THE CATHOLIC UNIVERSITY OF AMERICA

Modeling Uplands: Landscape and Prehistoric Native American Settlement Archaeology in the Virginia Blue Ridge Foothills

A DISSERTATION

Submitted to the Faculty of the

Department of Anthropology

School of Arts and Sciences

Of The Catholic University of America

For the Degree

Doctor of Philosphy

©

Copyright

All Rights Reserved

By

Carole L. Nash

Washington D.C.

2009

Modeling Uplands: Landscape and Prehistoric Native American Settlement Archaeology in the Virginia Blue Ridge Foothills

Carole Lynn Nash, Ph.D.

Director: Anita G. Cook, Ph.D.

This dissertation presents a landscape-based study of Native American archaeological site distribution in the Virginia Blue Ridge Mountains and foothills of the Upper Rappahannock River basin. The upland forests of the Appalachians are among the most diverse natural communities in the temperate world, and their ecological heterogeneity provides the setting for a study of change and flexibility as an essential feature of hunter-gatherer cultural existence. Archaeologists committed to an ecologically-based study of upland hunter-gatherer settlement have turned to the spatial and temporal scaling of the landscape approach to decipher the complex relations among humans and their environments and to consider cultural persistence and change in complex ecological settings.

The major methodological contribution is the development of an approach that combines field survey, artifact analysis, and Geographic Information Systems (GIS) to produce a working model of cultural continuity and change at multiple spatial and temporal scales. The field work was undertaken by the author and a

group of trained volunteers from the Madison Archaeology Project, a rural, citizen-science effort designed to document archaeological resources in the rural Rappahannock Piedmont. A relational database and Geographic Information System facilitates the analysis of provenienced artifact collections from 233 sites in three macro-physiographic provinces and six watersheds. The assemblage of 50,623 artifacts is analyzed for twenty-one variables associated with material culture, site characteristics, and ecological context. The resulting model allows the analysis of subtle landscape variables and site distribution across different spatial scales, releasing archaeologists from decontextualized explanations of hunter-gatherer settlement.

In addition to providing geographical coverage of a previously unstudied region, this study contributes to archaeological practice and archaeological site conservation. Throughout the United States, the daily exercise of archaeology relies on accurate models that can locate sites potentially threatened by landscape-altering projects. Archaeologists with access to GIS technology and relational databases have the potential for full consideration of landscape use by mobile hunter-gatherer groups who incorporated the uplands into settlement cycles. Similarly, local governments with access to this technology can develop more robust management plans for site conservation.

This dissertation by Carole L. Nash fulfills the dissertation requirement for the doctoral degree in Anthropology approved by Anita G. Cook, Ph.D. as Director and by David W. Guillet, Ph.D., and Michael B. Barber, Ph. D. as Readers.

_____

Anita G. Cook, Ph.D., Director

_____

David W. Guillet, Ph.D., Reader

_____

Michael B. Barber, Ph.D., Reader

Dedication

To William Gardner: his powerful presence, his exasperating personality, and his remarkable command of all things archaeological. 'Legacy' is over-used, but Bill shaped Middle Atlantic archaeology and the lives of his students in ways that continue to unfold, several years after his passing. William Faulkner said it best: "The past is never dead. It's not even past."

Contents

Signature Page ii
Dedication iii
List of Illustrations ix
List of Tables xiii
Acknowledgements xv

Chapter One: Introduction to the Landscape Approach to Hunter-Gatherer Archaeology in the Upper Rappahannock River Basin 1
The Study Area and the Madison Archaeology Project 2
Study Rationale and Research Questions 8
Theoretical Overview 11
Organizing Concepts 12
- Scale 13
- Mobility 14
- Uplands 15

Methodology: Data Collection 16
Methodology: Data Analysis 19
Contributions of the Study 23
Limitations of the Study 24
Organization 25

Chapter Two: Theoretical Orientation and Research Methodology 27
Landscape and Archaeology: A Theoretical Overview 27
- The Influence of the *Annales* School in Landscape Studies 28
- The Influence of Ecosystems Ecology in Landscape Studies 31
- Landscape Archaeology Today 36
- Landscape and Hunter-Gatherer Archaeology 38

Methodology of the Current Study 43
- Site Selection 43
- Site Documentation 49
- Surface and Subsurface Investigations: Comparability of Sample 55
- The Unification of Scale and the Cluster Methodology 57
- Site Variables 64
- Settlement Models and Site Types 66
- GIS Applications and Locational Studies 76
- Archive 79

Chapter Three: Environmental Context for the Upper Rappahannock Valley 81
Blue Ridge, Inner Piedmont, and Mesozoic Basin Macrophysiographic Zones....83
Northern Blue Ridge Mountains 84
Inner Piedmont....85
Mesozoic Rift Basin....86
Lithic Resources 88
Hydrology 93
Description of 14-Digit Hydrologic Units 97
E03 97
E11 98
E12 101
E13 101
E14 103
E15 106
Soils 108
Wildlife 110
Forests....112
Modern Climate of the Upper Rappahannock Valley 117
Paleoclimate and Vegetational Reconstruction of the Upper Rappahannock Valley 117
Terminal Pleistocene....120
Early-Middle Holocene 123
Late Holocene 127

Chapter Four: Culture History of the Northern Virginia Piedmont and Blue Ridge 131
Archaeological Studies in the Northern Virginia Piedmont and Blue Ridge 132
Culture History of the Upper Rappahannock Valley 141
Pre-Clovis....142
PaleoIndian 144
Early Archaic 147
Middle Archaic....149
Late Archaic 151
Early Woodland 154
Middle Woodland....157
Late Woodland 161
Historic Era 168

Chapter Five: Micro-Scale Analysis of Archaeological Cluster Data 174
Cluster Descriptions: Blue Ridge Physiographic Province 179
Arrowhead 180
Berry 182
Big Meadows 184
Corbin 187
Fishers Gap 189
Hawksbill 190
Laurels 192
Limberlost 194
Milam Gap 196
Nethers 198
Nicholson 200
Pinnacles 202
Rose River 203
Spitler Hill 205
Upper Rapidan 206
Weakley 208
Isolated Blue Ridge 210
Cluster Descriptions: Inner Piedmont Physiographic Province 212
Banks Mountain 213
Dark Run 215
Demarest 217
Elk Run 219
Graves 221
Graves Mill 224
Haywood 227
Hebron 229
Henshaw 233
Lambs Bottom 236
Lost Mountain 239
Mallory 240
Middle River 242
Neal Mountain 245
Peola Mills 247
Thorofare Mountain 248
Uno 250

White Oak 251
Isolated Inner Piedmont....255
Cluster Descriptions: Mesozoic Basin Physiographic Province....258
Beaverdam 259
Madison Mills....262
Sanford....263
Isolated Mesozoic Basin 266
The Pattern in the Details....268

Chapter Six: Selected Applications of Scaled Analysis in the Upper Rappahannock Basin 269
A Comparison of Conventional Settlement Modeling and the Landscape Approach in Hydrologic Unit E03 (Hughes River) 270
Outline of Hughes River Culture History 271
Site Function and Setting 278
Conventional Settlement Modeling and the E03 Hydrologic Unit....281
The Landscape Approach at the Meso-Scale: Hydrologic Unit E03 Settlement....283
Microenvironmental Heterogeneity and Site Function....285
Macro-Scale Analysis: Mobility in Mountain Settings 290
Lithic Raw Material and Residential Mobility....298
A Landscape-Based Culture History at the Meso-Scale....301
Tool Technology and Residential Mobility 303
The Sociality of Uplands and the Significance of Persistent Places in Hydrologic Unit E14 (Upper Robinson River/White Oak Run)....305
Outline of Upper Robinson River Culture History....309
Site Function and Setting 317
The Big Meadows Case Study: Aggregation and Territoriality during the Late Archaic Sub-Period....325
Rockshelters, Buffers, and Persistent Places 337

Chapter Seven: Concluding Remarks 351
A Preliminary Settlement Model for Madison County 351
Landscape Archaeology and Settlement Modeling in the Middle Atlantic Uplands 371

'We Have Often Wondered About an Indian Presence on This Land': The Madison Archaeology Project and the Importance of *Place* for Landscape Studies 377
Future Directions 383
Expanding MAP and Engendering 'Citizen Science' 383
Geodatabase 384
Scaled Research Questions 385
The Manahoac 391
Environmental Parameters and Cultural Expression 392

Appendix I: Diagnostic Artifact Type Descriptions 393
Protectile Points 394
Ceramics 405

Appendix II: Site Location Maps by Cluster and Cluster Diagnostic Artifacts by Cultural Sub-Period 409

Appendix III: Individual Site Information by Macrophysiographic Province and Cluster 450

Appendix IV: Artifact Catalog 486

Works Cited 626

List of Illustrations

Figure Page

1. Location of Study Area, Madison County, Virginia....3
2. Upper Rappahannock Watershed 4
3. Archaeological Survey Coverage by Virginia County 5
4. GeoCover Landsat Image, Madison County, Virginia....6
5. Matrix of Temporal and Spatial Scales Used in the Study....14
6. Macro-Physiographic Provinces, Madison County, Virginia....17
7. Madison Archaeology Project Site Clusters....21
8. Hydrologic Units, Madison County, Virginia 22
9. Prehistoric Archaeological Sites, Madison County, Virginia 44
10. Madison Archaeology Project Brochure....46
11. Madison Archaeology Project Information Card....47
12. An Application of Nested Spatial Scales in the Project Area 60
13. Prehistoric Archaeological Sites With No Known Cultural Period Affiliation, Madison County, Virginia....64
14. Hierarchical Settlement Model for Blue Ridge Mid-Hollow Fan and Piedmont Foothills....69
15. Monadnocks, Madison County, Virginia 87
16. Geology of Madison County, Virginia....90
17. Rapidan River Watershed....94
18. Hughes River Watershed (E03)....99
19. Upper Rapidan River/Conway River Watershed (E11) 100
20. Upper Rapidan River/South River Watershed (E12)....102
21. Rapidan River/Blue Run/Beautiful Run Watershed (E13) 104
22. Upper Robinson River/White Oak Run Watershed (E14)....105
23. Lower Robinson River/Crooked Run/Deep Run Watershed (E15) ..107
24. Madison County, Virginia Forest Cover (2005)....113
25. Koppen Climate Zones, Madison County, Virginia 118
26. Landmark Culture History Sequences Cited in Interior Virginia Archaeology 132
27. Blue Ridge Site Clusters, Madison Archaeology Project....179
28. Isolated Blue Ridge Sites, Madison Archaeology Project....211
29. Inner Piedmont Site Clusters, Madison Archaeology Project 212
30. Isolated Inner Piedmont Sites, Madison Archaeology Project 257

31. Mesozoic Basin Site Clusters, Madison Archaeology Project.....258
32. Isolated Mesozoic Basin Sites, Madison Archaeology Project.....267
33. Prehistoric Archaeological Sites, Hydrologic Unit E03 272
34. Transect Profile, Hydrologic Unit E03 273
35. Distribution of Components by Cultural Period, Hydrologic Unit E03 275
36. Frequency of Components by Cultural Period, E03 Hydrologic Unit.....276
37. Frequency of Diagnostic Lithic Occurrences, Hydrologic Unit E03 277
38. Archaeological Site Distribution by Function, Hydrologic Unit E03 279
39. Frequency of Archaeological Site Functions, Hydrologic Unit E03 280
40. Hoffman/Foss Predictive Model for Prehistoric Archaeological Sites, Nicholson Cluster, Hydrologic Unit E03.....284
41. Forest Communities, Hughes River Drainage, Shenandoah National Park.....286
42. Debris Flows in the Mid-Elevation Hollows, Hydrologic Unit E03 .290
43. Blue Ridge Summit Archaeological Sites, Hydrologic Unit E03.....293
44. Selected Transects, Hydrologic Unit E03.....296
45. Transect Profiles to Accompany Figure 44.....297
46. Prehistoric Archaeological Site Clusters and Sites, Hydrologic Unit E14 307
47. Transect Profile, Hydrologic Unit E14 308
48. Distribution of Components by Cultural Period, Hydrologic Unit E14 310
49. Frequency of Components by Cultural Period, Hydrologic Unit E14 311
50. Frequency of Diagnostic Lithic Occurrences, Hydrologic Unit E14.313
51. Occurrences of Steatite Bowl Fragments, Madison County 314
52. Frequency of Ceramic Artifacts by Type, Hydrologic Unit E14 315
53. Site Distribution by Function, Hydrologic Unit E14.....318
54. Site Function by Frequency, Hydrologic Unit E14.....319
55. Hamlet Locations, Madison County, Virginia.....321
56. Documented Rockshelters, Madison County, Virginia.....323
57. Vegetation Response to Climate in the Blue Ridge over the past 45,000 Years, with emphasis on American Chestnut 330

58. Incised Slate Fragment (6x4.5 cm), 44MA59 334
59. Henshaw and Elvin Graves Rockshelters and Associated Base Camps and Site Clusters 340
60. Robinson River Valley Constriction 342
61. Henshaw Rockshelter Viewshed and Associated Base Camps.....344
62. Elvin Graves Rockshelter Viewshed and Associated Base Camps...345
63. Frequency of Archaeological Site Components by Sub-Period 352
64. Frequency of Diagnostic Lithic Occurrences, Madison County, Virginia.....353
65. Paleoindian Components, Madison County, Virginia 355
66. Early Archaic Components, Madison County, Virginia 356
67. Middle Archaic Components, Madison County, Virginia.....357
68. Late Archaic Components, Madison County, Virginia.....359
69. Early Woodland Components, Madison County, Virginia 362
70. Middle Woodland Components, Madison County, Virginia.....363
71. Frequency of Archaeological Site Components by Sub-Period 365
72. Late Woodland Components, Madison County, Virginia.....366
73. Graves Effigy Face, Duck Farm Roy Crigler Site.....368
74. Prehistoric Archaeological Sites with Six or More Components 376
75. Named Waterfalls of the Blue Ridge, Madison County Virginia. 392

List of Tables

Tables Page

1. Chapter Organization 26
2. Non-Diagnostic Lithic Artifact Catalog Categories 52
3. Site Typology for Northern and Central Blue Ridge 70
4. Site Type, Description and Frequency in Study Area 73
5. Lithic Raw Materials Represented in Study Area Artifact Collections 91
6. Hydrologic Units in Study Area 97
7. Soil Associations of Madison County, Virginia (USDA 2004) 109
8. Natural Community Groups of the Study Area. 115
9. Ecological Classes of the Study Area 116
10. Comparison of Blue Ridge and Mesozoic Basin Paleoenvironment, Terminal Pleistocene-Early Holocene 122
11. Comparison of Blue Ridge and Mesozoic Basin Paleoenvironment, Early-Middle Holocene 124
12. Late Holocene Paleoenvironment 128
13. Study Clusters by Macrophysiographic Province, Hydrologic Unit, and Site 176
14. Parameters and Variables of Micro-Scale Cluster Analysis 178
15. Arrowhead Cluster Physical Attributes 180
16. Berry Cluster Physical Attributes 182
17. Big Meadows Cluster Physical Attributes 184
18. Corbin Cluster Physical Attributes 187
19. Fishers Gap Cluster Physical Attributes 189
20. Hawksbill Cluster Physical Attributes 190
21. Laurels Cluster Physical Attributes 192
22. Limberlost Cluster Physical Attributes 194
23. Milam Gap Cluster Physical Attributes 196
24. Nethers Cluster Physical Attributes 198
25. Nicholson Cluster Physical Attributes 200
26. Pinnacles Cluster Physical Attributes 202
27. Rose River Cluster Physical Attributes 203
28. Spitler Hill Cluster Physical Attributes 205
29. Upper Rapidan Cluster Physical Attributes 206
30. Weakley Cluster Physical Attributes 208
31. Banks Mountain Cluster Physical Attributes 213

32. Dark Run Cluster Physical Attributes....215
33. Demarest Cluster Physical Attributes.....217
34. Elk Run Cluster Physical Attributes....219
35. Graves Cluster Physical Attributes 221
36. Graves Mill Cluster Physical Attributes 224
37. Haywood Cluster Physical Attributes 227
38. Hebron Cluster Physical Attributes 229
39. Henshaw Cluster Physical Attributes....233
40. Lambs Bottom Cluster Physical Attributes 236
41. Lost Mountain Cluster Physical Attributes....239
42. Mallory Cluster Physical Attributes....240
43. Middle River Cluster Physical Attributes 242
44. Neal Mountain Cluster Physical Attributes....245
45. Peola Mills Cluster Physical Attributes 247
46. Thorofare Mountain Cluster Physical Attributes....248
47. Uno Cluster Physical Attributes 250
48. White Oak Cluster Physical Attributes....251
49. Beaverdam Cluster Physical Attributes....259
50. Madison Mills Cluster Physical Attributes 262
51. Sanford Cluster Physical Attributes....263
52. Frequency of Artifacts by Raw Material, Hydrologic Unit E03 299
53. Diagnostic Artifacts by Site Type and Elevation Range, Hydrologic Unit E03 302
54. JMU-Big Meadows Mafic Fen Survey, Diagnostic Projectile Points 329
55. Environmental and Cultural Attributes of Rockshelters, Madison County, Virginia 338
56. Non-Local Ceramics Recovered from Rockshelters, Hydrologic Unit E14 348

Acknowledgements

The Madison Archaeology Project (MAP) owes its existence to a small group of volunteers from the Madison County Historical Society: Susan Cable, Rob and Nancy Demarest, Alvaine Hamilton, Jan and Gene Harris, Dewey Lillard, Don Mayer, and Barbara Rodier. Their love of Madison County, Virginia and interest in Native American history led them to create a program that brings together "born-heres" with "come-heres" in the common pursuit of conserving archaeological sites. Dewey Lillard deserves special recognition for all the hours spent in the field, chasing down site locations and examining artifact collections.

MAP's success lies with the many Madison County residents who participated in the effort and continue to support site documentation with their time, knowledge, and (often) meals. Don and Julia Strode, who donated the Strode Artifact Collection to the Madison County Historical Society, offered hours of company. James and Rachel Graves and Ruth and Randall Lillard provided access to their family artifact collections, allowing me to work in their homes for days on end. To them and to all the MAP participants past and present, thank you a thousand times over.

From the outset, the Madison Archaeology Project was strongly influenced by the public archaeology programs developed by Dr. William Gardner and Dr. Joan Walker at Thunderbird Museum and Archaeological Park, an institution that grew out of the Department of Anthropology, Catholic University of America, in the 1970s and continued until closure in 1987. Both Dr. Gardner and Dr. Walker were members of the MAP Advisory Board and profoundly influenced the design of the program. Likewise, Dr. William Boyer provided insight and support during MAP's development, and Dr. Michael Barber became a sounding board as the analysis proceeded. Many years ago, Dr. Boyer introduced me to environmental archaeology of the Middle Atlantic and the importance of *place*, at a time when the furthest thing from my mind was researching the region of my birth.

My students at James Madison University, members of the Royal Order of the Plumb Bob, have wandered through the wilds of the Virginia Blue Ridge with me, and I continue to be amazed by their enthusiasm and patience. I am particularly grateful to Lillian Ledford, my senior assistant. Much of our work in Madison County is generously supported by Shenandoah National Park, whose staff

members have provided funding, lodging, and guidance since 1999. Major thanks are due Reed Engle who believed in the importance of the Big Meadows work.

Sandra Speiden, 'that archaeology lady,' set the standard for recording archaeological sites in the northern Virginia Piedmont, and I was fortunate to have known her and her family. Her legacy continues in the Sandra Speiden Scholarship for Graduate Study in Archaeology that is awarded on an annual basis by the Archeological Society of Virginia.

My extended family at Catholic University gave me much support and encouragement toward the completion of this work. As a CUA student, I stand in the shadow of Dr. Regina Flannery Herzfeld. I am especially grateful to Dr. Anita Cook who guided me after the passing of Dr. William Gardner. Dr. David Guillet, always ready to 'talk mountains,' gave me much food for thought throughout the process. Drs. Lucy Cohen, Jon Anderson, and Phyllis Chock shaped my thinking through their willingness to explore the links between cultural anthropology and archaeology. Dr. Cohen, in particular, has served as a role model, and I thank her for her support over the years. I owe both her and Catholic University a debt of gratitude for the Hochwalt Fellowship. Dr. Hanna Marks and the staff of the Graduate Office of the School of Arts and Sciences exhibited great tolerance and provided invaluable assistance.

Financial support for MAP-associated programming was provided by the Virginia Foundation for the Humanities, the Virginia Department of Historic Resources, and the Madison County Board of Supervisors. The Madison County Historical Society provided office space and a telephone in the early days of the survey and continues to support MAP exhibits in the historic Madison Arcade.

GIS technical assistance was provided by Peter Hof and Joel Staub of the James Madison University Geographic Science Program and Fred Garst of the Natural Resources Conservation Service. Pete, in particular, slogged through the creation of endless maps, maintaining a level of interest in the project that confounds me. Joanne Nobile, master editor, kindly reviewed the voluminous References section.

I am deeply indebted to all my colleagues, friends and family, as well as faculty and staff at James Madison University, who never gave up on the belief that I would complete this work. Cynthia Schroer, Jake Myers, Ginger Usry and Sharon Loyd

knew when to ask and when not to ask about the progression of writing. Perhaps from having families who have lived in the Virginia Piedmont for almost three hundred years, my parents, Barbara and Russell Nash, taught me that persistence is a good thing.

This work was inspired by the contemporary Indian communities of Virginia and a desire to tell a small part of the story of their ancestors. The relevance of archaeology lies not in the objects we find but in the unbroken presence of the people who left them.

Finally, my eternal gratitude goes to my husband, John Eckman—editor, formatter, and my strength. Your love carried me through the last sentence.

Chapter One: Introduction to the Landscape Approach to Hunter-Gatherer Archaeology in the Upper Rappahannock River Basin

> Too often in the rush to deal with broad theoretical questions, we pay only cursory attention to the fundamentals of data collection, site dating, analysis of site function, and reconstruction of populations . . . (Billman 1999:5)

Modern archaeology may depend on a "kaleidoscope of theoretical approaches" (Preucel and Hodder 1996a:6), but problem-oriented research grounded in Native American culture history and settlement patterns remains the foundation for the daily practice of Middle Atlantic prehistorians (Custer 1994). These tools that control for space, time and form—so basic as to be "internalized" as "mnemonic devices" by Americanist archaeologists (Fish 1999:203)—underlie the discourse of academic, public sector, and private sector archaeologists (Lyman et al. 1997a).

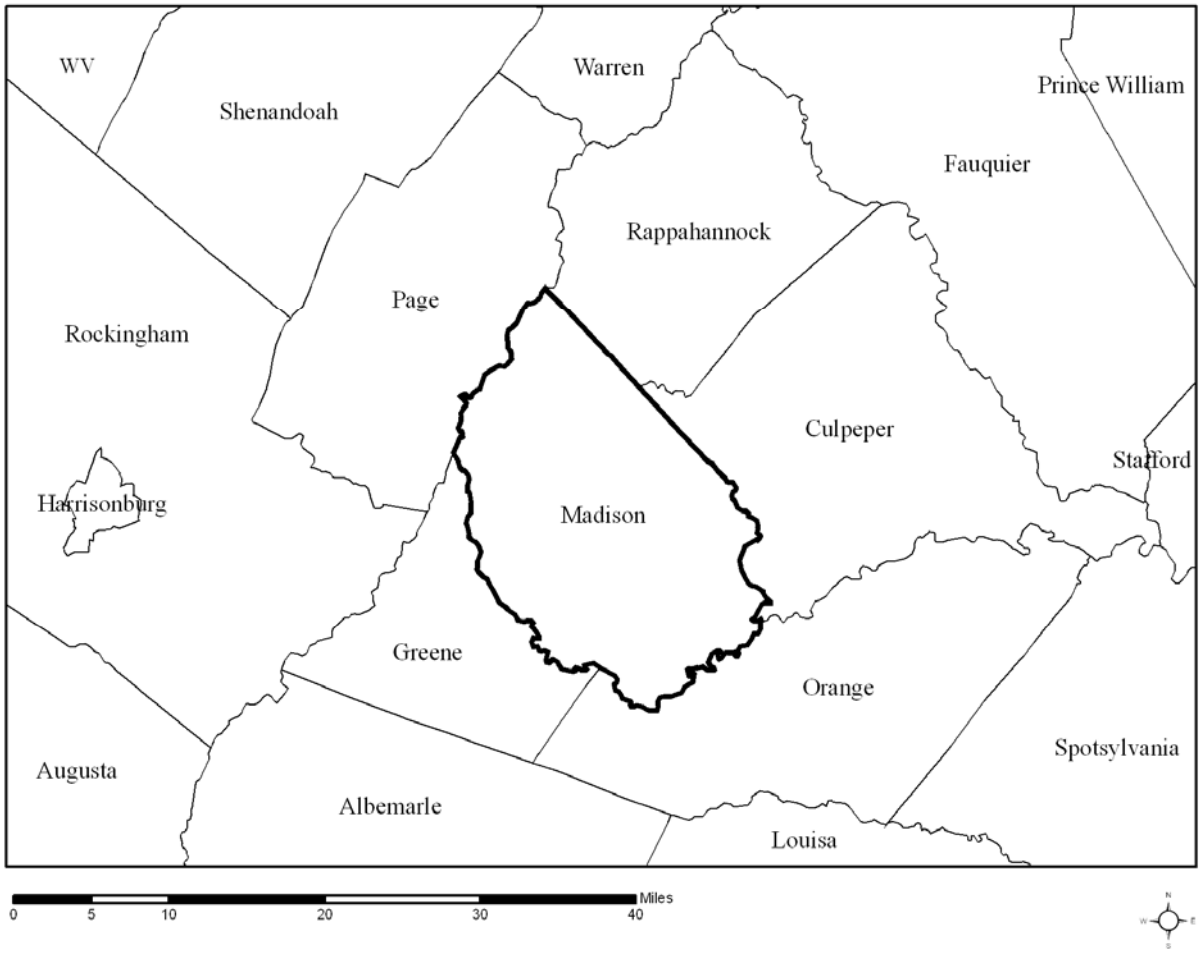
Since the late 1980s, Middle Atlantic prehistoric archaeology has seen a shift in focus from large-scale settlement model-building to a concern with the cultural variability of the region, its comparison to other regions of Eastern North America, and "long term trends in cultural evolution" among hunter-gatherer and agricultural populations (Custer 1994:346-348). Guided by these trends, the current settlement study focuses on the changing adaptations of prehistoric hunter-gatherer cultures of the Virginia Blue Ridge and demonstrates a multiscalar approach (Crumley 1994) highly sensitive to landscape and micro-environmental contexts—specific natural

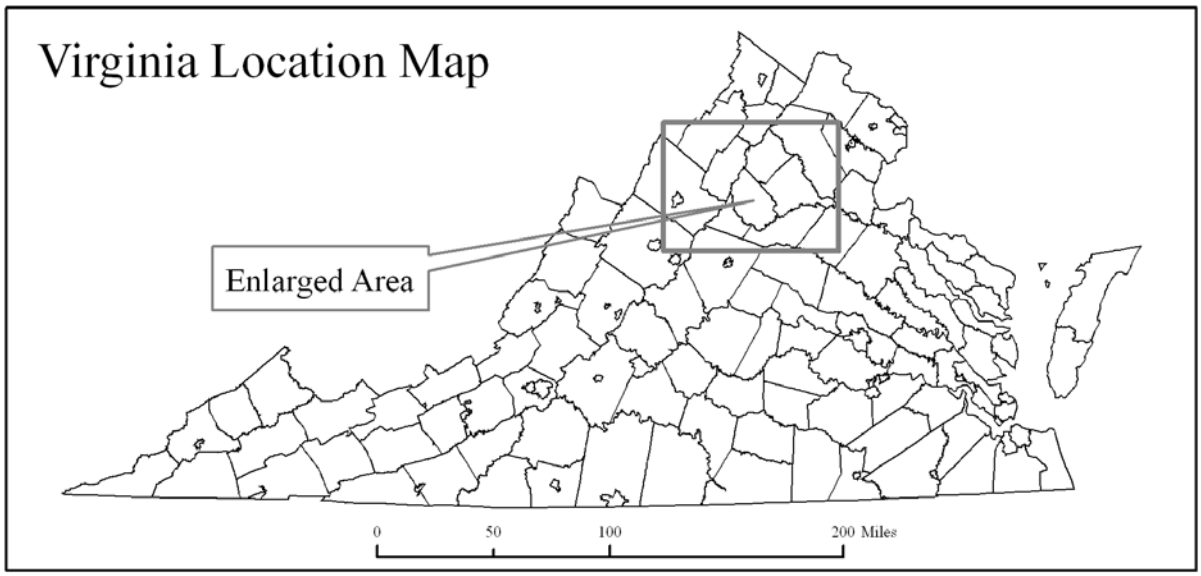
settings recognizable for their distinct arrays of resources. Given that the upland forests of the Appalachians are among the most diverse natural communities in the temperate world (Stephenson, Ash, and Stauffer 1993), their heterogeneity provides the setting for a study of change and flexibility as an essential feature of existence (Sullivan and Prezzano 2001a).

The study area, Madison County, Virginia, located in the northern Virginia Blue Ridge and Piedmont (Figure 1), provides a dataset created through a county-wide public archaeology program that documents archaeological resources in a little-studied place. An analysis of over two hundred archaeological sites offer insights into the merits of highly contextualized settlement studies. The anthropological goal of the work is to access small-scale prehistoric societies and their adaptations to a temperate upland region. The major contribution is the methodological approach that combines field survey, artifact analysis, and Geographic Information Systems (GIS) to produce a working model of cultural continuity and change at multiple spatial and temporal scales.

The Study Area and the Madison Archaeology Project

The Upper Rappahannock River Basin of the northern Virginia Piedmont (Figure 2), eighty miles southwest of Washington, D.C., has been acknowledged by the Virginia





Data obtained from http://www.nationalatlas.gov

Figure 1. Location of Study Area, Madison County, Virginia

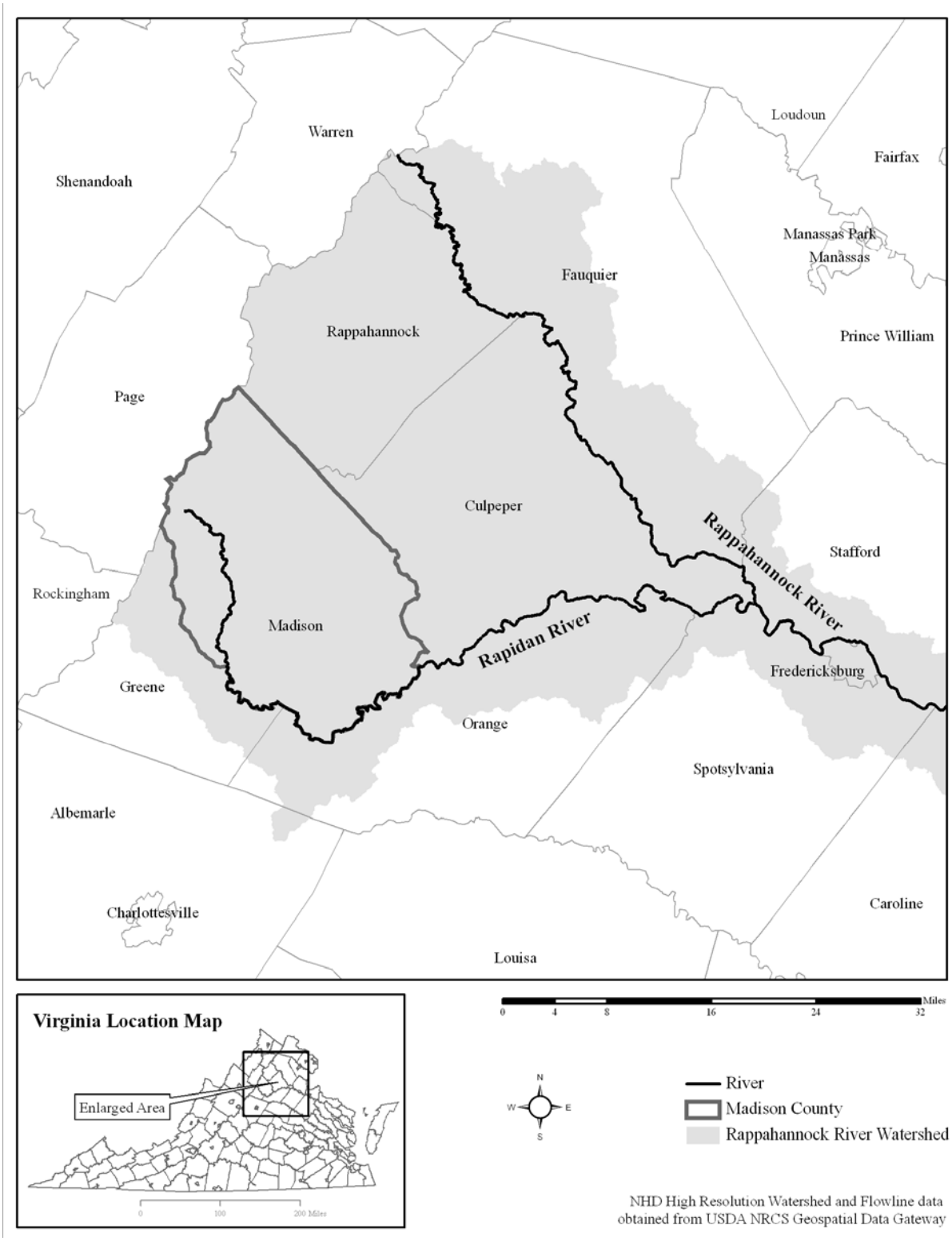


Figure 2. Upper Rappahannock Watershed

Department of Historic Resources (VDHR) as poorly represented by archaeological surveys (Figure 3).

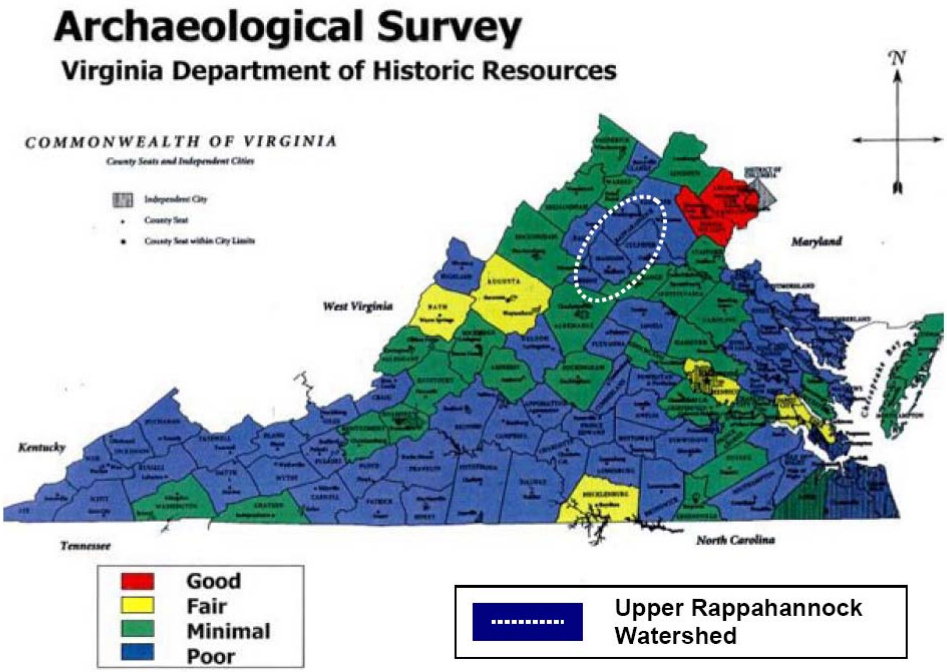


Figure 3. Archaeological Survey Coverage by Virginia County (http://www.dhr.virginia.gov/survey/SurveyMaps.htm)

This region is marked by low hills and ridges, forming a topographic transition ('foothills') into the Blue Ridge Mountains (Figure 4). While under-studied, the Upper Rappahannock has been hypothesized as a significant setting for the study of the correlation between Native American cultural patterns and ecological diversity (Foss 1983; Inashima 1990). It may also provide insights into hunter-gatherer upland-lowland systems of resource use and travel routes, as well as the

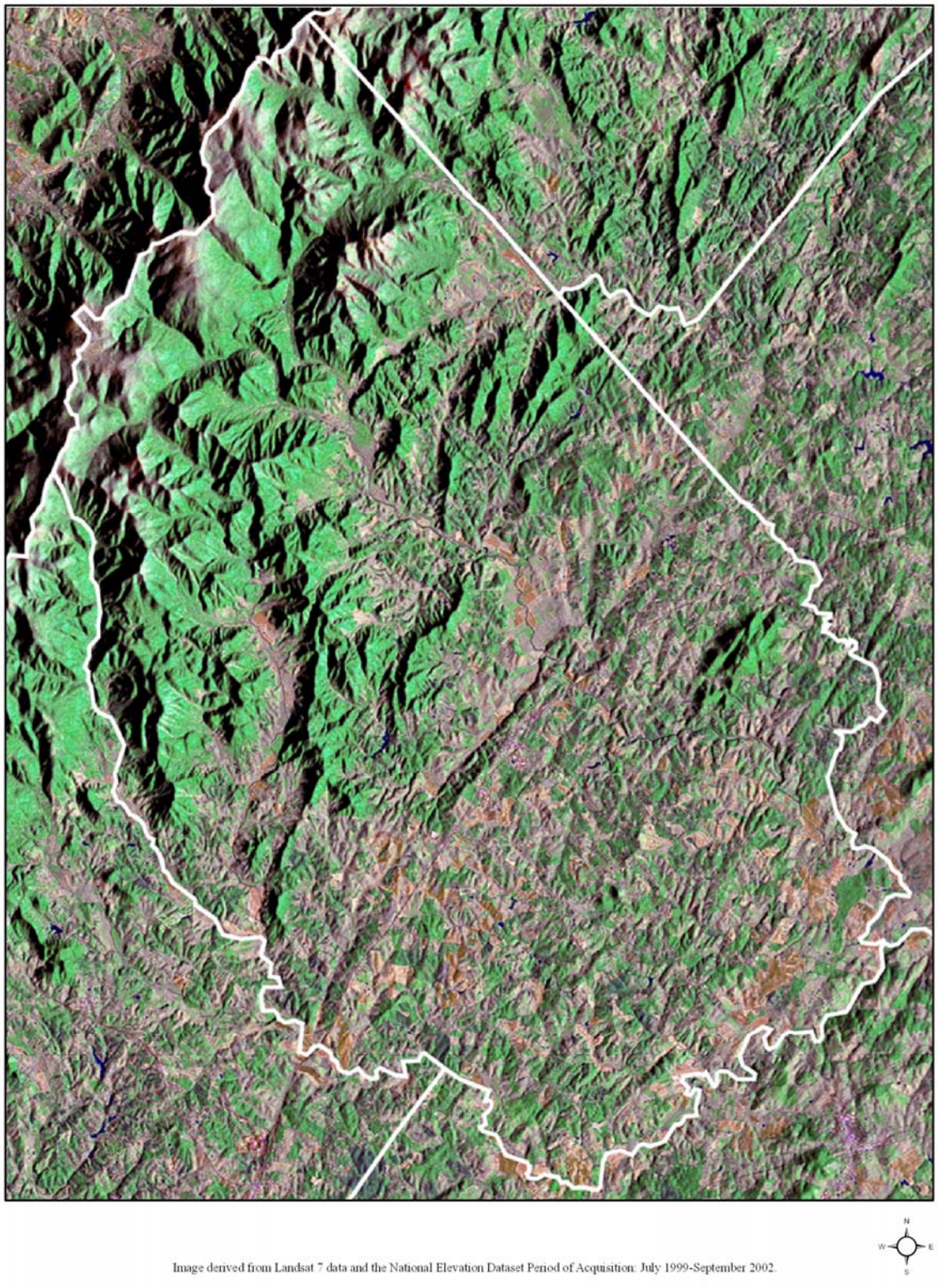


Figure 4. GeoCover Landsat Image, Madison County, Virginia

development of cultural identities and boundaries in a region of striking environmental variation (Gardner 1983a; Binford 1991; Trumbold 1991). However, these ecological anthropological questions can be addressed at only a gross level until a baseline for settlement pattern studies and culture history is established for the region.

In an attempt to fill these voids, the present document provides archaeological data for one county in the Upper Rappahannock basin, detailing a culture history sequence and preliminary model of prehistoric Native American settlement in the foothills/Blue Ridge region. Focusing on Madison County, an on-going survey and collections-based study has documented or reviewed 233 archaeological sites in a 327-square mile area that samples the topography of this transitional upland/ lowland region. Supported in part with a grant from the Virginia Foundation for the Humanities and Public Policy, the research grew out of the Madison Archaeology Project (MAP), a public program devoted to documenting the county's Native American archaeological record as a means of encouraging landowner site conservation (Nash 1992, 1993, 1994).

Study Rationale and Research Questions

The need for the present study arises from both the lacuna of data and the concern that generalized cultural historical and settlement models currently in use in the Middle Atlantic should be reassessed in light of systematic, region-specific studies (Nash 2001a).

Current research is predicated upon culture histories and prehistoric settlement models that continue to be framed by the generalizations of their early formulations (Boyer and Nash 1998; Barber and Tolley 1999; Nash 2000a), despite the warnings of model builders. In one of the most oft-referenced works regarding site distribution and settlement pattern modeling in the Middle Atlantic, Gardner (1987:52) describes an idealized transect of the Archaic period of the Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain as a "preliminary model" that "must be (and is being) subjected to considerable testing and revision . . . That there are local or regional habitat specific limitations cannot be denied."

Settlement pattern studies based on the interplay of environmental and cultural historical variables have been integral to the Middle Atlantic archaeological toolkit of the post-1970 era (Custer 1994). Settlement models have revealed much about archaeology in areas once totally neglected (e.g., uplands), but these heuristic

devices were originally posited to guide archaeological thinking about prehistoric Native American cultures and intended as a basis from which more refined studies would proceed (Boyer and Nash 1998). Custer (1994:330-331) describes Middle Atlantic archaeology of the pre-1980 period:

> (A)rchaeological research in the region had yielded sufficient data to allow archaeologists to produce broad reconstructions of prehistoric lifeways. Far-reaching generalizations were developed using data from limited excavations, and these generalizations formed the basis for models of prehistoric settlement and subsistence systems that could be tested with further archaeological research.

In Virginia, the advent of federally mandated Cultural Resources Management (CRM) studies and publicly funded archaeological projects resulted in research programs that devised culture histories and settlement pattern models within and across physiographic regions from the Coastal Plain to the Appalachian Plateau (Gardner 1974, 1982, 1987; Gardner and Boyer 1978; Custer 1979; Hoffman and Foss 1980; Boyer 1982; Geier and Boyer 1982; Potter 1982; Barber 1983; Tolley 1983; Hantman 1985; Catlin 1986; Johnson 1986; Klatka et al. 1986; Mouer 1990). These studies, like many of this period, allowed for neo-evolutionist examinations of cultural patterning at the macroregional scale, sampling from a variety of site settings and interpreting past behavioral systems through an ecological lens (Thomas 1998).

Central to the question of settlement model application is the assumption that environmental variables across the length and breadth of regions are homogeneous and/or continuous, and that human responses to these variables are homogeneous. If, as Custer argues, the characteristic that sets apart the Middle Atlantic from other regions is cultural variability that "may be due to its extensive environmental variability" (1994:346), the generalized models that conflate this environmental variability function as impediments to the further study of prehistoric cultural diversity, particularly in upland settings where climate and geography create complex mosaics of resources.

The present study—a record of known sites in the study area, a working model for the location of sites, and a framework for more contextualized research—is an initial approximation of the prehistory of a previously unknown region and a comparative basis for similar studies. It is a continuation and elaboration of the overall research design for site distribution and settlement pattern studies for the Middle Atlantic developed by William Gardner and his students at the Catholic University of America (Gardner 1982, 1987; Custer 1979; Stewart 1980; Wall 1981; Boyer 1982; Tolley 1986).

Theoretical Overview

During the late 1980s and 1990s, anthropologists influenced by humanistic cultural geography, historical ecology, and phenomenology developed the 'landscape approach' to reconfigure the human-environment dialectic so familiar in Americanist archaeology (Crumley 1995). In the 1998 plenary address to the Society for American Archaeology, van der Leeuw suggested that archaeology has shifted its emphasis from site to settlement pattern and now to landscape (Fisher and Thurston 1999). The landscape approach includes: a. a dedicated effort to examine the physical environment, often using a diverse suite of natural science techniques, but with explicit social scientific questions guiding the research; b. the recognition that human-environment interactions are historically-contingent, dynamic and accretionary, shaped by distinct cultural perceptions and past human actions; c. the realization that human environments are in themselves partly products or constructions of a dynamic interaction with human behavior (Feinman 1999).

Landscape archaeology is multiscalar—it can accommodate the study of the micro-scale distribution of individual artifacts within a specific activity locus, as it can the macro-scale distribution of base camps within a physiographic zone, each scale allowing the comprehension of a different set of behaviors. It employs the temporal scale periodicity and duration of the *Annales* School (Crumley 2002). But whereas

traditional settlement archaeology tends to posit a hierarchical, adaptive relationship between contemporaneous uses of space (e.g., activity area, foray camp, microband base camp, macroband base camp) and time (day, week, season, year), landscape archaeology posits a heterarchy: complex systems in which elements have the potential of being unranked relative to other elements or ranked in a number of ways, depending on systemic requirements (Crumley 1994). Influenced by the disequilibrium models of the New Ecology, heterarchy emphasizes the constant state of flux between culture and environment (Turner 1998). With over 13,000 years of Native American occupation in an upland-lowland interface, the study area provides a strong test case for the short-term changes and long-term continuities posited for hunter-gatherer cultures of the temperate world (Mithen 2000a).

Organizing Concepts

As a "set of culturally significant locations, each of which occupies a specified position within an array that makes up a coherent distribution," the settlement pattern "marks the intersection of human activities and the natural environment," reflecting the "cumulative outcomes of spatially expressed decisions and interactions" (Fish 1999:203). In the case of hunter-gatherer cultures, two organizing concepts guide settlement pattern studies: *scale* and *mobility*. The investigation of prehistoric human adaptation requires the collection of archaeological data

representative of the variability in the behavioral systems to be studied (Redman 1974), and from an ecological perspective, requires the sampling of environmental zones as a reflection of that variability. An additional organizing concept of *uplands* further frames the research questions and analysis.

Organizing Concept 1: Scale

With its emphasis on landscape as the manifestation of dialectical relations between human acts and nature, the landscape approach implements *scale* as the organizing concept for the study of spatial and temporal human-environment relations (Crumley and Marquardt 1990; Crumley 1994). The scale of human action and adaptation varies with time, space, and culture, and at any given time, meaning is constructed at multiple levels by individuals and groups inhabiting a place (Yamin and Metheny 1996; Johnson 1982). Spatial scales of analysis in the present study include the macro-scale (physiographic province), meso-scale (watershed), and micro-scale (microenvironment). Likewise, temporal scales of analysis include the macro-scale (cultural period), the meso-scale (cultural sub-period), and the micro-scale (phase). The multiscalar approach has the potential to reveal the workings of short-term cultural change and long-term continuity at local and regional levels (Figure 5).

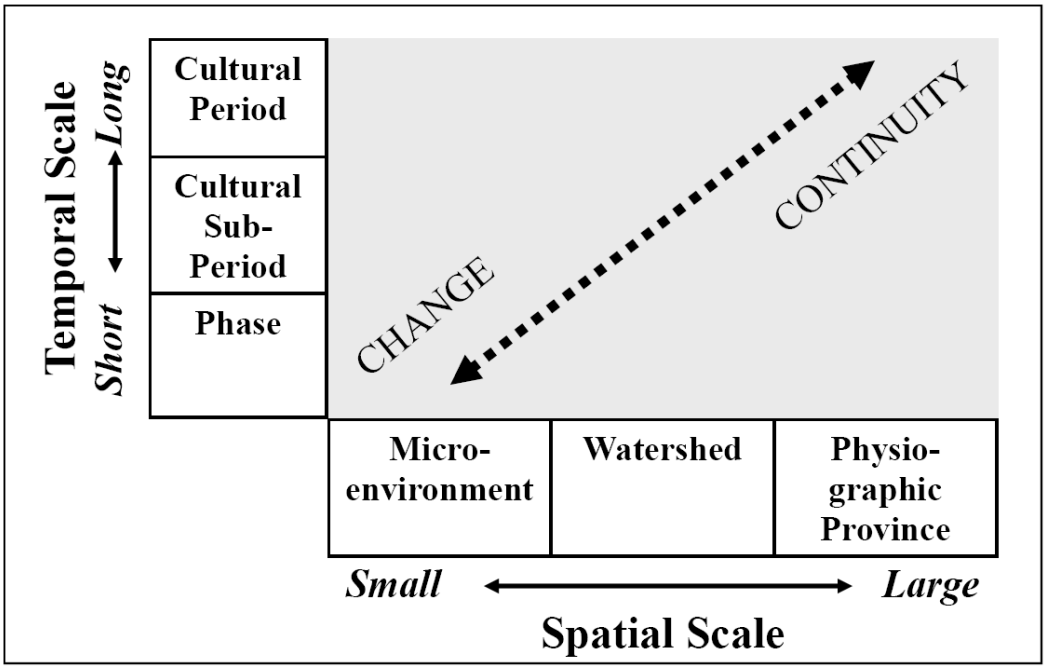


Figure 5. Matrix of Temporal and Spatial Scales Used in the Study

Organizing Concept 2: Mobility

Archaeological studies of hunter-gatherer settlement require the collection of data representative of the scales and types of activities associated with degrees of mobility (Banning 2002; Kelly 1995; Redman 1974). The archaeological record reflects hunter-gatherer mobility in patterned choices of site location, function, and demographic arrangement (Jochim 1976). A commonly employed ecological hypothesis correlates hunter-gatherer mobility with variation in distributions of needed resources (Jochim 1991) that, in temperate environments, are abundant on a seasonal basis. Groups develop flexible strategies of social organization that allow

for the exploitation of seasonal and perennial resources within a bounded region (Kelly 1995; Winterhalder 2001; Banning 2002).

The notion of *accessibility* is a corollary to patterned mobility in upland settings. While "modern thought has fixed place to spatial locations, every somewhere must lie on one or several paths of movement to and from places elsewhere"(Ingold 2007:3). Thus, the traditional settlement model approach to discrete locations as activity loci is expanded to consider the "connective tissue" (Deetz 1990:1) between sites, giving them greater context in larger spheres of movement.

Organizing Concept 3: Uplands

The particularistic emphasis of the landscape approach requires a highly contextualized analysis of *uplands*—in this instance, the uplands of the Rappahannock Valley. While the definition of mountains or uplands is in some part dependent on the perceptions of those who live in them (Beniston 2000), they are objectively identified by their elevations above the surrounding countryside and their resource groupings. The study area, with its mountains and foothills, displays marked vertical and horizontal zonation and corresponding ecological diversity from west to east, with mean elevation ranging from 4000 feet to 300 feet above mean sea level across twenty-five air miles. It samples from three

northeast/southwest-trending macrophysiographic provinces that extend through the Middle Atlantic and serve as north-south corridors for human movement: Blue Ridge, Inner Piedmont, and Mesozoic Basin (Figure 6). The closely juxtaposed microenvironments of the upland forests of the Appalachians provide the setting for a study of seasonally-based hunter-gatherer movement in a region with documented vertical zonation (USDA 2005). Ethnographic studies describe the cultural diversity, economic specialization, persistence of cultural traditions, and fluidity of social organization of upland communities (Brush 1984), and more recent archaeological studies of the Appalachians provide evidence for the persistence of cultural traditions among highland peoples (Sullivan and Prezzano 2001a).

Methodology: Data Collection

The present study builds on a public archaeology program that generated a large quantity of data in the form of artifact collections analysis and field survey. The Madison Archaeology Project (MAP) was initiated in 1990 at the request of the Madison Heritage Foundation for the purpose of reviewing known Native American archaeological sites, identifying new ones, and developing a land use planning document for their conservation (Nash 1992). MAP relies on the participation of landowners who dictate the location and number of sites included in the inventory,

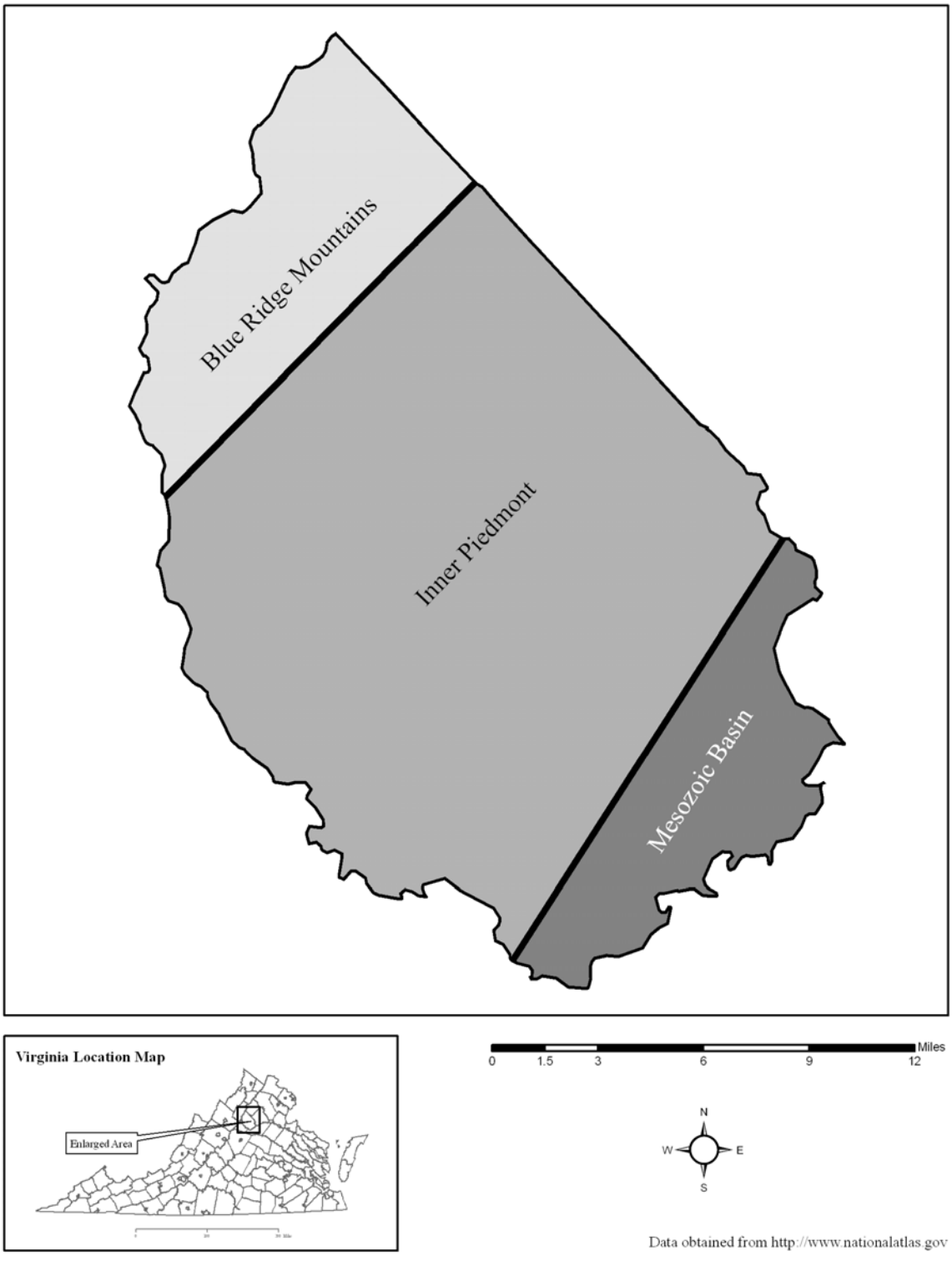


Figure 6. Macro-Physiographic Provinces, Madison County, Virginia

and is an example of the "civic engagement" (Little 2007) that marks contemporary archaeological practice.

The present study is an example of the first of two stages of a multistage research design: the regional reconnaissance survey and the more intensive surface survey of the region (Redman 1974). The regional reconnaissance survey is particularly useful in areas about which little is known of the archaeological record and "provides data on the location of many sites in the region, enables some general inferences about the prehistoric settlement patterns, and aids in more detailed planning of subsequent work" (Redman 1974:28). The Inner Piedmont comprises a distinct natural regional unit comprised of smaller units that theoretically possess a particular "array of natural resources which would have allowed for different ranges of prehistoric adaptive strategies" (Stewart 1980:13). Given the close proximity of this natural unit to both mountainous and lowland environments within the study area, it is assumed that the full range of site types comprising a hunting and gathering lifestyle will be encountered. The Upper Rappahannock survey draws from methodologies outlined in regional settlement pattern studies (see especially Gardner 1982), as well as those of landscape archaeology (Crumley and Marquardt 1990; Crumley 1995, 1999; Knapp and Ashmore 1999; Johnson 2007) and historical ecology (Crumley 1994).

VDHR archaeological site survey files (the on-line Data Sharing System) were reviewed for additional data, including previously recorded sites on private lands and those in adjoining Shenandoah National Park (VDHR 2008a). With the permission of the National Park Service, artifact collections and project reports were inventoried and included in the MAP database. The remaining VDHR-recorded sites on private lands were field checked by MAP volunteers and, where available, artifact collections were inventoried for the MAP database. Finally, artifact assemblages from early excavations undertaken by Archeological Society of Virginia (Holland and Graves 1951; Holland 1967) were included in the MAP inventory. Artifacts were cataloged using commonly accepted culture historical and functional types for the region. The result is a database of 233 prehistoric sites and 50,623 artifacts.

Methodology: Data Analysis

The sites are grouped in thirty-seven clusters (Figure 7) selected as purposive, stratified samples of micro-environmental zones from six meso-scale watersheds, or hydrologic units (Figure 8) and three macrophysiographic provinces. Unlike a traditional, quantitatively-based transect sampling strategy (Banning 2002; Redman 1974, 1983), the clusters vary in size depending upon known site size and present-

day property boundaries. Such a non-quantitative approach is appropriate given the minimal amount of research undertaken in the area of a hunter-gatherer settlement (Custer and Wallace 1982; Orton 2000). The development of a landscape-based settlement model is greatly aided by relational databases that allow the correlation of highly specific variables through query functions. A Microsoft Access relational database available from the author has been developed for this study to allow the analysis of data from the macro-, meso-, and micro-scales with the culture historical data generated by MAP. This database includes twenty-one fields of environmental and cultural historical information. To further the spatial analysis, the Access database is integrated with a Geographic Information System (GIS) that incorporates separate layers for soils, structural geology, topography, hydrology, and site location. By storing and manipulating large sets of spatial data, GIS is regularly used by archaeologists for regional database management at the meso- and macro-scales and has furthered the traditional settlement archaeology task of predictive modeling (Banning 2002; Wheatley and Gillings 2002). More recent applications informed by the landscape approach allow the reconfiguration of settlement studies to include such factors as viewshed, boundaries, group size dynamics, patterns of migration, and hunter-gatherer decision-making (Whitley and Hicks 2003).

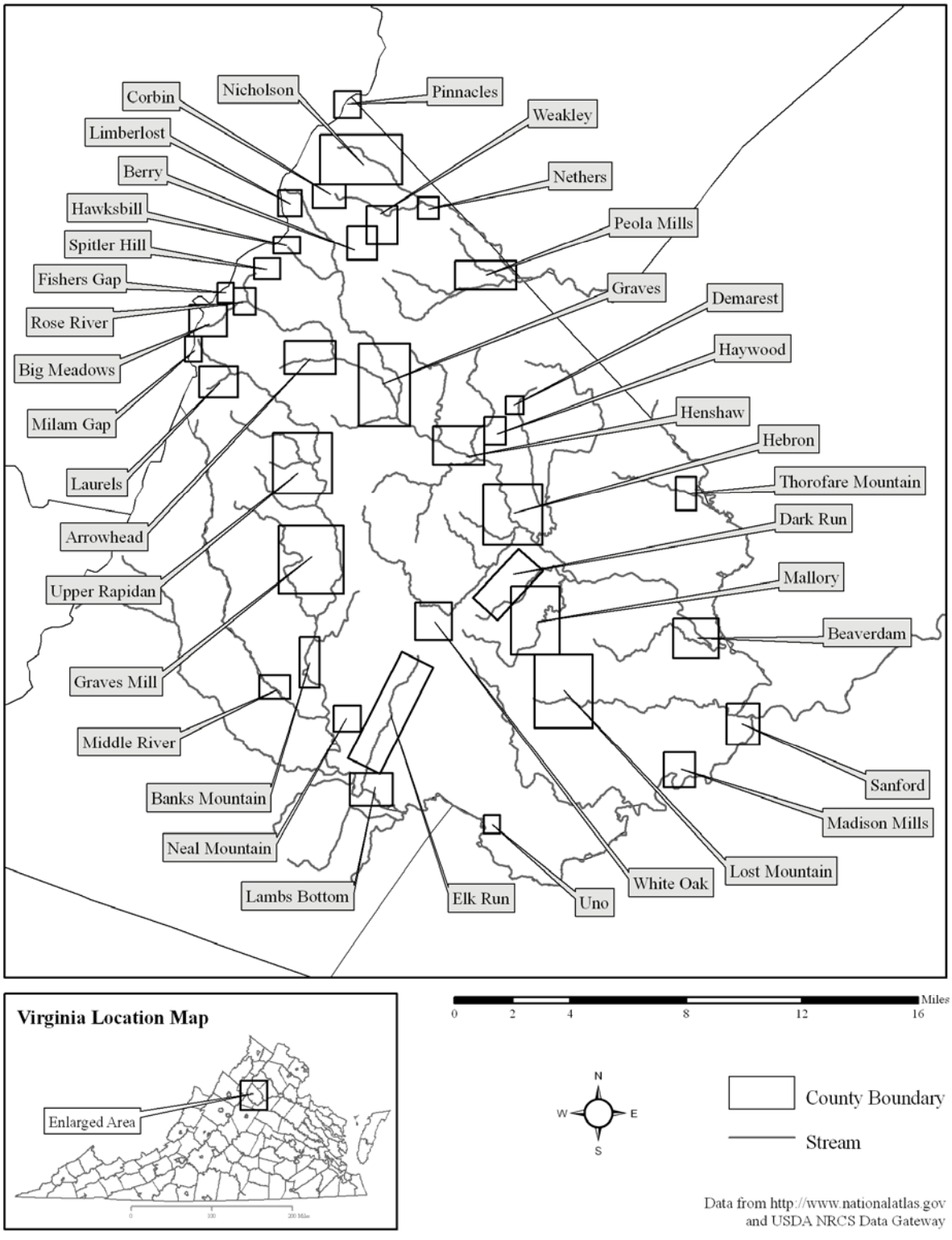


Figure 7. Madison Archaeology Project Site Clusters

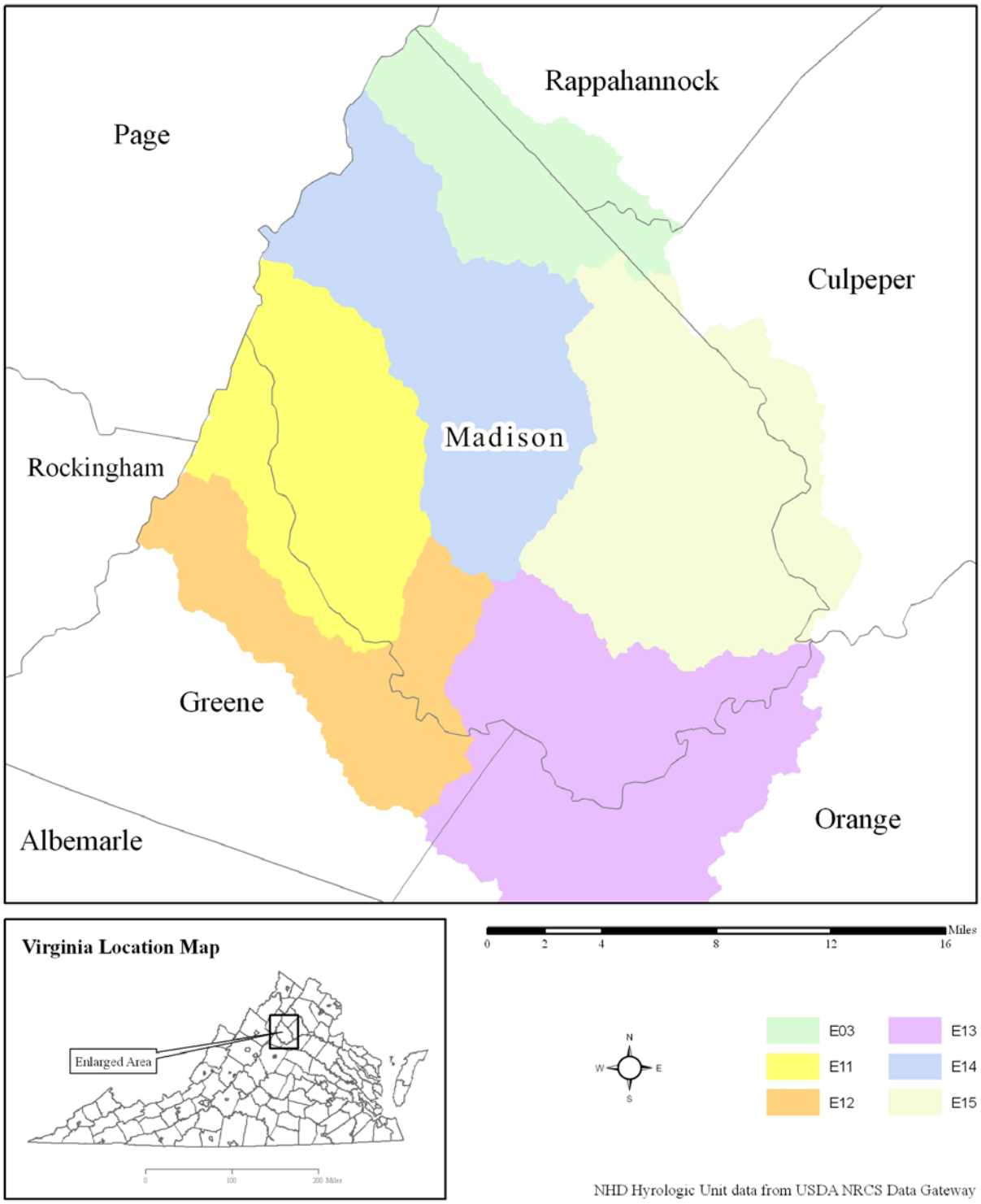


Figure 8. Hydrologic Units, Madison County, Virginia

Contributions of the Study

The GIS and Access applications allow the development of highly contextualized settlement models (Banning 2002). By analyzing archaeological survey data at multiple spatial and temporal scales, this investigation considers some of the common hypotheses concerning hunter-gatherer culture history, resource use, demography, site size, and social organization within the Middle Atlantic uplands. These results are compared to more traditional settlement studies undertaken in contiguous areas (Hantman 1985; Klein at al 1988; Petraglia et al. 1993) to determine the efficacy of landscape-based models to account for Native settlement in this region. The focus on the micro-environmental scale, the major contribution of the study, will lead to the development of new hypotheses concerning site function, geographic features as markers of cultural identity, upland-oriented interactions between contemporaneous peoples of differing cultural traditions, and upland-lowland patterns of movement. The results of this research will be made available as a conservation planning tool for Madison County, a local government that lacks both the public resources and institutional capacity to systematically research and devise preservation strategies for cultural resources.

Limitations of the Study

Due to MAP's limited funding, small number of trained personnel, and the heavy vegetation cover in the study area, full coverage survey (Fish and Kowalewski 1990) was not considered an option. Sampling techniques were implemented to gain insight into the variability of prehistoric settlement and subsistence patterns (Redman 1987).

The variation in topography in the study area and the participation of landowners led to the choice of the cluster as the most efficient sampling tool. While the specifics of cluster selection are discussed in Chapter Five, it should be noted here that their choice is based on data derived from surface collections made by the author, landowners, and artifact collectors, as well as published site reports. In other words, the data are gathered from a variety of sources that represent different levels of investigation. Therefore, no statistically valid extrapolations can be applied to a larger sampling universe (Mueller 1975; Custer and Wallace 1982; Boyer 1982). However, similar non-quantitative analyses of settlement patterns and environments have been successfully carried out by Gardner and others throughout the Middle Atlantic and have been used to effectively generate models of settlement-subsistence for anthropologically-oriented archaeological research as well as to

generate reliable predictions of site locations for cultural resource management studies (Custer 1982).

Organization

This document is organized to build the context necessary for a landscape-based analysis of hunter-gatherer settlement in a Middle Atlantic upland setting. The chapters include theoretical and methodological overviews, detailed descriptions of the environmental parameters of the study area, a review of the culture history of the region for the prehistoric era, and the scaled spatial and temporal analysis of data from the study area (Table 1).

The following chapter, with its review of landscape archaeology, provides the theoretical framework for the study. The history of the landscape approach—its association with the *Annales* School and its ties to ecosystems ecology—is contrasted with its use in modern archaeology and applicability to hunter-gatherer studies. The particulars of the study are examined in the discussion of methods, which details site selection and documentation, site variables and settlement modeling approaches, and GIS applications for locational studies.

Table 1. Chapter Organization

Chapter	Content
1. Introduction to the Landscape Approach to Hunter-Gatherer Archaeology in the Upper Rappahannock River Basin	Introduction to the Research Questions and the Study Area; Theoretical Overview and Study Rationale; Introduction to Methodology; Micro-Scale Analysis as Major Contribution of Study; Additional Contributions and Limitations of Study
2. Theoretical Orientation and Research Methodology	Review of Landscape Archaeology and Ecosystems Ecology; Description of Field and Analytical Methodology
3. Environmental Context for the Interior Rappahannock Valley	Description of Macrophysiographic Zones and Meso-scale Hydrologic Units; Relevant Biotic and Abiotic Features of the Study Area; Paleoclimate
4. Culture History of the Northern Virginia Piedmont and Blue Ridge	Culture Period and Sub-Period-Based Overview of Hypothesized Culture History for the Virginia Piedmont and Blue Ridge; Settlement Pattern Reconstructions of Hunter-Gatherer Mobility Between Lowland and Upland Zones
5. Micro-Scale Analysis of Archaeological Cluster Data	Micro-Scale Description of Archaeological Data and Environmental Parameters by Cluster Groupings
6. Locating Culture in the Upper Rappahannock Valley	Unification of Scaled Analysis in Selected Areas
7. Conclusions and Recommendations	Overview of Prehistoric Settlement in Madison County; Conclusions Concerning the Efficacy of Landscape Archaeology for the Study of Hunter-Gatherer Settlement

Chapter Two: Theoretical Orientation and Research Methodology

> When a particular scale is chosen during one moment of analysis, it is because at that effective scale one can comprehend patterns . . . (Crumley and Marquardt 1990:74).

Landscape and Archaeology: A Theoretical Overview

When we come to view landscapes as the product of the exchange between the natural world and humanity (Balée and Erickson 2006), *scale*—spatial, temporal, and social—becomes an immediate issue for archaeologists. Landscapes exist at multiple scales, the result of interactions between individuals in a variety of social groupings and within a variety of settings. We can speak of the 'extended family landscape' or the 'lineage landscape', knowing that individuals belonging to each will interact differently depending on the context of the space. Clearly tied to methodology, geographic or ecological scale is the degree of spatial or temporal resolution perceived and considered (Forman 1995), while sociological scale includes the "representative nature of social structures from individuals to organizations . . ." (Cumming, Cumming, and Redman 2006:2). The use of scale as a temporal and sociological framework in landscape studies has deep theoretical roots in the French *Annales* school (Bintliff 1991), which "proposed an interdisciplinary history distinguished by its emphasis on pattern recognition at three temporal scales: the

event, groups of conditions and events, and long-term history" (Crumley 1995). The spatial concept of scale owes a great debt to the "New Ecology" (Odum 1983) or ecosystems ecology, which posits the ecosystem as "composed of nested scales selected by biological, chemical, and physical processes" (Abel and Stepp 2003:3). Global Positioning Systems (GPS) and Geographic Information Systems (GIS) allow the control of space over very large areas as well as the correlation of artifact/site distributions and environmental variables, and have had much to do with the rapid development of landscape archaeology and the contextualization of settlement models (Kvamme 2000).

The Influence of the **Annales** *School on Landscape Studies*

Carole Crumley and William Marquardt's 1987 study of historical ecology, the integrated regional histories of human-environment relationships, or what McGlade (1995) calls *the socionatural system*, first introduced the landscape concept to many American archaeologists. As outlined in an interdisciplinary regional study of the Burgundian landscape, the application of a variety of temporal and spatial scales provides a much fuller picture of, and explanatory model for, culture change. Following Braudel's model of historical time (1972), three groups of processes mold the activities of human societies: *événement* (short-term history of events and

individuals); *conjoncture* (history of eras and regions guided by *mentalités*, or worldviews); and *longue durée* (geohistory, long-term history, guided by barely perceptible *mentalités*) (Blintliff 1991). Human consciousness is more acute at the scale of *événement* where human actions are recorded, while *conjoncture* (also known as *moyenne durée* - medium term) and *longue durée* "act as structures . . . which form a constraining and enabling framework for human life, communal and individual" (Blintliff 1991:7).

The researcher must design a program that captures evidence of these different scales of existence and allows the analysis of their relation to each other. In proposing multiple scales of social existence, the *Annales* school attempted to "reconcile the paradigmatic (logico-scientific) within the narrative in the study of the past, without either reducing the one to the other or succumbing to unproductive and uncritical relativism" (Peebles 1991:111). In other words, pattern recognition requires particular detail but does not preclude the discovery of underlying principles.

For example, the thirteen hundred-year Late Archaic sub-period in the Eastern Woodlands is recognized by many archaeologists as the 'golden age' of hunting and

gathering, typified by an alternating sylvan adaptation in the uplands and a riverine adaptation in the lowlands (Mouer 1990). The lowland-upland seasonal mobility that is a hallmark of prehistoric settlement can be sampled and studied at a broad regional level to determine a generalized, stable adaptation—the *longue durée.* Within that thirteen hundred-year period, though, there were significant changes in social organization and site types, as people of differing cultural traditions came to occupy adjoining regions. Thus, while the millennia-old hunter-gatherer lifeway continued, new negotiations of space and movement must have occurred. The exchange of prestige items in the form of carved soapstone bowls may have eased tensions that arose from more restricted mobility over several generations—the *conjoncture.* This can be studied at sites within the region where multiple aggregate occupations, exchange, and perhaps feasting are in evidence. And all the while, families had to eat and carry on the functions of daily life in a landscape shaped by sharing and kin relations—the *événement*—as seen in the small base camp setting.

The challenge to the researcher lies in the explication of linkages between the three processes and determining sources of change. In the above example, how are the everyday, the annual aggregation, and long-term adaptation reconciled? According to a later *Annales* proponent, French historian Emmanuel LeRoy Ladurie, "The

transition from one structure to another, the mutation, often remains in history as in biology, the most perplexing zone, where chance appears to play a large part" (1979:113). This most basic question was among the most difficult considered in the research design for the current study and is taken up later in this chapter in the discussion of concept application.

While landscapes are real world phenomena that can be studied scientifically, the inherent phenomenological quality of lived experience precludes archaeologists from dealing directly with them. Rather, archaeologists interact with the material residues of landscapes *(landscape signatures)*, the "imprints left on the earth's surface by particular constellations of human groups" (Marquardt and Crumley 1987:7). In short, landscapes are artifacts (Crumley 1995).

The Influence of Ecosystems Ecology on Landscape Studies

Ecological anthropology, "the study of the relations among population dynamics, social organization, and culture of human populations and the environments in which they live" (Orlove 1980:235), has a long and rich, albeit sometimes contentious, history in the discipline (Ellen 1982; Moran 2000). Far too broad to be considered here, the ecological approach has shaped the practice of contemporary

Americanist archaeology more than any other. From the culture area approach of Kroeber (1939), to the Neo-Evolutionism of White (1949) and the Cultural Ecology of Steward (1955), by the mid-Twentieth Century archaeologists were deeply involved in the study of the relationship between cultural regularities (particularly those related to settlement location, site size, and site function) and environmental parameters (Trigger 1996) .

The processual or 'New' Archaeology of the 1960s and 1970s placed the *ecosystem* concept front and center, so that culture itself became the primary means of human adaptation in a system of economic, social, and ideological elements (Binford 1962). Drawing from classical systems ecology (Odum 1971), human systems were included in the model of the homeostatic ecosystem, subject to negative feedback that controlled energy flows and regulated the entire system in a state of high efficiency (Abel and Stepp 2003). In this view, culture, adaptation, and homeostasis were synonymous. A generation of archaeologists trained in the neo-evolutionist/cultural ecology/settlement system package set off to discover the spatial representation of human adaptation.

In hunter-gatherer archaeology, mobility became a key concept in understanding human-environment relations. Binford (1980) established the *forager/collector* dichotomy, and Cleland (1976)/Winterhalder (1981) proposed the generalist (*diffuse*) and specialist (*focal*) forager dichotomy, to model site location and function. According to Binford, foragers (Winterhalder's *diffuse foragers*) adjust their residential location and group size to match the availability of resources. Their settlement pattern is characterized as *simple logistical* and includes three site types: seasonal, residential base camps for extended families, where processing, consumption, and maintenance activities take place; foray camps, where nuclear families or small groups of individuals procure specific resources; and ephemeral, special-function sites used by small task groups. Binford's collector (Winterhalder's *focal forager*) settlement pattern is characterized as *fusion-fission* and includes a greater range of site types. At the center of the pattern is the macro-social base camp, inhabited by aggregations of transegalitarian corporate groups (Owens and Hayden 1997) that coalesce seasonally in locations with rich, predictable resources. Macro-social groups disperse in small groups to micro-band base camps, where they spend much of the year. In addition to the small foray camps and ephemeral sites of the forager pattern, the collector pattern also includes temporary camps located away

from the primary residential base, where specialized task groups acquire and sometimes process critical resources.

Serious critiques of the anthropological application of the ecosystem concept came from a variety of camps, all focusing on its inability to explain cultural change. While assuming that cultural behaviors emerge in response to changing environmental conditions, the actual mechanism of change could not be found in the tautological arguments associated with homeostasis (Preucel and Hodder 1996b). This critique led to the adoption of a more Darwinian-based approach to the ecosystem—evolutionary ecology (Abel and Stepp 2003), in which "ecological relations are defined as all those interactions between the organism and its environment that affect its probability of survival and reproduction" (Preucel and Hodder 1996b:27). Hunter-gatherer scholars adopted optimal foraging theory in an attempt to quantify adaptation (Winterhalder 1981), focusing on such phenomena as 'net rate of energy capture' and 'reproductive fitness'.

Seen by its proponents as generating scientific explanations of cultural regularities, the full-scale adoption of the ecosystem concept created an anti-historicist climate in American archaeology, where the particulars of cultural change had little scientific

importance (Trigger 1996). Any deviation from optimality was taken as 'noise' and dismissed. In addition to the same critique of tautology ("all behavior is assumed to be optimal, and the task of the researcher is to determine what is being optimized"), evolutionary ecology was also subjected to critique in its home discipline of evolutionary biology, where the unit of analysis was open to debate (Preucel and Hodder 1996b).

Ecosystems ecology is currently enjoying a resurgence in anthropology with the development of the "New Ecology" (Botkin 1990), which replaces equilibrium systems with the view of ecosystems as complex adaptive systems that possess structural qualities such as resilience, multiple interacting scales, heterarchy, and indeterminism (Abel and Stepp 2003). In this view, *complexity* refers to a system in a perpetual state of change at every level—unpredictable, non-linear, far from equilibrium (Price and Thompson 1997). The principle of balance has been replaced with the principle of gradation—a continuum of degrees of disturbance. Spatial homogeneity at the ecosystem level has been replaced with heterogeneity across all scales, expressed in the mosaic of patches and corridors that interact with each other in parallel (Forman 1995).

For archaeologists interested in the diachronic study of human ecosystems, the most pressing issue emerging from the New Ecology concerns cultural stability and change. "The prehistoric 'environment' must be viewed not as a backdrop but as a 'moving target' negotiated incessantly with humans and other processes at both larger and smaller scales" (Abel and Stepp 2003:9). In this view, rather than a slow trajectory toward social complexity, we should expect pulse and collapse, shifting resource bases, and evidence of human agency: the contextuality of human ecosystems.

Landscape Archaeology Today

Currently, two separate yet complementary strands of inquiry are identified as landscape archaeology: a broadly based upwelling of interest in regional environmental and cultural history; and a humanistic geography that views landscape as experience and social product (Muir 2001; Johnson 2007). The former is the approach taken in the current study. As Crumley (2002) has argued, the more conventional practice of regarding landscape as a material, tangible portion of the natural and cultural environment is the direct inheritance of cultural ecology, and it is this approach that has seen wider acceptance among Americanist archaeologists. Critical of settlement pattern studies that tend to examine clusters of resources or

variables of site location, regardless of where they occur, based on idealized notions of landscape in which actors maximize efficiency in resource procurement, these practitioners theorize the environment as an active and far more complex entity in relation to human lives than as a passive backdrop or powerful determinant of culture (Knapp and Ashmore 1999).

The phenomenological approach, more Continental in its acceptance (Bender 1999), emphasizes the experience of the environment and the manner in which it is conceptualized and symbolized. Supporters are influenced by the philosopher Martin Heidegger, who wrote about "being in the world,' the relational and embedded way in which we conduct ourselves in our daily lives (Hirsch 1995). In this perspective, nothing intervenes between ourselves and the world we inhabit, giving rise to the concept of "place," the emotional attachments to localities developed by individuals and communities in the course of living there, and the way in which these attachments completely frame existence (Knapp and Ashmore 1999). For some this led to the study of natural places of significance to Native peoples: caves, mountains, and even physically 'empty' spaces (Brady and Ashmore 1999). For others, research is centered on symbolically charged landscapes and draws heavily from ethnographic and historical analogies (Tacon 1999). Critics

counter that this study of landscape is hampered by ambiguity in material clues to social meaning, which may not be marked in archaeologically detectable ways (Feinman 1999). While not employed in the current study to analyze archaeological evidence, this approach figures in the final chapter in the discussion of the interaction of the Anglo- and African-descended residents of Madison County with the Native American archaeological sites in their midst.

Landscape and Hunter-Gatherer Archaeology

Landscape is widely used in archaeology, and while some continue to employ it as a synonym for *landform*, most scholars have taken a more theoretical turn and restrict its referent to the cultural phenomenon. For example, using the string "Archaeology AND Landscape", a search in the *ISI Web of Knowledge Citation Index* (which includes the *Social Sciences Citation Index*) returned sixty-eight topic results and twenty-five title results for the ten year period between 1989 and 1998. Based on abstracts, fifty-five percent (n=51) of the citations describe research falling within the parameters of landscape archaeology. The remaining forty-five percent (n=42) describe environmental archaeology (*landscape* as the physical aggregate of landforms where cultural activity occurs). By comparison, the same search string returned 157 topic results and seventeen title results for the ten years between 1999

and 2008. Based on abstracts, eighty-three percent (n=145) of the citations describe research that falls within the parameters of landscape archaeology outlined above, with seventeen percent (n=29) describing environmental archaeology. These findings indicate that landscape archaeology, like settlement archaeology before it, is becoming naturalized in archaeological parlance.

Early attempts at landscape-based hunter-gatherer archaeology were proposed by Binford (1982) and Jochim (1991), both of whom are interested in connecting hunter-gatherer behavioral variability and spatial/seasonal resource distributions. Binford employed the concept of scale to analyze the periodicity of movement among mobile peoples, while Jochim focused on behavioral flexibility and environmental fluctuations.

A more methodological approach to landscape as the unit of analysis came from Dunnell and Dancey (1983), whose artifact-based *siteless* archaeology critiqued the essentialist character of the site concept. In their view, archaeologists actually encounter in the field a "more or less continuous distribution of artifacts on or near the surface of the planet" (Dunnell 1992:34), some of which are dense enough to be delineated as discrete, meaningful places of activity. Yet, archaeological deposits are

greatly affected by formation processes that alter depositional histories, so that "objects found in spatial proximity may have . . . entirely unrelated histories that preclude a simple equation between spatial proximity and systemic relevance" (1992:29). The remedy to this is a research program that fully samples archaeological settings through multiple episodes of survey. Only after several years of work is the archaeologist prepared to formulate hypotheses concerning spatial associations of artifacts and distinct occupations.

However, landscape archaeology as a fully integrated theoretical and methodological package is not yet fully embraced by archaeologists focused on hunter-gatherer societies, even though the emphasis on scale and dynamics meshes well with perennial topics in hunter-gatherer archaeology. In the twenty years of citations reviewed for the string "Archaeology AND Landscape," only four percent (n=9) of the articles focused on hunter-gatherers. Of the seven, four consider hunter-gatherers in arid lands, one in the Arctic, two in North Atlantic coastal settings, and two from the coast of northwestern North America. While several volumes on landscape archaeology and anthropology have been well received (Aston 1985; Hirsch and O'Hanlon 1995; Feld and Basso 1996; Roberts 1996; Knapp and Ashmore 1999; Johnson 2007), the only hunter-gatherer cultures discussed in these volumes

are Australian Aborigines and the Hopewell prehistoric culture of the Ohio/Illinois River Valleys. The former figure prominently in landscape studies because of their well-documented sacred landscapes and rock art, the latter because of their monumental earthworks that center sacred landscapes.

Mithen's *Hunter-Gatherer Landscape Archaeology: The Southern Hebrides Mesolithic Project* (2000a) is the only long-term regional archaeological study of hunter-gatherer cultures currently available to scholars as a model of the landscape approach. Set in the southern Hebrides of Scotland, this ambitious project emphasizes landscape archaeology as "the most appropriate way to study prehistoric hunter-gatherers" (2000a: 3). The research of field and experimental archaeologists, geographers, and paleoecologists models Mesolithic hunter-gatherer settlement of the island archipelago in the Inner Hebrides, the result being a description of the "Mesolithic experience" (2000b: 627) that explains colonization, settlement and the transition to farming. Mithen's analysis of the routinization of movement and the identification of persistent places is explored more fully in Chapter Seven.

The lack of incorporation of hunter-gatherers into landscape scenarios may have more to do with the limitations on data that archaeologists have come to accept,

particularly in temperate regions like the Middle Atlantic where modern disturbance and erosional processes, not to mention heavy vegetation, have significantly altered the archaeological record (Nash 2003). As Kelly notes, the "usually impoverished nature of the archaeological remains of hunter-gatherer societies" (1995:338) continues to lead archaeologists to reduce those societies to a set of seemingly adaptive traits derived from a simplistic understanding of the ecosystem. Another reason may be a continued bias toward hunters and gatherers as simple societies that exhibit fewer identifiable cultural buffers than their more complex counterparts, and therefore, less deserving of more in-depth analysis (Lee and Daly 1999). In the Middle Atlantic, where the tradition of environmental archaeology is dominant, the lack of discussion of landscape archaeology may stem from the belief that the multidisciplinary approach practiced here *is* landscape archaeology (Nash 2003). The interest in group subsistence, seasonality and resource use, patterns of mobility and social organization, and demographic change certainly qualifies as a beginning point for landscape archaeology, but the full integration of environmental parameters and cultural choice is not yet commonly encountered in the Middle Atlantic literature.

Methodology of the Current Study

Site Selection

The primary goal of the current study is to generate, using the tenets of landscape archaeology, a working model of prehistoric settlement in Madison County that promotes an understanding of cultural variability in an ecologically complex region. As an example of a regional reconnaissance survey (Redman 1973; 1974), the work relies heavily on surface deposits that provide *baseline* information: "the minimal set of information . . . (that) allows inferences about a variety of behavioral categories" (Redman 1987). Baseline studies include questions concerning chronology, subsistence, trade connections, and site function, and they begin with the initial documentation of sites and relevant environmental variables.

Of necessity, our understanding of the archaeological record relies on the evaluations of others—be it site survey, assessment, or mitigation—and we employ standard scientific and historiographic methods as checks on the veracity and replicability of their work. The Madison County study includes cultural and environmental information from 233 prehistoric archaeological sites (Figure 9), only six of which were discovered by the author. The Madison Archaeology Project (MAP), which substitutes the volunteer participation of landowners as the sampling

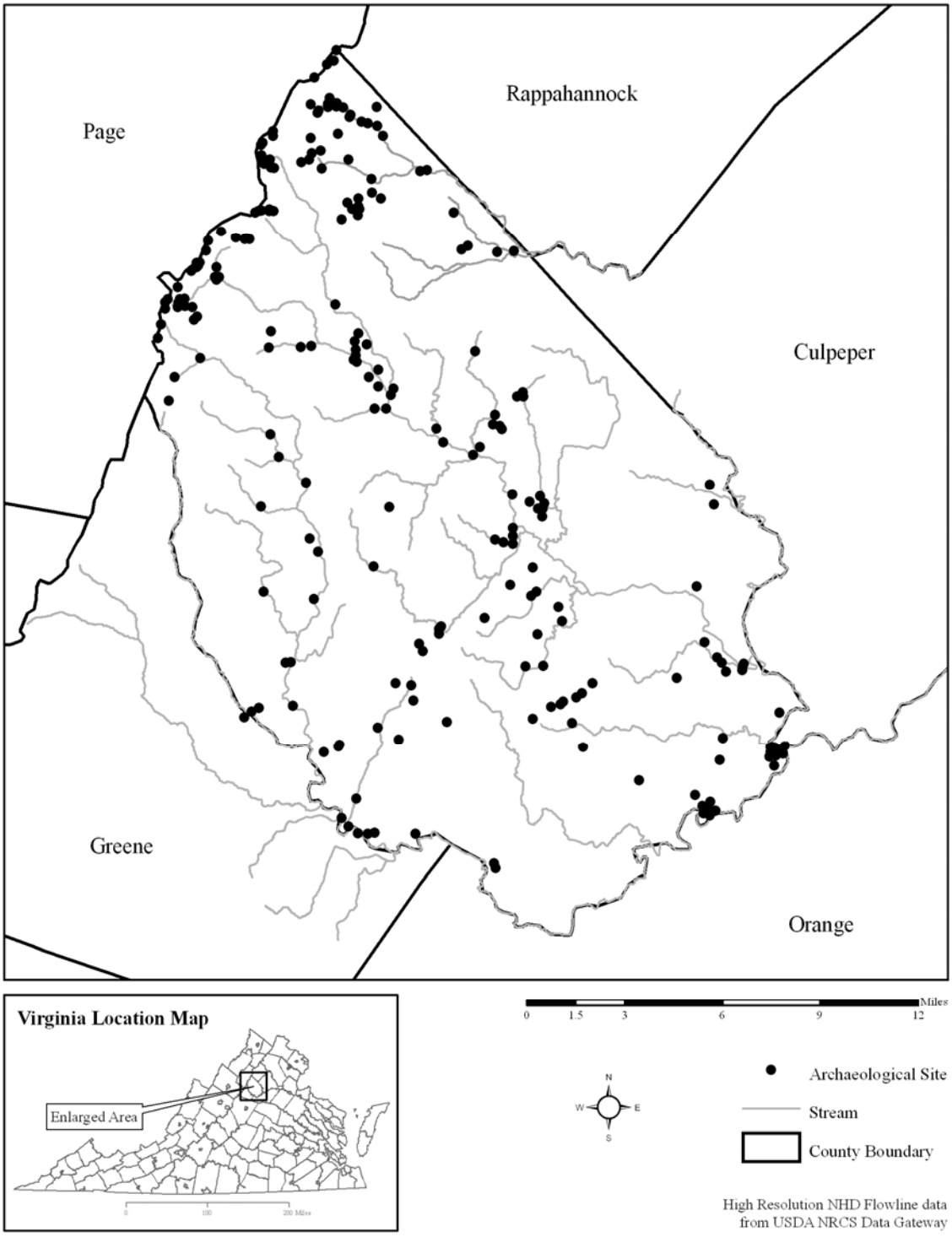


Figure 9. Prehistoric Archaeological Sites, Madison County, Virginia

mechanism for data generation, differs from more traditional projects in its lack of original field survey. Volunteers primarily reside east of the base of the Blue Ridge and have collected surface prehistoric artifacts from agricultural fields for many decades. Those with collections provenienced to specific locations were invited to participate in the formal study. Because of the local connection, MAP provides researchers access to information on small sites, many of which would be considered weakly patterned and thus overlooked.

MAP was introduced to the public by the Madison Heritage Foundation in 1990 as a program for identifying and documenting archaeological resources in Madison County. A grant from the Virginia Foundation for the Humanities funded the publication of a brochure (Figure 10) and information cards (Figure 11) that were distributed at locations such as the County Library, Chamber of Commerce and Arcade Museum. Volunteers formed a committee for contacting landowners (largely farmers) known to have artifact collections. A public event was held in the town of Madison in March 1990 where local officials, Dr. William Gardner, Dr. William Boyer of James Madison University, and the author spoke to a gathering of residents about the importance of grass-roots historic preservation and Virginia



Figure 10. Madison Archaeology Project Brochure

archaeology. This was followed by an artifact identification event where information was gathered on the research potential of the individual collections.

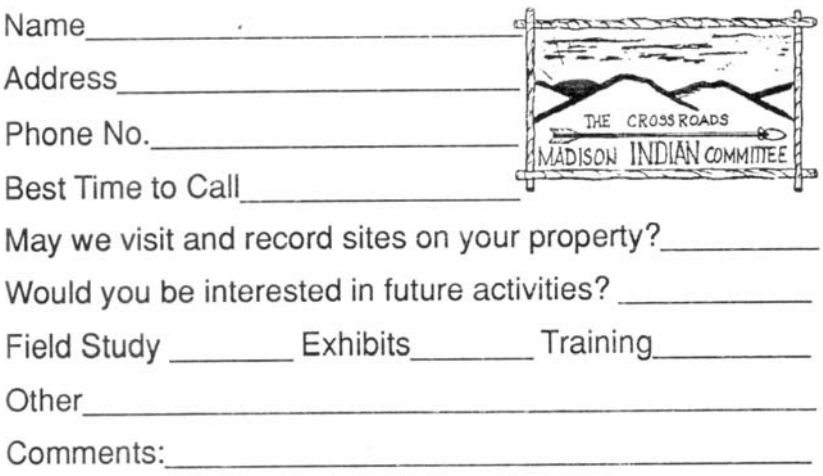


Figure 11. Madison Archaeology Project Information Card

One result of this effort was the creation of a schedule for visitation among MAP volunteers, the author, and the landowner for the purpose of fully documenting collections and mapping basic site parameters. Over two hundred landowners responded; since 1990, site visits have been made to sixty percent of respondents. Priority is given to the best provenienced collections, with a secondary choice being location to ensure the sampling of major drainages. Thus far, this work has documented eighty-nine prehistoric archaeological sites previously unknown to researchers. These are added to the fifty sites on private land already documented with the Virginia Department of Historic Resources for the county.

By comparison, 15.5 percent of the county—the Blue Ridge province—is off-limits to such collecting, having been under the control of Shenandoah National Park (Department of the Interior) since 1936. Overseen by Section 106 of the National Historic Preservation Act and undertaken by professional archaeologists engaged in highly localized survey and testing projects, the Blue Ridge archaeological research generates qualitatively different data from those generated by MAP for the Inner Piedmont and Mesozoic Basin. Ninety-four sites are documented for the county as the result of the Shenandoah National Park studies.

While the two approaches produce different data sets (non-Blue Ridge: long-term surface collecting of large sites; Blue Ridge: short term survey and testing of (often) small sites), they are very common in Appalachian counties where Federal holdings of mountain lands are considerable. Their use together in the same project is an important initial step in collating all known information of Madison County's archaeological resources. They also share a focus on sites that are impacted by modern activities. In the Park, for example, large numbers of sites are documented for trails that ease access to rough mountain topography.

Site Documentation

The documentation of archaeological sites for MAP is undertaken by at least two and sometimes up to five individuals, including the author, trained volunteers, and the landowner. This involves general surface reconnaissance with a crew placed at ten-foot intervals for walkovers. All located artifacts are marked with flags, site boundaries are measured, and a field map is drawn. In addition, privately-owned sites previously recorded with the Virginia Department of Historic Resources are field checked by volunteers trained in basic site survey methodology. With the rare exception of discovered diagnostic artifacts, additional objects are not removed from the site. Site locations are marked on U.S.G.S. topographic maps (7.5' series) and photographed for the MAP Archive which is maintained by the Madison County Historical Society.

The site visit also includes an informal interview with the landowner about the collection; the interviewer records answers by hand in notebooks organized by Hydrologic Unit and archived at the Madison County Historical Society; future work with this documentation will include electronic transcriptions of the interviews. The following collections-based questions, asked of all participants, help establish provenience:

- Who made the collection?
- Was the collection made at one point in time or over the course of multiple years?
- Are other artifacts from the site but not in the collection known to be in the possession of others? If so, could the landowner assist in making a contact with those persons?
- Are artifacts from different sites stored separately, or are they mixed?
- Were particular objects (e.g., projectile points and axes) collected, or did the collector pick up a range of objects believed to be artifacts?

While in the field, notes are taken on local environmental conditions based on the landowner's or collector's observations. All are asked the following to establish modern formation processes that can affect the artifact sample, with answers being recorded in the same entry as collections information:

- If there is water on the property, how have stream courses changed in memory?
- If there is a high-order stream on the property, how regular is flooding? When was the last flood?
- What is the history of land use (asked if the property has been owned by the same family for multiple generations)?

During the site check, the conversation is widened to include questions particular to the environmental setting. This information is used to develop a baseline understanding of the topographic and ecological character of the landscape. The discussion also provides an opportunity to record observations based on familiarity with highly localized conditions that may assist in understanding unique characteristics of *place*. There is no set group of questions asked during this portion

of data collection, but attempts are made to learn about rainfall and prevailing wind patterns, seasonal changes in temperature and precipitation, soils and vegetation, and wildlife.

The most time-consuming portion of the site visit is the actual documentation of the landowner's collection; depending on the size of the collection, this work can be accomplished in as few as two or as many as twenty-five visits. Initial information on culture history is derived from diagnostic artifacts recognized in published chronologies. Thirty-six projectile point types ranging from the PaleoIndian through the Woodland periods and nine ceramic ware types ranging from Early Woodland through Contact periods are presented in Appendix I, a table of type descriptions derived from the archaeological literature. A variety of debitage, flake tools, ground stone tools, cobble tools, and objects of adornment that are either non-diagnostic or associated with broader cultural periods are also included in the database (Table 2). The chipped and ground stone tools are included as indicators of site function and general cultural period association (Andrefsky 2001, 2005; J. L. Adams 2002).

All artifacts are entered into a Microsoft Access database that includes fields for locational information, frequency of artifact type, and lithic raw material. The

Table 2. Non-Diagnostic Lithic Artifact Catalog Categories

Manufacturing Process	**Artifact Type**
Lithic Reduction	biface complete
	biface proximal/midsection
	biface distal
	Core
	Flake
	Shatter
	triangular preform
Cobble Tool	abrader
	chipped axe
	chipped hoe
	general cobble tool
	grinding stone
	Hammerstone
	Mortar
Ground Stone Tool	Bannerstone
	Celt
	chunkey stone
	Discs
	gorget fragments
	grooved axe
	pebble pendant
	Pestle
	stone bowl fragment
	stone pipe fragment
Miscellaneous	effigy
	incised stone
	Wedge
	Unidentifiable

overall site assemblage is evaluated for percentages of local/non-local materials as an indicator of raw material procurement patterns. Every attempt has been made to include assemblage data for sites not recorded by MAP, using catalogs provided by the Virginia Department of Historic Resources, the Archeological Society of Virginia, the University of Virginia Department of Anthropology, and Shenandoah National

Park. As of this writing, the database includes information on 47,350 lithic and 3,273 ceramic artifacts.

Twenty-five sites included in the study also contain historic components that are not included in the present analysis. Twenty-one are located in Shenandoah National Park and represent Euroamerican homesteads dating to the Nineteenth/early Twentieth Centuries. The historic settlement of the Blue Ridge has been extensively documented for Nicholson, Corbin, and Weakley Hollows in Madison County (Hoffman et al. 1979; Horning 1998; 2004) in an effort to understand the impact of family removal from the Park in the 1930s. No doubt the remainder of the county holds significant historic archaeological resources deserving of documentation and study.

As a grass-roots educational effort, MAP was designed to assist landowners in maintaining their own artifact collections. They receive a copy of the catalog and the site evaluation and are asked to keep it with the collection. The Madison County Historical Society has a policy of accepting donated artifact collections and has accessioned four from local residents since MAP's inception. One of these, the Strode Collection, figures prominently in this research.

Don Strode, a retired botanist with the National Forest Service, maintained the largest artifact collection in the county, donating it to the Historical Society in 2004. The Strode artifacts comprise 20 percent (n=10,111) of the study assemblage. Of the artifacts collected from twenty-nine Inner Piedmont and Mesozoic Basin sites, 96.5 percent are marked with letters corresponding to site designations. The author visited each site with Mr. Strode prior to the donation to confirm site location and size. The result is a scientific and cultural treasure, containing evidence of Native occupation of the county from PaleoIndian through the Contact period.

Kate Graves, a former teacher and charter member of the Archeological Society of Virginia, left significant collections from the 1940 to 1960 era; these are maintained by her family in the marked candy and cigar boxes she used to separate the artifacts by site. Mrs. Graves collected artifacts from twenty-six sites in the Syria and Hebron areas of the county, accounting for five percent (n=2581) of the assemblage total. The Syria sites were field checked by the author to confirm location and site size. Access to the Hebron Valley sites was denied by the current owner, preventing field checks; however, the author spent considerable time evaluating site locations on topographic maps with Mrs. Graves' son, Jim, who had visited the sites previously.

Surface and Subsurface Investigations: Comparability of Sample

The surface survey and artifact collection analysis undertaken by MAP volunteers is designed to fulfill initial research requirements for regional survey; these methods differ from the traditional Section 106-associated studies in Shenandoah National Park. Nevertheless, many of the sites documented in the Park are known only by surface distributions of artifacts, and for the entire study, 78.5 percent (n=184) are 'surface only.'

Of the known prehistoric sites in Madison County, 21.5 percent (n=49) have seen various degrees of subsurface testing. Section 106 of the National Historic Preservation Act mandated testing for forty-four of these sites due to their location on Federal lands or the use of Federal monies or permits in impacting projects. Thirty of these Section 106 sites lie within Shenandoah National Park. As a testament to limited infrastructure development in the county, only twelve of the forty-four sites were tested due to Federally-funded highway construction (Thompson and Cole 1988; Jolley 1988; Egghart 1988; Busby and Pendleton 1993; Egghart, Boyd, and Joseph 1994; Botwick, 1995; VDHR 2008b), and only two due to Federally-permitted cell tower construction (Sara 2003; Carmody and Barile 2005). Testing of the

remaining sites represents early work by the Archeological Society of Virginia or training sessions for MAP volunteers.

In terms of the level of testing performed on the sites, thirty-five sites have undergone initial testing to determine their horizontal extent and gain a sense of stratigraphic integrity. This includes non-gridded shovel test pitting (one-foot by one-foot) to sterile subsoil at fifty-foot intervals. Twelve sites have been evaluated to determine their significance relative to National Register of Historic Places criteria; methods included the stratigraphic excavation of units varying in size from two to five feet square, dug to sterile subsoil in areas of greatest artifact concentration. Only two sites, both rockshelters, have seen full-scale excavation. The decision was made to include the artifacts recovered during subsurface testing in the MAP artifact database, as they provide important culture history and site function data. From a sampling perspective, the salient point is this: given the wide range of methods used to gather the data, the 233 sites included in the survey cannot generate statistically sound inferences. However, the non-quantitative, descriptive analysis of site distributions can "provide a basis for stratification of later sampling designs" (Custer and Wallace 1982:140).

The Unification of Scale and the Cluster Methodology

The physiographic diversity and compressed ecological zonation of the Upper Rappahannock basin provide a testing ground for the variability of adaptive responses made by hunting and gathering societies. Environmental archaeology holds that each habitat or natural unit provides a distinct array of resources potentially exploitable by prehistoric populations, and the landscape approach dictates that the study of these units must be scaled, both spatially and temporally, to determine variability in human-environment interactions.

Dincauze (2000) provides a nested series of four spatial scales of landform analysis that functions as a framework for the archaeological investigation: mega, macro, meso, and micro. The mega-scale is global or continental and has little immediate relevance for archaeological study beyond large-scale paleoclimatological processes, although it does provide context for human evolution. The macro-scale is the physiographic province, with direct relevance to human territoriality, resource exploitation, and communication. Temporally, this is the scale at which long-term, biologically-based population changes are visible (Kowalewski 2003). The meso-scale is the typical archaeological scale of region/locale that engages a large diversity of relevant processes occurring on an intergenerational interval, such as the

transition from small-scale to middle range societies. At the meso-scale, human activities are diverse and recognizable as influences on landforms, while the number and complexity of environmental variables affecting landforms are great (Rossignol 1992). The micro-scale is the local scale where landforms are highly responsive to small-scale, high-frequency processes and are likely to be unstable and reflective of immediate conditions. Demographic trajectories are affected by shifts in political economy at the micro- and meso-scale (Kowalewski 2003).

Rather than hierarchical (e.g., the macro-scale controls the meso-scale), *nested* scales require heterarchical or unranked analysis in which elements at various scales can affect each other (Crumley 2002). For example, the high quality of steatite at a particular quarry (micro-scale) can result in that site becoming a locus of regional interaction and aggregation (meso-scale), leading to exchange-based interactions across the macro-scale. In this example, steatite is the mediator across scales—a stone to be worked, a symbolic bowl to be exchanged. The success of scaled analysis lies in the ability of the analyst to recognize tendencies to reify hierarchy and attribute control to larger scales and subordination to smaller scales. Hierarchy renders the dynamic concept of region static by creating essentialist relationships

between longer-term/more geographically widespread phenomena and shorter-term/more localized phenomena (Crumley and Marquardt 1990).

The current work employs the concept of nested spatial and temporal scales as the primary analytical tool for the hunter-gatherer settlement study (Figure 12). The macrophysiographic province (Blue Ridge, Inner Piedmont, Mesozoic Basin) nests the watershed, or hydrologic unit (meso-scale) which, in turn, nests the cluster (micro-scale). The microenvironment is the portal to scaled studies for landscape archaeologists because the experience of complex human-environment interactions requires the consideration of places regularly in flux (Hirsch 1995). Culture history reflected in diagnostic artifact assemblages opens the discussion of temporal scaling, with basic documentation at the micro-scale leading to comparisons across the meso-scale and macro-scale. The macro- and meso-scales that frame the project area are discussed in detail in Chapter Three.

Taking a cue from regional settlement pattern studies in the Middle Atlantic, a modified version of the purposeful transect (Custer 1979) was selected as the appropriate analytical method for the exploratory research phase of the study. Transects are rectangular linear sampling units superimposed over the landscape

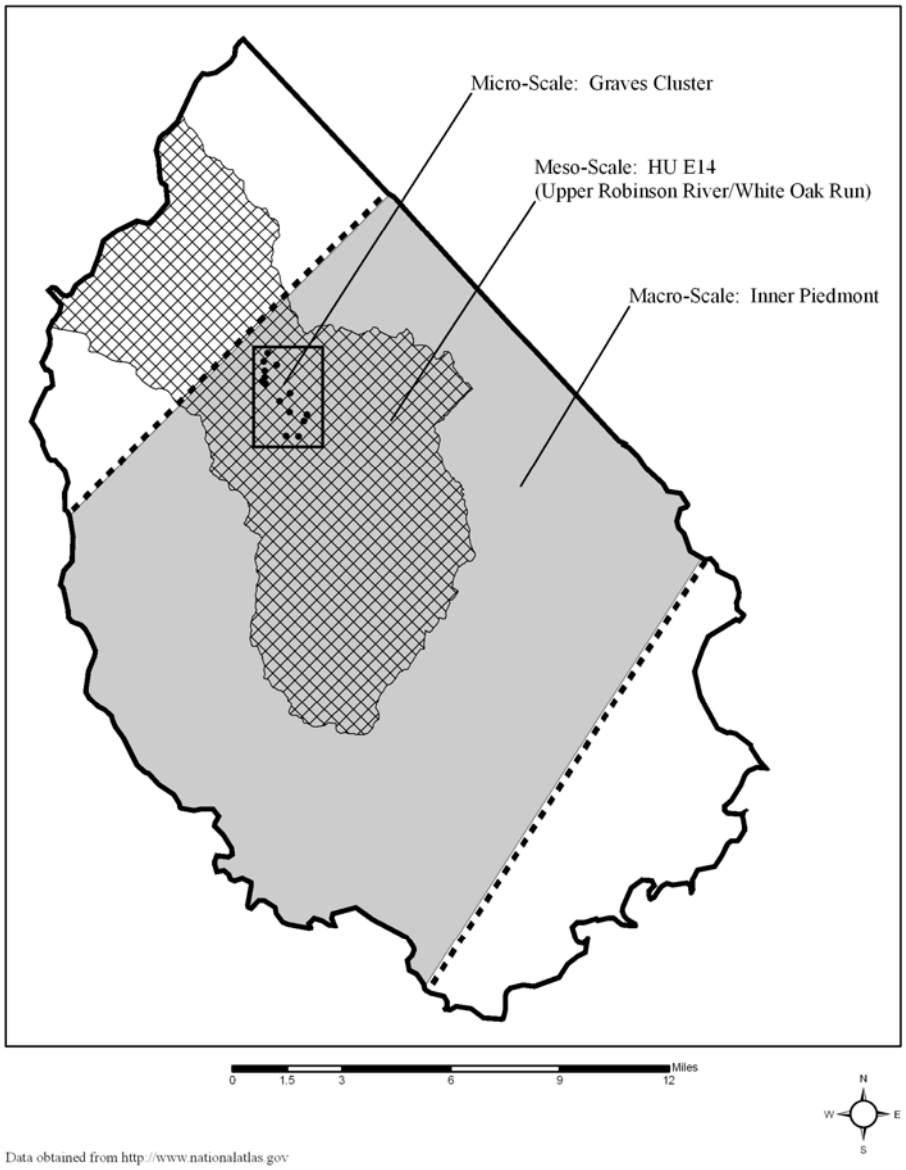


Figure 12. An Application of Nested Spatial Scales in the Project Area

and cross-cutting various topographic and environmental zones. Instead of transects, however, this study relies on the *cluster*—a grouping of geographically proximate sites that together form a sampling mosaic (Orton 2000). Thirty-seven

clusters are identified for the study (Figure 7). To qualify as a cluster, the group of sites must: share the same macrophysiographic province; be located in the same major river drainage (Hughes, Robinson, Rapidan); (ideally) be located in the same hydrologic unit; have closest neighbors less than one mile from each other; and sample from adjacent and/or overlapping micro-environments. The cluster concept takes advantage of the uneven distribution of available site data while allowing the comparison of site settings across biophysical zones. The clusters vary in areal extent, and the number of sites in each cluster varies from two to twelve depending on the availability of information. Contextual information on the specific clusters in this study is presented in Chapter Five.

As noted earlier in this chapter, landscape archaeologists sometimes struggle with the clear demonstration of linkages between scales. Individually, the clusters present a picture of prehistoric settlement on a highly localized scale; together, however, they are a gateway to discussions of settlement across larger scales, from the hydrologic unit to the macrophysiographic province. While the cluster is the starting point of analysis, the *unification of scale* may be achieved through the analysis of multi-component sites occupied intermittently for thousands of years. The long-term transmission of ecological and social knowledge that occurs at such places is better

adapted to serve individual and collective needs (Boyd and Richerson 1985) than are immediate decisions regarding resource availability and efficient use.

Based on diagnostic artifacts, 57.5 percent (n=134) of the sites in the study were occupied during multiple sub-periods. In fact, 27 percent (n=63) were occupied for five or more sequential cultural sub-periods. While these numbers reflect the collecting locations of MAP participants, and particularly floodplain settings that support large sites, they also point to patterns that transcend the particular site location. Some settings attract more long-term use than others, particularly where limiting factors of water and food sources channel people to particular locations. Conversely, some settings are less attractive for repeated visits, a fact seen in the current study, where 37 percent (n=87) of sites demonstrate a limited archaeological signature of no diagnostics and few artifacts (Figure 13). Such sites are typically characterized as 'lithic scatters' (Custer 1988; Cowan 1999; Barber 2001) and rarely studied for cultural patterning, despite the fact that they comprise much of the archaeological record in the Eastern Woodlands (McDougal and Funk 2006).

Given the significant, documented environmental changes of the late Pleistocene-Holocene in the study area, as well as the regionally-documented changes in

cultural patterns, the fact that so many of the sites were occupied during multiple sub-periods indicates that localized conditions are only partly responsible for settlement location choice. Typically, the occupation histories of multi-component sites are teased apart at fine temporal resolutions achieved through excavation and absolute or relative dating (Wandsnider 1998a; 1998b). Using the landscape approach, we may look to larger scales to explain what Mithen (2000) has called "persistent places." This will be further considered in Chapters Six and Seven.

The recognition of boundaries is also crucial to the unification of scale, as they "often serve simultaneously as both edges and centers within the landscape under investigation" (Crumley and Marquardt 1990:74), linking local to regional and beyond. Boundaries may be conduits of movement or buffer zones between groups. The lack of sites may reflect the control exhibited over paths to places, a behavior well-documented ethnographically for hunter-gatherers (Muir 2001). The GIS-based analysis of site locations by cultural phase across watersheds initiates the discovery of boundaries; these become clearer at the macrophysiographic scale, as will be demonstrated in the concluding chapter.

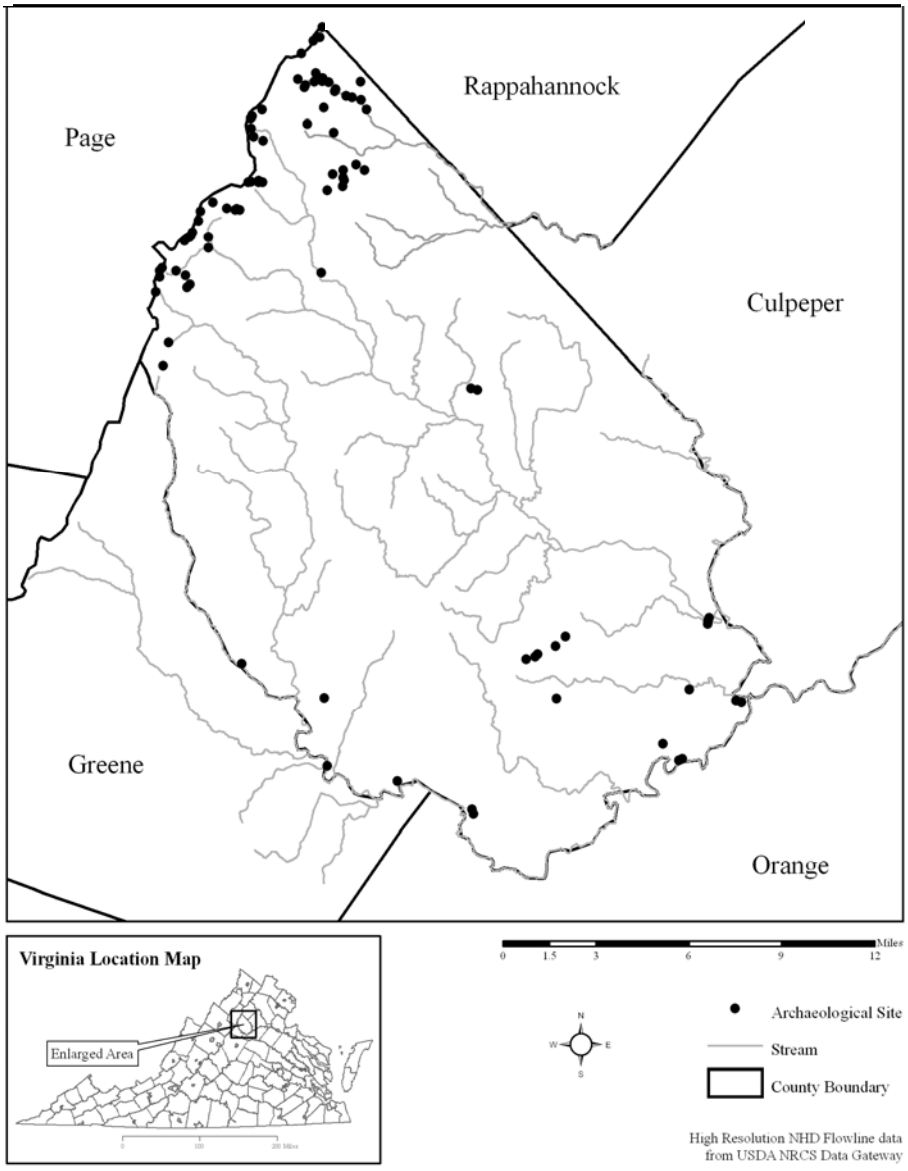


Figure 13. Prehistoric Archaeological Sites With No Known Cultural Period Affiliation, Madison County, Virginia

Site Variables

MAP created a relational database using Microsoft Access to organize and catalog cultural and baseline environmental information for each site, which is identified by

an assigned number, its name and/or VDHR site number, geographic location (UTM), and USGS 7.5′ series quadrangle map. Tables for lithic and ceramic artifacts and site attributes are joined in the database to create a multi-layered depiction of the physical characteristics of the sites and their cultural occupations. The environmental variables are drawn from Middle Atlantic regional settlement models and are recognized as significant for site location, technology, and resource procurement. Such models are "intuitive" after "decades of field work" (Barber et al. 2003: 74) but successfully predict site locations, particularly in upland settings. For example, archaeologists with the George Washington and Jefferson National Forests, responsible for the management of cultural resources on 1.8 million acres in the Blue Ridge, Ridge and Valley, Appalachian Plateau of western Virginia and eastern West Virginia, have developed a model based on various combinations of eight variables: aspect, distance to water, direction to water, presence or absence of springheads, topographic feature, elevation, slope, and soils. They have found that the "single reliable and consistent characteristic indicative of settlement (is) level terrain," but caution that archaeologists working in upland settings must remain flexible in their application of idealized settlement scenarios. "The point is that access to water, a southern exposure, and/or well drained soils may enhance attractiveness for prehistoric occupation; however, the lack of such attributes is not prohibitive to

occupation" (Barber et al. 2003: 75). In the present study, environmental variables include hydrologic unit, physiographic province, elevation (feet), landform, distance to water (feet), aspect, slope, soil series, and geology.

The cultural variables are also drawn from Middle Atlantic regional settlement surveys and reflect Redman's baseline data collection: site type, site size (acre), cultural sub-periods, diagnostic artifacts, non-diagnostic artifacts, and lithic raw material. Fields for site documentation (method of evaluation and published reference) are also included. The resulting database of twenty-one fields each for 233 sites creates almost five thousand entries that can be combined in a multitude of queries.

Settlement Models and Site Types

The settlement pattern concept that drives so much of Americanist archaeology is derived from the spatial distribution of sites over a contiguous landscape, the assumption being that these sites reflect groups of temporally-related communities (Ritchie and Funk 1973). The environmental framework around which settlement pattern research is built leads archaeologists to view hunter-gatherers as having a more dependent relationship with the biophysical environment, expressed as

specific subsistence adaptations. Middle Atlantic archaeologists have integrated archaeological, environmental, and ethnographic data to generate idealized models of settlement that are classified by the size, function, and types of social units that occupied them (Dent 1995). Regional hunter-gatherer settlement patterns are seen as the products of seasonal movement through a series of habitats that provide various animal and plant foods at different times of the year (Petraglia et al. 1993). The unit of analysis for the settlement pattern is the *site type*, shorthand for site function determined largely by artifact assemblage, site size, presence of storage features, and in some instances, location (Gardner 1982).

For the past thirty years, field surveys in the forested uplands of the western Middle Atlantic have been guided by settlement models tailored to the region (Barber et al. 2003). Gardner and Boyer's Massanutten survey (1978) provided the first site typology for western Virginia and in addition to the quarry-related suite of sites associated with the Paleoindian and Early Archaic periods, included the following for Middle Archaic-Late Woodland occupations: base camps, transient camps, individual hunting stations, quarries, stone burial mounds, quarries, and villages. The Gardner-Boyer model, as well as that of Holland (1980) included only base camps (staging areas between lowland settlements and upland resources) and

transient camps (specialized work camps) as site types for the Blue Ridge, limiting mountain occupations to resource extraction supporting lowland settlements.

Based on transect surveys in Shenandoah National Park, Hoffman et al. (1979) and Hoffman and Foss (1980) developed a multi-tiered, logistical hunter-gatherer settlement typology and system (Figure 14). Site types of lower grade were small, ephemeral sites representing brief occupations; those of higher grade were occupied by corporate groups. These were correlated with seven environmental areas (hollows, saddles, ridges, upland basins, gaps, slopes, and foothills) defined by the authors as significant for understanding site function (Table 3).

Hoffman and Foss' tiered site typology was intended to model different strategies of residential mobility among groups with a greater commitment to mountain settlement. The explanatory power of the model lies in the integration of site types within a mountain-oriented system. The lowlands are included but the emphasis is on the settlement system of hunter-gatherers whose intent was to lead an upland-focused life, at least on a seasonal basis. For example, Grade 4 sites, located in rich zones of micro-environmental overlap, "may have been occupied on and off for two or three months, with the group splitting up and rejoining in the course of exploiting

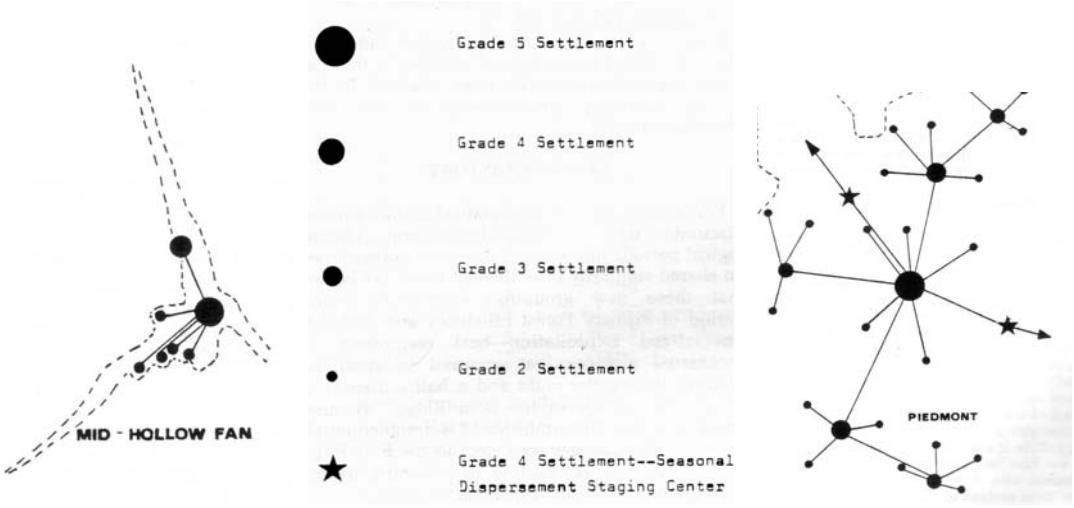


Figure 14. Hierarchical Settlement Model for Blue Ridge Mid-Hollow Fan (left) and Piedmont Foothills (reprinted from Hoffman and Foss 1980:189-190)

wide zones" around the camp (Hoffman and Foss 1980:189-190). Grade 3 sites, occupied by a small task group from one night to a week, were "located at sufficient distance from the parent (Grade 4) camp to make daily return impractical" (1980:190). Within the larger settlement system, Grade 3 sites were outliers of large, residential base camps (Grade 4) located in mountain basins. In turn, Grade 3 and 4 sites were associated with Grade 5 sites found in the lowlands. Grade 5 sites were centrally located, long-term residences of repeated occupation that functioned as "focal points for the entire community and . . . may have been mortuary and religious centers and defensive positions" (Hoffman and Foss 1980:189).

Table 3. Site Typology for the Northern and Central Virginia Blue Ridge (Hoffman and Foss 1980)

Grade	Size	Setting	Social Organization	Function	Archaeological Signature	Occupation Duration	Cultural Periods
1	variable	rock outcrops/talus slopes	several individuals	stone mining	densely-packed lithic manufacturing debris	1-3 nights	All
2	extremely small (two m^2)	benches; hollows; ridges	one or two individuals	individual event	scatter of waste flakes	few minutes-overnight	Late Archaic-Early Woodland; Late Woodland
3	several hundred m^2	open, flat land in foothills or hollows; springheads	band segments	exploitative camp	restricted tool diversity	one night-week	Late Archaic-Early Woodland; Late Woodland
4	several thousand m^2	saddles and upland basins	band segments	base camp/ seasonal dispersal center	features; wide range of artifact types	2-3 months	Late Archaic-Early Woodland; Late Woodland
5	"quite large"	Piedmont/ Valley foothill fans/ floodplains	band; one or two nuclear families	mortuary/religious center; long-term residence	multi-component; wide range of features and artifact types	long-term residence	Archaic and Woodland
6	"quite large"	Piedmont/ Valley floodplains	tribe	village	ten or more dwellings; wooden stockade; rich array of features and functionally diverse artifact types	semi-permanent	Late Woodland
7	variable	mountain gaps	--	burial mound complex	multiple stone and earthen burial mounds	--	Late Woodland

While the more comprehensive site typology provides an integrated picture of mountain-based hunter-gatherer settlement, this instrument is idealized and its identifying characteristics keyed to efficient ('rational') hunting and gathering behaviors derived from Caldwell's model of primary forest efficiency (1958). Such typologies remove sites, and ultimately the settlement system, from their cultural context and cannot begin to capture the potential range of human activities that take place in ecologically heterogeneous mountain settings such as the Appalachians (Stephenson, Ash and Stauffer 1993). A more contextualized landscape approach offers insight into larger questions of site function, social interaction, and cultural change.

Since the early 1980s, settlement models for the Blue Ridge have emphasized site typologies based on function as opposed to size and location, although those factors remain critical to the discussion of settlement systems. Most recently, Barber et al. (2003) outlined five site types for mountainous western Virginia: quarry, quarry reduction station, base camp, procurement camp, and transient camp. In this scenario, a base camp is a corporate site where smaller bands coalesced for seasonal aggregations or intensive resource exploitation, perhaps for an extended period. Such sites are signaled by the presence of features and a diversity of artifact types

representing a broad range of economic and subsistence activities. Upland base camps became more frequent as Native cultures moved from a foraging to a collecting economy, a transition occurring at the interface of the Early and Middle Archaic. The choice of base camp location was tied to the distribution of valued water resources, particularly springheads, in the level terrain of major saddles and gaps. In recognition of the limitations of idealized site typologies, the authors describe a variety of activities occurring at base camps, with activities that reinforced social ties taking precedence over basic tasks such as lithic procurement.

Expanding upon the idea of 'the sociality of uplands' (Nash 2008c), the analytical methodology of the Madison County study allows a break with the idealized approach that created earlier site typologies. From a purely empirical point of view, such a break is necessary, given the large sample of surface artifact concentrations representing mixed, multi-component sites that most likely served different purposes with different occupations (Wandsnider 1992). However, the reconnaissance character of the work requires some form of organization to allow for site comparison. Using a combination of traditional nomenclature set out in VDHR's Data Sharing System (2008a), as well as a newly created classification, the MAP survey employs twelve generalized site types based on areal extent, artifact frequency, and artifact diversity (Table 4).

Table 4. Site Type, Description and Frequency in Study Area

Site Type	Description
Large Base Camp	Intensive/extensive occupation; wide range of tool types; usually multi-component; at least 4.5 acres
Small Base Camp	Intensive occupation in more restricted location; limited range of tool types; typically less than 3 acres
Limited Activity Camp	Small site less than 1 acre with small range of tool types focused on a limited range of activities
Hamlet	Intensive/extensive occupation; wide range of tool types; significant pottery indicating Woodland period settlement; typically 10-30 acres
Rockshelter	Overhang of resistant rock at base of bluff or cliff; formed by differential erosion; protective roof over open occupation area
Lithic Workshop	Stone tool manufacturing site with focus on secondary reduction
Quarry	Outcrop of lithic material showing evidence of primary human extractive activities
Stone Burial Mound	Compacted stone and earthen mound showing evidence of burial practices and adjacent cultural activity
Lithic Cache	A group of artifacts deposited in the same safe place, usually of the same type or lithic origin
Isolated Point Find	Single diagnostic projectile point find
Collecting Area	Extensive, long-term artifact collecting locale with poorly documented boundaries
Indeterminate	Insufficient quantity/diversity of artifacts to determine site function

Six of these types (rockshelter, quarry, stone burial mound, lithic cache, lithic workshop, and isolated point find) are self-explanatory, being referents for a particular physical form such as rockshelter, or a very specific feature such as stone burial mound, or a very specific cultural activity, such as a lithic cache. This is not to

say, however, that these site types have restricted meaning in a settlement system because of their restricted definitions.

The remaining types require further discussion. Instead of automatically associating a form of social organization or settlement duration with *base camp* (e.g. macro-social, micro-social), the initial sort into *large base camp* and *small base camp* is used as an indicator of occupation intensity. As with all site typologies, this division assumes different cultural and technological functions for the site categories, but without automatically pigeonholing them into a particular settlement model. This is also the same for the *limited activity camp*, which is identified based on a low diversity and number of artifacts, not its position as a support for a particular base camp. These are questions that must be resolved during the analysis, not assumed at the outset.

Hamlet is the only site type in this study that inherently attributes a specific temporal and spatial function to a site based on its traditional use in the Middle Atlantic (Gallivan 1999). A Woodland Period manifestation, a hamlet is identified by its large size, density and diversity of artifacts, and the presence of significant quantities of ceramics. By definition, it is assumed to be the central location of settlement for an

aggregate group that has introduced some level of horticulture into its subsistence practices.

A new concept introduced by this analysis is the *collecting area*, a very large but poorly defined site that, if surveyed and tested according to accepted practice, would be better characterized as overlapping or spatially discrete occupations (Nash 2001b). Typically found in cultivated fields adjacent to high order stream courses, a collecting area encompasses multiple landforms subject to walk-over by the artifact collector. Given the disturbed plowzone context and the lack of systematic survey, the importance of such collections can be overlooked by academic archaeologists. Plowzone sites, in general, comprise the bulk of known prehistoric sites in rural areas (Carr 2008), and the advent of conservation farming has limited surface visibility necessary for more fine-grained survey. While the artifacts from the collecting forays have provenience in only the most general sense, in that they are boxed or bagged according to agricultural field, they are a record of prehistoric activity in a circumscribed area. Further, recent experimental studies (Schindler 2004) have demonstrated that repeated surface collections, such as the ones made by multiple generations of landowners, offer a better representation of parent deposits than do methodologies regularly employed during Phase I surveys. A single one

hundred-acre collecting area, located in the Hebron Valley, has been documented by MAP. As the landowner denied permission for survey, information about this locale depends on large artifact collections made over forty years ago by the previous owners.

Finally, *indeterminate* sites are those for which so little information exists that the identification of a particular function is impossible based on current information. Artifact assemblages from these sites rarely include diagnostics. Such sites are common in the Virginia Piedmont (Parker and Klein 1989; Petraglia et al. 1993; Klein 2002) and Blue Ridge (Hoffman and Foss 1980; Barber et al. 2003) and are often overlooked. As this category includes seventy-one sites, or 30.5 percent of the study total, it will be explored in some detail in Chapters Five and Six.

GIS Applications and Locational Studies

Geographic Information Systems (GIS) technology is central to the analysis of the considerable amount of data described above. A powerful computer-based application, a GIS integrates hardware, software, and data for capturing, managing, analyzing, and displaying geographically referenced information. It can be viewed from three perspectives: as a structured database that describes the world in

geographic terms (geodatabase); as a set of maps that display features and feature relationships on the Earth's surface (window into the geodatabase); and as a set of information tools that derive new geographic datasets from existing datasets (modeling) (ESRI 2008). Through a query function, a GIS can integrate and relate any data with a spatial component, creating a multi-layered view of the physical environment. It is a major tool for landscape archaeology or any "sociospatial research" (Steinberg and Steinberg 2006: 37) as it enables the researcher to use actual locational information that need not be compared with the ideal situations proposed by previous settlement modeling (Crumley 1995).

In hunter-gatherer societies, geographical knowledge is typified by a collective wisdom and epistemological diversity that reflects generations of biocentric, place-based experiences (Fowler and Turner 1999). GIS, with its strong Western emphasis on anthropogenic resource management, has raised concerns among some scholars working directly with indigenous peoples on issues of geographic importance (Rundstrom 1995). In coining *ethnophysiography* to describe the 'ethnoscience of landscapes,' Mark and Turk (2003) argue for a highly contextualized spatial cognition that is dangerously minimized by realist representations of landscape. Others, however, have developed extensive programs in 'participatory GIS (PGIS)'

based on the mapping of cultural landscapes by indigenous groups trained in the technology (Aporta 2005). Arguing that such maps are important political tools for land claims and the preservation of language in place names, adherents to this approach note that while the abstraction required by cartographic conventions essentializes places and spatial relationships, cartographic representations created through GIS capture *patterns* of specific variables that can be used as indicators of cultural *process* and *mental maps* (Harvey 2008). GIS data layering creates hypotheses about spatial relationships that can be tested with ethnographic analogy and ethnohistoric research. For example, among the Inuit of Nunavut, GPS and GIS have been used to map travel routes and Inuit landmarks, thereby reclaiming an indigenous landscape constructed around seasonal mobility (Aporta 2005). Similarly, written accounts of Anishinawbeg (Ojibwa) elders' oral geography have been used to map a highly contextualized visualization of the Temagami native landscape (Warhus 1997).

Georeferenced data layers in the present study include:

- 7.5' seamless topographic maps (USGS)
- USDA Soil Series (USDA NRCS)
- Geology of Virginia (VDMME)
- NHD High Resolution Watershed and Flowline (USDA NRCS)
- 10-Meter Digital Elevation Model (USGS)

In this study, GIS is used to identify patterns between the previously described environmental variables, archaeological site locations, and artifact distributions at various scales of spatial and temporal analysis. This use is subsumed under the regional research focus of archaeological GIS (Wheatley and Gillings 2002). The analytical tools of query, overlay (combination), viewshed, transect profile, and predictive modeling ('distance transformation') are employed to further explore the scaled, landscape approach to hunter-gatherer lifeways in the study area.

Archive

MAP was developed as a template for a long-term archaeological study of Madison County and is intended to continue after the current study is reported. With the assistance of the Madison County Historical Society, the author is committed to maintaining the databases and GIS and continuing to input data as new sites are encountered. All contact information, field notes, maps, artifact catalogs, photographs, and any other related materials generated by the project are the property of the Madison County Historical Society and archived at the Madison Arcade, administrative headquarters of the Society. In keeping with MAP's educational and conservation missions, information concerning specific sites will be made available to that site's landowners upon request, and they will be asked

permission to record their sites with VDHR. In order to protect the sites, the archive will be open and information on exact site location (UTM coordinate) will be released only after consultation with the landowner and only to professional researchers who demonstrate a need and meet professional standards.

The application of the landscape approach to the study of prehistoric hunter-gatherers of the upper Rappahannock Valley requires a review of the environmental parameters of this complex region as the initial point of departure. The following chapter builds the framework of spatial scale by examining in detail the macrophysiographic zones and meso-scale hydrologic units within the study area. An overview of relevant biotic and abiotic features further develops an understanding of the ecological heterogeneity of the Blue Ridge foothills and mountains. The baseline physiographic and ecological characterizations are further contextualized in a discussion of Late Pleistocene/Holocene climate change.

Chapter Three: Environmental Context for the Upper Rappahannock Valley

The present study of prehistoric hunter-gatherers of the upper Rappahannock Valley requires a review of the environmental parameters of this complex region as the initial point of departure. Decades of archaeological studies in the Appalachians are upending John Swanton's description of the region as a "marginal area . . . occupied rather through necessity rather than by choice" (1946:37). Sustained archaeological and historic research in this mountain system and its associated lower-elevation uplands demonstrate a remarkable variety of human adaptations across thousands of years, some of which emphasize the fluidity of social organization and others the long-term persistence of cultural traditions (Sullivan and Prezzano 2001b). In ethnographic studies, the environmental heterogeneity of upland settings is seen as an important test case for the study of human adaptation and cultural diversity (Brush 1984; Guillet 1983). As mountain systems, the Appalachians and their associated uplands share important characteristics with their high-elevation counterparts such as the Alps, Himalayas, Rockies, or Andes: "extensive and varied climate conditions, vegetation, wildlife, and human cultural diversity" (The Mountain Institute 1999:2).

The closely juxtaposed microenvironments of the Appalachian forests provide a setting for the study of ecological possibilities and constraints in cultural development. In this chapter, contextual descriptions of the Upper Rappahannock region at the macrophysiographic scale transition into descriptions of the natural elements significant for hunter-gatherer site location studies: lithic resources, hydrology, soils, wildlife and forests.

A discussion of basic geologic formations provides a basis for understanding the social and technological implications of stone tools, the most common artifact documented for the study area. Lithic raw material availability, quality, and reliability are strongly associated with embedded strategies of procurement and curation (Andrefsky 1994). Considerable effort is put into hydrologic description: watersheds, delineated at multiple scales, provide an appropriate analytical tool for the study of the spatial organization of human groups across a landscape (Carr and Keller 1998; McDougal and Funk 2006). With their distinctive physical and chemical attributes, soils control for vegetation distributions and are significant for discussions of plant and animal resources critical to hunter-gatherer existence. Soil distributions also contribute to the understanding of landform evolution and site formation processes, particularly in settings as diverse as those of the study area.

While forest and wildlife communities have changed considerably over the span of human occupation, their modern distributions provide an important introduction to the ecological complexity of the Upper Rappahannock region. An extended description of post-Late Pleistocene climate change in the region completes the discussion of environmental context, demonstrating the diversity of settings encountered by Blue Ridge hunter-gatherers.

Blue Ridge, Inner Piedmont and Mesozoic Basin Macrophysiographic Zones

In keeping with the multiscalar approach of landscape archaeology, this review begins with the largest of the units of analysis: the macrophysiographic province. A macrophysiographic province is a broad-scale subdivision based on terrain (elevation and relief), rock type, and geologic structure and history (USGS 2003) and is a useful organizing concept for regions such as the upper Rappahannock Valley with its vertical and horizontal zonation and corresponding ecological diversity. With elevations ranging from 4000 feet to 300 feet above sea level in only twenty-five air miles, the region samples from three southwest-to-northeast-trending provinces extending through the Middle Atlantic: Blue Ridge Mountains; Inner Piedmont; and Mesozoic Rift Basin (Figure 6). In addition to controlling for distributions of non-human biotic communities, physiographic provinces exhibit distinct features that influence cultural development.

Northern Blue Ridge Mountains

The Blue Ridge is part of the Appalachian Mountain chain, forming its eastern margins from Pennsylvania to Georgia. To the west of the Blue Ridge lie the lowlands of the Great Valley; to the east, the Blue Ridge foothills or Inner Piedmont. Blue Ridge lithology is comprised of ancient granitic charnockites, metamorphosed volcanics, and sedimentary limestones (Gathright 1976). The Northern Virginia Blue Ridge sub-region is rugged with steep slopes, narrow ridges, broad mountains, and high relief. Elevations range from 1500′ to 4500′ above sea level (Bailey 1999). In Virginia, the Northern Blue Ridge extends to Roanoke where it opens to the Southern Blue Ridge, a broad upland plateau with moderate relief and isolated high peaks. The Rappahannock River and its primary tributaries head in the Northern Blue Ridge as deeply incised, first- and second-order streams with *V-shaped* valleys. Soils of the Blue Ridge are rocky and well drained deposits that manifest as large co-alluvial fans at the eastern base.

The concept of *stream order* is extremely important to this discussion and will appear throughout the remainder of this work. Stream order is a measurement of perennial stream size (and thus, catchment area) based on a hierarchy of tributaries (Dincauze 2000). First-order streams initiate surface flow; where two first-order streams meet,

they form a second-order stream. First- and second-order streams are considered headwaters with substrates of bedrock, boulders, and cobbles. As the stream flows toward lowlands, the order increases at the confluence of equal orders. The Blue Ridge and Inner Piedmont in the study area are drained by intermittent or first-order and second-order streams; second-order streams typically enter the Inner Piedmont at the bases of alluvial fans, where they form narrow floodplains in the dissected foothills. The highest-order stream in the study area is the Rapidan River, which achieves fourth-order in the southeastern corner of the county. The flat, low-elevation topography of the Mesozoic Basin has created several large meanders, particularly near the confluence of the Robinson and Rapidan Rivers.

Inner Piedmont

The Eastern North American Piedmont, a vast erosional feature or peneplain, of rolling knolls and moderate slopes, extends from New England to Georgia. Dissected by shallow mid-order streams, it is underlain by beds of igneous and metamorphic crystalline rocks, largely granites of Precambrian and Paleozoic age (Fichter and Baedke 2000). Elevations range from 400-1000' above sea level, with peaks rising to 2500' above sea level. The Piedmont can be divided into eastern ("outer") and western ("inner") zones by topographic features. The Outer Piedmont

comprises the eastern two-thirds of the province, while the Inner Piedmont, the location of much of the current study area, contains the steeply rolling to hilly belt lying just east of the Blue Ridge (Fleming et al. 2006). The Inner Piedmont is marked by a belt of erosional features known as monadnocks, isolated ridges of resistant rock, detached from the Blue Ridge. These unassimilated remnants of previous geology add thousands of acres of low elevation (900'-1200') ridgetops (Figure 15). At some locations the Blue Ridge rises abruptly above the peneplain, presenting a formidable scarp known as the Blue Ridge Front (Godfrey 1997). Under a mantle of vegetation, the rock beneath the Piedmont peneplain weather into saprolite, rendering the soils of the province 'residual.' Due to the composition of the parent rocks and saprolites, Piedmont soils have high clay content and are highly recognizable by their deep red, iron-rich color (Bailey 2006).

Mesozoic Rift Basin (a.k.a. "Culpeper Basin")

The Mesozoic Rift Basin of the Outer Piedmont, known locally as the Culpeper Basin, is one of twenty structural trough depressions bordering the eastern front of the Appalachian Mountain system from Nova Scotia to Georgia (Lee and Froelich 1989). Extending eighty miles through Northern Virginia and into the Maryland Piedmont, this regional manifestation of the Rift Basin macrophysiographic province

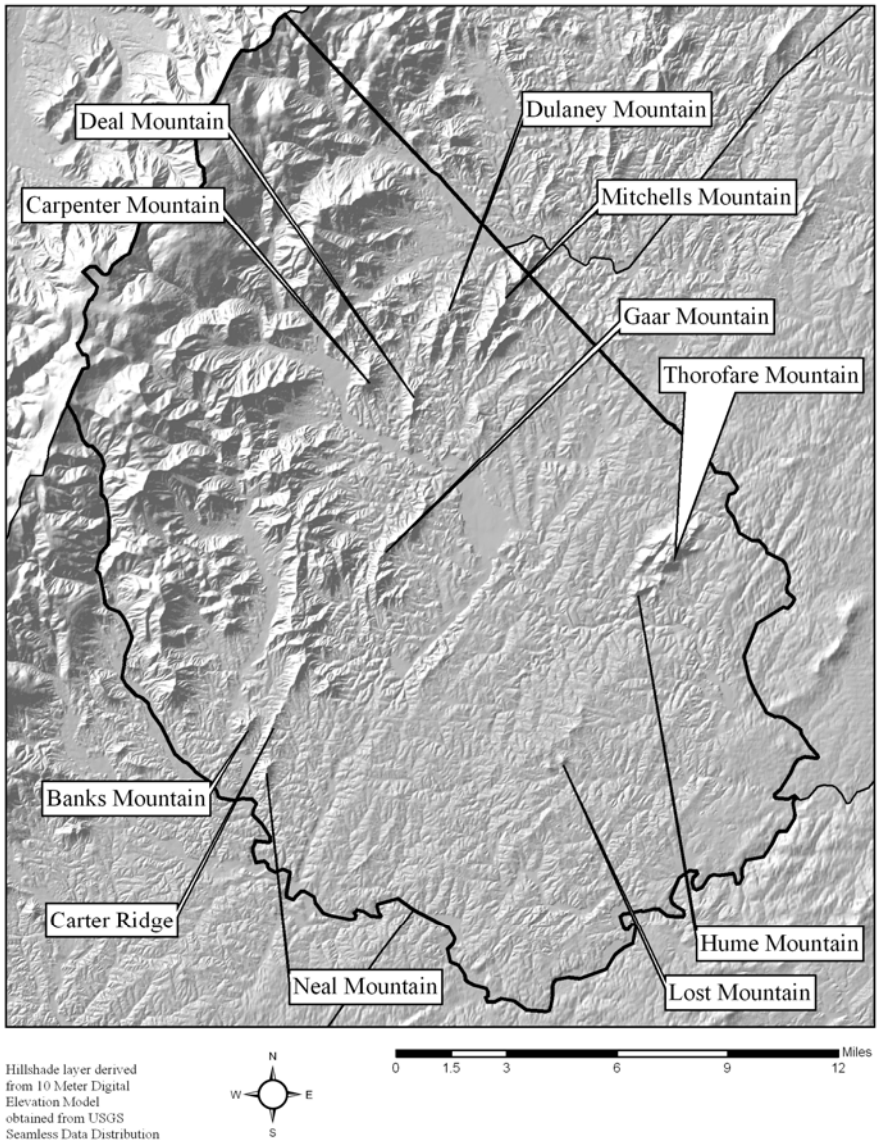


Figure 15. Monadnocks, Madison County, Virginia

terminates in the study area. The Culpeper Basin is characterized by low relief and gently rolling to nearly flat topography (200 feet-400 feet above sea level). Mid-order stream valleys give way to riverine systems of third- and fourth-order, with more extensive floodplain development. The sediments that formed the red bedrock

material ("red beds") were deposited during the late Triassic to the early Jurassic Periods. Predominantly siltstones, these also include shales, sandstones, and conglomerates. The sedimentary rocks were intruded with lava (diabase and basalt), and a contact zone of altered rock (hornfels and granulite) formed between the diabase and sedimentary beds. Soils within the area are typically weathered products of these rock types. Residual alluvial deposits of gravel, cobbles, and occasional breccias composed of coarse quartzite, sandstone, and weathered igneous rocks exist along stream terraces (Rader and Evans 1993).

Lithic Resources

Given the complexity of Blue Ridge and Piedmont geology (Fichter and Baedke 2000) and the preponderance of clastic materials, Native peoples of the region had access to a wide range of lithic types for the manufacture of chipped and ground stone tools. A basic understanding of structural geology is important to hunter-gatherer studies, as raw material availability, selection, and treatment relate to technological and social organization (Cowan 1999). Rader and Evans (1993) identify thirty-one structural formations within Madison County (Figure 16); artifact collections from the study area include artifacts manufactured from nine of these. Of the twenty-two lithic types noted in collections, fifty-nine percent (n=13) either

outcrop or exist in cobble form within the study area, twenty-three percent (n=5) most likely occur within forty miles of the study area, and eighteen percent (n=4) can be considered long-distance resources available through extended travel and/or exchange (Table 5).

Because the complex geology of the Virginia Piedmont has seen limited small-scale mapping (Bailey 2006), published descriptions often overlook highly localized outcrops containing knappable material. For example, archaeological surveys of the upper Rapidan and Robinson River valleys in the eastern flanks of the Blue Ridge discovered bedded mylonite, a silicate replacement material used locally throughout prehistory. Macrotypic characteristics led previous researchers to misidentify it as a variant of chalcedony which outcrops in Devonian and Ordovician formations in the Ridge and Valley over 100 miles from the study area (Boyer and Nash 1998). Geologic mapping in the county (Allen 1963; Rader and Evans 1993) overlooked this silicious material in both its frequent occurrence in cobble form and *in situ* mylonitic shear zones of the Inner Piedmont (Bailey et al. 2003). Stone tools manufactured from this material are common in artifact collections from the contiguous Inner Piedmont, Blue Ridge, and eastern Shenandoah Valley, demonstrating use by Native

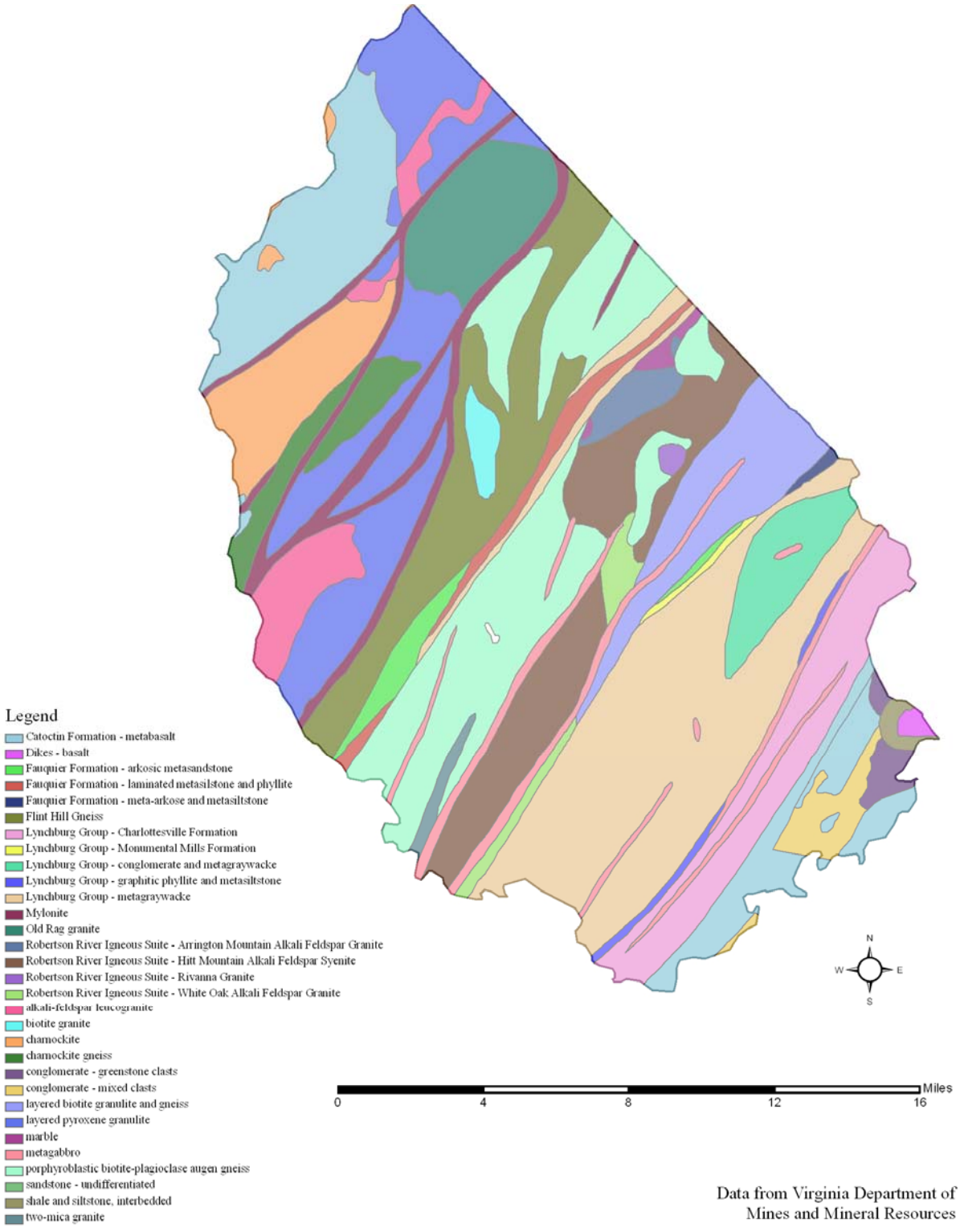


Figure 16. Geology of Madison County, Virginia

Table 5. Lithic Raw Materials Represented in Study Area Artifact Collections

Raw Material	**Probable Geologic Formation**	**Probable Source Locations**	**% of Lithic Inventory**
Argillicious Shale	Balls Bluff	Mesozoic Basin (local)	.08
Basalt	Catoctin	Blue Ridge (local)	.15
Chalcedony	Ordovician/Devonian Limestones	Ridge and Valley	.25
Chert	Ordovician/Devonian Limestones	Ridge and Valley	5.1
Chlorite	Intrusive Ultramafics	Inner Piedmont (local)	.008
Chrysoprase	Catoctin	Blue Ridge (local)	.01
Diabase	Culpeper Basin Dikes	Mesozoic Basin (local)	.02
Greywacke	Lynchburg	Inner Piedmont (local)	.04
Hematite	Antietam	Blue Ridge (regional)	.004
Hornfels	Balls Bluff	Mesozoic Basin (local)	.06
Jasper	Antietam	Blue Ridge (regional)	1.1
Metabasalt	Catoctin	Blue Ridge (local), Mesozoic Basin (local)	8.0
Metabasalt Breccia	Catoctin	Blue Ridge (local)	.20
Metasiltstone	Virgilina	Mesozoic Basin (Carolina)	.04
Mylonite	Blue Ridge Basement Complex; Robertson River	Inner Piedmont (local)	1.6
Oolitic Quartzite	Sugarloaf Mountain	Inner Piedmont (Maryland)	.07
Phyllite	Catoctin/Candler	Blue Ridge (local), Mesozoic Basin (local)	.07
Quartz	Blue Ridge Basement Complex; Robertson River	Inner Piedmont (local)	45.0
Quartzite	Antietam	Blue Ridge (regional)	37.3
Rhyolite	Catoctin	Blue Ridge (Maryland)	.62
Sandstone	Silurian and Devonian Sandstones	Shenandoah Valley	.01
Slate	Catoctin/Charlottesville/Quantico	Inner Piedmont (regional)	.008
Steatite	Intrusive Ultramafics	Inner Piedmont (local/regional)	.13

populations from the Early Archaic through the Protohistoric periods (Boyer and Nash 1998). Further examples of prehistoric utilization of little-studied lithic resources, ranging from breccias to replacement silicates, are included in Chapter Five.

Quartz is the predominant lithic choice for stone tool manufacture, comprising forty-five percent of the artifacts inventoried for this study. Although this material is ubiquitous across the Piedmont (Gardner 1983b), it varies widely in quality and knappability. Prehistoric populations exhibited selectivity in its use (Israel and Davis 1992; Nash 1994; LaPorta 1999). There exists tremendous variation in the quality of vein quartz from the Robertson River Formation alone, and several quarry sites near high-quality outcrops have been located (Nash 1994).

Regarding identified cryptocrystalline (finely textured, high silica content) resources, the stream beds of the Rapidan River and its tributaries carry cobbles of jasper, most likely weathered from the Catoctin Formation of the Blue Ridge (Gathright 1976). As documented for the Ridge and Valley, prehistoric populations relied on material type for expedient tool manufacture, and several sites yielding evidence of cryptocrystalline tool manufacture have been located in the study area

(Nash 2005a). Other lithic resources of note include metasandstone (quartzite) from the Antietam Formation, which outcrops at the western base of the Blue Ridge and was intensively used in mountain settings and the Inner Piedmont. Metabasalt (Catoctin Formation greenstone) outcrops both in the Blue Ridge and Mesozoic Basin, with the cobble form found in every stream of the study area. Present, but in smaller amounts, are imported materials such as metarhyolite, metasiltstone, chalcedony, and some exotic crypto- and micro-crystallines.

Hydrology

Madison County is considered a headwaters zone for the Rappahannock River, one of two Virginia rivers that drains from the Blue Ridge to the Chesapeake Bay (Figure 2). With the exception of the Hughes River which drains directly into the main stem of the river, the county is drained by the Rapidan River, the largest tributary to the Rappahannock (Figure 17).

Archaeologists rely on the watershed as an organizing concept for Geographic Information Systems (GIS)-based comparative, intra- and inter-regional settlement studies (Kvamme 1997; McDougal and Funk 1998). A true watershed is an area of land and water defined by a boundary such that all surface drainage within the

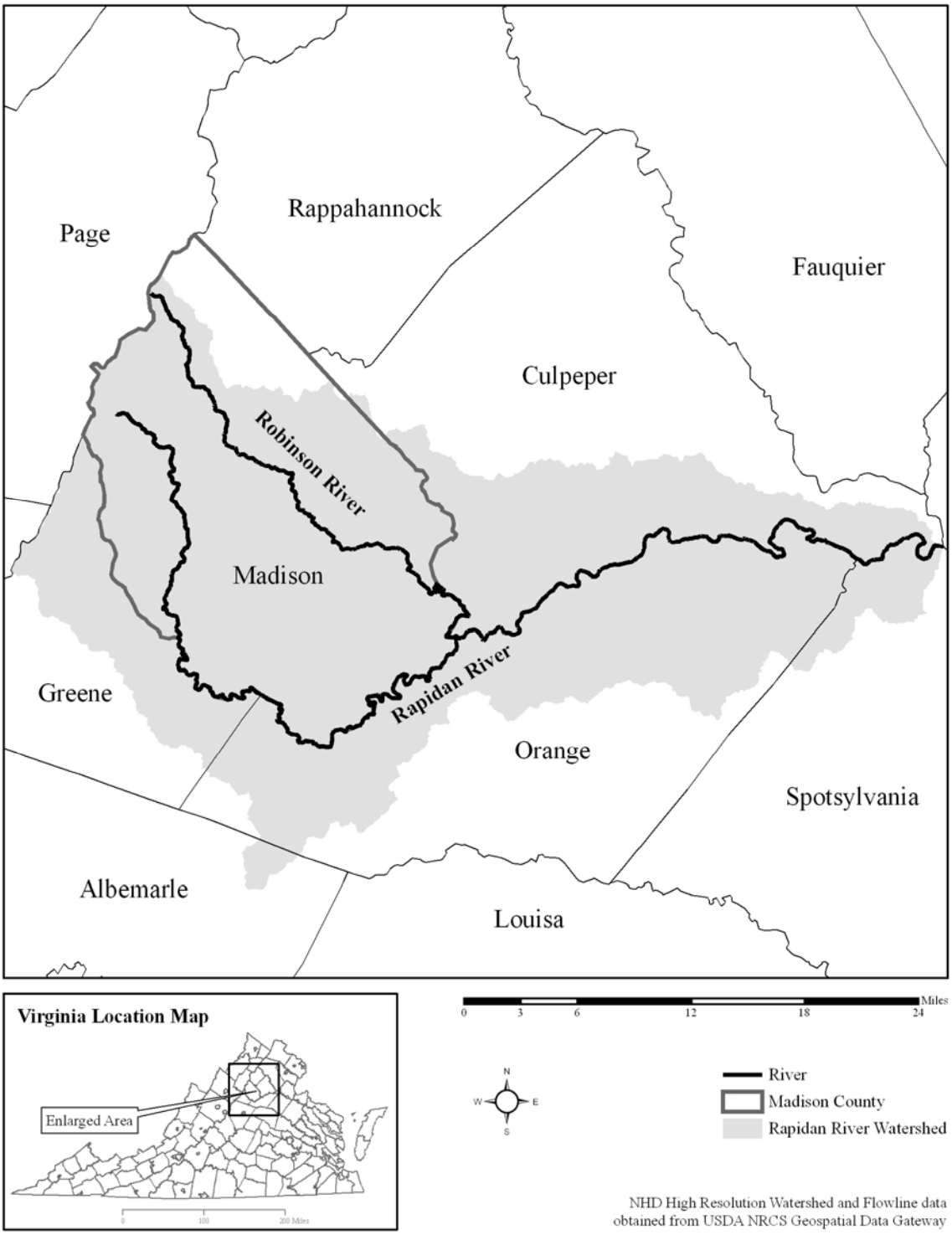


Figure 17. Rapidan River Watershed

boundary converges to a single point (Virginia Department of Conservation and Recreation 2006). As a catchment, a watershed creates an easily-identified region, sampling the varied topographies that are drained from high to low points. Data layers employed to develop contexts for settlement analysis (e.g. vegetation cover, soils, structural geology) are often tied to the watershed as the base layer. Using the watershed as a frame, multiple environmental variables are layered in a GIS to create a highly specific representation that is compared to other such areas.

The present study relies on a watershed classification scheme first developed by the U.S. Geological Survey (USGS) to facilitate comparative water quality studies and now used as a base layer in GIS analysis: the hydrologic unit (Seaber et al. 1987). Like watersheds, hydrologic units (HUs) are drainage areas delineated to nest into a multi-level hierarchical drainage system. HUs are not equivalent to watersheds, however. HUs may include waters that flow into an area from outside, delineating, for example, a lower portion of a river at an arbitrary point from an upper portion of the same stream or river. As a management tool, the hydrologic unit balances drainage characteristics with area size (National Atlas 2008).

The HU system is organized into a four-tiered hierarchy: Region, Sub-Region, Accounting Unit, and Cataloging Unit (Saber et al). The area included in this study falls within the Middle Atlantic Region (Region 2); Lower Chesapeake Sub-Region (Sub-Region 0208); Lower Chesapeake Excluding the James River Basin Accounting Unit (Accounting Unit 120801); and Rapidan-Upper Rappahannock Cataloging Unit (Cataloging Unit 02080104). Multiple Cataloging Units, the smallest of four levels used by USGS, may be combined to provide the entire drainage area of one watershed.

In 1995, The Virginia Department of Conservation and Recreation created fourteen-digit sub-catalog HUs for more fine-grained data capture and analysis; these are generally delineated as third-order stream drainages and range in area from approximately forty to 125 square miles. HUs are given a three-character identity for map display and keyed to USGS Cataloging Units. The HUs used throughout this study are six of the smaller, fourteen-digit units delineated for Virginia (Figure 8):

- E03 (Hughes River)
- E11 (Upper Rapidan/Conway River)
- E12 (Rapidan River/South River)
- E13 (Rapidan River/Blue Run/Beautiful Run)
- E14 (Upper Robinson River/White Oak Run
- E15 (Lower Robinson River/Crooked Run/Deep Run)

HUs disregard jurisdictional boundries and only one of the six, Upper Robinson River/White Oak Run, is completely contained within Madison County. The other five extend into neighboring counties to the east, south, and west. The Madison County area for each HU is offered for comparative purposes (Table 6):

Table 6. Hydrologic Units in Study Area

Hydrologic Unit	**Name**	**Total Area (Square Miles)**	**Area in County (Square Miles)**	**Elevational Range (feet)**
E03	Hughes River	47.85	31.06	3460 (Hemlock Springs)-620 amsl (Peola Mills)
E11	Upper Rapidan River/ Conway River	70.95	63.14	3800 (Hazeltop)-540 amsl (Conway/Rapidan River Confluence)
E12	Rapidan River/ South River	55.30	13.51	1100 (Neal Mountain)-440 amsl (Elk Run/Rapidan River Confluence)
E13	Rapidan River/Blue Run/Beautiful Run	119.63	46.28	600 (Burnt Tree)-280 amsl (Robinson/Rapidan River Confluence)
E14	Upper Robinson River/ White Oak Run	86.54	86.54	4050 (Hawksbill)-400 (Hebron Valley) amsl
E15	Lower Robinson River/ Crooked Run/Deep Run	107.59	81.12	1100 (Thoroughfare)-280 (Great Run/Rapidan River Confluence) amsl

Descriptions of Fourteen-Digit Hydrologic Units

E03 (Hughes River)

The Hughes River originates in Shenandoah National Park and falls almost completely within the Blue Ridge, draining the northeastern flank of Old Rag

Mountain (Figure 18). The first-order tributaries of Brokenback Run, Ragged Run, Popham Run, and Rosson Hollow Run flow across the Blue Ridge Basement granites and genisses, creating a rugged landscape and forming the second-order Hughes River floodplain near Peola Mills. Nicholson, Corbin, and Weakley Hollow, major points of entry into Shenandoah National Park from privately-held parcels, are well-known topographic features. Thirty-one square miles (sixty-five percent) of this small HU fall within northeastern Madison County, the remainder draining extreme western Rappahannock County. Elevations range from 3460′ amsl (Hemlock Springs) to 600′ amsl (Peola Mills) across eight air miles.

E11 (Upper Rapidan River/Conway River) originates in Shenandoah National Park with the headwaters of the Rapidan River (Laurel Prong and Mill Prong) that drain the southern Big Meadows basin and The Laurels (Figure 19). The metavolcanic formations of the Blue Ridge have eroded to create broad, lower elevation peaks and deeply incised stream valleys. The confluence of the second-order Staunton and Rapidan Rivers creates the third-order trunk of the Rapidan, forming a broad mountain valley at Graves Mill. The Rapidan floodplain increases in breadth as other second-order streams (Kinsey Run, Garth Run, and Whetstone Run) join the River. The Conway (a.k.a. "Middle") River marks the western Madison-Greene

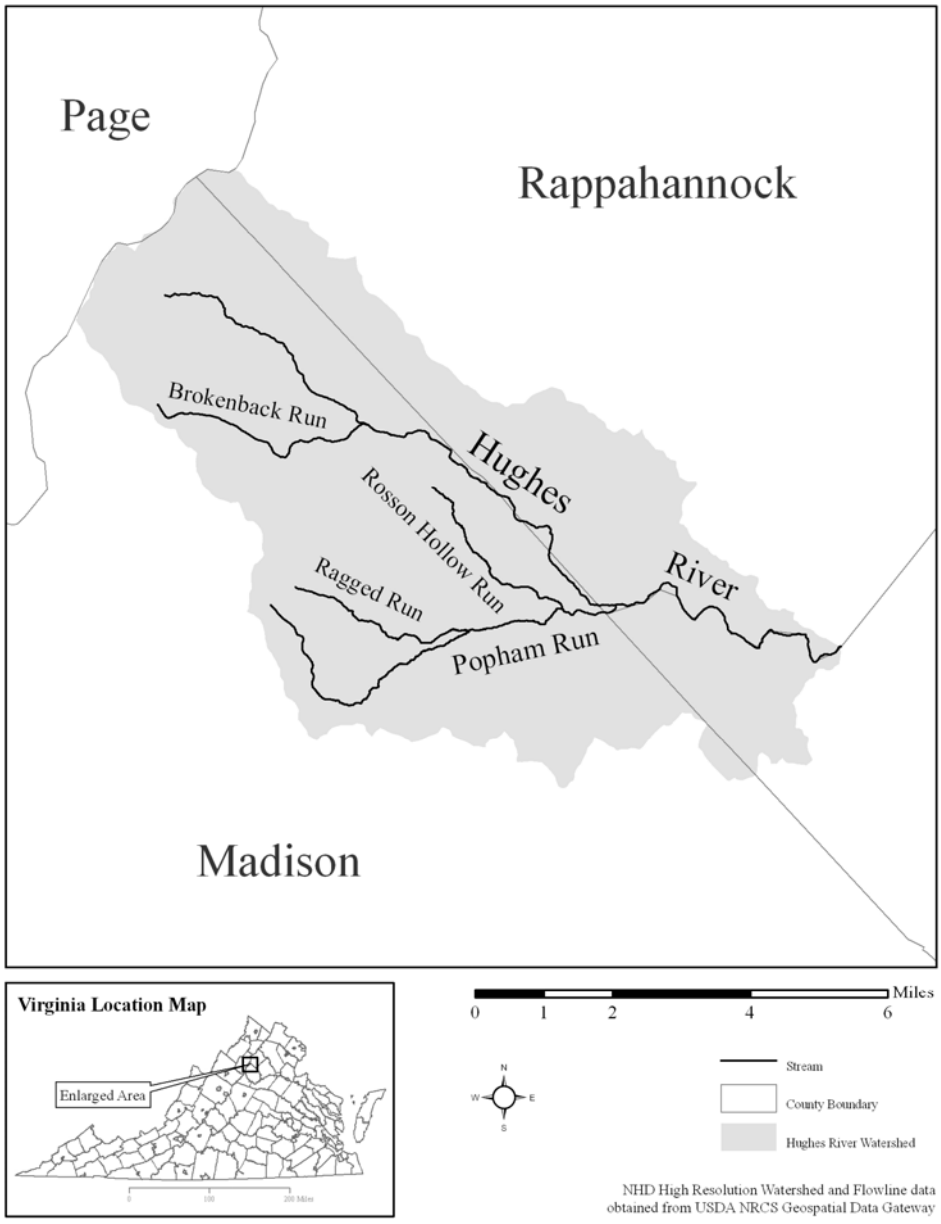


Figure 18. Hughes River Watershed (E03)

County border, draining Hazletop, Bearfence, and Lewis Mountain. Forming a floodplain near Fletcher as it enters the foothills, the Conway is entrenched by bluffs from that point to its confluence with the Rapidan River. Sixty-three square miles

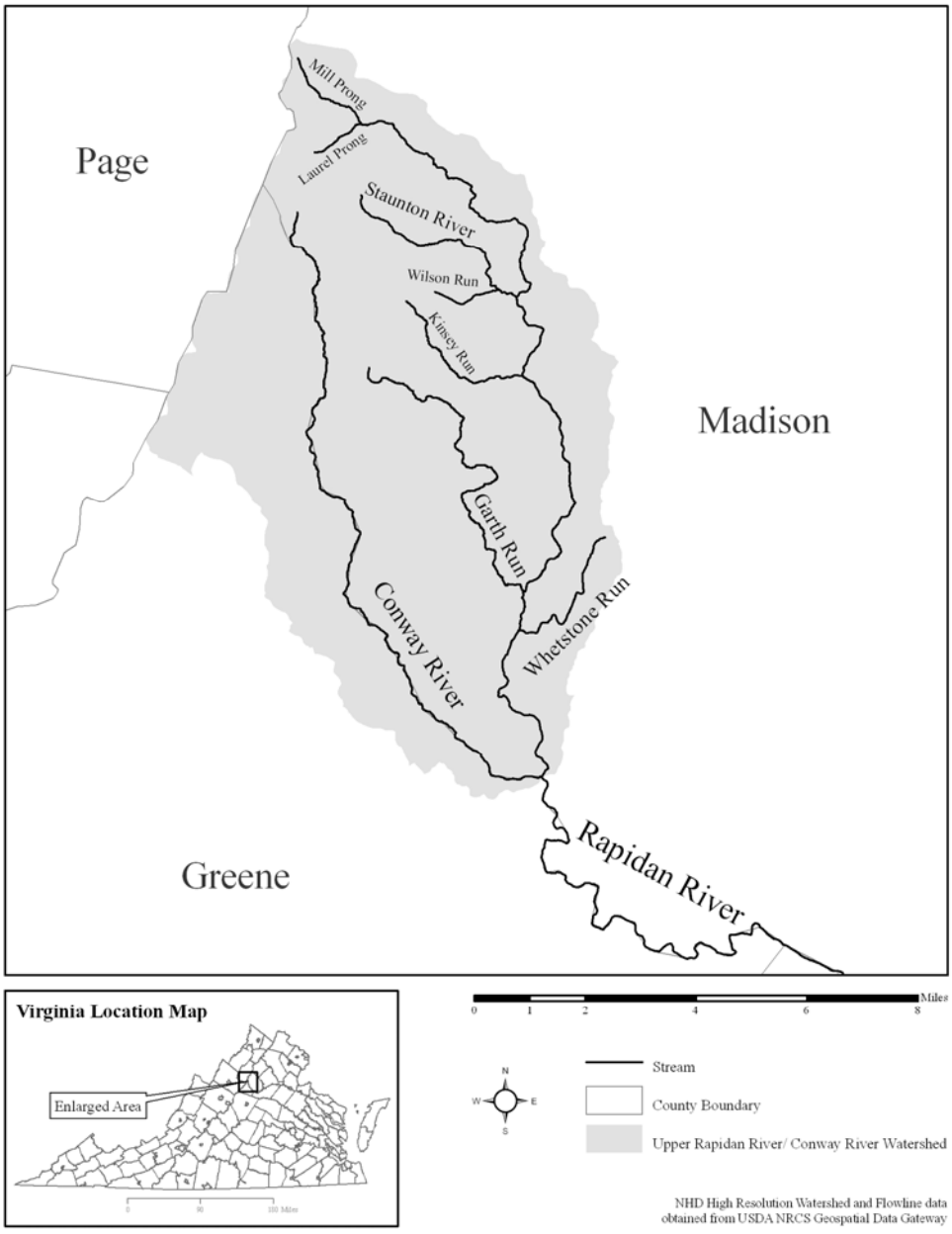


Figure 19. Upper Rapidan River/Conway River Watershed (E11)

(eighty-nine percent) of E11 falls within Madison County, with drainage elevations ranging from 3800′ amsl (Hazeltop) to 540′ amsl (Conway/Rapidan confluence) across fourteen air miles. The remainder drains the northern edge of Greene County.

E12 (Rapidan River/South River)

The Rapidan River/South River, a prong-shaped HU, evidences two points of origin: the Greene County Blue Ridge and the Neal Mountain-Banks Mountain-Carter Ridge monadnock system in Madison County (Figure 20). Only 13.5 square miles (twenty-four percent) of this drainage falls within the Inner Piedmont of Madison County; the second-order Elk Run and its many unnamed first-order tributaries account for almost all of this. A short section of the Rapidan River, from its confluence with the Conway River to Elk Run, is also included. A watershed divide between the Rappahannock and James Rivers is one mile southeast of the E12 HU. Metavolcanic and metasedimentary bedrock underlies this HU, which exhibits limited elevational range across six air miles: 1100' amsl atop Neal Mountain to 440' amsl at the Elk Run/Rapidan River confluence. In addition to the monadnocks, E12 is characterized by low-elevation ridges and small, deeply incised stream valleys.

E13 (Rapidan River/Blue Run/Beautiful Run

E13 (Rapidan River/Blue Run/Beautiful Run) is the only HU to sample primarily from the Mesozoic Basin with its unique mix of sedimentary and volcanic bedrock (Figure 21). 46 square miles (thirty-nine percent) of this HU, which extends into northern Orange County, drains the southern boundary of Madison County. The

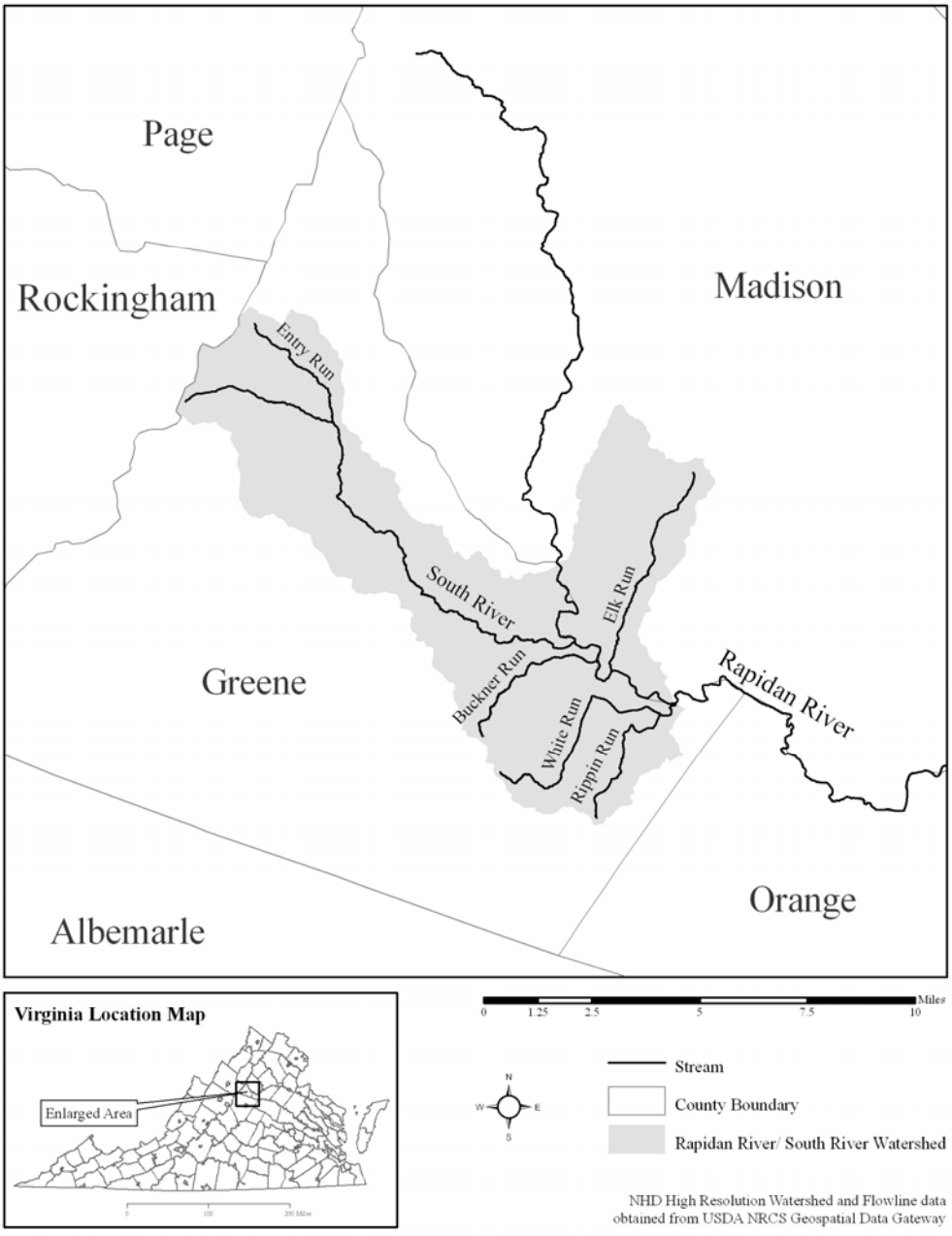


Figure 20. Upper Rapidan River/South River Watershed (E12)

second-order Beautiful Run flows across the metavolcanics and metasedimentary rocks of the Inner Piedmont, creating a landscape of small stream valleys and low

hills. Many of its tributaries are intermittent streams, adding an element of unpredictability to surface water supplies. E13 exhibits the least amount of elevational difference of all the HUs: 600′ amsl (Burnt Tree) to 280′ amsl (confluence of the Robinson and Rapidan Rivers) across twelve air miles. The third-order Rapidan River is entrenched by bluffs in E13, although it has formed a large floodplain at Madison Mills (Walker's Bottom).

E14 (Upper Robinson River/White Oak Run)

The Upper Robinson River originates in Shenandoah National Park with the Rose River and its tributaries (Hogcamp Branch, Cedar Run) and the Robinson River and its tributaries (Strother Run). Terminating in the broad backwash plain of the Hebron Valley at the confluence of White Oak Run and the Robinson River, E14 samples from the Blue Ridge and Inner Piedmont, offering classic examples of Blue Ridge foothills (Figure 22). This sub-basin drains 86.5 square miles, all within Madison County, across volcanic, metavolcanic, and metasedimentary bedrock. It exhibits an elevational drop of over 3,800 feet across fourteen air miles, the greatest elevational range of all the HUs. While the majority of tributaries are first-order, the Rose River increases to a second-order stream at the base of the Blue Ridge and creates a third-order Robinson River at their confluence near Syria, where broad

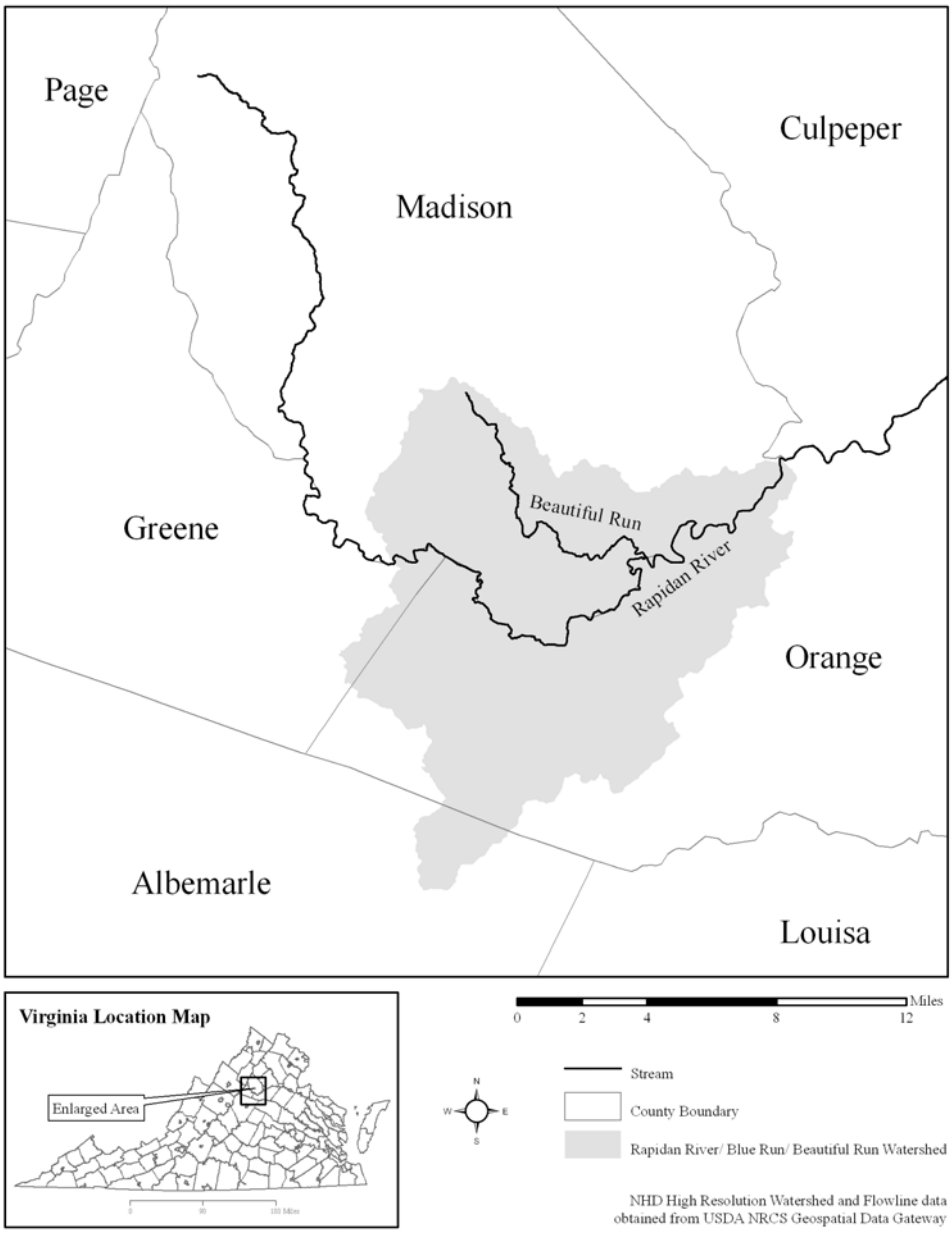


Figure 21. Rapidan River/Blue Run/Beautiful Run Watershed (E13)

floodplains mark the emergence of the drainage in the foothills. E14 contains one of the most celebrated rare ecological communities in the Eastern United States: the Big Meadows mafic fen in the high elevation Big Meadows basin. A saturated

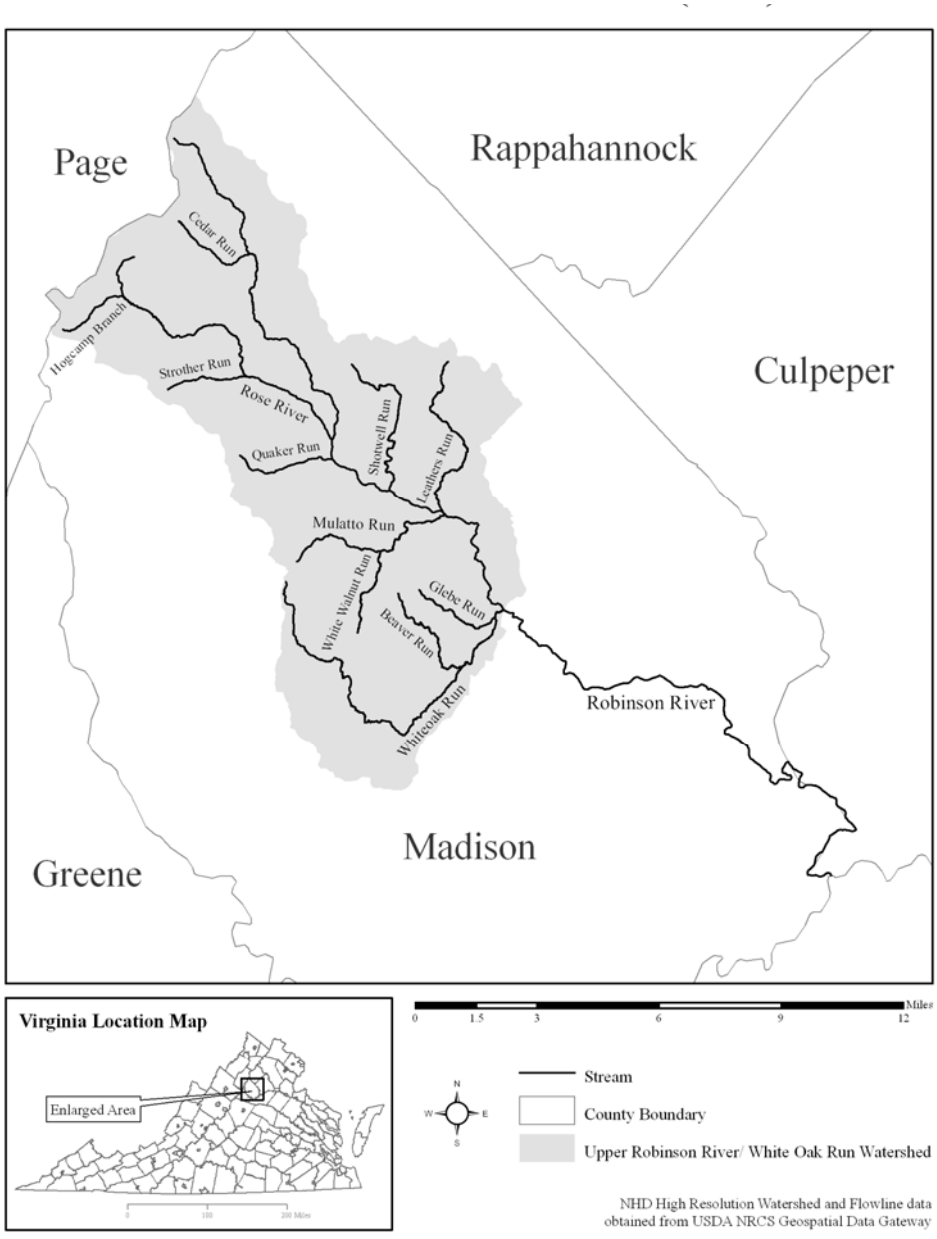


Figure 22. Upper Robinson River/White Oak Run Watershed (E14)

wetland occurring on soils weathered from igneous rocks rich in iron and magnesium (Fleming et al. 2006). The Robinson River floodplain of the HebronValley is a striking topographic feature that figured prominently in the

prehistoric settlement of the region. A backwash feature controlled by the White Oak Run Fault, it is known locally for extensive wetlands.

E15 (Lower Robinson River/Crooked Run/Deep Run)

The Lower Robinson River together with Crooked Run and Deep Run drains 81 square miles (eighty-two percent) of southeastern Madison County (Figure 23). The remainder drains extreme southwestern Culpeper County. E15 is one of two HUs in the study that does not head in the Blue Ridge; rather, its highest elevations are the monadnocks of the Inner Piedmont (Thoroughfare Mountain and Lost Mountain). This drainage flows across meta-volcanics and sedimentary rocks of the Inner Piedmont and Mesozoic Basin, with elevations ranging from 1100' amsl (Thoroughfare Mountain) to 280' amsl (Great Run/Rapidan River confluence). The main tributaries to the Robinson River—Deep Run, Dark Run, Crooked Run, Beaverdam Run, and Great Run—are second-order streams with numerous unnamed first-order tributaries that originate with springs and dissect the low foothills of the southeastern portion of Madison County.

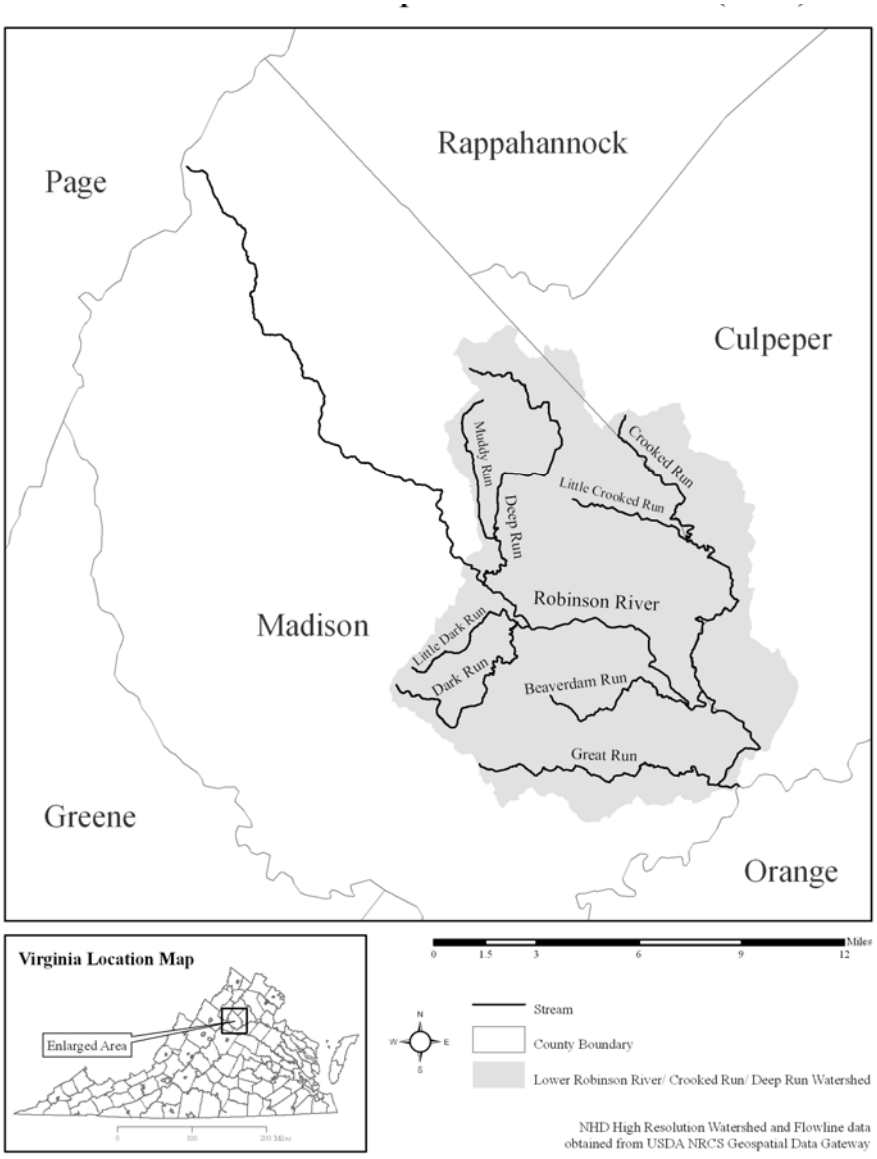


Figure 23. Lower Robinson River/Crooked Run/Deep Run Watershed (E15)

At its lowest elevation, the Robinson River meanders across Mesozoic shales and siltstones, forming a broad, alluvial plain at its confluence with the Rapidan River. The Rapidan emerges as a fourth-order stream at the intersection of Madison, Orange and Culpeper counties.

Soils

Madison County's complex topographic settings have created a multitude of soils organized in a scaled system by the United States Department of Agriculture's Natural Resource Conservation Service (Table 7; Elder and Pettry 1975; Burt 2004). The overarching soil geomorphology classification is the *association*, a natural landscape with a distinctive, proportional pattern of soils that share major characteristics. For example, the Rock Land-Meyersville-Catoctin soil association is found on moderately steep, well-drained mountain land. Associations are further divided into *series*, a more specific category that emphasizes soil texture. The Rock Land-Meyersville-Catoctin soil association is comprised of three soil series -- Rock Land, Meyersville, and Catoctin. Each of these, in turn, is divided into *phases*, more specific categories that take into consideration slope, stoniness, or other characteristics that affect the soil's suitability for human use. To complete the example, the Rock Land Series is divided into six phases based on pH, slope, or proximity to another association. The phase is the typical mapping unit, capturing specific environmental variables associated with land management practices. Madison County's soils are divided among fourteen associations, which are in turn divided into fifty-nine series, which are in turn divided into 154 phases. The phases are included in the GIS soils layer to create the most specific context possible for

Table 7. Soil Associations of Madison County, Virginia (USDA 2004)

Soil Association	**Characteristics**	**Macrophysiographic Province**	**% Land in County**
Rock Land-Meyersville-Catoctin	Deep, well-drained soils on mountain uplands	Blue Ridge	6
Porters-Rock Land	Moderately deep, well-drained soils on mountain uplands	Blue Ridge	19
Tusquitee-Colluvial Land-Unison	Deep, well-drained colluvial soils in mountain valleys and on colluvial fans	Blue Ridge	8
Brandywine-Eubanks-Lloyd	Deep, well-drained soils on dissected uplands	Inner Piedmont	17
Elioak-Hazel-Meadowville	Moderately deep, moderately well-drained soils on tops and sides of ridges, along drainageways, and in deep depressions	Inner Piedmont	22
Brandywine-Eubanks	Deep, excessively-drained soils on the tops and sides of ridges	Inner Piedmont	2
Brandywine-Chester-Meadowville	Deep, excessively-drained soils on the broad tops and sides of ridges, along drainageways, and in deep depressions	Inner Piedmont	3
Cecil-Lloyd-Louisburg	Deep, well-drained soils on the broad tops and sides of ridges	Inner Piedmont	10
Lloyd-Hazel-Elioak	Deep, excessively drained soils on the tops and sides of ridges	Inner Piedmont	2
Fauquier-Catoctin	Deep, moderately well-drained soils on the tops and sides of ridges	Inner Piedmont	2
Davidson-Bremo-Zion	Deep, moderately well-drained soils on narrow tops and sides of ridges	Inner Piedmont/Mesozoic Basin	1
Rapidan-Penn-Bucks	Deep, well-drained soils on the broad tops and sides of ridges	Mesozoic Basin	2
Hiwassee-Wickham-Roanoke	Deep, well-drained soils on river terraces	Inner Piedmont	1
Chewacla-Congaree-Codorus	Deep, well-drained soils on floodplains	Inner Piedmont/Mesozoic Basin	5

archaeological site locations. Because of their connection to parent material, topography, climate, time, and floral/faunal assemblages, mapped soil phases can

provide a snapshot of landscape evolution (Waters 1992). The value of such fine-grained detail was demonstrated by Parker and Klein (1989) for the Montpelier property in adjoining Orange County, where well-mapped soil series defined survey strata in lowland and upland settings and contributed to the development of a landform-based settlement-subsistence model.

Wildlife

As with vegetation, Virginia's diverse fauna have responded to climate changes, both at regional and local scales. Late Wisconsin (25,000-10,000 B.P.) large-bodied mammalian genera were reduced by two-thirds at the onset of the Holocene (Martin 1984), and are poorly known for the Virginia Piedmont. A single locale in Fauquier County, forty miles north of the study area, yielded wooly mammoth remains (McDonald et al. 1998). With the general warming trends of the Holocene, new habitat brought new faunas, and thirteen genera not present at the end of the Wisconsin glaciation are now found in Virginia. Archaeological evidence of Early-Middle Holocene fauna is extremely limited (Whyte 1990; Stevens 1991), but Late Holocene assemblages demonstrate essentially modern fauna (Barfield and Barber 1992). However, historic period overhunting resulted in the extinction of animals expected for the study area and represented in the Virginia archaeofaunal record:

elk, eastern cougar, grey wolf, passenger pigeon, and possibly bison (Wilson and Tuberville 2003).

The U.S. Department of Interior (2005) reports 326 known vertebrate species within the bboundries of Shenandoah National Park and the Virginia Department of Game and Inland Fisheries (2008) reports 433 known or likely vertebrate species within a ten-mile radius of the town of Madison, an area that samples from all macrophysiographic provinces discussed in this study. Terrestrial vertebrate species (and habitats) of particular interest in the study area include white-tailed deer, black bear, bobcat, opossum, grey fox, beaver, grey squirrel, common box turtle, snapping turtle, and wild turkey. The non-tidal Rappahannock drainage is home to a number of freshwater fish species, including sunfish, striped bass, trout and catfish (Institute for Water Resources 2007). In the Upper Rappahannock basin, middle- or high-order streams tend to harbor more fish species than low-order streams combined (Terwilliger and Tate 1995). However, while the only third- or higher-order streams in Madison County are the Inner Piedmont/Mesozoic Basin Rapidan and Robinson Rivers, the Blue Ridge headwaters provide habitat for cold water species like native trout.

Forests

Vegetation is often used by ecologists to describe ecological patterning across the landscape because of its relative immobility and reflection of site-specific conditions (Grossman et al. 1998). While the assumption of minimal landscape alteration by pre-colonial Eastern Woodland Native populations is problematic for any study of past human adaptation (Cronon 2003), modern vegetation provides a starting point for discussions of ecological complexity.

Intensive farming has a long history in the Eastern North American Piedmont, resulting in the loss of much of the original vegetation cover and topsoil (Wilson and Tuberville 2003). Extractive timber and tanbark industries of the Eighteenth and Nineteenth Centuries cleared much of the mountain forest so that virtually all remaining Blue Ridge forest is secondary (Terwiliger and Tate 1995). Only small pockets of old growth remain in inaccessible areas (Davis 1996). The prevalent vegetation for the northern Virginia Blue Ridge and northern Inner Piedmont, previously designated the "Oak-Chestnut Forest" by (Braun 1950), is now classified as mixed oak and oak-hickory forest, the dominant elements varying with elevation (Figure 24).

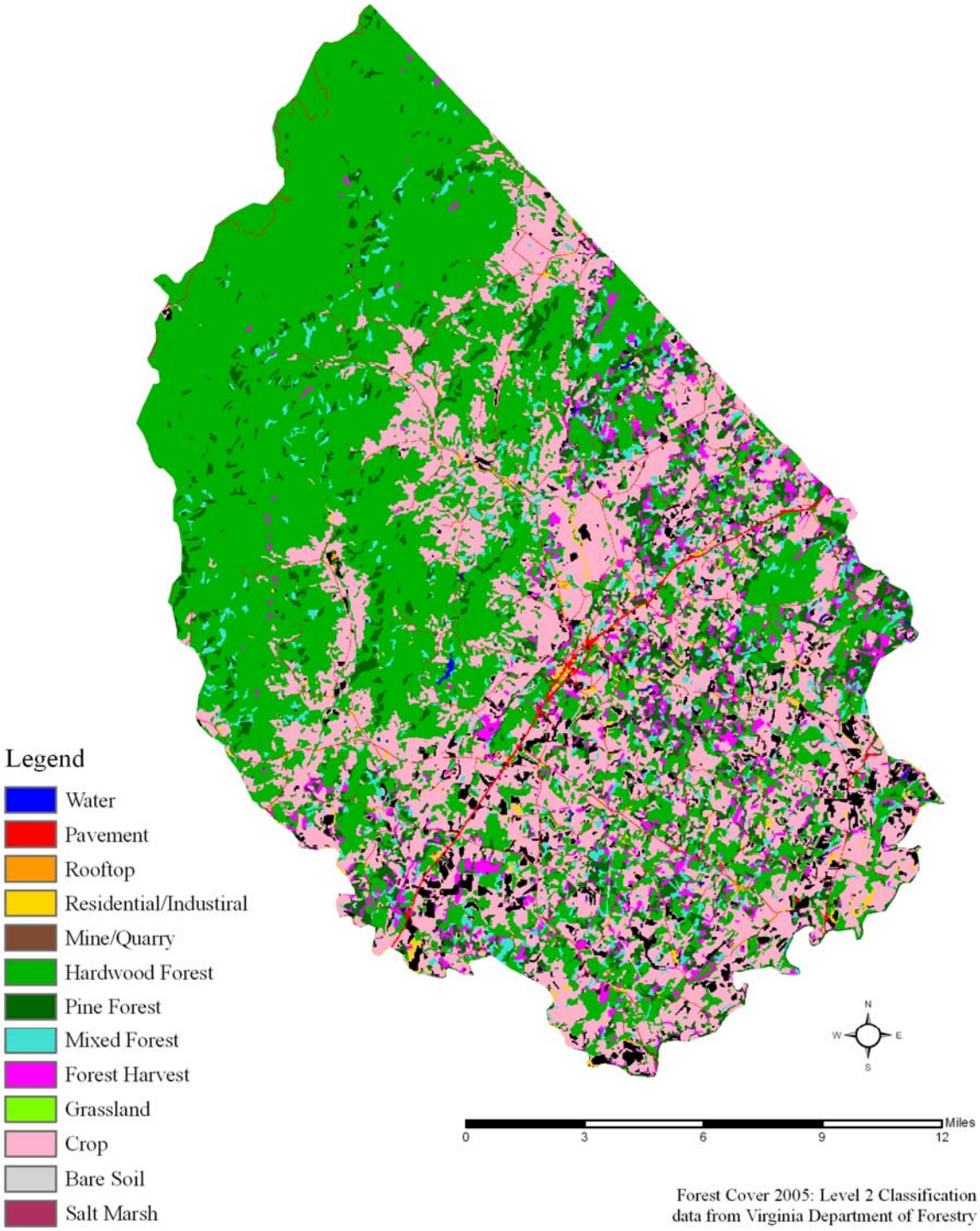


Figure 24. Madison County, Virginia Forest Cover (2005)

The American chestnut, once the largest and dominant element in the Ridge and Valley, Blue Ridge, and Inner Piedmont, has been extinct as a canopy species since the 1930s, the result of the chestnut blight, an introduced fungus that decimated the giant within a generation (Hebard, Double, and MacDonald 2007). While seemingly less heterogeneous than the Coastal Plain's rich wetland environments or the Ridge and Valley's varied elevational settings, the Piedmont, and particularly the Inner Piedmont, demonstrate significant irregularities of terrain that support a wide array of woody and herbaceous plant communities (Fleming et al. 2006). Within the modern oak-hickory forest, three oak species are most frequent: white oak, chestnut oak, and red oak, with hickory a major component (Terwiliger and Tate 1995). The oak-hickory forest varies with increasing elevation in the Blue Ridge, giving way to high elevation forests with boreal associations (Fleming et al. 2006).

As with streams and soils, ecological relationships can be explored at several scales that become more dynamic with specificity. The Virginia Natural Heritage Program, the State agency charged with biodiversity inventory and stewardship, employs a four-tiered vegetation classification. Derived from the patch-corridor-matrix model of landscape ecology (Forman 1995), the classification is designed to emphasize ecological complexity within large regions often described as homogeneous.

Within the Terrestrial System (the broadest and most stable of the classification schemes), the current study area is divided into four *ecological classes*, identified by gross climatic, geographic and edaphic similarities (Fleming et al. 2006; Table 8).

Table 8. Natural Community Groups of the Study Area *(after Fleming at al,* 2006).

Ecological Class	**Description**
High Elevation Mountain Communities	Above 3500′ amsl; diverse vegetation rich in northern species
Low Elevation Mesic Forests	Below 3500′ amsl; mesophytic to sub-mesophytic forest vegetation
Low Elevation Dry and Dry-Mesic Forests and Woodlands	Below 3500′ a.s.l; xerophytic to submesophytic forest and woodland vegetation
Low Elevation Rock Outcrops and Barrens	Below 3500′ amsl; edaphically-controlled woodland, scrub, herbaceous, and moss/lichen vegetation

Nested within the ecological class are varieties of *ecological community groups:* "an assemblage of co-existing, interacting species, considered together with the physical environment and associated ecological processes, that usually recurs on the landscape" (Fleming et al. 2006; Young et al. 2006). Today, the distinguishing factor of a natural community group is its lack of anthropogenic disturbance, or long-term recovery from such disturbance, so that it approximates conditions prior to European settlement. Eighteen natural community groups that may approximate undisturbed colonial-era vegetation regimes have been mapped in Madison County (Table 9).

Table 9. Ecological Classes of the Study Area (after *Fleming et al. 2006*).

Community Group	**Hydrologic Unit**
Central Appalachian Northern Hardwood Forest	E14
Eastern Hemlock-Hardwood Forest	E11; E14
High Elevation Acidic Heath Barren	E03
High Elevation Outcrop Barren	E03; E14
High Elevation Seepage Swamp	E14
Low Elevation Basic Outcrop Barren	E14
Mafic Fen/Seep	E14
Montane Mixed Oak-Oak Hickory Forest	E14
Mountain/Piedmont Acidic Seepage Swamp	E11
Mountain/ Piedmont Basic Woodland	E14
Northern Red Oak Forest	E14
Southern Appalachian Cove Forest	E03
Oak/Heath Forest	E14
High Elevation Boulderfield Forest	E14
Basic Mesic Forest	E13
Rich Cove/Slope Forest	E11; E12
Basic Oak-Hickory Forest	E13
High Elevation Boulderfield Forest	E14
Mountain/Piedmont Basic Seepage Swamp	E11

Within each community group are a number of *community types* or associations that share definite environmental, structural, and floristic similarities. These are the most dynamic of the classification strata, subject to frequent change. For example, within the Northern Red Oak Forest community group is the Red Oak/White Oak/ Blueberry Forest Type. Both the community group and community type are important to the study of hunter-gatherer/environmental interactions and will be further explored in Chapter Five.

Modern Climate of the Upper Rappahannock River Valley

The present-day climate of Virginia is classified as "humid subtropical (Koeppen Cfa)", although Blue Ridge and Appalachian Plateau elevations above 3000 feet amsl fall within the "humid continental (Köeppen Dwa)" classification (Kottek et al, 2006; Figure 25). The division of climate zones within the study area is significant; humid subtropical climates are characterized by hot, humid summers, mild winters, and significant year-round precipitation, while humid continental climates have greater temperature extremes and variable weather patterns, being more influenced by polar air masses (Hayden and Michaels 2000). For example, the greatest twenty-four hour snowfall on record for Virginia was recorded at 3450 feet amsl at Big Meadows in the Madison County Blue Ridge (33 inches), as was the greatest twenty-four hour rainfall event (23.88 inches). More recent palynological studies of the region (Litwin et al. 2004) demonstrate significant differences in high- and low-elevation natural communities throughout the Holocene.

Paleoclimate and Vegetational Reconstruction of the Upper Rappahannock Valley

The changing hunter-gatherer lifeways hypothesized for the study area took place within the context of well-documented macro-scale climatic changes of the Terminal Pleistocene and Holocene in North America, often described at the biome level of

organization (Delcourt and Delcourt 2004). However, the proposed correspondence between hunter-gatherer settlement systems and environmental settings requires a small-scale (community) approach to ecosystem modeling (Carbone 1976; Delcourt and Delcourt 1987; Custer 1989; Dincauze 2000),

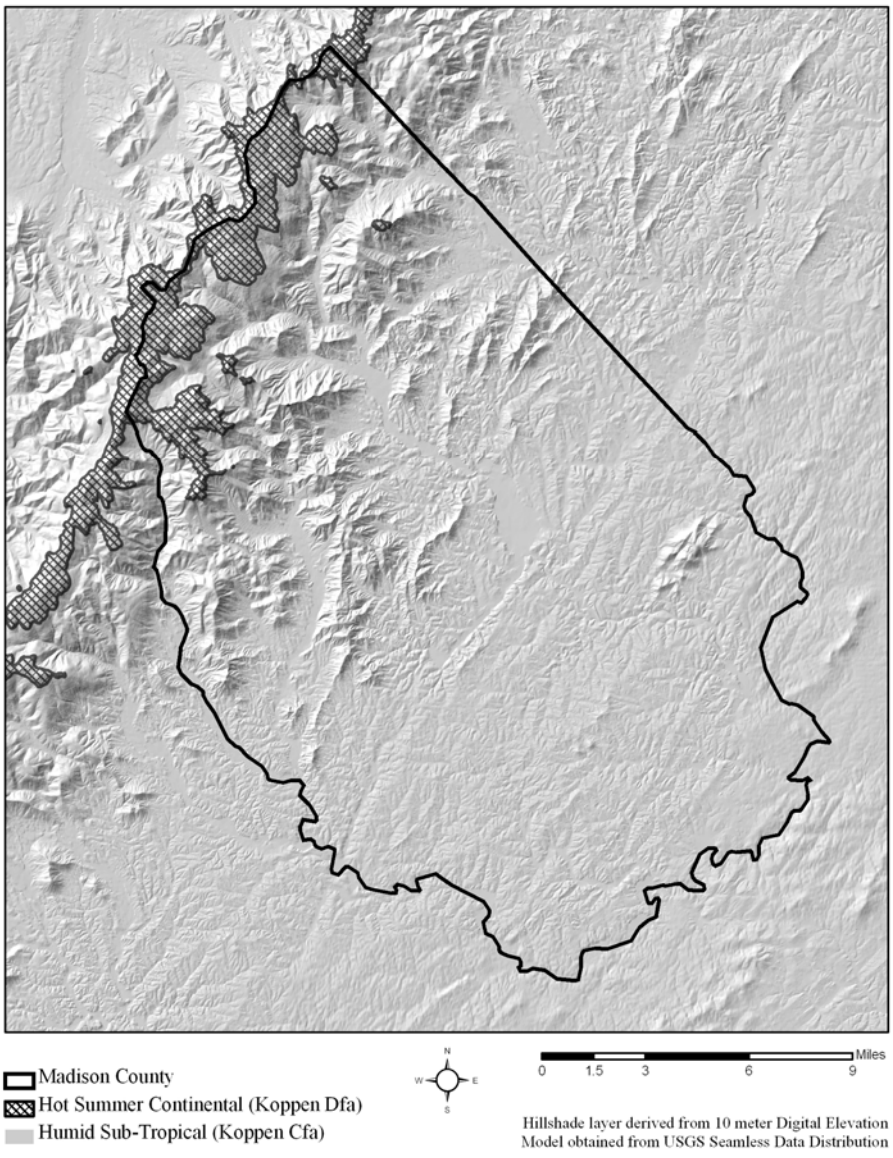


Figure 25. Köeppen Climate Zones, Madison County, Virginia

necessitating research into the localized effects of global climate trends (Williams et al. 2004). The following environmental reconstruction for the Blue Ridge, Inner Piedmont, and Mesozoic Basin relies on proxy data—primarily palynological samples and geomorphological studies—and modern analogs to explain ecosystem dynamics, particularly rates of change in species replacement and ecosystem restructuring in response to climatic shifts. The compressed zonation of the study area is ideal for such a review, as "the best examples of climate change recorded in the vegetational record suggest that where a sharp ecotone exists, the pollen/macrofossil evidence provides a sensitive and rapid response to climate change" (Peteet 2000:1360). Ecotones, transition areas between two ecological communities, exhibit a mixture of species that can respond quickly to climate change, acting as refugia for elements whose main communities have migrated to other regions (Crumley 1993).

Regional pollen assemblages from preserved contexts, dating from 45,000 years ago to the modern period (Litwin et al. 2004), support the hypothesis that vegetational changes are in-phase with climate changes, making them an important variable in the study of human responses to environmental conditions. These assemblages indicate that the mechanism enabling forest zones to change in-phase with climate

shifts must happen internally and locally within each forest zone, in refugial plants within embedded microenvironments.

Equally significant is the finding that climate has been both a steady and persistent agent of change. A reconstructed sequence from the Blue Ridge (Litwin et al. 2004) demonstrates thirty-seven forest shifts over the past 40,000 years and a mean annual temperature variation of at least twenty degrees Fahrenheit. On average, forests experienced climate-related turnover less than every 1100 years. While the rate of change varied and became less frequent post-Full Glacial Maximum, at least six major changes are documented for the 15,000 years of human settlement in the region. Perturbations within broad climatic intervals indicate that the Terminal Pleistocene was not uniformly cool, nor was the Holocene uniformly warm.

Terminal Pleistocene (20,000-11,500 B.P.)

Macro-scale environmental reconstructions indicate that the pioneering First People "interacted with their environment on a regional scale during a period of major climate change and ecosystem reorganization" (Delcourt and Delcourt 1987). Two recent paleoclimatological studies in the Blue Ridge and Mesozoic Basin have produced robust, inter-regional environmental reconstructions of the study area for

the Last Glacial Maximum of the Wisconsin Glaciation (ca. 20,000 B.P.) to the Pleistocene/Holocene transition (11,500 B.P.). Deep coring in the Big Meadows mafic fen (44MA59/60/102) and geomorphological studies of the Kinsey Run and Moormans River Debris Flow (Litwin et al. 2004) have generated a reconstruction of the Northern Virginia Blue Ridge as a dynamic landscape. Pollen and phytolith studies associated with archaeological data recovery at the Brook Run Site (44CU122) in the adjoining Mesozoic Basin provide a highly detailed environmental reconstruction for the Younger Dryas (Voigt 2004).

Boreal forest dominated Eastern North America from the Laurentide Ice Sheet to 34 degrees north latitude in present-day southern North Carolina (Delcourt and Delcourt 2004). A coniferous-deciduous ecotone at this southern latitude began a time-transgressive shift northward with the warming of the Interstadial 1 between 17000 and 14700 BP (Delcourt and Delcourt 1993). This shift was also transgressive from lowland to upland, with the higher elevations of the Appalachians serving as refugia for boreal elements well into the terminal Pleistocene (Delcourt and Delcourt 1998). Rapid climate change associated with the Younger Dryas Stadial, from 13,000-11,000 B.P., resulted in the opening and eventual retreat of closed boreal forest as panregional phenomenon at the transition to the Holocene (Delcourt and Delcourt

1987; Kneller and Peteet 1993). Sediment coring at Big Meadows (3450 feet amsl) and adjoining Blue Ridge settings have produced a striking and detailed reconstruction

Table 10. Comparison of Blue Ridge and Mesozoic Basin Paleoenvironment, Terminal Pleistocene-Early Holocene

YPB	**Chronozone**	**Forest Type Blue Ridge**	**Forest Type Mesozoic Basin**	**Temperature**
20,000-17,000	Last Glacial Maximum	**Tundra and Periglacial Activity** at 3400+ feet a.s.l (solifluction lobes/patterned ground); **Full Boreal Forest** (Taiga): Fir, Larch, Spruce, Pine, Juniper, Birch, and Grasses in high elevation Blue Ridge; *shifts to* **Northeastern Spruce-Fir Forest**: all of the above plus Hemlock, but decreasing Spruce and Fir; minority Oak and Walnut in lower elevations	No Data	Cooling to Slight Warming
17,000-14,700	Interstadial 1	**Northern Hardwoods Spruce Forest**: all of the above, plus Hickory, with continued decrease in Spruce, Fir, and Birch	No Data	Increased Warming
14,700-12,700	Bolling-Allerod Interstadial	**Northern Hardwoods Spruce Forest**: decrease in Pine; slight increase in Oak, Beech, and Hickory at lower elevations	No Data	Continued Warming
12700-11570	Younger Dryas	Reversal to **Boreal Forest** at higher elevations; Reversal to **Northeastern Spruce Fir Forest** at lower elevations; occurred in first 300 years, with deciduous elements increasing by 12000 B.P.	**Northern Hardwoods Spruce Forest with novel plant associations (no modern analog):** Alder, Spruce, Jack Pine, Red Pine, Eastern White Pine, Tamarack	Abrupt Cooling and Aridity to Gradual Warming

of this period, with palynological studies of paleosols from the Brook Run Site (820 feet amsl) providing a comparison for the Younger Dryas Stadial (Table 10; Litwin et al. 2004; Vogt 2004). Terminal Pleistocene forests in the Blue Ridge fluctuated strongly in response to regional-scale climate shifts over short geologic time intervals. The warming of the the 18,000-12,000 B.P. period was abruptly interrupted by the Younger Dryas, with cooling of as much as fifteen degrees Fahrenheit occurring over a matter of decades (Litt et al. 2003). As will be discussed in Chapter Four, the first documented evidence of human settlement in the Upper Rappahannock most likely occurred during the Younger Dryas when boreal elements dominated even lowland forests. While the Blue Ridge studies rely on arboreal pollen from species for climatic reconstructions, the Brook Run study also captured pollen from edible herbaceous species such as raspberry/blackberry, goosefoot/amaranth, blueberry, and huckleberry for occupation layers dating to the Younger Dryas (Voigt 2004).

Early-Middle Holocene (11,500-3000 B.P.)

The Early-Middle Holocene generally coincides with the Early-Late Archaic cultural periods, and is often associated with climatic amelioration and the establishment of the Appalachian Oak Forest (Delcourt and Delcourt 2004). The transition from the

boreal forest of the Terminal Pleistocene to the hardwood deciduous forest was gradual for the first few centuries of the Holocene due to the abrupt cooling of the Pre-Boreal Oscillation (an extremely rapid, world-wide cold event), and transgressive from lowland to upland over an approximately 2000-year period (Table 11).

Table 11. Comparison of Blue Ridge and Mesozoic Basin Paleoenvironment, Early-Middle Holocene (after Litwin et al. 2004 and Voigt 2004)

YPB	**Chronozone**	**Forest Type Blue Ridge**	**Forest Type Mesozoic Basin**	**Temperature**
11,570-11,300	Pre-Boreal Oscillation	**Northern Hardwoods Spruce Forest** at higher elevations, plus Hemlock; **Northern Hardwood Forest** in lower elevations	**Continuation of Northern Hardwoods Spruce Forest**	Abrupt Cooling
11,300-9,000	Boreal	**Northern Hardwood Forest** at higher elevations; emergence of **Appalachian Oak Forest** at lower elevations: Oak, Pine, Hickory, Birch, Beech, Hemlock	Emergence of **Appalachian Oak Forest**: White Oak, Red Oak, Beech, American Chestnut, Yellow Poplar	Gradual Warming
9000-5000	Holocene Climatic Optimum	**Appalachian Oak Forest** throughout the Blue Ridge; transition to **Oak-Hickory-Pine Forest** and/or **Southern Mixed Forest** on ridgetops between 6000-4000 B.P.	No Data	Increased Warming and Aridity
5000-3000	Sub-Boreal	**Oak-Hickory-Pine Forest;** transition to **Appalachian Oak Forest**	No Data	Gradual Cooling

With the onset of the Boreal chronozone at 11,300 B.P., the retreat of the polar air front and renewed intrusion of tropical air masses may have initiated Holocene erosion and debris flow activity on the eastern side of the Blue Ridge in the Inner Piedmont.

This is particularly significant for the formation of debris fans that became the focus of human settlement during the Archaic Period. At several sites east of the Blue Ridge, Holocene debris fans are entrenched into Pleistocene fan sediments and may record a shift in dominant depositional processes from braided stream to infrequent debris flow episodes (Kochel and Simmons 1986). Radiocarbon dating indicates that depositional episodes associated with Blue Ridge debris flows are separated by 3,000-4,000 years of inactivity and that some portions of the Central Blue Ridge have seen at least three major debris flow episodes during the Holocene (Eaton 1999). Higher elevations were also affected by the increasing aridity of the Boreal: sediment and palynological analysis at Big Meadows indicate a disconformity between the land surface of the Younger Dryas and that of the Boreal (Litwin et al. 2004). The earliest landscape encountered by the first human occupants at Big Meadows (ca. 9000 B.P.) was erosional (Nash 2004).

The Appalachian Oak Forest was established throughout the Blue Ridge by 10,000 B.P. (Litwin et al. 2004). Unstable plant communities characterized this transitional era, however, with remnants of the once-pervasive boreal forest restricted to refuges in the highest elevations. During the Climatic Optimum of 6000-4000 B.P., when the Northern Hemisphere experienced the warmest climatic conditions of the Holocene to date, forests of the highest ridges may have shifted to oak-hickory-pine associations or a southern mixed forest (Litwin et al. 2004), the latter blanketing the lowlands. The extreme dryness of this interval is associated with forest fires, and while the discussion of natural or anthropogenic sources of ignition continues, some ecologists argue that the Appalachian Oak Forest was shaped by anthropogenic fire management (Delcourt and Delcourt 1998; Brown 2000; Patterson 2006). Such practices would have cleared forest openings and encouraged fire-tolerant hard mast species such as oak and chestnut. A critical result was the creation of habitat for large browsing herbivores such as elk and white-tailed deer. The open landscape would have been rich in soft mast, major food supplies for black bear and smaller mammals, as well as wild turkey (Carroll et al. 2002). Neoglaciation in the Northern Hemisphere began with the slow cooling of the Sub-Boreal chronozone; macro-scale paleoenvironmental reconstructions of Eastern North America characterize climate

and vegetational cover as effectively stabilized to modern conditions by ca. 3000 B.P. (Delcourt and Delcourt 1985).

Late Holocene (3000 B.P.-Modern)

Macro-scale paleoenvironmental reconstructions of Eastern North America indicate that climate and vegetational cover were effectively stabilized to modern conditions by 3000 B.P. (Table 10; Delcourt and Delcourt 1985). Known as the Sub-Atlantic episode and roughly corresponding to the Woodland cultural period, climatological events of the Late Holocene contributed to further alluvial fan and floodplain development. Two major zones of the Eastern deciduous forest divided Virginia: the Oak-Pine Forest of the Outer Piedmont and Coastal Plain and the Appalachian Oak Forest of the Inner Piedmont, Blue Ridge and Ridge and Valley (Table 12; Delcourt and Delcourt 2000). The study area falls within the latter; at present, more specific vegetational history awaits further palynological studies in the Blue Ridge and Inner Piedmont.

Evidence of localized, catastrophic environmental change in the Virginia Blue Ridge during the Sub-Atlantic comes from a study of a rapid mass movement event in Madison County (Wieczorek et al. 1996). Dissecting a co-alluvial fan in the upper

Table 12. Late Holocene Paleoenvironment (after Litwin et al. 2004)

YBP	Chronozone	Blue Ridge Forest Type	Temperature
3000-1200	Sub-Atlantic	**Appalachian Oak Forest** with Chestnut and Hickory dominant; open high elevation basins	Cool, Moist
1200-700	Medieval Climatic Optimum	**Appalachian Oak Forest** with Chestnut and Hickory dominant	Abrupt Warming
700-120	Little Ice Age	**Appalachian Oak Forest** with Chestnut dominant	Abrupt Cooling
120-present	Modern	**Appalachian Oak Forest** with Hickory and Pine	Gradual to Abrupt Warming

Rapidan River basin, the Kinsey Run debris flow exposed a geomorphological record of similar past events. Radiocarbon dates bracket the last episode of this magnitude between 2480 B.P. and 2050 B.P. with studies from Nelson County indicating a similar pattern in the Upper Tye River basin (Nash and Eaton 1997).

Geomorphological analysis of James and Potomac River alluvial settings upstream of the Fall Line provides a regional comparison for the Upper Rappahannock River. Hayes and Monaghan (1998) hypothesize a peak in floodplain accumulation around 2000 B.P., marking a high flood interval. Floodplain surfaces rapidly aggraded. By 1000 B.P., declining flood frequency and lower sedimentation rates led to the formation of stable deposits in floodplain settings and the establishment of mature riparian forest. Stahle et al. (2007) have recently provided tree ring evidence of a

continent-wide 'megadrought between 700 and 100 B.P., with the most intense and prolonged interval during the late Sixteenth Century.

Today, the prevalent vegetation for the Northern Blue Ridge is mixed oak and oak-hickory dominated by chestnut oak, white oak, black oak, northern red oak, tulip poplar, and various hickories. At higher elevations, red oak drops out and northern red oak dominates the ridges. Xeric oak/heath and pine-oak/heath communities are more widespread on metasedimentary bedrock areas, while rich cove forests, hemlock forests, northern hardwood forests, and other mesophytic communities occupy smaller habitats throughout (Wilson and Tuberville 2003).

When left undisturbed, the modern natural vegetation in the Inner Piedmont is mixed oak or mixed hardwood forest, dominated by beech, white oak, chestnut oak, northern red oak, tulip poplar, and various hickories. Eastern hemlock forests, recently decimated by the invasive insect, the hemlock wooly adelgid, were found on sheltered, north-facing stream bluffs and ravines. In the Mesozoic Basin, the flat landscape and clay-rich soils form hardpans, supporting stunted oak and oak-hickory-ash forests, as well as isolated wetlands. During the Little Ice Age, the region may have been covered in oak savannas and prairies.

The overviews of environmental history and natural resources in this chapter emphasize the physical heterogeneity of the Upper Rappahannock region. Dominated by uplands, the study area exhibits remarkable variation in resource type and distribution. Coupled with data on climatic shifts and perturbations of the past 13,000 years, the environmental background creates a strong image of a landscape in flux, sometimes on a generational scale. In order to examine the meaning of such variation and change for human populations, Chapter Four presents a parallel overview of the known culture history of the region.

Chapter Four: Culture History of the Northern Virginia Piedmont and Blue Ridge

Constituting the "first formal paradigm for Americanist archaeology" (Lyman et al. 1997b:v), culture history is loosely defined as both process and product: the construction of the history of past cultures and the identification of material culture markers signifying cultural change. Relying on the methods of artifact typology, chronology, and regional classification, culture history offers a comparative base of units believed to represent anthropologically meaningful cultures (Thomas 1998). As the major archaeological language of space and time, culture history is a necessary element of the present study. In providing a culture history baseline for the prehistoric period of the Upper Rappahannock region, this chapter also considers the contributions of culture history to modern archaeological research here. Regions such as the study area that have seen limited archaeological study are perhaps the most promising reminders that "the description of the development, diffusion, and movement of cultural traits establishes a space-time systematics which forms an essential building block for research (Preucel and Hodder 1996a:6-7).

Archaeological Studies in the Northern Virginia Piedmont and Blue Ridge

In the Middle Atlantic, culture history was the focus of the earliest systematic archaeological study (Holmes 1903), with regional syntheses based on 'traits' or attributes at the artifact and site level created through the early 1970s (Cross 1941; Manson et al. 1944; Schmitt 1952; Evans 1955; Stephenson and Ferguson 1963; Coe 1964; Ritchie 1969 [1980]; Broyles 1971; Kinsey 1972). The widespread distribution of cultural traditions is assumed in these syntheses, resulting in their being applied far from the type sites yielding *in situ* diagnostic artifacts (Figure 26).



Figure 26. Landmark Culture History Sequences Cited in Interior Virginia Archaeology

With the advent of processualist approaches in the 1960s, culture history, pigeonholed as descriptive and particularistic, fell out of favor as an explicit endeavor of American archaeology (Willey and Sabloff 1993). Cultural similarity over time and space, once characterized as a consequence of transmission, came to be viewed as a consequence of external constraints (Dunnell 1990), which, in turn, became a focus of the New Archaeology. Typology building and the development of regional cultural syntheses came to a halt, even though culture history continues as the transcendent framework within which current archaeology is conducted (Preucel and Hodder 1996a:6). Indeed, it "underpins everything we do" (Lyman et al. 1997a:v).

In the Middle Atlantic, recent culture history studies tend to focus on the distribution of previously defined artifact types as markers of cultural traditions and regional interactions (Kuhn 1996; Stevens 1998; Stewart 1998b; Dent and Jirokowic 2001; Espenshade 2001; Wall 2001). In daily practice, primarily in cultural resource management (CRM) archaeology, the culture history syntheses developed from the 1940s to the 1970s are commonly referenced for the identification of artifact types, despite recent demonstrations that the "uncritical borrowing of...typologies from

elsewhere...has seriously limited a broader understanding of both technological traditions and regional prehistory"(Chilton 1996:67).

With the exception of systematic research conducted by the Fairfax County Park Authority (Crowell 2008), the Virginia Piedmont is underreported in the archaeological literature (Hantman 2007), a situation that was brought to the attention of the archaeological community over twenty-five years ago at the first Conference on Piedmont Archaeology (Wittkofski and Browning 1983). At the same conference, Gardner was critical of the concept of 'Piedmont archaeology,' commenting that "the Piedmont lacks any external or internal differentiation that would set it apart from other areas and lend credence to its being considered as an actual or quasi-natural and/or cultural area" (1983b:153). It is reasonable to say that the Piedmont, compared to other geographic regions of the Middle Atlantic, has seen less coverage than adjoining regions, making it difficult to determine broader regional similarities and differences through prehistory.

The first documented archaeological investigation in North America took place twenty miles south of the present study area. In *Notes on the State of Virginia* (1982 [1787]), Jefferson speculated about the prehistoric Native American inhabitants of the Piedmont, recording his own excavation of an accretional burial mound in

Albemarle County (Hantman and Dunham 1993). Between that time and the early 1920s there is only incidental mention of a prehistoric past in the region.

The first professional archaeologist to visit the area was Gerard Fowke of the Smithsonian Institution's Bureau of American Ethnology, who came through Madison County in the 1890s while scouting locations of burial mounds. While no such features were documented for the county, Fowke (1894) described a steatite quarry (44MA4) in the east-central section near Fordsville. After Fowke's visit, no further archaeological study was undertaken in the region until David Bushnell, also of the B.A.E., (1930; 1935; 1940) investigated the locations of mapped contact-period villages of Siouan-speaking peoples at the falls of the Rappahannock River near Fredericksburg. *The Manahoac Tribes in Virginia, 1608* (1935) contains few references to the Inner Piedmont, although the work mentioned the recovery of lithic artifacts made of non-local materials in the region. While Bushnell never undertook archaeological survey or excavation in the Inner Piedmont, his visit spurred an interest among amateur collectors.

Local historian and life-long resident Claude Yowell devoted a chapter to "The Indians of Madison County" in *A History of Madison County* (1926), reiterating Capt. John Smith's and Thomas Jefferson's discussions of a Manahoac occupation of the

area. Yowell went on to discuss local legends regarding Native peoples who interacted with the first German settlers in the Hebron Valley in the mid-1720s. Mr.Yowell, an avid artifact collector, was knowledgeable of site locations throughout Madison County. The three thousand-piece Claude Yowell artifact collection was donated to the Madison County Historical Society in 1992, and while there is little supporting documentation or provenience information, it offers a general snapshot of projectile point types and raw materials from the region.

Titus Ulke, a professional entomologist who frequented the antiquarian circles of Washington, D.C. in the 1920s, brought his interest to Madison County in the mid-1930s. While staying at Graves Mountain Lodge in Syria (along the Rose River), he befriended Mrs. Kate Graves, who would become a founding member of the Archeological Society of Virginia in 1940. Together, they collected numerous stone artifacts from the 'Arrow Patch,' now known as the Arrowhead Patch Site. Ulke (1936) penned a draft report of findings in possession of the Graves family that describes "an old orchard and cornfield . . . where she (Mrs. Graves) had picked up a marvelously large and interesting collection of Indian artifacts." This collection, a portion of which is on display at the Lodge, is still maintained by the family and is incorporated into the present study.

The first excavation to take place in Madison County was the work of C.G. Holland and Mrs. Kate Graves at the Henshaw Rockshelter (44MA1). Although not trained as an archaeologist, Holland, a psychology professor at the University of Virginia, had a great interest in the prehistory of the Piedmont and Ridge and Valley and was recognized as an authority on western Virginia archaeology. Authoring several works on the subject still in use today (1955; 1960; 1970), he first partnered with Clifford Evans and Betty Meggars of the Smithsonian Institution's Department of Anthropology on state-wide ceramic studies and patterned subsequent work on their methods (1955). Mrs. Graves worked with Holland on several excavations in Madison and Greene Counties, the results of which were published in the *Quarterly Bulletin of the Archeological Society of Virginia* (1951; 1967). Their rockshelter excavations in Madison County, as well as Holland's work in Greene County (1964) yielded a stratified sequence of prehistoric habitation beginning with the Halifax tradition of the Middle Archaic (ca 6000 B.P.) and continuing through the Late Woodland with the Keyser ceramic tradition (ca 550 B.P.). In the 1970s Holland and several University of Virginia students recorded approximately twenty-five archaeo-logical sites in Madison County (Virginia Department of Historic Resources Data Sharing System 2008).

The Department of Anthropology at the University of Virginia undertook the first systematic research in the region with a series of cultural resources management studies in Shenandoah National Park (Foss 1977; Hoffman 1975; Hoffman et al. 1975; Hoffman et al. 1976; Hoffman et al. 1979; McLearen 1976). This ecologically-based program resulted in the discovery of several hundred prehistoric and historic archaeological sites and the development of a predictive model of settlement and subsistence for the Blue Ridge. As described in Chapter Two of this work, general findings regarding the prehistoric use of the mountains include the location of eight landforms of high site location probability, each accessing multiple microenvironments and reliable water sources (Boyer 1982). Sites range in cultural affiliation from the Middle Archaic through the Late Woodland and represent a variety of sizes and functional uses, including base and foray camps, rockshelters, quarries, and transient stations. Although the field studies were confined to the Blue Ridge, they took into consideration known sites on the western and eastern flanks of the mountains in the Shenandoah, James, and Rappahannock River drainages so as to consider the movement of seasonally-based populations who moved between the mountains and the foothills. Overall, the UVa site sample and analysis resulted in the hypothesis that the Inner Piedmont was a 'staging area' for larger, more settled populations who lived in the Outer Piedmont.

The remaining long-term research program in the immediate study region is also based in Shenandoah National Park, represented by the cultural resources studies of Inashima at several sites in Madison, Greene, and Page Counties (1984; 1986; 1988; 1990a), as well as the author's work at Big Meadows, Old Rag, and Limberlost (Nash 2004; 2005b; 2006a). Inashima's surveys and limited excavations support the general findings of Hoffman et al, with the addition of several Early Archaic (ca. 10,000 B.P.) and ceramic-bearing sites dating to the Middle and Late Woodland (1800-800 B.P.) sub-periods. In addition, he found intensive use of the Blue Ridge during the Late Archaic sub-period (ca 4200-3200 B.P.). His more recent work includes discussions of ethnobotanical remains from several northern Blue Ridge sites, including some in Madison and Page counties, where fire hearth excavations and flotation of feature soils yielded evidence of the prehistoric use of wild species at high-elevation sites during the Late Woodland sub-period (Inashima 1990b). The author's work in the Park is discussed in detail in the following chapters.

Aside from small cultural resources management and research studies on file with the Virginia Department of Historic Resources, no systematic research within the Inner Piedmont of the Rappahannock drainage was undertaken prior to the present study. In a systematic study of Albemarle County, Hantman (1985) sampled from the Inner and Outer Piedmont of the James River drainage, recording forty-five

Archaic period site components and twenty-eight Woodland period site components. However, a bias toward lower elevations in the sampling strategy was noted and Hantman cautioned that "areas along the foothills of the Blue Ridge and on the southwest and northeast corner of the county are still devoid of systematic survey coverage" (1985:89).

The Outer Piedmont region in the upper Rappahannock drainage has seen limited study by archaeologists. Cultural resources management projects resulted in the documentation of a small number of sites in Orange and Culpeper Counties; the majority of the sites from this area on file with the Virginia Department of Historic Resources were individually recorded by members of the Archeological Society of Virginia or local collectors and landowners.

One segment of the Upper Rappahannock drainage which is transitional between the Inner and Outer Piedmont has received a considerable amount of attention by professional archaeologists: the Somerset/Montpelier Station area. Hampstead Farm, located at Somerset, was surveyed by Wittkofski, Egloff, and Speiden and found to contain components ranging from the Early Archaic sub-period to the Late Woodland sub-period (Wittkofski 1986). Located near this property on the Rapidan River is the Rapidan Mound (44OR1), a Late Woodland accretional burial mound

first tested by Gerard Fowke in 1892 (Hantman 1993). The mound was partially excavated by Holland (Holland et al. 1983), the remainder being excavated by the University of Virginia (Dunham 1994). While little survey of the property surrounding the mound was undertaken, it is hypothesized that the burial feature was the focal point for Siouan-speaking Monacan villages distributed within a thirty-mile catchment along the lower Rapidan River. Hantman, Dunham, and Gold (2003) and Gold (2004) provide a greater context for the Rapidan Mound in recent works about the Late Woodland collective burial tradition of western Virginia.

Systematic research at the Montpelier property, first by the National Trust for Historic Preservation (Lewis and Parker 1987), and then by the University of Virginia (Klein et al. 1988) led to the discovery of thirty-eight prehistoric sites on sections of 2600 acres of land. Many of these were identified as non-diagnostic lithic scatters, but datable sites range from the Late Archaic-Early Woodland sub-periods.

Culture History of the Upper Rappahannock Valley

Portions of the culture history of the upper Rappahannock Valley can be pieced together from several volumes that provide overviews of the north-central Virginia Blue Ridge region based on limited archaeological and historical studies (Hoffman et al. 1976; 1979; Inashima 1986; 1992; Lambert 1989). However, the culture history of

this region-especially that of its Native American occupants-relies heavily on studies undertaken in adjoining regions (Gardner 1984; 1987). In part, the lack of writing and research on the region is a direct result of scholars' assumptions about the uplands—that they served as barriers between cultures settled in the Great Valley or Outer Piedmont/Falls Zone, that they were peripheral to important lowland developments, and that upland sites are typically small and shallow, offering little insight into cultural processes (Nash 1999a). In order to develop a context for this project, the following overview is offered, with a focus on specific information from north-central Blue Ridge/Piedmont studies. Descriptions of diagnostic artifacts (projectile points and ceramics) used as chronological markers, along with their associated radiocarbon assays, are included in Appendix I.

Pre-Clovis 18,000 B.P. (?) - 13,500 B.P.

Still somewhat controversial with only a few candidate sites in North and South America, the hypothesis for a ca. 18,000-14,000 B.P. initial human occupation of the western hemisphere has gained significant adherents in recent years (Collins 2002; Goodyear 2005; Bradley and Stanford 2005). The more commonly-accepted Bering Land Bridge Migration Theory held that humans, carriers of Clovis culture, entered far northwest North America from northeastern Asia ca. 13,000 B.P., migrated across Beringia (Meltzer 2006). They then migrated south to the Great Plains, passing

through an "ice-free" corridor between the huge Cordilleran and Laurentide glaciers, ultimately settling the Americas in a few generations. According to this scenario, the ice-free corridor between the two glaciers opened several thousand years later than the proposed early, or Pre-Clovis, sites. While the details of the Pre-Clovis hypotheses are not necessary for this discussion, the existence of one of these early sites in the Virginia Coastal Plain, Cactus Hill (McAvoy and McAvoy 1997), merits discussion. Here a small band occupied a sandy hill overlooking the Nottoway River. One piece of white pine charcoal recovered from a possible hearth feature was radiocarbon dated to almost 17,000 B.P. Associated with the charcoal were stone tools (blades, blade cores, and simple bifaces) and quartzite debitage. Currently, all known Pre-Clovis sites are small with a very limited range of stone tools that bear some similarity to the Upper Paleolithic blade technologies of northern China (Adavasio 2003). More recent findings from the Virginia and Maryland Eastern Shore are taken as evidence of a Solutrean culture association and a southwestern European origin for the earliest Eastern North American occupants (Stanford 2008). Artifact collections from the Delmarva Peninsula contain unfluted bifacial forms and tool assemblages identified as 'Solutrean-like', with one such specimen recovered in association with mastodont bones and ivory from the Outer Continental Shelf by scallop dredging operations. An uncalibrated radiocarbon assay of 22,600 B.P. on ivory collagen doubles the human occupation of the East Coast, and if proven to be

from solid context, will further challenge accepted notions about human settlement in the New World (Stanford 2009).

Paleo-Indian Period (13,500 B.P.—11,000 B.P.)

Inashima (1992) notes that very little is known about the early cultural chronology of the Virginia Blue Ridge, in large part due to assumptions made by previous researchers about the Blue Ridge being uninhabitable until 9000 B.P. (Hoffman and Foss 1980; Gardner 1987). While the terminal Pleistocene climatic and environmental conditions of boreal forest and spruce parkland in the lower elevations and alpine tundra in the highest elevations might have made the Blue Ridge marginal for sustained human occupation (Carbone 1976), a growing body of evidence indicates that the region was seasonally inhabited by highly mobile foragers whose travels began at quarry sites of some distance (Nash 1998; 2008a).

The Paleoindian period of the Blue Ridge region is best known though excavations at the Flint Run Complex in Warren County, located on the South Fork of the Shenandoah River four miles west of the Park boundary at Gooney Run Overlook (Gardner 1974; 1989). Evidence from the Thunderbird (44WR11) and Fifty (44WR50) sites supports the interpretation of a hunting emphasis for the site occupants of this large, quarry-related riverine base camp, reflected in a specialized tool kit oriented

toward butchering and processing. Other site types in the Paleoindian settlement system include the quarry site, the quarry reduction site, base camp maintenance stations, and outlying foray sites (Custer 1990).

Recent radiocarbon dating of Late Pleistocene megafaunal assemblages demonstrates that these species were extinct in Southeastern North America prior to the peopling of the region (Boyd 2003), and that the first human inhabitants most likely hunted deer, elk, moose, and other modern species. While no direct evidence for plant exploitation has been found for this period in western Virginia, it is probable that gathering was also a subsistence activity for these populations, as they settled near poorly drained areas where marsh-based resources were available (Boyd 1989). The parkland/alpine setting offered a diverse, but diffused set of resources, necessitating a relatively mobile existence for small groups. As noted by Turner (1989), such an existence was probably restricted both by culturally mediated macroband territories and the need for access to known resources.

The earliest diagnostic of the Paleo-Indian period is the fluted Clovis point (post-13,500 B.P but prior to 12,500 B.P.), followed by the Mid-Paleo point (present by 12,800 B.P.), and the Hardaway-Dalton point (Gardner 1989). Microcrystalline lithic raw material was preferred by these hunting-focused populations, with settlement

geared to locations where such material was available. Indeed, the settlement of the Flint Run area was associated with local outcroppings of jasper of the Blue Ridge Overthrust Fault, the cyclical settlement model predicated on the need to periodically return to the quarry.

The Blue Ridge may have been occupied infrequently during the Paleoindian period; habitation sites would have been "limited to small-scale hunting camps peripheral to the larger-scale riverine/quarry-based sites" like Thunderbird (Inashima 1992:111). Very few artifacts associated with this period have been documented from sites in Shenandoah National Park or the contiguous Blue Ridge. Only three Paleoindian diagnostics are found in the Park's collections: a green chert Clovis point reportedly found along Skyline Drive during the late 1930s; a tan quartzite basally-fluted preform (Inashima 1992); and a possible quartz Hardaway-Dalton fragment from 44PA200 (Inashima 1994). That none of these is manufactured from Flint Run and other Blue Ridge Overthrust Fault jasper is an indication that the first occupants of the high elevation Blue Ridge were unfamiliar with this resource and not affiliated with the groups who frequented those quarries. This also holds for the McDaniel Site in adjacent Greene County, where a single-fluted/parallel-flaked chert point (identified as Clovis) was excavated on a small floodplain terrace at the base of Swift Run Gap (MacDonald et al. 2005). Even more puzzling is the Brook

Run Site in adjacent Culpeper County, a jasper quarry with no identifiable Clovis tradition artifacts despite terminal Pleistocene/Early Holocene radiocarbon dates (Voigt 2004). Survey in the Inner Piedmont offers evidence of Mid-Late Paleoindian occupations of the Blue Ridge foothills by small, highly mobile groups, possibly associated with the Plano cultural tradition of the Great Lakes and northern Middle Atlantic (Nash 1998; 2008a). A Blue Ridge foothills connection for the Plano tradition has been proposed by Childress and Blanton (1997) for the Leesville Lake Site (44PY152) in the far southern Inner Piedmont. Together, this evidence points to a complex process of peopling of this area that continued through the Paleoindian period.

Early Archaic Sub-Period (11,000 B.P.- 8800 B.P.)

Gardner (1989) emphasized a strong continuity between the Paleoindian and Early Archaic sub-periods. Early Archaic lithic raw material preference, tool kit curation, and site location overlapped with that of the Paleoindian period, although diagnostic projectile point styles changed. The settlement pattern continued to reflect the mobility of the band-level groups inhabiting the region; however, their movements became more circumscribed throughout the Early Archaic, so that by the end of the period the continuity with the Paleoindian lifeway appears to have diminished (Gardner 1986; Custer 1990). In its place was a generalized foraging

pattern of seasonal movement centered on the more intensive exploitation of new and varied ecological niches. Upland environments saw greater use, with seasonal transhumance based on vertical zonation reflected in an increasing number of small foraging camps in the Blue Ridge (Gardner 1983a; Barber et al. 2003). The onset of this more intensive use of the mountains coincides with the use of the Antietam quartzite deposits on the western edge of the central and northern Virginia Blue Ridge (Hoffman and Foss 1980; McLearen 1992).

Continued inter-regional interaction is seen in the wide distribution of basic forms of Early Archaic projectile points. Corner-notched points (Palmer tradition) appeared in the toolkit at 10,000 B.P. along with the chipped stone axe and the drill. These points are often serrated (probably through resharpening on the haft) and basally ground. The introduction of corner-notching may signal a technological change, specifically the shift from the thrusting spear to the throwing spear (atlatl), but this issue is by no means settled (Gardner 1989). Other diagnostic projectile points from the early phase of this period include Kirk Corner-notched (Coe 1964). A shift to side-notched types (Kirk and Big Sandy) occurred by at least 9300 B.P., followed by a shift to stemmed varieties (Kirk), which terminated by 8800 B.P. With the appearance of side notching, the gradual shift away from microcrystalline lithic resources became more pronounced, and points made of metarhyolite (the closest

source of which is the Blue Ridge from Harper's Ferry to Gettysburg) appeared at the Thunderbird Site (Custer 1990).

Early Archaic diagnostics (Palmer and Kirk Corner-notched and Kirk Stemmed) have been recovered in excavated contexts (J Site, 44PA200, 44MA54, and 44AU152) in Shenandoah National Park. "Experimental evidence for exploitation of white-tailed deer is provided in . . . the identification of blood residue attributable to the Family *Cervidae* on two Kirk Serrated/Stemmed points from Shenandoah National Park" (Inashima 1994:212).

Middle Archaic Sub-Period (8800 B.P.-4500 B.P.)

The spread of deciduous forests continued throughout the Middle Archaic, a change that engendered the proliferation of vegetable foods and small mammals adapted to forested settings. The subsistence trend of general foraging became pronounced during this time, with an overall increase in the number of sites in all ecological zones (Gardner 1989). Toward the end of the period, the pattern of foraging changed to a more focused approach, with microband base camps appearing in the uplands and macroband camps in riverine settings.

Middle Archaic point styles of the western Virginia include bifurcate forms such as the 8800 B.P. LeCroy (Kneberg 1956) and 8500 B.P. St. Albans (Broyles 1971), the post-bifurcate Stanly (7500 B.P.), the contracting stemmed Morrow Mountain (7500-6000 B.P.), the large, Archaic Triangle (6000-4500 B.P.; Stewart 1998a), and Guilford (6000 B.P.; Coe 1964), and the side-notched Halifax/Brewerton of the terminal Middle Archaic (5500-4500 B.P.; Coe 1964; Ritchie 1980). The bilobate point may have evolved out of the LeCroy bifurcate as a regional, Piedmont tradition; variously named State Farm and Culpeper, it has been recovered from Middle Archaic contexts (Knepper 1995). The regionalized approach to Middle Archaic point manufacture signals a more localized focus to subsistence and social interaction (Barber 2001). Preference for microcrystalline lithic material was abandoned, with propinquity guiding lithic choice. The tool kit became more generalized, evidencing new additions related to seed and nut processing: grinding stones, mortars, and pestles (Gardner 1986).

Within Shenandoah National Park, Middle Archaic diagnostic points including LeCroy, Stanly, Morrow Mountain, and Guilford, have been recovered in excavated contexts from many sites (Inashima 1988, 1994). A large Archaic triangular point was excavated from a pre-Late Archaic context in Shenandoah National Park (Nash 2004). Poorly understood at present, this type has been recovered from Middle

Archaic contexts in the northern Middle Atlantic (Stewart 1998a). The terminal Middle Archaic style, Halifax, has been recovered from at least twenty sites, reflecting the population 'explosion' of that time (Hoffman and Foss 1980). Brewerton and Lamoka points (Ritchie 1980), which continued to be made into the Late Archaic in western Virginia, are not well-documented in the Blue Ridge but have been recovered from excavated contexts in the central and southern Ridge and Valley (Boyer 1982; Whyte 2007).

Late Archaic Period (4500 B.P.-3200 B.P.)

The beginning of the Late Archaic period correlates with the Holocene Climatic Optimum, characterized by extreme heat and dryness. Closed canopy deciduous forests covered the landscape, reducing the diversity of plant and animal species but increasing the hard mast production of xeric species. Human settlement patterns reflect the opportunity of highly productive, if seasonally restricted, environments. Riverine areas would have offered one such environment, with species of anadromous fish and mussels in abundance in the spring (Gardner 1987). Mountainous zones were attractive during the fall when the high biomass mature chestnut and hickory forests produced abundant harvests. In particular, the broad alluvial fans of the eastern edge of the Blue Ridge became the locations of large,

residential base camps, sites of seasonal dispersal that encircled larger base camps along river terraces and bottomlands (Holland 1980).

Projectile point styles of the Late Archaic period reflect a continued stylistic and cultural division in the Blue Ridge. At the beginning of the period, stemmed Savannah River broadspears (Coe 1964), generally made of quartzite, blanketed much of Virginia. These were often manufactured from greenstone in the Blue Ridge and Inner Piedmont (McLearen 1991; Nash 1999a). Savannah River points have been recovered from every environmental zone in the uplands- from base camps in the foothills and saddles to exploitive camps, transient stations, and quarry areas (Hoffman and Foss 1980). The Holocene Climatic Optimum has been referred to as the "florescence" of the Native occupation of the Blue Ridge, mirroring Joseph Caldwell's description of the Middle-Late Archaic as the time of "primary forest efficiency" (Caldwell 1958). Other additions to the toolkit include the soapstone (steatite) bowl and the ground, grooved axe. A recent review of radiocarbon assays associated with steatite bowls in Eastern North American concludes that while this artifact type was introduced during the Late Archaic sub-period, it most frequently occurs in Early Woodland contexts alongside early pottery (Sassaman 2006). In this view, the stone container, which often traveled far from its geological source, may be

best explained as significant for group- and alliance-formation, rather than as a utilitarian cooking vessel (Klein 1997; Hart, Reber, Thompson, and Lusteck 2008).

By 3800 B.P. the northern influence represented by the Brewerton and Lamoka projectile points continued in the Blue Ridge, signaled by the Susquehanna Broadspear, Lehigh/Koens-Crispin Broadspear, Perkiomen Broadspear, MacPherson, and the narrow-bladed Savannah River derivative, Holmes (Gardner 1986). The Koens-Crispin Broadspear (Kinsey 1972), commonly manufactured from chert and rhyolite, is described as a slightly later broadspear variant restricted in its distribution to the northern Middle Atlantic. Several have been recovered from sites in Shenandoah National Park (Nash 2003). The Susquehanna Broadspear (Kinsey 1972) is found along the Potomac River from west of the Fall Line near Washington, D.C. to the edge of the Allegheny Front and the Appalachian Plateau. The point is typically made of rhyolite and found with caches of rhyolite bifaces and soapstone (steatite) bowls in riverine settings. Few have been documented in the Blue Ridge (Inashima 1988) or the Inner Rappahannock Piedmont (Nash and Eaton 1997). The Holmes point, on the other hand, is found south and east of the Susquehanna distribution and is typically manufactured from quartzite; these are also found with steatite bowls in riverine settings (Potter 1982). Point forms meeting the Holmes description have been documented at many sites in the Blue Ridge (Inashima 1986)

and Piedmont. The Susquehanna, Perkiomen, and MacPherson types, as well as the Holmes type, are documented for the study area, the latter by far the most common. The occurrence of these northern and southern cultural types at several large Blue Ridge sites indicates overlapping territories or perhaps aggregation events involving multiple bands (Nash 2005c; 2008b; 2008c).

Early Woodland Sub-Period (3200 B.P.-2500 B.P.)

The Early Woodland was divided into three phases for the Middle Atlantic by Gardner and Carbone (n.d.): Early Woodland I (3200-2900 B.P.); Early Woodland II (2900-2700 B.P.); and Early Woodland III (2700 -2500 B.P.). These phases are distinguished in material culture by stylistic and technological variations in ceramic containers, the artifact type that has traditionally separated the Late Archaic from the Early Woodland. Based on present knowledge, there was much continuity between the terminal Late Archaic and Early Woodland in the Blue Ridge and Piedmont, so that many archaeologists refer to Early Woodland I as the "Transitional" (Mouer 1991). Ceramic technology was grafted onto a cultural base that developed out of the Late Archaic (Gardner and Nash 1990; Gardner 2000). Climatic change associated with the Atlantic/Sub-Boreal episode brought cooler and moister conditions to the Blue Ridge, and with them, a slight retraction of American chestnut stands. Blue Ridge site types for this period include small size, short

duration base camps and ephemeral camps (Inashima 1986). There is evidence for increasing sedentism associated with the more efficient exploitation of resources and possible experimentation with cultigens (Petraglia et al. 1993; Gallivan 1997) at large, Inner Piedmont riverine base camps.

Early Woodland I is recognized in the archaeological record with the appearance of Marcey Creek Plain ceramics, a trough-shaped, flat-bottomed ceramic bowl tempered with crushed steatite (Evans 1955). Hand-molded coarse quartz and shale tempered sherds found at sites along the North and South Forks of the Shenandoah River are interpreted as Marcey Creek cognates and may represent a period of experimentation with the new technology (Gardner and Nash 1990).

By approximately 2900 B.P., at the beginning of Early Woodland II, the hand-molding technique of ceramic manufacture was replaced by the annular ring technique consisting of coils placed on top of a molded base. These were then smoothed with a textile-wrapped paddle into a solid wall. The result was the coiled vessel form with a conoidal base known as Selden Island (Slattery 1946). These steatite-tempered, cord marked vessels have been recovered from the Corral Site (44WR57) and the Cabin Run Site (44WR3) on the Shenandoah River just north of Front Royal (Gardner 1986), and throughout the Potomac Piedmont (Gardner 2000).

Sand- or grit-tempered cord marked conoidal vessels appeared in the Shenandoah Valley and Piedmont by 2700 B.P., signaling the start of Early Woodland III. These ceramics are identical to the Accokeek type (Stephenson and Ferguson 1963), and are members of the sand tempered horizon that covered all of Virginia's physiographic provinces at this time (Mouer 1991).

Unfortunately, not much is known of the use of early ceramic technology in the Blue Ridge or Inner Piedmont. Accokeek sherds have been recovered from rockshelters in the middle Robinson River drainage in the study area (Holland and Graves 1951; Holland 1967), and two sites in Shenandoah National Park have yielded ceramics that may be transitional between the Early and Middle Woodland (Inashima 1988).

Projectile point styles of Early Woodland I are based on two forms: stemmed and side-notched. The stemmed, narrow-bladed points may be derived from the Holmes tradition, with the side-notched or fishtail types derived from the Susquehanna Broadspear (Gardner 2000). Type names include Calvert and Vernon (Stephenson and Ferguson 1963), Bare Island (Kinsey 1972), and Orient Fishtail (Ritchie 1980). These points were made from a wide range of lithic raw materials, including quartz, quartzite, chert, rhyolite, and argillite.

Early Woodland II is marked by the contracting-stem Piscataway (Stephenson and Ferguson, 1963) and Teardrop (Mounier and Martin 1994) points, with the side-notched Potts point being introduced during the terminal Early Woodland (Gardner and Nash 1990). Settlement patterns (and presumably, subsistence) for Early Woodland II were a continuation of those of Early Woodland I.

Middle Woodland Sub-Period (2500 B.P.-1100 B.P.)

This fourteen hundred year sub-period of prehistory is poorly known in the Blue Ridge and Inner Piedmont; all site inventories of the Northern Blue Ridge document a decrease in sites dating to this sub-period (Hoffman and Foss 1980; Gardner 1987; Inashima 1988). Gardner (1994) attributed this to the abandonment of the region, while Holland (1980) described the Inner Piedmont and Blue Ridge of the Middle Woodland as a buffer zone between Shenandoah Valley and Outer Piedmont/Fall Line groups.

Gardner's 1982 division of the Middle Woodland sub-period into Middle Woodland I (2500 B.P—1800 B.P.) and Middle Woodland II (1800 B.P.—1100 B.P) is commonly used by Middle Atlantic archaeologists. During Middle Woodland I, the Stone Burial Mound Complex developed in the Shenandoah Valley, characterized by clusters of stone mounds located on bluffs overlooking floodplains (Gardner 1993).

The mounds are comprised of piles of stones capping one or more burial pits and have a temporal range of 2450 B.P. to 1850 B.P. Recovered grave goods (celts, ochre, and biface caches) were often made from local materials, supporting the hypothesis of the mounds as an indigenous interpretation of a non-local (Ohio Valley Adena-Hopewell) tradition. This may also be the first indication of an emergent social hierarchy among Valley groups. Because the stone burial mounds were restricted, usually containing the remains of a single individual, it has been hypothesized that they represent a "Big Man" type of social organization (Stewart 1992). These cultural phenomena are documented for the South Fork of the Shenandoah River and in West Virginia, Maryland, and Pennsylvania. Survey of the Hebron Valley of the Upper Rappahannock Inner Piedmont has extended the burial mound tradition eastward across the Blue Ridge (Nash 1999b; 2000a; 2006b; 2008d), supporting earlier work by Bushnell in Albemarle County (1933).

The crushed rock ceramics of Middle Woodland I (Albemarle series, after Evans 1955) may have gradually evolved out of the Early Woodland III sand-tempered ceramics. This development has been observed at the Kemper Site (44RM27) in Rockingham County (Gardner and Nash 1990). The cord marking of Early Woodland III was gradually replaced with net marking to the extent that this latter tradition can be referred to as the "net marked horizon." Celts appeared in the tool

kit, replacing grooved axes; the Potts projectile point continued to be made in the early part of the period (McLearen 1992) and was accompanied in the Inner Piedmont by the Teardrop point (Mounier and Martin 1994). The Selby Bay point (Mayr 1958), a type widely distributed in the Coastal Plain, is documented at rockshelters and upland camps in the Potomac Piedmont and Maryland Blue Ridge (Johnson 1991; Curry and Kavanaugh 1991) and is also noted for the study area (Nash 2002).

The stone burial mound phenomenon was attenuated during Middle Woodland II, but lowland sites remained in the same floodplain backwater swamp locations. They became smaller and more numerous, however, possibly indicating a dispersal of hamlets (Gardner 1986). At the few sites that have been documented, the net marked crushed rock ceramics of Middle Woodland I were replaced with fabric and cord marked crushed rock ceramics—all still within the Albemarle tradition (Nash 2000b; 2002). The literature describes a decrease in the amount and size of crushed rock temper during this phase , so that sand tempered vessels with crushed rock inclusions became common (Gardner and Carbone, n.d.). Middle Woodland II ceramics have been recovered at various rockshelters in the Inner Piedmont (Nash 2000b; 2002), small base camps in the Inner Piedmont (Gardner 1994), and riverine-based camps of the Outer Piedmont (Gallivan 1997).

If, as has been hypothesized, the Middle Woodland marks the adoption of intensive horticulture and a subsistence focus on native plants, floodplain backwater wetlands were ideal locations for settlement (Blanton 1992), and the uplands would have seen limited settlement except for seasonal procurement camps. No large, macro-social unit aggregation sites dating to the Middle Woodland have been documented in the Blue Ridge or Inner Piedmont (Nash 2008d). Archaeological evidence from 44PA174 (Meadow School Road Site) indicates that horticulture may have accompanied Middle Woodland groups into the mountains: a small fire pit at the site dating to 1730 B.P. contained the charred seeds of knotweed, a known dietary source (Inashima 1990b).

Although it is proposed that the large Levanna triangular projectile point form (Ritchie 1980) associated with the bow and arrow was introduced into all areas of Virginia during the Middle Woodland, radiometric dates indicate that widespread acceptance of this technological shift did not occur until the Late Woodland (Nash 2008d). Corner- notched types and pentagonal variants similar to Jack's Reef (Ritchie 1980) are associated with terminal Middle Woodland Albemarle ceramics at sites in Shenandoah National Park (Inashima 1988) and the Inner Piedmont (Petraglia et al. 1993).

Late Woodland Sub-Period (1100 B.P.-400 B.P.)

This final period of prehistoric occupation in the Ridge and Valley and Blue Ridge is divided by Gardner into five phases: Late Woodland I (1100-900 B.P.); Late Woodland II (900-750 B.P.); Late Woodland III (750-650 B.P.); Late Woodland IV (650-550 B.P.); and Late Woodland V (650-400 B.P.). This sequence provides a point of departure for the Late Woodland of the Inner Piedmont.

Late Woodland hallmarks include: increased reliance on cultigens and the introduction of non-local domesticates; a settled, agricultural way of life; population movements that can be tracked through ceramic styles and intra- and inter-site patterning; and increasing sociocultural complexity (Gardner and Carbone, n.d.). Gallivan's study of the internal organization of floodplain communities in the James River Piedmont (1999) found that populations increased in size and became more sedentary over the course of the Late Woodland. Current research into subsistence demonstrates the continued importance of wild foods to Late Woodland populations (McKnight and Gallivan 2007), so that while a centrally-based settlement pattern emerged in floodplain settings, upland environments were accessed through exploitive, transient camps.

The bow and arrow became basic to hunting technology in Virginia during the Late Woodland and triangular projectile points of various sizes and basal configurations are associated with this period. Common Northern Piedmont and Blue Ridge types include Yadkin (Coe 1964) and Madison (Ritchie 1980). While these points become smaller over time, it is difficult to discern specific types from surface collections, as there is an overlapping continuum of size in their type descriptions.

The role of agriculture in the subsistence practices of Blue Ridge and Inner Piedmont-associated Late Woodland groups is not clear at present. Settlement pattern studies in both the Shenandoah Valley and Piedmont indicate population aggregation on floodplain levees where arable soils dominated the landscape (Gardner 1986). Evidence of domesticates is scant in both regions, however, either "suggesting that preservation factors or disposal factors are skewing the collected data" (Walker and Miller 1992) or that maize-based agriculture was never a dominant factor in what remained, basically, a foraging economy in the Middle Atlantic uplands (Custer 1986; Raber 1993). Analysis of faunal remains from Late Woodland Piedmont and Shenandoah Valley sites indicates the importance of terrestrial animal populations to the diet, with aquatic species augmenting the resource base (Barfield and Barber 1992).

Late Woodland I is characterized by a continuation of the cord marked and fabric marked crushed rock-tempered (Albemarle) ceramics. The evolution from ceramics with crushed rock temper toward sand temper with crushed rock inclusions led Gardner to refer to this phase as "Evolved Albemarle" (1986). Other researchers have noted this trend, hypothesizing that the reduction in temper size and vessel wall thickness may be associated with new cooking techniques for a maize-based diet (Klein 1994).

Late Woodland II ceramic assemblages are dominated by Albemarle Cord Marked and Fabric Marked vessels, but limestone tempered wares (Page Series, after Manson, MacCord, and Griffin 1944) appear in small numbers in the northern Shenandoah Valley at this time and make their way across the Blue Ridge, where they are found in rockshelter contexts (Holland and Graves 1951; Holland 1967). In the Piedmont, the Albemarle tradition continued unabated, although incised wares appeared during this phase; the more complex zoned motifs are similar to those found on Bowman's Brook/Overpeck Incised wares of the northern Middle Atlantic, while the more simple bands of punctates are found on crushed rock and sand tempered Evolved Albemarle vessels (Gardner and Carbone, n.d.; Gallivan 2003).

There is some debate as to the cultural affiliation of wares exhibiting decorated and collared rims, cord marked bodies, and finely crushed rock temper in northern Virginia during Late Woodland II. Vessels similar to Shepard Ware, identified as part of the Montgomery Complex in the Potomac region by Slattery et al. (1966), have been recovered in the northern and central Shenandoah Valley (Egloff and Hodges 1989), just west of the study area. Gardner considered Shepard Ware to be a northern Virginia/Maryland Piedmont phenomenon that gave rise to the Potomac Creek tradition. Following his lead, the author has not included it in the Ridge and Valley/Blue Ridge chronology, instead associating this type with the longstanding Albemarle tradition. Rockshelters located outside the eastern boundary of Shenandoah National Park in Madison and Greene Counties have yielded evidence of Page and Albemarle ceramics with simple decorative rim motifs (Nash 1997a).

Large accretional burial mounds located on floodplains of major streams in the central and southern Shenandoah Valley, as well as the central Piedmont, have been recorded by historians and archaeologists since the 1780s (Dunham 1994), and archaeological analysis associates them with the Late Woodland II-IV phases. Described by some in the literature as the "Lewis Creek Mound Culture" (MacCord 1986), this is hypothesized to be a region-wide phenomenon underpinning a distinct culture known during the historic era as the 'Monacan' (Gold 2004; Hantman 2008),

although the attribution of the mounds with the historic Monacan has been questioned by Boyd (2004). Accretional mounds were the sites of collective burial for individuals from several communities united through sociopolitical mechanisms or extended kinship. Recent analysis of the remains from the Valentine Mound in Rockbridge County and the Rapidan Mound in Orange County estimated 1000-2000 individuals in each mound (Hantman et al. 2000; Klein and Duncan 2004). These mounds and others like it may represent monuments to an ancestor cult that emerged at a time of social change, the communal ritual countering the trend toward inequality in the early agricultural societies of the Piedmont and Valley and Ridge (Hantman, Dunham, and Gold 2003).

Late Woodland III is characterized by an increase in the limestone tempered (Page) wares, accompanied by a decrease in the Albemarle wares west of the Blue Ridge. Attribute crossover between these two traditions is present in Late Woodland III vessels, evidenced in the actual mixing of tempers in some vessels. Surfaces treated with cord marking were dominant, but fabric marking was still present and found in both tempering traditions. Applied rim strips and pseudo-collars appeared, as did cord-wrapped dowel impressions, gashes, and punctations—all of which are present on the Albemarle ceramics of the Piedmont (Gardner and Carbone, n.d.; Gallivan 2003). Small numbers of limestone tempered sherds identified as Page Series were

recovered from the Rapidan Mound (44OR1), located on the south bank of the Rapidan River just outside the study area (Klein and Duncan 2004).

Late Woodland IV is marked by a continuation of the Albemarle tradition in the Piedmont. Ceramic assemblages from this phase are mixed with small numbers of the Shenandoah Valley-based shell tempered Keyser ceramics (Manson et al. 1944), typically in rockshelters. Potomac Creek ceramics are also present in small numbers in these assemblages, both in the Valley and the Inner Rappahannock Piedmont (Nash 1997a). Vessel surfaces were predominately cord marked, with fabric impression also present. Cord-wrapped dowel impressions decorated vessel rims, an attribute characteristic of Potomac Creek wares (Holmes 1903) from the Potomac Valley that may indicate regional interaction. In the James River Piedmont, stamped decorations may link the inhabitants with groups settled further to the southeast (Hantman and Klein 1992); isolated sherds from these southern Piedmont traditions—Gaston (Coe 1964) and Dan River (Coe 1952) have been recovered from floodplain sites in the study area (Nash 1997a).

Late Woodland V, while appropriate for the Shenandoah Valley where Keyser ceramics dominate assemblages dated to the 500-400 B.P., is not as easily applied to the Blue Ridge and Inner Piedmont. The lack of excavated contexts dating to this

phase limit discussions of Upper Rappahannock culture history for the decades preceding European contact (Rountree, Clark and Mountford 2007). Based on radiometric dating and stylistic and petrographic analysis, Klein and Duncan (2004) propose a long-standing regional ceramic tradition (Gardner's 'Evolved Albemarle') extending into the mid-16th century for the Rappahannock Inner Piedmont.

Major social and political changes during the 15th-16th centuries are documented in the archaeological literature for all surrounding regions: the centralized, palisaded villages of the Keyser and Potomac Creek traditions (Potter 1993); the rise of a deer hide trade and formalized interaction between coastal and mountainous Virginia communities (Barber 2008); and the rise of complex polities in the middle James River drainage (Gallivan 1999). Gardner viewed the palisades as defensive structures signaling endemic warfare and attributed these changes to a combination of external (Little Ice Age) and internal (population growth) factors (1986). As an alternative hypothesis from the ideological realm, Jirikowic (1995) suggests that these features encircled sacred areas of larger, dispersed settlements, serving as symbolic enclosures rather than military fortifications. In an analysis of Dan River phase occupation of the southern Piedmont and Blue Ridge, Egloff et al. propose that palisaded communities were at the center of a settlement hierarchy, with the palisade encircling "the more important, strategically-placed communities . . ." (1994:98). To date, no palisaded villages have been identified for the Rappahannock

Piedmont, which could be an indication of the lack of research rather than the absence of this site type.

Late Woodland components have been recorded at sites in Shenandoah National Park, although the diagnostic artifacts for many of these were either misidentified or not well-documented (Inashima 1988). Some of the artifact-bearing sites are sizeable and interpreted as large-scale hunting camps (Inashima 1986). Small triangular points and Potomac Creek/Page ceramics are included in the assemblages from these sites, indicating that the Blue Ridge may have been the destination of parties from both the Piedmont and Shenandoah Valley toward the end of the Late Woodland (Nash 1997a).

Historic Era

In the Piedmont, villages identified as Monacan (James River Valley) and Manahoac (Rappahannock River Valley) were documented as far west as the foothills by John Smith (1986), who relied on informants for settlement locations. Four named "Kings Houses" in the Upper Rappahannock Basin, west of the Fall Line, were included: Shackaconia (lower Rapidan); Stegara (upper Rapidan); Hassinnunga (Rapidan/Rappahannock confluence); and Tanxsnitania (upper Rappahannock). While Smith's explorations were largely confined to the Coastal Plain, his party was

attacked at the falls of the Rappahannock River by bowmen identified as Manahoac by an Algonquian interpreter in August 1608. In an exchange now chilling in its retelling, a captured Manahoac warrior, Amorolek, told Smith that his men attacked because "they heard we were a people come from under the world, to take their world from them."

By 1669, when explorer John Lederer made his way into the Inner Piedmont by following the main stem of the Rappahannock, these villages were described as abandoned, their "old fields" overgrown (Lederer 1672 [2005]). The Monacan signed the Treaty of Middle Plantation in 1677, along with the "Kings of the Saponi" who may have included Manahoac (Rountree, Clark and Mountford 2007). By 1713, Governor Spotswood's policy of the forced removal of interior Indian populations to Fort Christanna in Southside Virginia all but decimated remaining communities, some of whom migrated north to join the Iroquois after 1722 (Hantman 1993).

Historical research demonstrates that small Indigenous communities or isolated families may have continued to live in the lower elevations of the Blue Ridge into the 18th century (Yowell 1926), when they were assimilated into European and possibly African families through marriage (Nash 1997b; 2007). A thorough review of 18th century land grants for the region that would become Madison County

yielded no references to Indian settlements (Lillard 1999), but Orange County court records from 1740 relate a case against "twenty six Saponey Indians, who inhabited Col. Spotswood's land in Fox's Neck go about and do a great deal of mischief by setting fire to the woods . . ." (Grinnan 1895:189). A second report from 1742-1743 described eleven "Saponey Indians (who) were arrested for hog stealing, burning the woods, &c . . . ." (Grinnan 1895:190) in the same general area, located approximately ten miles southeast of the present-day Madison-Orange-Culpeper county intersection. By this time, many of the surviving Virginia Indians of the Piedmont came to be known as 'Saponey' (various spellings) because of their forced association with the Siouan-speaking Saponi who lived near Fort Christanna. The "Saponey" arrested for setting fire to the woods in Orange County could have been Manahoac hunters practicing the fire hunt method of driving game (Holland 1979).

The Manahoac remain enigmatic due to the paucity of detail in historical documents and the lack of archaeological study of proto-historic/historic Indian sites in the Inner Piedmont. A review of linguistic, ethnohistoric, and archaeological evidence by Spencer (2007) supports the claims of Mooney (1894), Bushnell (1919, 1934) and Swanton (1942, 1952) that the Ohio Valley was the original homeland from which the major Eastern and Western Siouan sub-families migrated several thousand years ago (Wood 2008). Ulke (1936), who spent considerable time in the Black Hills

conducting entomological research, described the Monacan and Manahoac as "two warlike branches of the great and once powerful Sioux Tribes of the Western Plains." He continued, "From vantage points on the southern slopes of the Blue Ridges (sic), they frequently swooped down upon the Virginia Indians of the Potomac Valley . . . who were constantly fearful of their raids." Ulke's conflation of culture history and characterization of 'warlike' Indians is common in the antiquarian literature of the late 19th/early 20th centuries (Hinsley 1981), as is seen in Yowell's description of the Manahoac (1926).

Mooney associated both the Monacan and Manahoac as members of the Eastern Siouan language sub-family, and based on a small sample of words and historical anecdotes (1894:23) identified the Manahoac as a "confederacy . . . of perhaps a dozen tribes" (1894:19). Mouer (1981, 1983) conceived of the Monacan and Manahoac as "two complementary subregional segments" (1981:1) of a segmentary confederacy, in contrast to the Powhatan paramount chiefdom of the Coastal Plain. According to this model, Manahoac society was organized around small, lineage-based villages or hamlets, each of several hundred individuals, whose alliances with the Monacan were periodically expressed through the confederacy. Unlike the Monacan, whose territories extended eastward toward the Fall Line (and thus, closer to Powhatan), the permanent settlements of the Manahoac were upstream, removing

them from the zone of contentious interaction. Holland (1979) proposed that the Monacan-Manahoac controlled a buffer zone between the Fall Line and the Blue Ridge that limited the seasonal hunting incursions of Coastal Plain tribes in the interior. Hantman (1990, 1993, 2001) argues that various lines of evidence point to Monacans and Manahoacs as sharing a similar lifestyle and material culture, leading one recent researcher to subsume "all of the Late Prehistoric and contact period Siouan-speaking peoples of the Piedmont and Ridge and Valley of Virginia as well as all their descendants" as 'Monacan' (Gold 2004). In the same vein, Cook writes, "(T)here may have been less differentiation between these so-called tribes (including the Tutelos) than scholars have been willing to recognize" (2000:26), referring to them as a "collective entity" (2000:27) with a large precolonial territory. The Monacan Nation, one of the eight State-recognized tribes of Virginia, considers the Manahoac to have been closely affiliated to the Monacan (Wood 2008). Nash (2007), in assessing recent excavations at Contact-period sites in the Shenandoah Valley as well as ethnohistoric evidence, proposes a more complex relationship between these cultures based on their different geographic loci and external affiliations.

While a starting point, this generalized overview of the Native American culture history of western Virginia belies the complexity of 13,000 years of settlement in this region. One premise of the present work is the inadequacy of basic cultural

chronologies and settlement pattern reconstructions developed for other areas to represent prehistoric hunter-gatherer behavior in ecologically heterogeneous regions. Kelly, for example, describes the "considerable diversity among ethnographically known hunter-gatherers, even within a delimited region" (1995:2). The scaled landscape approach requires a more context-based study that matches research questions with the correct scale of analysis. The study of cultural change and persistence begins at the micro-scale, with detailed descriptions that capture the heterogeneity of the Upper Rappahannock. The following chapter provides these descriptions through the analysis of site clusters, micro-scale groupings of sites that sample from the rich variety of environmental settings in the region.

Chapter Five: Micro-Scale Analysis of Archaeological Cluster Data

Effective archaeological settlement pattern studies require a highly contextualized understanding of site locations and artifact assemblages, an endeavor that begins at the analytical level of the micro-scale. Reflecting the immediacy of settlement, the micro-scale is operationalized for the present study by the *site cluster*-a grouping of geographically proximate archaeological sites (Orton 2000). At this scale, landforms are highly responsive to small, high-frequency environmental processes that set the parameters and challenges met by a variety of cultural responses (Fisher and Feinman 2005). Analysis at smaller spatial scales allows the clarification of human action and environmental consequence (Leeuw 2000), providing a basis for larger scale studies of broader patterns.

The goal of Chapter Five is to present detailed archaeological and environmental data on the thirty-seven clusters that sample the study area (Figure 7). From a research perspective, this chapter represents the first report of MAP sites in the archaeological literature, as well as the first systematic presentation of research in the Madison County section of Shenandoah National Park since 1980. It serves as a catalog from which data may be culled for further research. The emphasis on detail

required by micro-scale analysis lends itself to a narrative form. However, the reader can access quick 'snapshots' of the clusters through Appendices II and III. Appendix II includes digital orthophotography (DOQQ) images of site cluster areas, created with data from the National Agriculture Imagery Program (NAIP). This imagery was chosen for its ability to display the relationship of the sites to surrounding landforms without relaying exact locational information. Appendix II also includes histograms that display the frequency of diagnostic artifacts by sub-period for each cluster. Appendix III is the tabular presentation of individual site information, including site function, landform, artifact types, lithic raw material, numbers of artifacts, and cultural sub-periods.

From a policy perspective, the level of detail included in the chapter is desirable for heritage resource planning. While there is a strongly held belief that comprehensive planning and zoning can make a difference for the future of archaeological resources (Rapidan-Rappahannock Regional Commission 2001), this chapter is the first effort at presenting the systematically gathered data necessary for such measures in Madison County, Virginia. Local government officials, familiar with the county, will find the descriptions tied to local landmarks and family surnames common to this rural area. Because the variables included populate the geodatabase accompanying

this work, trained users can create GIS queries as needed for even more detailed analyses.

The following cluster discussion is organized by macrophysiographic province: Blue Ridge (Figure 27), Inner Piedmont (Figure 29), and Mesozoic Basin (Figure 31). Within each province, the clusters are arranged alphabetically (Table 13):

Table 13. Study Clusters by Macrophysiographic Province, Hydrologic Unit, and Site

Cluster Name	Macrophysiographic Province	Hydrologic Unit	Sites
Arrowhead	Blue Ridge	E-14	Arrowhead Patch; Foster; Foster Rockshelter; Strode X
Berry	Blue Ridge	E-14	MA3; 23; 47; 200
Big Meadows	Blue Ridge	E-14; E-11	MA36-37; 55-56; 59-60; 86; 94; 102; 196-198
Corbin	Blue Ridge	E-03; E-14	MA52-54; 128; 149
Fishers Gap	Blue Ridge	E-14	MA35; 87; 90-91; 93
Hawksbill	Blue Ridge	E-14	MA80-82; 96-97; 159
Laurels	Blue Ridge	E-11	MA154-155
Limberlost	Blue Ridge	E-14	MA29-30; 38; 61; 112-113
Milam Gap	Blue Ridge	E-11	MA92; 99
Nethers	Blue Ridge	E-03	Clark; MA150
Nicholson	Blue Ridge	E-03	MA20-21; 24-25; 39-45; 48-49; 130-131; 192
Pinnacles	Blue Ridge	E-03	MA19; 100-101
Rose River	Blue Ridge	E-14	MA27; 33-34; 62; 189
Spitler Hill	Blue Ridge	E-14	MA31-32; 83-84
Upper Rapidan	Blue Ridge	E-11	MA 7; 153; 201
Weakley	Blue Ridge	E-03	MA2; 46; 161; 163; 165; 166
Isolated	Blue Ridge	E-03; E-11; E-14	MA17-18; 50-51; 57-58; 75-78; 85; 88-89; 148; 157; 181; J. W. Jenkins; Quartzite Alley
Banks Mountain	Inner Piedmont	E-11	Blue Heron; Strode B; MA121
Dark Run	Inner Piedmont	E-15	Girl Scout; Strode K, L, O, V
Demarest	Inner Piedmont	E-15	Burke; Demarest Desert; Demarest Pottery

Table 13 continued

Cluster Name	Macrophysiographic Province	Hydrologic Unit	Sites
Elk Run	Inner Piedmont	E-12	J. B. Estes; Strode D, F, J, Y
Graves	Inner Piedmont	E-14	Graves: Around Hill; Catherine; Hay Berry; Hay Guy Anderson; Hay Lodge; Hay Sis Aylor; Hay Weakley; Hay Jack Jasper; Margaret; Peach Orchard; Stony Brook; MA8-9; 16
Graves Mill	Inner Piedmont	E-11	Dejarnette Whitlock; Wagoner; MA5-6
Haywood	Inner Piedmont	E-14	Coates Cache; Coates Garden; Martens Mounds; Strode U
Hebron	Inner Piedmont	E-14; E-15	Crigler; McClain; Rees; Strode A; Graves Duck Farm: Farm; Barn; Chicken House; Frankie John; Jesse B; Roy Crigler; Trees; Welch
Henshaw	Inner Piedmont	E-14	Martens; Strode M; Strode N; MA1
Lambs Bottom	Inner Piedmont	E-12	Hawley-Zimmer; Strode E; MA12, 13; 73
Lost Mountain	Inner Piedmont	E-13	Jenkins Mountain Field; MA103-105; 109-111; 193
Mallory	Inner Piedmont	E-15	Shirley Estes; Strode 4, G, R, S
Middle River	Inner Piedmont	E-11	Crowe; Hawkins; Strode C
Neal Mountain	Inner Piedmont	E-12	Devil Fence; Dewey; MA11
Peola Mills	Inner Piedmont	E-03	Backfield Farm; Barbara Yowell; Graves Bee Hive; Graves Coates
Thorofare Mtn.	Inner Piedmont	E-15	Janet Sisk; Mary Sisk
Uno	Inner Piedmont	E-13	MA14-15
White Oak	Inner Piedmont	E-14	MA10; 127; 199; Strode 2-3;
Isolated	Inner Piedmont	E-12; E-13; E-14; E-15	MA74; 118; Dixon; Jane Aylor; Mayer; Penn; Strode H; Strode W
Beaverdam	Mesozoic Basin	E-15	Dejarnette Johnston; Strode I; Strode Q; Strode Z; MA114-116
Madison Mills	Mesozoic Basin	E-13	MA106-108; 122-126
Sanford	Mesozoic Basin	E-13; E-15	MA63-72; 119
Isolated	Mesozoic Basin	E-13; E-15	MA4; MA120; MA190; Nash Garden; Strode T

Individual cluster descriptions are organized around four parameters: physical inventory; settlement factors; archaeological data recovery methods; and cultural attributes (Table 14). Of note for landscape analysis are the 'settlement factors' and

'cultural attributes' parameters, which inform settlement archaeology. The goal of providing a highly contextualized, precise description for each cluster is directly tied to the analysis of the meso- and macro-scales to follow in Chapter Six.

Table 14. Parameters and Variables of Micro-Scale Cluster Analysis

Physical Inventory	# of sites; hydrologic unit; mean elevation; mean slope; mean distance to water; aspect(s); mean site area
Settlement Factors	location; setting; general topographic features; unique topographic features; hydrology; geology/lithic raw material availability; soils; vegetation
Archaeological Data Recovery Methods	informant; surface survey; subsurface testing; mitigation
Cultural Attributes	artifact assemblages; diagnostic artifacts; lithic raw material frequency/patterns of mobility; site functions; preliminary interpretation of cluster occupation

Cluster Descriptions, Blue Ridge Physiographic Province

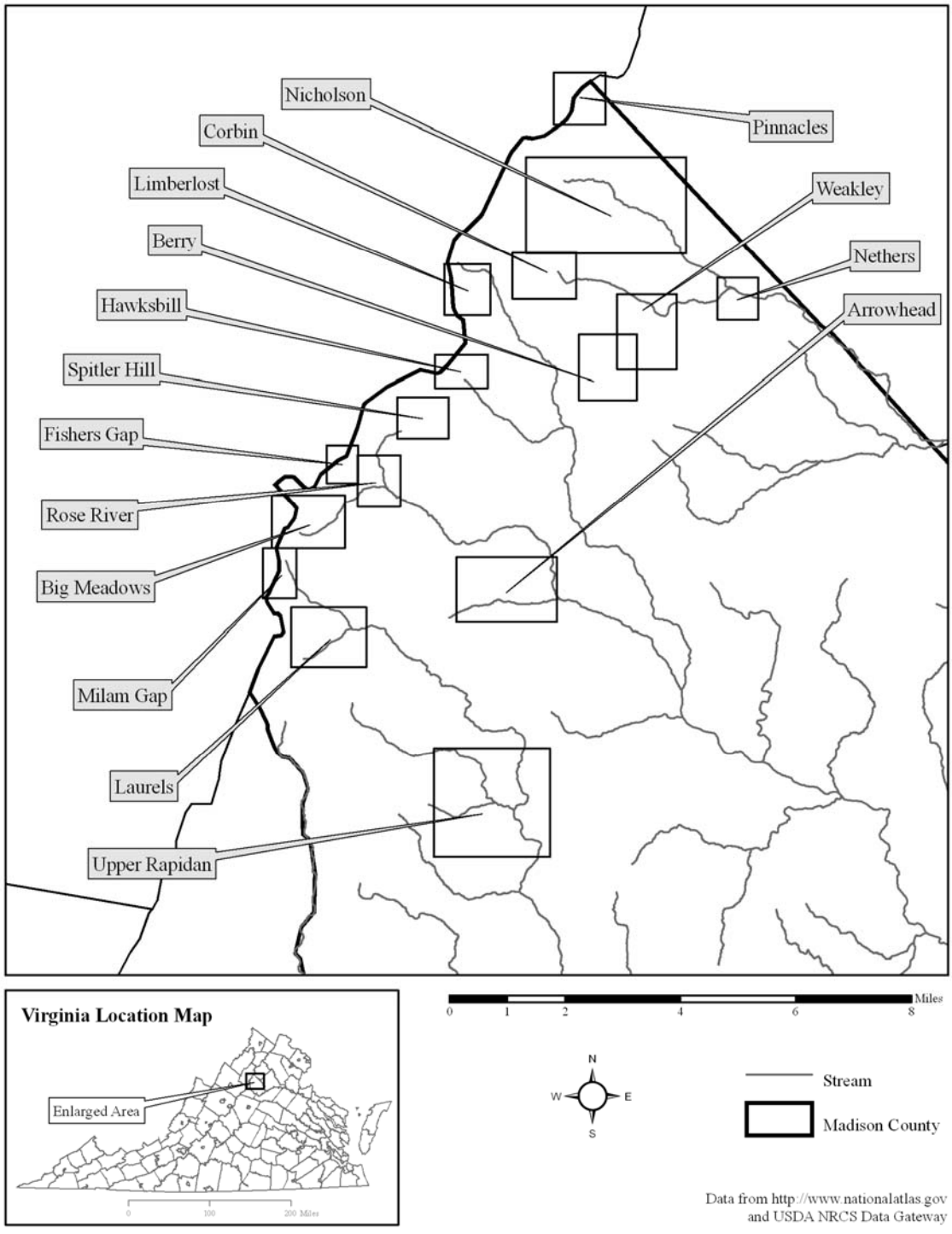


Figure 27. Blue Ridge Site Clusters, Madison Archaeology Project

A. Arrowhead (Table 15; Appendix II, Figures 1 and 2; Appendix III, Table 1).

Table 15. Arrowhead Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
4	E14	1388	14	312	NE-E-SE	2.56

Location: Lower Rose River Valley where Blue Ridge opens to Inner Piedmont. On private land adjacent to Shenandoah National Park.
Setting: Sheltered fan/floodplain interface, backed by Big Tom Mountain on north and Doubletop Mountain on south and west. Sites connected by Rose River and modern County Road 648, the spur off the historic Blue Ridge Turnpike that becomes the Upper Dark Hollow Trail inside Shenandoah National Park.
Hydrology: First- and second-order Strother Run; confluence of first-order Dry Branch and second-order Rose River; confluence of first-order Jemima Branch and second-order Rose River. Rose River a direct conduit between the Blue Ridge summit and the Inner Piedmont.
Geology: Mylonite and Charnokite.
Soils: Porters very stony loam; Tusquitee stony loam; Unison loam.
Vegetation: Rich Cove and Slope Forest (Large Patch); Piedmont/Mountain Alluvial Forest (Large Patch); orchards.
Comments: Remotely sensed imagery demonstrates an extensive debris flow in Strother Run drainage that contributed to the formation of deep floodplain soils on the lower Rose River. Probable Holocene association. Rose River cobble load in cluster includes large quantities of Catoctin metabasalt cobbles for stone axe and projectile point production and Catoctin metabasalt jasper cobbles for stone tool production. Mylonite, also used in stone tool production, outcrops in the cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The site assemblages from the Arrowhead Cluster contain 467 artifacts; of these forty-one percent are diagnostic lithic or ceramic objects. The high percentage of diagnostics reflects landowner artifact collection bias, as field checks confirmed large quantities of debitage at three of the four sites. Based on frequency

counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through Late Woodland sub-periods, with heaviest occupation during the Middle Archaic sub-period (Halifax and Bilobate phases comprise twenty-two percent of total diagnostics). Two of the four sites were occupied during every cultural sub-period between the Early Archaic and the Late Woodland. The presence of a large base camp, two small base camps, and rockshelter—all multi-component—at a pivotal location between the Blue Ridge and the Inner Piedmont, points to a regular corridor of movement with well-known settlements along the way. Thirteen lithic raw material types, eleven of which are from outside the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region, support the presence of groups having mobility and/or exchange patterns that took them across a variety of physiographic provinces. The remaining raw material types (oolitic quartzite and rhyolite) support movement and/or exchange patterns well beyond the region. Fifty percent of the lithic artifacts are manufactured from vein quartz, an indication of a cluster orientation toward the eastern Inner Piedmont. However, twenty-five percent are manufactured from Antietam quartzite, cherts, and jaspers from the Shenandoah Valley and Blue Ridge, pointing to a western orientation. While at the sites, the occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; spear production; stone axe production; hunting; hide working; and possible horticulture.

The assemblage from the Arrowhead Patch also includes five steatite bowl fragments that may have a Late Archaic-Early Woodland ritual association. The presence of Early Woodland (Accokeek) and Middle-Late Woodland (Albemarle) ceramics at the Arrowhead Patch Site supports some degree of sedentism at this gateway location. The lack of Protohistoric/Contact period ceramics contrasts with the Foster Rockshelter a mile up Strother Run, which yielded not only ceramics associated with the Shenandoah-Potomac basins (Keyser), but also the only recorded sherds in the study area of Moyaone pottery from the lower Potomac Valley and historic-era Colonoware. Local historian Claude Yowell (1926) associated the cluster area with the last historic Indian occupation (mid-Eighteenth Century) of the County. The Arrowhead Cluster, named for the prolific Arrowhead Patch Site, is one of the few clusters in the study area set in a mountain valley, and may provide a model for well-known staging areas between high and low elevation occupations.

B. Berry (Table 16; Appendix II, Figures 3 and 4; Appendix III, Table 2).

Table 16. Berry Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
4	E14	1958	27	321	SE-W-NW	1.69

Location: Berry Hollow, northeast-facing hollow in Old Rag Mountain, Shenandoah National Park.
Setting: South-facing saddle at head of Berry Hollow opens to steep-sided stream valley; sheltered by Old Rag Mountain on the east and Robertson Mountain on the west. Cluster located at crossroads of heavily traveled Park trails: Berry Hollow Fire Road; Old Rag Fire Road; and Weakley Hollow Fire Road.
Hydrology: Unnamed first-order tributary to the Robinson River and first-order Robinson River stem; both are hydrologic 'dead-ends' in Blue Ridge, but headwaters mark divide between Robinson and Hughes Rivers. Robinson River opens to floodplain development in Inner Piedmont below cluster.
Geology: Granulite and Mylonite.
Soils: Colluvial land; Tusquitee stony loam; Stony silt loam.
Vegetation: Rich Cove and Slope Forest (Large Patch).
Comments: Mylonite, used in stone tool production, outcrops in the cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA23, 44MA47.

Cultural Description: The four sites of the Berry Cluster have yielded 1,130 artifacts, ninety-nine percent of these from a small base camp (44MA23) tested by University of Virginia archaeologists in 1976. The six diagnostic artifacts from the cluster, 0.6 percent of the assemblage total, are from 44MA23. Due to limited artifact assemblages and/or documentation, the three remaining sites cannot be assigned to a cultural period or function and are identified as 'lithic scatters' on VDHR site survey forms. Based on the 44MA23 assemblage, the cluster was sparsely occupied from the Middle Archaic through Early Woodland sub-periods. Sixty-seven percent of the projectile points are associated with the Late Archaic-Early Woodland sub-periods. Vein quartz and Antietam quartzite comprise ninety-one percent of the five lithic raw material types in the assemblage, both found within a mile to the west and

east of the cluster. The occupants of 44MA23 were largely involved in bifacial reduction, projectile point manufacture and hunting; the presence of steatite bowl fragment presents an interesting challenge for interpretation, as such artifacts are typically recovered from settings evidencing a wider variety of activities. The bowl fragments are contemporaneous with the Late Archaic Savannah River and Early Woodland Calvert projectile points, matching the most intensive use of the cluster. The Berry Hollow cluster, interpreted as a stop-over location for groups in movement across the Blue Ridge, provides an important case study for cultural occupation in closely juxtaposed headwaters zones, in this instance, the Hughes River and Robinson River headwaters.

C. Big Meadows (Table 17; Appendix II, Figures 5 and 6; Appendix III, Table 3).

Table 17. Big Meadows Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
12	E14, E11	3462	9	411	N-NE-E-SE-S	1.23

Location: Central point on Skyline Drive, between Fishers Gap and Milam Gap; most visited location in Shenandoah National Park; Virginia Blue Ridge north of Roanoke attains maximum width here, with Big Meadows as central point.
Setting: High elevation basin/seepage swamp known for relict boreal species; sheltered by Blackrock on northwest and Stony Mountain on southeast; periglacial features (solifluction lobes) ring basin rim. Pipers Path, mid-Eighteenth Century

wagon road, crosses Meadow today as unnamed trail. Intersection of Rapidan Road and Skyline Drive marks western edge of Meadow.
Hydrology: Springs and first-order tributaries to Hogcamp Branch; extensive wetlands (mafic fen, high elevation seepage swamp). Hogcamp Branch tributary to Rose River; direct conduit between Inner Piedmont and Blue Ridge summit. Extreme northeastern edge of basin marks drainage divide between Rappahannock (Rose River) and Shenandoah River (Hawksbill Creek) drainages.
Geology: Catoctin metabasalt.
Soils: Myersville-Catoctin very stony silt loam; Rock land; evidence of aeolian deposition on basin rim (Nash 2003).
Vegetation: Northern Red Oak Forest (Matrix); High Elevation Boulderfield Forest (Large Patch); Northern Blue Ridge Mafic Fen (Small Patch). Currently fire-managed as meadow.
Comments: Largest catchment of all Northern Blue Ridge features; headwaters for Rappahannock (east) and Shenandoah (west). Well-documented vegetation history (Litwin et al.2003). Catoctin metabasalt with jasper inclusions (breccia) outcrops in area, as do phyllite members of the Catoctin formation.
Archaeological Data Recovery Methods: Surface survey—All Sites; Systematic Surface Survey—44MA37, 44MA55, 44MA59, 44MA60, 44MA102, 44MA196, 44MA197, 44MA198; Systematic Testing -- 44MA37, 44MA55, 44MA56, 44MA59, 44MA60, 44MA86, 44MA102, 44MA196, 44MA197, 44MA198; Block Excavation -- 44MA59.

Cultural Description: Big Meadows has been the focus of the most intensive archaeological study in the Northern Blue Ridge, with two Park Service-sanctioned testing programs since the 1970s. Twelve sites are documented for the Big Meadows cluster; their assemblages total 9,043 artifacts. Of these, diagnostic lithic or ceramic objects comprise only 0.8 percent. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through Late Woodland sub-periods, with heaviest occupation during the Late Archaic and Early Woodland sub-periods (forty-eight percent of the total diagnostics). The most projectile point types most frequently recovered from Big Meadows sites are Savannah River (eleven

percent of diagnostics) and Calvert (eleven percent of diagnostics). None of the twelve sites was occupied during every cultural sub-period between the Early Archaic and the Late Woodland, although half are multi-component, and five were occupied during at least four sub-periods. The presence of five small base camps and five limited activity camps in the second-highest elevation cluster of the study area is testament to the allure of Big Meadows, with its basin wetlands and surrounding terraces. Recent testing indicates overlapping occupations adjacent to the mafic fen, as opposed to a single large encampment (Nash 2003; 2008d). Seventeen lithic raw material types, four of which are from outside the immediate region, support the presence of groups having mobility and/or exchange patterns taking them beyond the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Eighty percent of lithic artifacts are manufactured from Antietam quartzite, which outcrops on the western slopes of the Blue Ridge and is found in cobble form in the South Fork of the Shenandoah River. The basin may have served as a supra-community aggregation and negotiation space during the Late Archaic and Early Woodland sub-periods, as seen in the twelve steatite bowl fragments recovered during test excavations at 44MA59, the mixture of local/non-local contemporaneous projectile point types, and an incised slate fragment (Nash 2008c). The cluster occupants engaged in a variety of tool manufacturing and resource processing activities, including bifacial reduction and projectile point manufacture,

spear production, hunting, plant/nut processing, and hide working. The presence of Middle-Late Woodland Albemarle ceramics at 44MA102 (3420' amsl) supports some degree of sedentism in the basin and is one of the highest elevations for which aboriginal pottery is documented in Virginia. As a large, heavily-occupied, high elevation basin, Big Meadows continues to provide Middle Atlantic archaeologists with one of the best case studies of the evolution of hunter-gatherer social dynamics in an upland setting. The cluster figures prominently in the Chapter Six discussion of upland social engagement.

D. Corbin (Table 18; Appendix II, Figures 7 and 8; Appendix III, Table 4).

Table 18. Corbin Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E03; E14	2943	19	863	E-S-NW	1.01

Location: Blue Ridge crossroads between Pinnacle Peak to the north and Robertson Mountain to the south; at head of east-trending Corbin Hollow in Old Rag Mountain.
Setting: Slope and saddle sheltered by high peaks on all sides. Intersection of Robertson Mountain Trail, Corbin Mountain Trail, and the Old Rag Fire Road.
Hydrology: First-order Brokenback Run and first-order Negro Run are hydrologic 'dead ends' toward Blue Ridge summit; connect today to Limberlost Cluster via Old Rag Fire Road; drainage oriented eastward to Hughes River in the Inner Piedmont.
Geology: Catoctin metabasalt and Granulite meet at the head of the hollow.
Soils: Porters very stony loam; Myersville-Catoctin very stony silt loam.
Vegetation: Montane Oak-Hickory Forest (Matrix).

Comments: Remotely sensed imagery indicates debris flows in Brokenback Run drainage. Probable Holocene association.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA52, 44MA53, 44MA54.

Cultural Description: The five sites of the Corbin Cluster yielded eighty-four lithic artifacts. Nineteen percent of the assemblage is comprised of diagnostic projectile points, half of those associated with the Early Woodland sub-period (Calvert type). The cluster was sparsely occupied from the Early Archaic through the Early Woodland and again in the Late Woodland, used by groups for limited activities such as bifacial reduction and hunting. Due to a limited artifact assemblage, one site cannot be assigned to a cultural period or function and is identified as a 'lithic scatter' on the VDHR site survey form. Antietam quartzite, which outcrops five miles west of the cluster, comprises seventy percent of the lithic raw material in the artifact assemblage. 44MA54, the only multi-component site in the cluster, is located at the Hughes River/Robinson River divide and may have served as a stop-over for small groups traveling between those watersheds. Given the extremely rough topography of the area and the general lack of connecting drainages, the Corbin Cluster sites may have functioned as side camps for hunting parties traveling through Blue Ridge Mountain saddles from the west. It serves as a test case for isolated mountain occupations.

E. Fishers Gap (Table 19; Appendix II, Figure 9; Appendix III, Table 5).

Table 19. Fishers Gap Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
5	E14	3050	20	1108	E-SE	.22

Location: Modest Blue Ridge wind gap, sheltered on north by Hawksbill Mountain and on south by Big Meadows.
Setting: Narrow saddle crossing for historic Blue Ridge Turnpike at summit of Blue Ridge; located along Skyline Drive. Significant drop-off to Kite Hollow on the west and Rose River Falls on the east. Gap marks the northern end of widest section of Northern Virginia Blue Ridge.
Hydrology: Unnamed first-order tributaries to Rose River. Rose River a direct conduit from Blue Ridge summit to Inner Piedmont; no comparable drainage on the west side that would connect Blue Ridge summit to Shenandoah Valley.
Geology: Catoctin metabasalt.
Soils: Rock land; Myersville-Catoctin very stony silt loam.
Vegetation: Montane Oak Hickory Forest (Matrix); Mountain/Piedmont Basic Woodland (Small Patch).
Comments: Remotely sensed imagery indicates cluster located at the head of Rose River debris flows; probable Holocene association.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: Five extremely small sites of the Fishers Gap Cluster have yielded fifty-three artifacts. Four of the five sites cannot be assigned to a cultural period or function, as the assemblages of each contain small amounts of debitage. The assemblage of 44MA87 includes flakes and a Middle-Late Woodland ceramic sherd, indicating food preparation. Antietam quartzite, which outcrops three miles west of the cluster, comprises one hundred percent of the lithic raw material in the assemblage. The small sites, all discovered during Skyline Drive maintenance work,

may represent single-occupation hunting outposts, although evidence for this interpretation is extremely limited. In earlier assessments of Blue Ridge settlement modeling, Gardner (1987) listed Fishers Gap as having high probability for significant prehistoric settlement, particularly as it became a major crossing during the historic era with the construction of the Blue Ridge Turnpike. However, this cluster of sites supports the hypothesis that direct access to mountain gaps (via streams) was as important as the crossings themselves (Nash 2001). The lack of a connecting drainage to the Shenandoah Valley may have made this area less desirable than adjacent approaches.

F. Hawksbill (Table 20; Appendix II, Figures 10 and 11; Appendix III, Table 6).

Table 20. Hawksbill Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
6	E14	3366	16	1077	NE-SE-S-SW	.77

Location: Highest elevation wind gap in Shenandoah National Park; sheltered by Crescent Rock on the north and Hawksbill on the south; greatest elevational drop in Shenandoah National Park (2500 feet off north face into Timber Hollow).
Setting: Hawksbill peak, highest point in Madison County and Shenandoah National Park, is less than one-half mile from this cluster. Three trails intersect in this cluster: Timber Hollow, Cedar Run, White Oak Fire Road. Significant drop-off to west (Timber Hollow); moderate fan development to the east (Cedar Run Falls).
Hydrology: Headwaters of Cedar Run, tributary to Robinson River; limited water sources in gap. Cedar Run a direct conduit between Blue Ridge summit and Inner

Piedmont. Headwaters of Hawksbill Creek to the west connect the gap to the Shenandoah Valley.
Geology: Catoctin metabasalt.
Soils: Rock land; Unison very stony silt loam.
Vegetation: Northern Red Oak Forest (Matrix).
Comments: Sites located at heads of relict stream channels tributary to main stem of Cedar Run. Small-scale debris flows 500′ below cluster; probable Holocene association.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: Hawksbill Cluster includes six sites that have yielded 117 artifacts. With the exception of a single Vernon projectile point from 44MA80 (0.8 percent of the assemblage total), all cluster artifacts are lithic debitage. The cluster was sparsely occupied during the Early Woodland sub-period. Due to limited artifact assemblages and/or documentation, three sites cannot be assigned to a cultural period or function and are identified as 'lithic scatters' on VDHR site survey forms. The remaining three sites are limited activity camps whose occupants focused on the bifacial reduction of Antietam quartzite (sixty-four percent of assemblage). Of these camps, the 44MA96 assemblage contained five lithic raw material types, four from the western Blue Ridge/Shenandoah Valley, and one from the Inner Piedmont, indicating mobility between these macrophysiographic provinces. As with the Fishers Gap Cluster, the small sites of the Hawksbill Cluster, all discovered during Skyline Drive maintenance work, may represent single-occupation hunting outposts. Hawksbill Gap is the second wind gap in the study with limited evidence of Native American occupation; unlike Fishers Gap, Hawksbill directly connects the

Piedmont and Valley through stream headwaters and was expected to offer evidence of a more intensive Native presence. The limited nature of the occupations may relate to changeable weather patterns associated with the high elevation peak.

G. Laurels (Table 21; Appendix II, Figures 12 and 13; Appendix III, Table 7).

Table 21. Laurels Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
2	E11	2626	12	75	E-SE	5.0

Location: The Laurels, ca. 2 miles southeast of Big Meadows; framed by Fork Mountain (southeast), Hazeltop (west), and Big Meadows (north).
Setting: Well-watered mountain cove; accessed by Rapidan (Hoover) Road and Mill Prong Trail.
Hydrology: Headwaters of Laurel Prong and confluence of Laurel Prong and Mill Prong, both tributary to the Rapidan River. Mill Prong heads at Milam Gap and connects the Rapidan to the Blue Ridge summit.
Geology: Catoctin metabasalt.
Soils: Colluvial land.
Vegetation: Eastern Hemlock-Hardwood Forest (Large Patch); High Elevation Hemlock Seepage Swamp (Small Patch).
Comments: Area has seen extreme disturbance from large-scale debris flows; probable Holocene association. Vegetation history included in Litwin et al.(2003), with soil core from cluster area analyzed for fossil pollen. Catoctin metabasalt with jasper inclusions (breccia) outcrops in area, as do phyllite members of the Catoctin formation.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Testing—44MA155.

Cultural Description: All 559 artifacts from the Laurels Cluster are associated with 44MA155, a small base camp. Three percent of the artifacts are diagnostic lithic or

ceramic objects. No data beyond a site form are available for 44MA154. Based on frequency counts of diagnostic artifacts from 44MA155, the cluster was occupied from the Middle Archaic through Late Woodland sub-periods, with heaviest occupation during the Middle-Late Woodland, represented by Levanna/Yadkin projectile points and Albemarle ceramics. Located below Big Meadows, 44MA155 is one of the few sites in Shenandoah National Park that has yielded prehistoric ceramics, albeit only two sherds of the Middle-Late Woodland Albemarle Cord-Marked type. Eight lithic raw material types, all from the Shenandoah Valley-Piedmont region, indicate the regular movement of groups across the Blue Ridge, with 44MA155 as a known stop-over. Fifty-two percent of the lithic artifacts are manufactured from Antietam quartzite, an indication of a site orientation toward the Shenandoah Valley. Thirty-seven percent of the lithic artifacts are manufactured of vein quartz, indicating regular movement from the Inner Piedmont. While at 44MA155, site occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; hunting; and hide working. The Middle-Late Woodland occupations of the cluster coupled with the presence of ceramics indicate a previously undocumented cultural pattern for the late prehistoric Blue Ridge: more sedentary settlement in high elevation wetland setting (Kimberley 2002).

H. Limberlost (Table 22; Appendix II, Figures 14 and 15; Appendix III, Table 8).

Table 22. Limberlost Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
6	E14	3321	10	253	N-NE-SE	.99

Location: Near Skyland and Skyline Drive in Shenandoah National Park; in southern shadow of Stony Man Mountain.
Setting: Small mountain basin that opens to north and east; sheltered by Pollock Knob on west and Bettys Rock on south; handicapped-accessible area with high rates of visitation and corresponding site impact; connected to Corbin Cluster by Old Rag Fire Road; crossroads for White Oak Canyon Trail and Old Rag Fire Road. Loss of hemlock forest to wooly adelgid is opening canopy for first time in ca. 500 years.
Hydrology: Springs feed unnamed first-order tributary to Robinson River; drainage forms the six falls of White Oak Canyon which connects Robinson River to Blue Ridge summit. No comparable drainage on the west side that connects Blue Ridge summit to Shenandoah Valley.
Geology: Basin formed by differential weathering of Catoctin metabasalt and Charnokite.
Soils: Porters very stony loam; Rock land; Colluvial land.
Vegetation: Eastern Hemlock-Hardwood Forest (Large Patch); High Elevation Hemlock Seepage Swamp (Small Patch).
Comments: Catoctin metabasalt with jasper inclusions (breccia) outcrops in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Testing—44MA61, 44MA112, 44MA113.

Cultural Description: The assemblages for the six sites of the Limberlost Cluster contain 963 artifacts; 0.8 percent of the artifacts are diagnostic projectile points. Due to limited artifact assemblages and/or documentation, three sites cannot be assigned to a cultural period or function and are identified as 'lithic scatters' on VDHR site survey forms. Two sites are identified as small base camps and one as a limited

activity camp. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Middle Archaic through Early Woodland sub-periods and again during the Late Woodland, with heaviest occupation during the latter. Fifty percent of diagnostics are represented by Levanna/Yadkin and Madison projectile points. Six of seven lithic raw material types are found in the Shenandoah Valley-Piedmont region, indicating the regular movement of groups across the Blue Ridge. Fifty-nine percent of the lithic artifacts are manufactured from Antietam quartzite, an indication of a site orientation toward the Shenandoah Valley. Two small base camps, 44MA61 (the only multi-component site in the cluster) and 44MA112, are located adjacent to high elevation wetlands. While in the Limberlost area, site occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; hunting; and hide working. Like the Big Meadows and Laurels Cluster, the Limberlost Cluster provides a case study of extensive late prehistoric, wetlands-focused settlement in high elevation settings (Lewis and Ebeling 1994).

I. Milam Gap (Table 23; Appendix II, Figures 16 and 17; Appendix III, Table 9).

Table 23. Milam Gap Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
2	E11	3275	16	794	SE	7.40

Location: Saddle of Laurel Ridge; between Big Meadows (north) and Huckleberry Cliff (south).
Setting: Wide Blue Ridge wind gap marking point of more gradual slope to the west; topography more similar to the foothills of the east.
Connected to Laurels Cluster by Mill Prong Trail.
Hydrology: Watershed Divide between the Rapidan and Robinson Rivers. Spring-fed headwaters of Mill Prong, which connects Rapidan River to Blue Ridge Summit. Headwaters of East Branch of Naked Creek nearby on west side, but not a direct conduit from Milam Gap to Shenandoah Valley.
Geology: Catoctin metabasalt.
Soils: Rock land; Baile stony silt loam.
Vegetation: Northern Red Oak Forest (Matrix).
Comments: Catoctin metabasalt with jasper inclusions (breccia) outcrops in area, as do phyllite members of the Catoctin formation.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Testing—44MA92.

Cultural Description: The two sites of the Milam Gap Cluster have yielded 1,856 artifacts, with ninety-nine percent coming from 44MA92, the only large base camp identified for the Blue Ridge. 0.7 percent of the artifacts are diagnostic projectile points. Due to an extremely limited artifact assemblage, 44MA99 cannot be assigned to a cultural period or function and identified as a 'lithic scatter' on the VDHR site survey form. Based on frequency counts of diagnostic artifacts from the 44MA92 assemblage, Milam Gap was occupied from the Middle Archaic through the Late

Woodland sub-periods, with heaviest occupation during the Late Archaic. Forty percent of the diagnostics are Savannah River, MacPherson, Holmes, and Bare Island types. A shallow basin-shaped feature, interpreted as a fire hearth, yielded a radiocarbon date of 3600+/-70 B.P. (Inashima 1986), placing it in the period of heaviest occupation. Eight of nine lithic raw material types are found in the Shenandoah Valley-Piedmont region, indicating the regular movement of groups across the Blue Ridge. In contrast to all other Blue Ridge summit clusters in the study area, the greatest amount (seventy-two percent) of the lithic artifacts are manufactured not of Antietam quartzite but quartz, an indication of a site orientation toward the Inner Piedmont. The assemblage from 44MA92 also includes six steatite bowl fragments that may have a Late Archaic-Early Woodland ritual association and could be linked to the twelve fragments from 44MA59, located a little over a mile to the northeast at Big Meadows. While in the Milam Gap area, site occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; hunting; hide working; plant processing; spear production; and possible wood working. Milam Gap is a sub-basin within the larger Big Meadows basin, and as a headwaters divide between the Shenandoah River drainage to the west and the Rapidan River to the east, provides a case study of an accessible mountain gap that saw intensive use. It

may have served as a living and work area for Late Archaic/Early Woodland groups whose ultimate focus was ritual activity at Big Meadows.

J. Nethers (Table 24; Appendix II, Figures 18 and 19; Appendix III, Table 10).

Table 24. Nethers Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
2	E03	879	7	123	SE, NW	3.10

Location: Eastern base of Old Rag Mountain along the Hughes River, just below confluence of Hughes River and Brokenback Run; on private land adjoining Shenandoah National Park.
Setting: Low elevation mountain valley; cut by County Road 600.
Hydrology: Third-order Hughes River; first major Hughes River floodplain. Unnamed first-order tributaries on the south side of road created braided drainage pattern supporting seasonal wetlands.
Geology: Old Rag Granite and Granulite.
Soils: Codorus loam; Unisom loam.
Vegetation: Piedmont/Mountain Alluvial Forest (Large Patch).
Comments: Remotely sensed imagery indicates small-scale debris flows behind (west of) 44MA150. Brokenback Run cobble load in cluster includes mylonite cobbles for stone tool production. Lowest elevation Blue Ridge cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Testing—44MA150.

Cultural Description: The two multi-component, small base camps of the Nethers Cluster have yielded 467 artifacts. Eight percent of the artifacts are projectile points and ceramics. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with

heaviest occupation during the Late Archaic (fifty-nine percent of diagnostics are represented by Savannah River and Holmes types). Eight of nine lithic raw material types are found in the Shenandoah Valley-Piedmont region, indicating the regular movement of groups across the Blue Ridge. Forty-nine percent of the lithic artifacts are manufactured from vein quartz, an indication of a stronger orientation toward the east and the Inner Piedmont. The assemblage from 44MA150 includes one steatite bowl fragment that may have a Late Archaic-Early Woodland ritual association. While in the Nethers area, site occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture (eighty-four percent of the assemblage); stone axe production (metabasalt cobble blanks); hunting; hide working; and plant processing. The presence of Middle Woodland (Popes Creek) and Middle-Late Woodland (Albemarle) ceramics at 44MA150 supports some degree of sedentism, similar to that proposed for the Arrowhead Patch Site of the Arrowhead Cluster. Located on the first major floodplain of the Hughes River, the Nethers Cluster is examined in greater detail in Chapter Six as a model of a transitional upland-lowland settlement setting.

K. Nicholson (Table 25; Appendix II, Figures 20 and 21; Appendix III, Table 11).

Table 25. Nicholson Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
16	E03	1911	16	366	N-NE-E-SE-S-SW	.78

Location: Nicholson Hollow, northeast side of Old Rag Mountain.
Setting: Steep-sided mountain valley with limited stream terrace development; sites tethered to second- and third-order Hughes River. Nicholson Hollow Trail connects Nethers Cluster to Nicholson Cluster; Pinnacles Cluster connected to Nicholson Cluster by Corbin Cabin Trail.
Hydrology: First- and second-order Hughes River; Hughes River most direct conduit from Inner Piedmont to Blue Ridge summit in project area.
Geology: Pyroxene Granulite.
Soils: Unison very stony silt loam; Rock land; Colluvial land.
Vegetation: Central Appalachian Dry-Mesic Chestnut Oak-Northern Red Oak Forest (Matrix); Rich Cove and Slope Forest (Large Patch); High Elevation Outcrop Barren (Small Patch).
Comments: Remotely sensed imagery indicates significant debris flow activity (large- and small-scale) throughout Nicholson Hollow; probable Holocene association.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA48, 44MA49, 44MA192.

Cultural Description: The sixteen sites of the Nicholson Cluster have yielded only 214 lithic artifacts. Extending for two miles along the Hughes River, the sites were documented as the result of systematic survey and provide a solid sample of settlement in a Blue Ridge stream valley setting. Due to limited artifact assemblages, however, thirteen of the sixteen sites cannot be assigned a cultural function and are identified as 'lithic scatters' on VDHR site survey forms. The remaining three sites

are identified as limited activity camps. Fifteen of the sixteen site assemblages include no diagnostic artifacts and cannot be assigned to a cultural period. The three percent of the cluster assemblage comprised of diagnostic projectile points comes from 44MA20, a limited activity camp with Middle Archaic through the Late Woodland sub-period components. The Nicholson Cluster was sparsely occupied during this span, with eighty-one percent of the sites most likely single occupations by a few individuals engaged in tool maintenance. The assemblages from the limited activity camps reflect only bifacial reduction, projectile point manufacture, and possible plant processing. The five lithic raw materials in the assemblage are from the Shenandoah Valley-Blue Ridge-Inner Piedmont region. Antietam quartzite, which outcrops five miles west of the cluster, comprises sixty-four percent of the raw material, indicating west-to-east movement from the Blue Ridge into the Inner Piedmont. Vein quartz from the Inner Piedmont comprises thirty-two percent of the artifact assemblage, indicating movement into Old Rag Mountain from the east. The rough topography of the Hughes River drainage may have prevented any substantial prehistoric settlement in the cluster. However, given the systematic documentation of sites in the mid-upper Hughes River, the Nicholson Cluster provides a solid case study of small, often overlooked sites that are common archaeological signatures in mountainous settings. This issue is taken up in some detail in Chapter Six.

L. Pinnacles (Table 26; Appendix II, Figure 22; Appendix III, Table 12).

Table 26. Pinnacles Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
3	E03	3271	12	1186	E-SE	.02

Location: Blue Ridge summit; far northwestern corner of Madison County.
Setting: Skyline Drive is the most distinguishing landmark; sites exposed but oriented to east; formidable slope on west toward Shaver Hollow and North Fork of Dry Run; connected to Nicholson Cluster by the Corbin Cabin Trail.
Hydrology: Unnamed first-order tributaries to Hughes River.
Geology: Charnokite and Pyroxene Granulite.
Soils: Porters very stony loam.
Vegetation: High Elevation Outcrop Barren (Patch).
Comments: Extremely rough topography.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA100, 44MA101

Cultural Description: Seven lithic artifacts are documented for the three sites of the Pinnacles Cluster, which has the smallest mean site size, as well as the largest mean distance to water of all clusters in the study area. None of the sites can be assigned to a cultural period or function, as no diagnostic artifacts have been recovered. All sites are identified as 'lithic scatters' on the VDHR site survey forms. A single quartz biface and four flakes indicate movement from the Inner Piedmont, whereas three Antietam quartzite flakes support movement from the west. The small sites, all discovered during Skyline Drive maintenance work, may represent single-occupation outposts, highlighting a high-elevation cultural practice not recognized

in lower elevations. Akin to the 'overlooks' on modern Skyline Drive, the vantage points of the Pinnacle Cluster sites may have been critical to hunter-gatherers on the move. This issue will be examined in greater detail in Chapter Six.

M. Rose River (Table 27; Appendix II, Figures 23 and 24; Appendix III, Table 13).

Table 27. Rose River Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
5	E14	2284	29	122	N-NE-E	.45

Location: Narrow interior stream terraces 1000' below the historic Blue Ridge Turnpike (Rose River Fire Road) in extremely steep-sided Rose River valley.
Setting: Sheltered head of hollow; central between Fishers Gap and Arrowhead Clusters; junction of Loop Trail, Rose River Falls Trail; adjacent to Rose River Falls.
Hydrology: First-order Rose River; unnamed first-order tributaries to Rose River; second-order Hogcamp Branch; Hogcamp Branch and headwaters of Rose River form main stem of Rose River in cluster.
Geology: Catoctin metabasalt.
Soils: Colluvial land; Rock land.
Vegetation: Northern Red Oak (Matrix); Basic Mesic Forest (Large Patch).
Comments: Steepness of hollow has contributed to a large number of debris flows perpendicular to Rose River; probable Holocene association. Catoctin metabasalt with jasper inclusions (breccia) outcrops in cluster. Within ¾-mile of two major Blue Ridge waterfalls. Low-grade copper ore mined here in Nineteenth Century.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Testing—44MA27.

Cultural Description: The artifact assemblages of the five sites of the Rose River Cluster contain 5,674 artifacts; of these, 0.6 percent are diagnostic lithic or ceramic

objects. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Middle Archaic through Late Woodland sub-periods, with heaviest occupation during the Late Woodland sub-period (fifty-nine percent of diagnostics are Levanna/Yadkin and Madison projectile points). Two of the five sites are multi-component, one is single component, and two yielded no diagnostic artifacts and are not assignable to a cultural period. Artifact assemblages were large and diverse enough to allow the identification of function for all five sites: two small base camps and three limited activity camps. The six lithic raw material types in the assemblage support the presence of groups having mobility and/or exchange patterns that focus on the Shenandoah Valley-Blue Ridge-Inner Piedmont. Seventy-five percent of the lithic artifacts are manufactured from Antietam quartzite. In a pattern unique to the Blue Ridge clusters, twelve percent of the assemblage is comprised of chert, also from the Shenandoah Valley. Another twelve percent of the assemblage is manufactured from Inner Piedmont vein quartz; together, the raw material supports the interpretation of the cluster as a stop-over for groups moving from both east and west, with a stronger affinity for the west. While at the sites, the occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; hunting; and hide working. The presence of Middle-Late Woodland (Albemarle) ceramics and Late Woodland (Page) ceramics indicates some degree of sedentism 44MA27. The Rose River Cluster is

located within a linear series of ceramic-bearing sites in the Rose River drainage, which terminates on the west at the Big Meadows Cluster and on the east at the Arrowhead Cluster. The Page ceramics, also recovered from the Foster Rockshelter three miles to the east, are particularly interesting, as they signal an association with sedentary groups from the Shenandoah Valley. With the highest mean slope (twenty-nine percent) of any cluster, Rose River is something of an anomaly in the number of sites and the intensity of their use. The protected, small terraces and benches overlooking the confluence of streams in the hollow present a natural stopping point at the interface of the gradual rise of the lower-elevation Blue Ridge and the steep slopes of the higher elevation Blue Ridge. The well-established Late Woodland presence in this cluster mirrors that in the Laurels Cluster, which offers a similar topographic setting: the confluence of two second-order streams adjacent to a waterfall. The symbolic association of waterfalls and hunter-gatherer mobility patterns will be examined in Chapter Seven.

N. Spitler Hill (Table 28; Appendix II, Figure 25; Appendix III, Table 14).

Table 28. Spitler Hill Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
4	E14	3603	11	587	E-SE	.04

Location: Blue Ridge summit along Skyline Drive; Spitler Hill.
Setting: High elevation mountain saddle sheltered by Hawksbill to the north; very steep drop on west side; large fans oriented to east; most isolated cluster in study area. No drainage on west side directly connects cluster to Shenandoah Valley.
Hydrology: probable relict spring in saddle.
Geology: Catoctin Metabasalt.
Soils: Myersville-Catoctin very stony silt loam.
Vegetation: Northern Red Oak Forest (Matrix).
Comments: Highest elevation Blue Ridge cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The four sites of the Spitler Hill Cluster, which has the highest mean elevation of all clusters in the study area, have yielded twenty-two artifacts. Given the lack of diagnostic artifacts and the small assemblage, none of the sites can be assigned to a cultural period or function; all are identified as 'lithic scatters' on the VDHR site survey forms. Twenty percent of the artifacts are manufactured from quartzite and chert, indicating movement from the west; two quartz bifaces support movement from the Inner Piedmont. The small sites, all discovered during Skyline Drive maintenance work, may represent single-occupation outposts and provide a parallel case study to that of the Pinnacles Cluster.

O. Upper Rapidan (Table 29; Appendix II, Figures 26 and 27; Appendix III, Table 15).

Table 29. Upper Rapidan Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
3	E11	1226	12	168	NE-E	5.77

Location: Staunton River area, both within Shenandoah National Park and outside the eastern boundary of the Park on private land.
Setting: Broad fans oriented off eastern arm of Jones Mountain; on Staunton River Trail and County Road 662. Area saw extensive disturbance from 1995 debris flow that exposed Late Pleistocene and Mid-Holocene debris flows; foothills setting and larger number of streams allow greater options for mobility.
Hydrology: First-order Kinsey Run/Wilson Run; second-order Staunton River; third-order Rapidan River; 44MA7 on first major floodplain of Rapidan River.
Geology: Pyroxene Granulite.
Soils: Tusquitee stony loam; Riverwash.
Vegetation: Central Appalachian Dry-Mesic Chestnut Oak-Northern Red Oak Forest (Matrix); Central Appalachian Woodland Seep (Small Patch).
Comments: Well-documented environmental history (Litwin et al.2003). Rapidan River cobble load in cluster includes large numbers of Catoctin metabasalt cobbles for stone axe production and mylonite cobbles for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The three sites of the Upper Rapidan Cluster have yielded 139 lithic artifacts. Ten percent of the cluster assemblage is comprised of projectile points; based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through Late Woodland sub-periods, with the heaviest occupation during the Late Archaic (Savannah River) and Early Woodland (Calvert) sub-periods. Two of the sites are small base camps and one a limited activity camp. Five of the six lithic raw materials in the assemblage are found in the region; Antietam quartzite and chert from the western Blue Ridge/Shenandoah Valley account for thirty-nine percent, with vein quartz from the Inner Piedmont accounting for thirty-two percent. Together, these indicate movement into the cluster from both the west and east. The assemblages reflect bifacial reduction and

projectile point manufacture, hunting, hide working, stone axe production, and possible plant processing. Unlike the Hughes River and the upper Robinson River, the terraces of the upper Rapidan River are well-developed, increasing the likelihood of more substantial settlement; that this has not yet been documented for this cluster area may be a reflection of the limited survey undertaken here. Conversely, the lack of large, well-known sites in this cluster may also be associated with the lack of drainages that head at the Blue Ridge summit, making this area less desirable as a regular travel route.

P. Weakley (Table 30; Appendix II, Figures 28 and 29; Appendix III, Table 16).

Table 30. Weakley Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
6	E03	1828	20	620	NW-N-E	.79

Location: Mountain crossroads, head of Weakley Hollow, a northeast-trending feature on Old Rag Mountain.
Setting: Saddle and slideslope at head of steep-sided valley; intersection of Weakley Hollow, Robertson Mountain Trail, and Corbin Mountain Trail; connected to Corbin and Berry Clusters by these trails.
Hydrology: Springs; First-order unnamed tributary to Brokenback Run; first-order Brokenback Run. Cluster marks drainage divide between Hughes River (north) and Robinson River (south).
Geology: Old Rag Granite, Mylonite, and Pyroxene Granulite.
Soils: Colluvial land.
Vegetation: Rich Cove and Slope Forest (Matrix).

Comments: Access to the cluster is more open from the Hughes River drainage, although it is situated only 2000' from the Robinson River headwaters.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA2.

Cultural Description: A total of eleven lithic and ceramic artifacts are documented for the six sites of the Weakley Cluster; no data are available for four sites, which were recorded primarily as historic homesteads. Due to this lack of data and the small assemblage of another site identified on the VDHR site survey form as a 'lithic scatter,' five of the six sites are of unknown cultural affiliation and function. Fifty-five percent of the cluster assemblage is comprised of diagnostic artifacts; based on frequency counts of diagnostic artifacts, the cluster was occupied from the Middle Archaic through Middle Woodland sub-periods. 44MA2, a small base camp, yielded two Early Woodland (Accokeek) ceramic sherds, indicating some degree of sedentism. Three of the four lithic raw materials in the assemblage are found in the region; the presence of Antietam quartzite, chert, and vein quartz indicate movement into the cluster from both the west and east. The assemblages reflect bifacial reduction and projectile point manufacture, hunting, and hide working. The Weakley Cluster provides a test case for site location in settings typically described as 'low probability' in hunter-gatherer settlement modeling: steep slopes and high distance to water. This will be examined further in Chapter Six.

Q. Isolated Blue Ridge Sites (Figure 28; Appendix III, Table 17).

Sites identified as 'isolated' do not meet the cluster criteria outlined in Chapter Two. Eighteen isolated sites are documented for the Blue Ridge province in the study area; fifteen of these are in Shenandoah National Park. Eighty-eight percent have such a limited artifact signature that attribution to a function or cultural period is not possible. Three are limited activity camps where bifacial reduction was a focus. Of the three isolated Blue Ridge sites on private land, 44MA17 is a rockshelter excavated in the 1970s by the University of Virginia Department of Anthropology; one is a small base camp where bifacial reduction, projectile point manufacture, and stone axe production occurred; and one is a lithic workshop. The latter site, Quartzite Alley in the Kinsey Run drainage, is noteworthy for two reasons: while bifacial reduction was clearly a significant activity at the site, the artifact assemblage demonstrates a wide range of tasks; and it was destroyed by the Kinsey Run Debris Flow in 1995. In addition to providing the name for the site, the surface clusters of Antietam quartzite thinning flakes indicate raw material transport across the Blue Ridge in the form of early stage bifaces.

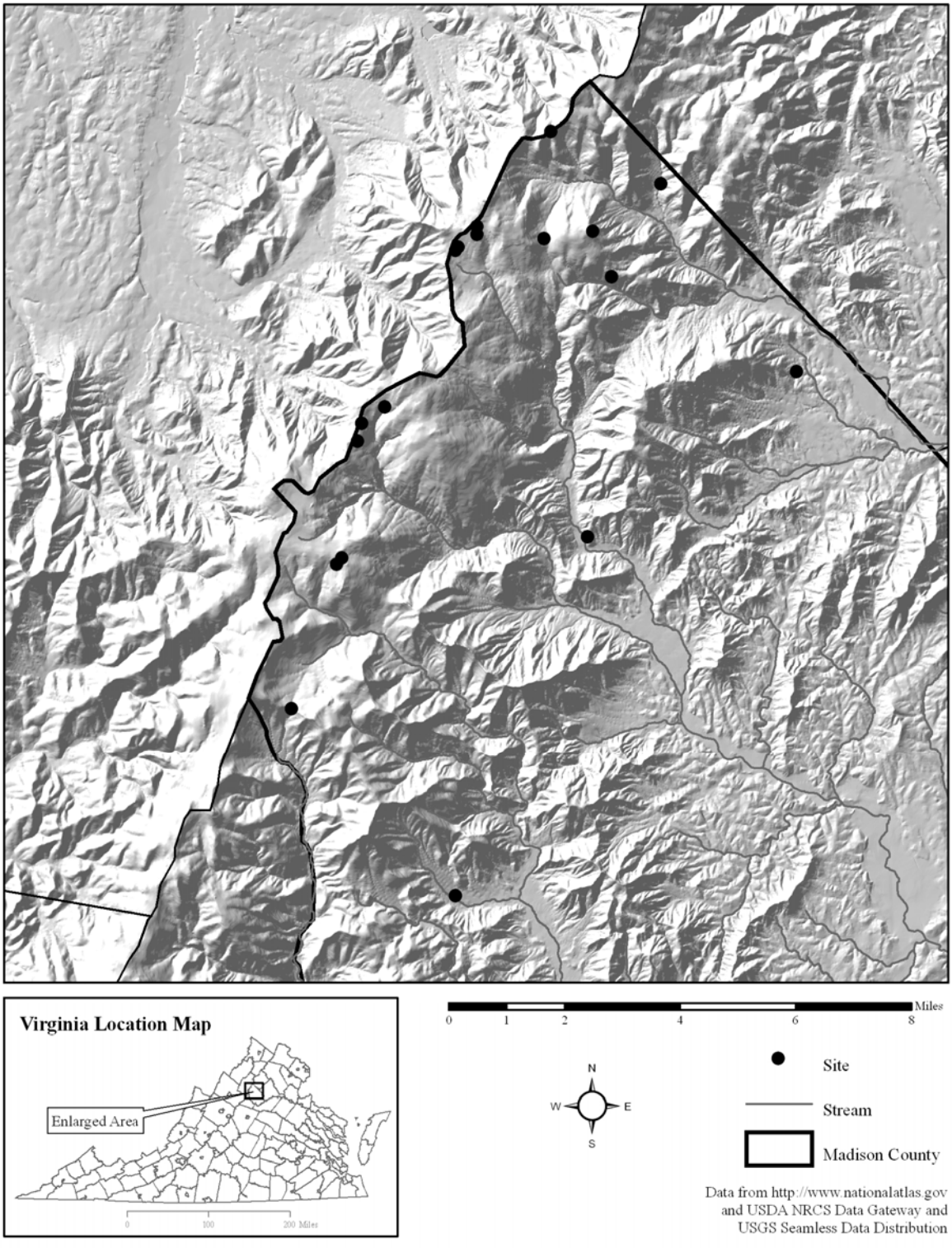


Figure 28. Isolated Blue Ridge Sites, Madison Archaeology Project

Cluster Descriptions, Inner Piedmont Physiographic Province

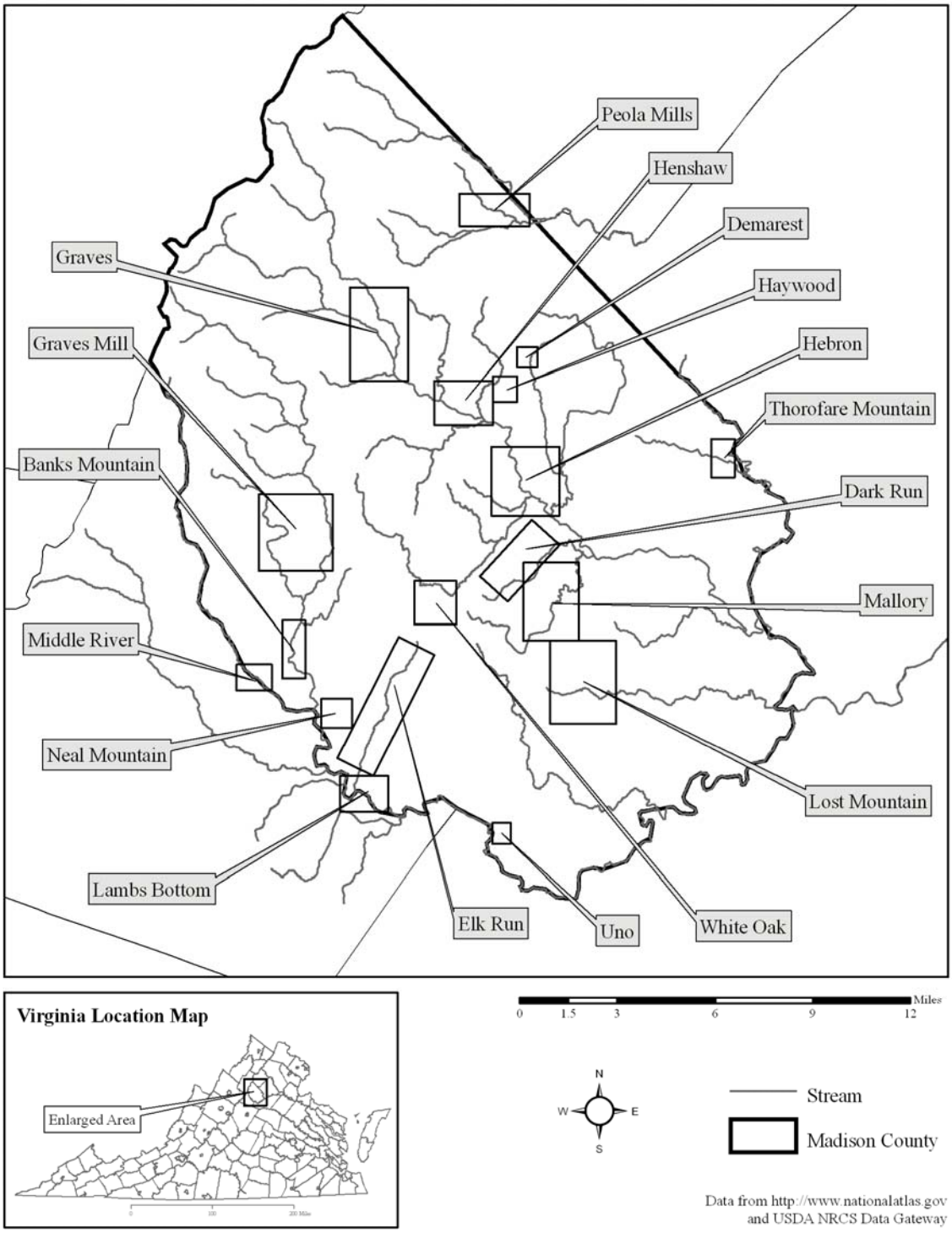


Figure 29. Inner Piedmont Site Clusters, Madison Archaeology Project

A. Banks Mountain (Table 31; Appendix II, Figures 30 and 31; Appendix III, Table 18).

Table 31. Banks Mountain Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
3	E11	581	4	350	E-SE	3.07

Location: West-central Madison County, at base of Banks Mountain monadnock near Hood.
Setting: Rapidan River floodplain terrace and hilltop overlooking Rapidan River; State Route 230 and County Road 663 border northern and southern edges of cluster. First major bend in Rapidan River occurs in cluster.
Hydrology: Third-order Rapidan River; unnamed first-order tributary to Rapidan River. Cluster is ¾-mile south of confluence of second-order Garth Run and Rapidan River, on first major floodplain of third-order Rapidan.
Geology: Flint Hill Gneiss
Soils: Codorus loam; Dyke loam.
Vegetation: Piedmont/Mountain Floodplain Forest (Matrix).
Comments: Rapidan River cobble load in cluster includes greenstone and mylonite cobbles for stone axe and stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The three sites of the Banks Mountain Cluster have yielded 1,784 lithic and ceramic artifacts. Fifty-three percent of the artifacts are diagnostic projectile points and ceramics. The high percentage of diagnostics reflects artifact collection bias, as field checks confirmed large quantities of debitage at two of three sites. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the PaleoIndian through the Late Woodland sub-periods, with heaviest occupation during the Late Woodland sub-period (fifty-three percent of

diagnostics). The assemblage contains fourteen lithic raw material types, twelve of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. As with other Inner Piedmont clusters, the lithic materials of the Banks Mountain Cluster indicate larger patterns of movement than do those of Blue Ridge cluster assemblages. Fifty percent of the lithic artifacts from the Banks Mountain Cluster are manufactured from vein quartz, an indication of a stronger orientation toward the Inner Piedmont (east), although thirty percent of the assemblage is comprised of Antietam quartzite, signaling regular movement and/or exchange in the western Blue Ridge/Shenandoah Valley. The most significant site in the cluster is Strode B, which was occupied during every sub-period from Late PaleoIndian through Late Woodland. It is one of only five sites in the study area with a PaleoIndian component, which is represented by five Late Paleo Lanceolate points (Plano-like). Undoubtedly, the earliest occupation at the site (Late PaleoIndian) was very limited in size and scope, but the assemblage demonstrates a significant increase in activity and probable base camp identification by the Middle Archaic sub-period. By the Early Woodland sub-period, the site was a large base camp. The Late Woodland (Albemarle and Potomac Creek) ceramic assemblage (forty-five percent of the diagnostic artifacts from the site) is the largest of any in the county. The identification of the site as a hamlet is largely based on the occurrence of these ceramics and triangular projectile points. Strode B falls within the catchment defined

by Dunham (1994) for the Late Woodland Rapidan Mound, located nine miles south. The occupants of Strode B engaged in bifacial reduction and projectile point manufacture, hunting, hide working, stone axe production, plant processing, wood working, and horticultural activities. Two steatite bowl fragments, which may have a Late Archaic-Early Woodland ritual association, were also recovered from Strode B. The presence of Early Woodland (Accokeek), Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Potomac Creek) ceramics at Strode B supports increasing sedentism at the site, as well as connections to the Late Woodland/Contact period culture of the Potomac Piedmont. Exclusive of Strode B, the Banks Mountain Cluster sites are identified as limited activity camps whose occupants were focused on bifacial reduction, projectile point manufacture, and hunting. This cluster is one of four in the study area to be focused at the base of a monadnock, providing a test case for long-term settlement associations with significant landscape features.

B. Dark Run (Table 32; Appendix II, Figures 32 and 33; Appendix III, Table 19).

Table 32. Dark Run Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E15	509	8	451	E-SE-S	.69

Location: In and around town of Madison in central region of Madison County.
Setting: Low elevation saddles and hilltops in heavily dissected topography; cluster located at major crossroads (U.S. Route 29, State Route 231, and myriad County Roads).
Hydrology: First-order Little Dark Run.
Geology: Robertson River Igneous Suite.
Soils: Lloyd clay loam; Louisburg sandy loam; Starr silt loam.
Vegetation: Mountain/Piedmont Basic Woodland (Small Patch).
Comments: Quartz-bearing deposits outcrop in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The assemblages of the five sites of the Dark Run Cluster contain ninety-one lithic and ceramic artifacts. Seventy-four percent of the artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Late Archaic-Early Woodland sub-periods (fifty-two percent of diagnostics). The assemblage contains four lithic raw material types, all of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont region. Seventy-one percent of the lithic artifacts from the Banks Mountain Cluster are manufactured from vein quartz, an indication of a stronger orientation toward the Inner Piedmont. Four of the five sites are multi-component; all of these are identified as limited activity camps. The assemblage from the only single-component site, Girl Scout, is too limited for a determination of site function. The occupants of the Dark Run Cluster engaged in bifacial reduction and projectile point manufacture, hunting, and hide working. The

presence of Middle-Late Woodland Albemarle ceramics at Strode L supports some degree of sedentism at the site. The Dark Run Cluster provides a good example of small site groupings in interriverine Piedmont settings. More specifically, the cluster sites are located at headwaters of low-elevation first-order streams and can be compared to sites associated with the same cultural sub-periods in riverine settings to better understand larger settlement patterns of the Inner Piedmont.

C. Demarest (Table 33; Appendix II, Figures 34 and 35; Appendix III, Table 20).

Table 33. Demarest Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
3	E15	596	6	135	E-SE	.53

Location: Northeastern section of Madison County, at base of Arrington Mountain (Dulaney Mountain monadnock system).
Setting: Interior stream terraces dissecting low-elevation ridges; cluster cut by County Road 606.
Hydrology: Ponded springs and unnamed first-order tributaries to Muddy Run.
Geology: Robertson River Igneous Suite.
Soils: Eubanks fine gravelly loam.
Vegetation: Oak-Heath Forest (Matrix).
Comments: Vein quartz-bearing deposits outcrop in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—Demarest Desert.

Cultural Description: The three multi-component sites of the Demarest Cluster have yielded 332 lithic and ceramic artifacts; of these twenty-nine percent are diagnostic

lithic or ceramic objects. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through Late Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (twenty-six percent of total diagnostics). The Demarest Desert site was occupied during every cultural sub-period between the Early Archaic and the Late Woodland, while the Burke site evidences Early Archaic through Early Woodland settlement. These two small base camps and the Demarest Pottery limited activity camp are located on the easternmost ridge of the Dulaney Mountain monadnock system (Arrington Mountain), overlooking the lower elevation dissected topography of the Inner Piedmont. Eight lithic raw material types, seven of which are from the Shenandoah Valley-Blue Ridge-Inner Piedmont region, support the presence of groups having regionally-focused mobility and/or exchange patterns. Eighty-nine percent of the lithic artifacts are manufactured from vein quartz which outcrops in the area, and the high number of quartz flakes, shatter, and cores in the assemblage (fifty-four percent of the lithic count) strongly indicates bifacial reduction as a major activity at the Demarest Desert and Demarest Pottery sites. Additional cluster activities include projectile point manufacture, spear production, hide working, and stone axe production. The assemblage from the Demarest Cluster also includes Middle-Late Woodland and Late Woodland Albemarle ceramics, indicating some degree of sedentism at the Demarest Pottery site, which may have served as a support for the

Demarest Desert site on the hill above it. Another example of an interriverine cluster, the Demarest sites add to the comparative database of persistent occupations in first-order headwaters.

D. Elk Run (Table 34; Appendix II, Figures 36 and 37; Appendix III, Table 21).

Table 34. Elk Run Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E12	605	6	251	SE-S-SW-NW	.03

Location: Elk Run stream valley, near Shelby in southwestern corner of Madison County.
Setting: Interior stream terraces and hilltops above Elk Run; heavily dissected topography. Cluster bounded on east by U.S. Route 29 and County Roads 662 and 663.
Hydrology: Ponded springs; unnamed first-order tributaries to Elk Run.
Geology: Robertson River Igneous Suite and Augen Gneiss.
Soils: Cecil fine sandy loam; Brandywine loam; Lloyd loam.
Vegetation: Mountain/Piedmont Basic Woodlands (Small Patch).
Comments: Quartz-bearing deposits outcrop in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The assemblages of the five sites of the Elk Run Cluster contain 470 lithic and ceramic artifacts. Fifty percent of the artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Mid-PaleoIndian through the Late Woodland sub-periods, with heaviest occupation during the Late Archaic-Early

Woodland sub-periods (sixty percent). The assemblage contains nine lithic raw material types, eight of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Fifty-five percent of the lithic artifacts from the Banks Mountain Cluster are manufactured from vein quartz, an indication of a stronger orientation toward the Inner Piedmont (east), although twenty-four percent are manufactured from Antietam quartzite, indicating regular movement and/or exchange with the western Blue Ridge/Shenandoah Valley. At .03 acres, the Elk Run Cluster has the smallest mean site area all Inner Piedmont clusters. The J. B. Estes Site represents an isolated point find—one of two Mid-Paleo projectile points recorded for Madison County (McCary 1961). Two cluster sites are identified as small base camps and two as limited activity camps. The occupants of the Elk Run Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, and wood working. The presence of Middle Woodland Popes Creek ceramics at Strode Y and Late Woodland Albemarle ceramics at Strode J and Strode Y supports some degree of sedentism at these interriverine sites. While the sites of the Elk Run Cluster are located at the headwaters of first-order tributaries to Elk Run (as are other interriverine clusters in the study), their close proximity to a third-order tributary to the Rapidan River, as well as their proximity to large floodplain sites on the terraces of the Rapidan River, provides an important contrast to more isolated site groupings.

E. Graves (Table 35; Appendix II, Figures 38 and 39; Appendix III, Table 22).

Table 35. Graves Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
14	E14	707	8	175	NE-E-SE-S-SW	3.21

Location: Syria, north-central section of the county; between Doubletop Mountain on the west and Carpenter Mountain monadnock on the east, in high foothills.
Setting: Sheltered terraces and fans of first major Robinson River floodplain; opens to south. Blue Ridge access from both the Rose and upper Robinson River valleys. Connected to Arrowhead Cluster by County Road 648 and to Berry Cluster by County Road 600. Cluster split by County Road 670 (Historic Blue Ridge Turnpike).
Hydrology: Second-order Rose River joins second-order Robinson River at head of cluster to form third-order Robinson River; second-order Quaker Run (hydrologic 'dead end' into the Blue Ridge); unnamed first-order tributaries to Robinson River.
Geology: Pyroxene Granulite, Mylonite, Flint Hill Gneiss, and Biotite Granite.
Soils: Trego loam; Codorus loam; Dyke loam; Eubanks loam; Unison loam; Riverwash.
Vegetation: Piedmont/Mountain Alluvial Forest (Large Patch).
Comments: Remotely sensed imagery indicates major collapse of south ridge of Doubletop Mountain and subsequent formation of small stream valleys -- focus of probable Holocene-associated debris flows. Robinson River cobble load in cluster includes large quantities of Catoctin metabasalt cobbles for stone axe production and Catoctin metabasalt jasper cobbles for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Block Excavation—44MA9.

Cultural Description: The assemblages from the fourteen sites of the Graves Cluster include 10,730 artifacts. Of these, eighty-nine percent were excavated from 44MA9, the Elvin Graves Rockshelter. Twelve percent of the assemblage is comprised of diagnostic lithics and ceramics. Based on frequency counts of diagnostic artifacts,

the cluster was occupied from the Early Archaic through Late Woodland sub-periods, with heaviest occupation during the Late Woodland sub-period (sixty percent of diagnostics). This is skewed by 44MA9, which has the largest ceramic assemblage of any site in Madison County. Even taking this sampling problem into consideration, the Graves Cluster is one of the most significant in the study due to the density of sites and the consistency of artifact collection by the Kate Graves family. All cluster sites are multi-component, with five occupied during every cultural sub-period between the Early Archaic and the Late Woodland. In addition to the Elvin Graves Rockshelter, the cluster contains four small base camps, two large base camps, and seven limited activity camps. Based on the artifact assemblage and excavated features (fire hearths), the rockshelter functioned as a small base camp during the Middle-Late Archaic and Late Woodland sub-periods. One of only two radiocarbon assays for Madison County comes from one 44MA9 hearth feature and is associated with Halifax projectile points: 3709+/-129 B.P. (Holland 1967). Fragmentary faunal remains recovered from the hearths represent white tailed deer, gray squirrel, and Carolina terrapin. Seventeen lithic raw material types, fifteen of which are from the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin, support the presence of groups having mobility and/or exchange patterns that focus on region. Fifty-nine percent of the lithic artifacts are manufactured from vein quartz, an indication of a site orientation toward the Inner Piedmont. Twenty-five

percent are manufactured from metabasalt, available in the cluster in Robinson River cobble beds. While at the sites, the occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; spear production; stone axe production; hunting; hide working; wood working; plant processing; and possible horticulture. The Graves Cluster assemblage also includes three steatite bowl fragments, a steatite pipe fragment, and four clay tobacco pipe fragments. A steatite bowl fragment and the pipe fragment were excavated from 44MA9, and while not recovered in feature contexts, were found in association with Late Archaic sub-period Savannah River Broadspears. Two steatite bowl fragments were also found in the artifact assemblage from the Graves Margaret Site. The clay pipe fragments (two stems, two bowls) are generally associated with the Woodland period; the surface treatment of one bowl fragment (cord-wrapped dowel) places it in the Late Woodland sub-period. The presence of Early Woodland (Accokeek), Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle, Page, Keyser) ceramics from five Graves Cluster sites supports some degree of sedentism. Keyser sherds were recovered from the Elvin Graves Rockshelter, which is located four miles southwest of the Keyser-bearing Foster Rockshelter. The longevity of use links the Graves Cluster to the Arrowhead Cluster located one mile to the northwest, and identifies the Graves Cluster sites as well-known to mobile groups. Shotwell

Hollow, located one mile to the east, is associated by local historians with historic Indian occupation (Yowell 1926). Given the intensive survey and excellent provenience of artifact collections, the Graves Cluster is one of the two most significant in the study area. The broad floodplains of the Rose River provide a gateway into the Piedmont for groups moving eastward through the Blue Ridge, while funneling movement westward along major tributary streams. This cluster is discussed in greater detail in Chapter Six.

F. Graves Mill (Table 36; Appendix II, Figures 40 and 41; Appendix III, Table 23).

Table 36. Graves Mill Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
4	E11	737	11	267	NE-E-SE	.49

Location: Graves Mill, in Rapidan River Valley between German Ridge and Flattop Ridge, adjacent to eastern boundary of Shenandoah National Park and state-owned Rapidan Wildlife Management Area.
Setting: Floodplain/fans of Rapidan River; located at southern terminus of the widest section of the northern Virginia Blue Ridge. Divided by County Roads 662 and 615.
Hydrology: Second-order Staunton River, Kinsey Run, Garth Run; first major floodplain of third-order Rapidan River.
Geology: Pyroxene Granulite and Flint Hill Gneiss.
Soils: Unison loam; Codorus loam; Meadowville loam; Brandywine stony loam.
Vegetation: Piedmont/Mountain Alluvial Forest (Large Patch).
Comments: Remotely sensed imagery indicates significant debris flow activity in the Garth Run valley; probable Holocene association. Weathered debris flows are visible in steep-sided stream valleys of unnamed first-order tributaries of Rapidan River.

Rapidan River cobble load in cluster includes large quantities of Catoctin metabasalt cobbles for stone axe production and Mylonite and Catoctin metabasalt jasper cobbles for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The sites of the Graves Mill Cluster, which has the highest mean elevation of the Inner Piedmont clusters, have yielded eighty-one lithic and ceramic artifacts. Forty-three percent of the artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Middle Woodland sub-periods, with heaviest occupation during the Late Archaic sub-period (thirty-seven percent of diagnostics). The assemblage contains six lithic raw material types, five of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont region. This signature is comparable to that of the Upper Rapidan River Cluster, located two miles to the north. Antietam quartzite from the western Blue Ridge/Shenandoah Valley and vein quartz from the Inner Piedmont comprise thirty nine percent and forty percent, respectively, of the lithic assemblage, indicating group movements into the cluster from west and east. All four sites have small assemblages, with three identified as limited activity camps. The Dejarnette Whitlock Site, with a wider array of artifact types and single ceramic sherd, is identified as a small base camp. Graves Mill Cluster occupants engaged in bifacial

reduction and projectile point manufacture, hunting, hide working, and stone axe production.

Randall and Ruth Lillard of Graves Mill have retained in their family a remarkable collection of artifacts made during the early-mid Twentieth Century by a local storekeeper, Elmo Utz. The Utz Collection is famous for its curation in large wooden 'wheel' cheese boxes; there are reports from local informants of up to eight of these boxes, but only three are known to reside in Madison County. The Lillards have two in their possession. The 753 artifacts included in the 'Lillard-Utz Collection' were inventoried in six visits but are not included in this study because site provenience could not be determined. The collection of diagnostic projectile points and greenstone axes contains a significant variety of raw materials from outside the region, as well as point types representing the entire range of known prehistoric settlement in Madison County, from Mid-Paleo through Late Woodland.

Given its location as a 'gateway' to the Rapidan River floodplains, similar to that of the Graves Cluster for the Rose River floodplains, intensive Native occupation was expected for the Graves Mill Cluster. The Utz Collection from the Graves Mill area supports this hypothesis, indicating the need for more systematic research here.

G. Haywood (Table 37; Appendix II, Figures 42 and 43; Appendix III, Table 24).

Table 37. Haywood Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
4	E14	574	10	401	SW-NW-N	1.73

Location: Western flanks of Arrington Mountain, member of Dulaney Mountain monadnock system.
Setting: Sheltered ridge-hollow in heavily dissected topography; Route 609 borders cluster on south.
Hydrology: Spring-fed unnamed first-order tributary to Leathers Run.
Geology: Robertson River Igneous Suite.
Soils: Meadowville loam; Brandywine fine gravelly loam; Eubanks fine gravelly loam.
Vegetation: Mountain/Piedmont Basic Woodlands (Small Patch).
Comments: Quartz-bearing deposits outcrop in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The four sites of the Haywood Cluster have yielded 153 lithic artifacts. Thirty-nine percent of the artifacts are diagnostic projectile points, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-period, with heaviest occupation during the Early Woodland sub-periods (thirty-two percent of diagnostics). The assemblage contains seven lithic raw material types, six of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont. Fifty-one percent of the lithic artifacts from the Haywood Cluster are manufactured

from vein quartz, while thirty-three percent are manufactured from Antietam quartzite, indicating group movement from both east and west. The small number of artifacts belies the significance of the cluster, where two of the most unique sites in Madison County are found: the Martens Mound Site and the Coates Cache Site (Nash 1999b). As a grouping of five probable Middle Woodland stone burial mounds, the Martens Mound Site is one of few such sites documented east of the Blue Ridge. These features are situated on a north-facing alluvial fan of the Arrington Mountain monadnock. The mounds, averaging 13.5 feet by 17 feet, are comparable in size to the Middle Woodland earthen and stone burial mounds recorded in the Shenandoah Valley. Each is outlined by large, embedded gneiss fieldstones and cobbles, and was apparently capped by smaller fieldstones, most of which are now found in adjoining spoil piles that are taken as evidence of looting. The Coates Cache Site, located at a springhead one thousand feet west of the mounds, is another anomaly for the Inner Piedmont. Since 1980, twenty-five large, slightly contracting stemmed, late-stage quartzite bifaces have eroded into the Leathers Run tributary flowing at the base of the fan where the mounds are located. The bifaces are manufactured in the flake and core tradition, with striking platforms visible on the majority. Averaging 130 mm in length, 69 mm in width, and 12 mm in thickness, these are late stage preforms for hafted bifaces or knives/blades. It is not known whether the Coates cache represents the storage of non-local materials prior

to redistribution (a common interpretation of caches), or the conspicuous consumption associated with mortuary rituals. The remaining sites in the cluster are small base camps where occupants engaged in bifacial reduction and projectile point manufacture, hunting, and stone axe production. The cluster's location at the confluence of Leathers Run and the Robinson River marks the head of the Hebron Valley, site of the most intensive documented prehistoric occupations in the study area. While the burial mounds and cache are situated one hundred feet above the Valley, neither is visible from the floodplain. Rather, they are oriented north, toward the headwaters of Leathers Run, nestled in the flakes of the Arrington Mountain monadnock. Further research must consider the meaning of such a protected location for a burial ritual that is typically located in highly visible settings.

H. Hebron (Table 38; Appendix II, Figures 44 and 45; Appendix III, Table 25).

Table 38. Hebron Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
12	E11; E14	449	3	515	N-NE-E-S-SW-NW	16.84

Location: Hebron Valley, near the center of Madison County.
Setting: Floodplain terraces and wetlands on widest floodplain (two miles) in study area. County Road 603 borders cluster on east; County Road 638 borders cluster on south. Sheltered on west by Gaar Mountain monadnock. Valley narrows at southern terminus where alluvial deposits are thin or absent and the Robinson River cut a gorge-like valley approximately one hundred fifty-feet below the surrounding upland surface. Change in valley morphology occurs where Robinson River crosses the northeast-striking White Oak Run high stress zone. Fault may structurally control the alluvial sedimentation by way of an uplifted block that obstructs sediment transport. Historically known for marshy environments. Lacustrine sediments discovered at lowest points of the valley. Portions of valley remain marshy today, although much of the land has been drained for cultivation. Farm located at the southern terminus of the valley is named "Duck Farm" after avian inhabitants.
Hydrology: Confluence of third-order Robinson River and second-order White Oak Run; unnamed first-order tributary to Robinson River; first-order Muddy Run.
Geology: Robertson River Igneous Suite and Augen Gneiss.
Soils: Augusta silt loam; Hiwassee loam; Wickham loam; Chewacla silt loam; Brandywine loam.
Vegetation: Piedmont/Mountain Floodplain Forest (Matrix).
Comments: Floodplain formed as backwash plain at White Oak Run High Stress Zone. Robinson River cobble load in cluster includes Catoctin metabasalt cobbles for stone axe production and Catoctin metabasalt breccia (jasper) cobbles for stone tool production. Quartz-bearing deposits outcrop in cluster. "Hebron chalcedony" is believed to be associated with High Stress Zone, although not mapped *in situ*.
Archaeological Data Recovery Methods: Surface Survey—All Sites; no re-survey due to lack of access to sites; informant-based description.

Cultural Description: The assemblages from the twelve sites of the Hebron Cluster include 2,249 lithic and ceramic artifacts; of these forty-nine percent are diagnostics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Late PaleoIndian though Late Woodland sub-

periods, with heaviest occupation during the Late Woodland sub-period (twenty-nine percent of diagnostics). As with the Graves Cluster, the Hebron Cluster is one of the most significant in the study due to the density of sites and the consistency of artifact collection by the Kate Graves family. All cluster sites are multi-component, with one occupied during every cultural sub-period between the Late PaleoIndian and the Late Woodland sub-periods, and five occupied during every cultural sub-period between the Early Archaic and the Late Woodland sub-periods. The cluster contains eight small base camps, two hamlets, one limited activity camp, and one collecting area (Duck Farm Site). As discussed in Chapter Two, future studies of the Duck Farm Site will no doubt identify multiple sites in the one hundred acres that currently comprise it. The cluster artifact assemblage includes twenty-one lithic raw material types, the greatest variety of any cluster in the study area. Eighteen are from the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin, supporting the presence of groups having mobility and/or exchange patterns that focus on the region. Fifty-six percent of the lithic artifacts are manufactured from vein quartz, an indication of a site orientation toward the Inner Piedmont. Twenty-eight percent of the lithic raw material is Antietam Quartzite, chert, and jasper which points to interactions with western-oriented groups or travel in that direction across the Blue Ridge. The Hebron Cluster assemblage is unique in the number and variety of objects interpreted as ritual objects: three steatite bowl fragments, three

slate gorgets, one metasiltstone bannerstone, two steatite discs, one chlorite miniature *bas relief* effigy face, and one chlorite stone pipe fragment. Seven of these artifacts are from the Duck Farm Roy Crigler Site, a hamlet on the eastern edge of the Hebron Valley. No other site in Madison County has yielded gorgets, discs, or an effigy face, which are probably associated with Middle-Late Woodland occupations and may be tied to horticultural ritual and the expression of social rank (MacCord 1966; Blanton 2003). The other hamlet, the Strode A Site, is one of only five sites in the study area having a PaleoIndian component. Represented by two Late Paleo Single-Flute points and a thirty pound cache of an unidentified orange-red chalcedony cores and flakes, the Strode A Late PaleoIndian assemblage supports the interpretation of a small, quarry-related occupation for this sub-period. A projectile point of this material-a Late PaleoIndian single-flute-was recovered at Strode E in the Lambs Bottom Cluster. Like Strode B of the Banks Mountain Cluster, Strode A also yielded a significant number of Late Woodland ceramics. The two hamlets, Strode A and Duck Farm Roy Crigler, fall within the catchment defined by Dunham (1994) for the Rapidan Mound, located ten miles to the south. While in the cluster, the occupants engaged in a variety of tool manufacturing and resource processing activities: bifacial reduction and projectile point manufacture; spear production; stone axe production; hunting; hide working; wood working; plant processing; and possible horticulture. The presence of Middle Woodland (Popes

Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle) ceramics from seven Graves Cluster sites supports some degree of sedentism. This cluster will be examined in greater detail in the context of Hydrologic Unit E14 in Chapters Six and Seven. The large number of multi-component sites, the variety of site functions, and unique assemblages at several sites make this a solid case study for persistent places as keys to unifying scaled analysis.

I. Henshaw (Table 39; Appendix II, Figures 46 and 47; Appendix III, Table 26).

Table 39. Henshaw Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
4	E14	504	14	182	NW, N, SE	8.97

Location: Head of Hebron Valley between Deal Mountain and Gaar Mountain monadnocks.
Setting: Floodplain and hilltops in constriction between Deal (north) and Gaar (south) Mountain monadnocks; adjacent to State Route 231.
Hydrology: Confluence of third-order Robinson River with second-order Leathers Run and second-order Mulatto Run.
Geology: Flint Hill Gneiss and Augen Gneiss.
Soils: Congaree loam; Alluvial land; Rock land.
Vegetation: Piedmont/Mountain Floodplain Forest (Matrix).
Comments: Hebron Valley opens at south end of cluster. Robinson River cobble load includes Catoctin metabasalt cobbles for stone axe production and Catoctin metabasalt jasper cobbles for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Block Excavation—44MA1.

Cultural Description: While a significant number of artifacts (1,185 lithic and ceramic) are documented for the four sites of the Henshaw Cluster, ninety-one percent of these are from the excavations of the Henshaw Rockshelter (44MA1). Seventy-seven percent of the cluster artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias for the non-rockshelter sites and the recovery of a significant quantity of ceramic sherds during the rockshelter excavation. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Late Woodland sub-period (eight-two percent of diagnostics). The assemblage contains ten lithic raw material types, all of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin. Seventy percent of the lithic artifacts from the Henshaw Cluster are manufactured from vein quartz, while ten percent are manufactured from Antietam quartzite, indicating a focus on local resources and movement from the Blue Ridge to the west. All of the sites in the cluster are multi-component; two are identified as small base camps and one as a limited activity camp. The cluster sites evidence the greatest mean slope (fourteen percent) of the Inner Piedmont clusters due to the location of the Henshaw Rockshelter in a cliff face. With its range of artifacts, hearth features, and faunal remains, the Henshaw Rockshelter was also a small base camp, re-occupied for several thousand years. Ten mammalian and two reptilian species the

indicate an upland and riverine focus were recovered from the hearth features: deer, rabbit, otter, raccoon, marmot, gray squirrel, muskrat, wood rat, dog, gray fox, black snake, and probable water turtle. Four probable bone awl fragments were recovered from the hearth features, as well. The occupants of the Henshaw Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, and wood working. Two steatite bowl fragments that may have a Late Archaic-Early Woodland ritual association were recovered from cluster sites, one each at the Henshaw Rockshelter and the Martens Site. The site report for Henshaw (Holland and Graves 1951) mentions a small "pebble pendant" broken at a drill hole, as well as a bone bead blank, both of which may represent the creation of items for personal adornment. The presence of Early Woodland (Accokeek), Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle, Page, Keyser) ceramics from two Henshaw Cluster sites supports some degree of sedentism. Seven sherds of Gaston Simple Stamped ceramics, associated with cultures of the Inner Coastal Plain of the James and York Rivers, indicate long-distance exchange during the Late Woodland sub-period. 44MA1 is the southernmost of the five Robinson/Rose River rockshelters, and like 44MA9 (three miles to the northwest), contained Page and Keyser sherds. These Late Woodland ceramics support the hypothesis of small groups moving across the Blue Ridge from sedentary sites in the Shenandoah Valley, stopping at well-known sites during their

travels. Given its location at the constriction of the Robinson River Valley near Banco, a significant natural feature, the Henshaw Cluster offers a case study of the cultural identification of landmarks as territorial boundaries, an issue that is taken up in Chapter Six.

J. Lambs Bottom (Table 40; Appendix II, Figures 48 and 49; Appendix III, Table 27).

Table 40. Lambs Bottom Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E12	463	6	218	E-S-SW	16.89

Location: Madison/Greene County border in southwestern project area.
Setting: Bluffs and terraces of modest Rapidan River floodplain; U.S. Route 29 divides the cluster.
Hydrology: Confluence of second-order Elk Run and third-order Rapidan River.
Geology: Flint Hill Gneiss, Augen Gneiss, and Robertson River Igneous Suite.
Soils: Wickham loam; Codorus loam; Appling fine sandy loam; Starr silt loam.
Vegetation: Piedmont/Mountain Floodplain Forest (Matrix).
Comments: Major floods of Twentieth Century have scoured Rapidan River floodplain and exposed cultural deposits. Rapidan River cobble load in cluster includes Catoctin metabasalt cobbles for stone axe production and Mylonite and Catoctin metabasalt jasper cobbles for stone tool production. Quartz-bearing deposits outcrop in cluster.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The assemblages of the five sites of the Lambs Bottom Cluster include 1341 lithic and ceramic artifacts, which has the highest mean site area (16.84 acres) of any cluster in the study area. Eight-four percent of the artifacts are from the

surface of the Strode E Site, which was severely impacted by the 1985 and 1996 floods. Located in Greene County on the south bank of the Rapidan River, Strode E is one of two non-Madison County sites included in the study due to its proximity to the county boundary. Forty-three percent of the artifacts from the cluster assemblage are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the PaleoIndian through the Late Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (thirty-eight percent of diagnostics). The assemblage contains seventeen lithic raw material types, sixteen of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin. Sixty-five percent of the lithic artifacts from the Lambs Bottom Cluster are manufactured from vein quartz, while twenty percent are manufactured from Antietam quartzite, chert, and jasper, indicating group movement from both west and east. Three of the sites in the cluster are multi-component; two are identified as hamlets and two as limited activity camps. Due to limited artifact assemblages and/or documentation, one site cannot be assigned to a cultural period or function and is identified as a 'lithic scatter' on the VDHR site survey form. The Strode E Site houses one of only five PaleoIndian components in the study, represented by two Late Paleo Single-Flute points. The presence of two Late Woodland hamlets (Strode E and Hawley-Zimmer) is significant because of their proximity to the Rapidan Mound (44OR1), an

accretional mound located four miles downriver from the Lambs Bottom Cluster. The occupants of the Lambs Bottom Cluster engaged in bifacial reduction and projectile point manufacture, spear production, hunting, wood working, stone axe production, and horticultural activities. Four steatite bowl fragments, which may have a Late Archaic-Early Woodland ritual association, were recovered from three sites in the cluster. The presence of Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle) ceramics from Strode E and Hawley-Zimmer supports some degree of sedentism at these sites. The recovery of a single sherd of Gaston Simple Stamped, typically from Late Woodland sub-period sites in the Inner Coastal Plain James and York Rivers, which signals long-distance exchange and/or interaction. The ceramic sherds in the Hawley-Zimmer assemblage are extremely large, indicating the exposure of features during flooding episodes of the past fifteen years. The intensive activity of local collector in the agricultural fields along the Lambs Bottom Cluster stretch of Rapidan River floodplain identified the large sites here; yet, the number of artifacts recovered is somewhat limited. This cluster may provide evidence for the hypothesis that archaeological components on the first terraces of Piedmont floodplains are difficult to locate because of extensive aggradation (Petraglia et al.1993; Hayes and Monaghan 1998).

K. Lost Mountain (Table 41; Appendix II, Figures 50 and 51; Appendix III, Table 28).

Table 41. Lost Mountain Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
8	E-13	588	6	738	N-E-SE-S-SW-W-NW	1.02

Location: Base of double-peaked Lost Mountain monadnock in south-central Madison County near Aroda.
Setting: Fans and ridge tops in heavily dissected terrain; County Road 607 and State Road 230 bound the cluster.
Hydrology: Unnamed intermittent tributaries to first-order Great Run.
Geology: Lynchburg Metagreywacke.
Soils: Elioak fine sandy loam; Appling fine sandy loam; Cecil fine sandy loam.
Vegetation: Oak/Heath Forest (Matrix).
Comments: 7 of the 8 sites in this cluster were located through Phase I archaeological survey and are an indication of the frequency of small interriverine sites in the Inner Piedmont.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA103, 44MA104, 44MA105, 44MA109, 44MA110, 44MA111, 44MA193.

Cultural Description: The Lost Mountain Cluster is comprised of eight sites that have yielded 170 lithic artifacts. Forty-five percent of the artifacts are diagnostic projectile points and ceramics. Fifty-three percent of the artifacts are from the Jenkins Mountain Field Site; of these, eight-three percent are diagnostic projectile points, which clearly points to artifact collection bias in the assemblage. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Late

Archaic sub-period (thirty-three percent of diagnostics). The assemblage contains only three lithic raw material types, all of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont region. Ninety-nine percent of the lithic artifacts from the Lost Mountain Cluster are manufactured from vein quartz, an indication of a strong orientation toward the Inner Piedmont. The Jenkins Mountain Field Site is the only multi-component site in the cluster, and two sites (44MA110 and 44MA193) are limited activity camps. Due to limited artifact assemblages and/or documentation, five sites cannot be assigned to a cultural period or function and are identified as a 'lithic scatters' on the VDHR site survey forms. The occupants of the Lost Mountain Cluster engaged in bifacial reduction, projectile point manufacture, and wood working. The grouping represents commonly identified (and overlooked) small sites in Piedmont interriverine settings. The Lost Mountain Cluster, with a single multi-component site, may provide a case study of limited use encampments in the interriverine Piedmont.

L. Mallory (Table 42; Appendix II, Figures 52 and 52; Appendix III, Table 29).

Table 42. Mallory Cluster Physical Attributes.

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E15	483	4	349	NE-S-SW	.93

Location: Near Prices Shop, east of Town of Madison; between Dark Run and Lost Mountain Clusters.
Setting: Flat hilltops in heavily dissected interriverine topography; County Roads 616 and 634 bound cluster.
Hydrology: First-order and second-order Little Dark Run.
Geology: Lynchburg Metagreywacke.
Soils: Cecil fine sandy loam; Chewacla silt loam; Hazel loam.
Vegetation: Oak/Heath Forest (Matrix).
Comments: All sites were located by surface finds in plowed fields.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The assemblages from the five sites of the Mallory Cluster contain 447 lithic and ceramic artifacts. Forty-five percent of the artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (thirty-five percent of diagnostics). The assemblage contains thirteen lithic raw material types, twelve of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Seventy-four percent of the lithic artifacts from the Mallory Cluster are manufactured from vein quartz, an indication of a strong orientation toward the Inner Piedmont. Four of five sites are multi-component; three of the mult-component sites are identified as small base camps and one as a limited activity camp. The assemblage from the only single-component site, Shirley Estes, is too limited for a determination of site function. The occupants of the Mallory Cluster engaged in bifacial reduction and

projectile point manufacture, hunting, hide working, and wood working. A single metagreywacke stone bowl fragment was recovered from the Strode R Site; it is believed to be a local manifestation of the Late Archaic-Early Woodland steatite bowl tradition. The presence of Early Woodland (Accokeek) ceramics, Middle Woodland (Popes Creek) ceramics, and Middle-Late Woodland (Albemarle) ceramics at three sites supports some degree of sedentism in the cluster. The Mallory Cluster is another example of a grouping of small sites in Piedmont interriverine settings; as the majority of these multi-component sites in the headwaters of first-order streams, this cluster provides a good comparison to the Dark Run Cluster.

M. Middle River (Table 43; Appendix II, Figures 54 and 55; Appendix III, Table 30).

Table 43. Middle River Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
3	E11	621	2	628	SE-SW	10.26

Location: Madison/Greene County border in western project area; near Brills Shop.
Setting: Floodplain terrace and hilltop of Middle (Conway) River; State Route 230 cuts cluster.
Hydrology: Second-order Middle River.
Geology: Flint Hill Gneiss.
Soils: Congaree fine sandy loam; Codorus loam; Eubanks loam.
Vegetation: Piedmont/Mountain Floodplain Forest (Matrix).
Comments: Middle River is an underfit stream; river valley formed during Late Pleistocene when stream channel held considerably more flow. Middle River cobble

load in cluster includes Catoctin metabasalt cobbles for stone axe production and Catoctin metabasalt jasper cobbles for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The three sites of the Middle River Cluster have yielded 670 lithic and ceramic artifacts. Forty-three percent of the artifacts are diagnostic projectile points and ceramics. The high percentage of diagnostics reflects artifact collection bias, as field checks confirmed large quantities of debitage at all three sites. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (twenty-eight percent of diagnostics). Two of the sites, Strode C and Hawkins, are multi-component, while no diagnostic artifacts were recovered from the Crowe Site. Strode C is one of two sites in the study located outside of Madison County; its position on the south bank of the Middle River places it in Greene County. The assemblage contains eleven lithic raw material types, ten of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Sixty-one percent of the lithic artifacts from the Middle River Cluster are manufactured from vein quartz, an indication of a strong orientation toward the Inner Piedmont (east), although twenty-three percent of the assemblage is comprised of Antietam quartzite, signaling regular movement and/or exchange in the western Blue Ridge/Shenandoah Valley. The most significant site in the cluster is Strode C, which was occupied during every sub-period from

Early Archaic through Late Woodland. The Late Woodland ceramics (Albemarle and Potomac Creek), taken together with the triangular projectile points (Levanna/Yadkin and Madison), comprise sixteen percent of the diagnostic artifact assemblage. The identification of the site as a hamlet is largely based on the occurrence of these artifacts, as well as its location on the first terrace of the large Middle River floodplain. Strode C falls within the catchment defined by Dunham (1994) for the Rapidan Mound, located nine miles to the east. Exclusive of Strode C, the Middle River Cluster sites are identified as a limited activity camp and a small base camp. The occupants of the Middle River Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, and wood working. The presence of Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle and Potomac Creek) ceramics at Strode C supports increasing sedentism at the site, as well as connections to the Late Woodland/Contact period culture of the Potomac Piedmont. While not associated with a monadnock, the Middle River Cluster provides a comparison to the adjoining Banks Mountain Cluster, with its Strode B hamlet and multi-component base camps and limited activity camps on the terraces above the Rapidan River. The broad Middle River floodplain provides a setting comparable to those of the eight other hamlets in the study area.

N. Neal Mountain (Table 44; Appendix II, Figures 56 and 57; Appendix III, Table 31).

Table 44. Neal Mountain Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
3	E12	629	9	532	SW-NW	.34

Location: Madison/Greene County border in western project area, at base of Neal Mountain monadnock; near Shelby.
Setting: Hilltops; sheltered by Neal Mountain on the northwest. Cluster bordered on south by County Route 621.
Hydrology: First-order Gilmore Run and unnamed first-order tributaries to the Rapidan River.
Geology: Augen Gneiss.
Soils: Eubanks Loam.
Vegetation: Mountain/Piedmont Basic Woodland (Small Patch).
Comments: Cluster adjacent to large quartz outcrops.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting: Dewey Site; Devil Fence Site.

Cultural Description: The assemblages from the three sites of the Neal Mountain cluster contain 1,285 lithic artifacts; nine percent are diagnostic projectile points. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods with heaviest occupation during the Early Woodland sub-period (thirty-five percent). The Middle Archaic is also well-represented in the diagnostic assemblage, accounting for thirty-two percent. The assemblage contains nine lithic raw material types, eight of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Ninety-three percent of the lithic artifacts from the Banks Mountain Cluster are

manufactured from vein quartz, a direct reflection of the accessibility of high quality outcrops adjacent to the cluster. The Devil Fence Site is situated in the midst of such outcrops, and its identification as a lithic workshop is derived from the 538 quartz flakes, shatter, cores, and biface fragments found there. No diagnostic artifacts were recovered during survey or testing at this site, but it is assumed to be multi-component based on the quantity of lithic debitage. The Dewey Site, five hundred feet south of Devil Fence, is identified as a small, quarry-related camp site, occupied during every sub-period from the Early Archaic through the Late Woodland. The remaining site, 4MA11, is identified as a limited activity camp. The occupants of the Neal Mountain Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, and wood working. None of the sites yielded ceramics, matching the pattern of short-term occupations in the interriverine Piedmont. Located at the base of the Neal Mountain monadnock, the settings for all three cluster sites lack direct access to surface water, unlike other interriverine sites in the study area. While springheads that are now relict may have been accessible to site occupants during prehistory, the cluster provides a case study of specialized activity areas away from more resource-rich locations.

O. Peola Mills (Table 45; Appendix II, Figures 58 and 59; Appendix III, Table 32).

Table 45. Peola Mills Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
4	E03	662	5	318	SE-S	3.45

Location: Madison/Rappahannock County border in eastern study area; near Etlan.
Setting: Easternmost fan of Old Rag Mountain at intersection of foothills and flat land of Inner Piedmont; ridges and floodplain of Hughes River; cut by State Route 231.
Hydrology: Second-order Rosson Hollow Run; second-order Popham Run; third-order Hughes River.
Geology: Flint Hill Gneiss and Augen Gneiss.
Soils: Wickham loam; Trego loam; Unison loam.
Vegetation: Piedmont/Mountain Alluvial Forest (Large Patch).
Comments: Hughes River cobble load in cluster includes mylonite for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The four sites of the Peola Mills Cluster have yielded 141 lithic and ceramic artifacts. Fifty-six percent of the artifacts are diagnostic projectile points and ceramics, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Mid-PaleoIndian through the Late Woodland sub-periods, with heaviest occupation during the Late Archaic and Early Woodland sub-periods (seventy-three percent of diagnostics). The assemblage contains ten lithic raw material types, nine of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. All cluster sites are multi-component, with the large base camp, the Barbara Yowell Site, occupied during the

Mid-Paleo through Middle Woodland sub-periods. A single Mid-Paleo projectile point identifies this early occupation. Two of the four sites are identified as small base camps, and one as a limited activity camp. The presence of two ceramic sherds in the Graves Beehive Site assemblage indicates a degree of sedentism. Peola Mills Cluster occupants engaged in bifacial reduction and projectile point manufacture, hunting, hide working, and stone axe production. A single steatite bowl fragment was recovered from the Backfield Farm site, which may have a Late Archaic-Early Woodland ritual association. Given its location in the lower Hughes River basin, the Peola Mills Cluster is one of two clusters that directly link the Blue Ridge clusters with the Hazel River, the stream that forms the main stem of the Rappahannock River in the Outer Piedmont. The lack of a dominant lithic material in the artifact assemblages indicates a 'crossroads' function for the Peola Mills Cluster, given its proximity to both the Blue Ridge and the Piedmont. This is discussed in greater detail in Chapter Six.

P. Thorofare Mountain (Table 46; Appendix II, Figures 60 and 61; Appendix III, Table 33).

Table 46. Thorofare Mountain Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
2	E15	524	7	823	SW-NW	3.35

Location: Far northeastern corner of Madison County, at base of Thorofare Mountain monadnock.
Setting: Saddle/hilltop in more moderate topography; bounded on east by County Road 631, which links Thorofare Mountain and Beaverdam Clusters.
Hydrology: First-order Little Crooked Run.
Geology: Lynchburg Metagreywacke.
Soils: Hazel loam; Elioak fine sandy loam.
Vegetation: Oak/Heath Forest (Matrix).
Comments: Thorofare Mountain is the most isolated of the Madison County monadnocks.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The Thorofare Mountain Cluster, which has the distinguishing feature of the highest mean distance to water of all Inner Piedmont clusters (823 feet), contains two sites that have yielded fifty-six lithic artifacts. Forty-six percent of the artifacts are diagnostic projectile points, reflecting artifact collection bias. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Early Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (sixty-five percent of diagnostics). The assemblage contains only two lithic raw material types, quartz (eight-two percent) and metabasalt (eighteen percent), both of which are found in the Blue Ridge-Inner Piedmont-Mesozoic Basin region. The limited variety in raw material signals restricted mobility, a pattern seen in the sites located at the base of the Lost Mountain monadnock. The occupants of the Thorofare Mountain Cluster engaged in bifacial reduction, projectile point manufacture, and wood working. Given its

isolation and verticality, more intensive use of the cluster area throughout prehistory is expected, and the lack of documented sites is believed to be a reflection of the lack of MAP participants in the far eastern section of Madison County. Future research should focus the hypothesis of restricted mobility in monadnock settings, which may have served as 'uplands' for groups settled further to the east in the Outer Piedmont.

Q. Uno (Table 47; Appendix II, Figure 62; Appendix III, Table 32).

Table 47. Uno Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
2	E-13	427	8	251	SW	.56

Location: Madison/Greene County border in south-central study area; near Uno crossroads.
Setting: Back of bluff above Rapidan River; moderately dissected topography. Cluster overlooks bend in Rapidan River where Rapidan Mound (44OR1) is located.
Hydrology: Unnamed, intermittent tributaries to third-order Rapidan River.
Geology: Lynchburg Metagreywacke
Soils: Wickham loam; Lloyd fine sandy loam.
Vegetation: Oak/Heath Forest (Matrix).
Comments: Rapidan River cobble load in cluster includes Catoctin metabasalt for stone axe production and Catoctin metabasalt jasper for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The assemblages of the two sites of the Uno Cluster have yielded twenty-five artifacts. This cluster has the distinguishing feature of the lowest

mean elevation of all Inner Piedmont clusters (427 feet amsl). No diagnostic artifacts have been recovered from these sites, both limited activity camps where bifacial reduction was the focal activity. The assemblage contains only two lithic raw material types, quartz (ninety-six percent) and quartzite (four percent), both found in the Shenandoah Valley-Blue Ridge-Inner Piedmont region. The small size of the sites and artifact assemblage are surprising, given the cluster's location overlooking a broad floodplain of the Rapidan River and the Rapidan Mound. Instead of having a riverine orientation, the sites appear to follow the pattern of small interriverine, upland-focused limited activity camps. In this way, they mirror the large number of sites documented on the Rapidan bluffs in Greene County, across the river from the study area. Further research in should focus on the integration of such sites into a riverine-oriented subsistence.

R. White Oak (Table 48; Appendix II, Figures 63 and 64; Appendix III, Table 35).

Table 48. White Oak Run Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
5	E14	537	7	382	NE-SE-S-NW	6.54

Location: Southeastern base of German Ridge, the eastern-most outlier of the Northern Virginia Blue Ridge.

Setting: Hilltops and sheltered fan/floodplain interface on half-mile-wide backwash plain between German Ridge (west) and Courthouse Mountain monadnock (east); in White Oak Run High Stress Zone; cluster cut by County Road 657.
Hydrology: Second-order White Oak Run.
Geology: Augen Gneiss.
Soils: Altavista loam; Chewacla silt loam; Brandywine loam.
Vegetation: Piedmont/Mountain Alluvial Forest (Large Patch).
Comments: High-quality quartz outcrops in cluster; carried in cobble load of White Oak Run.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Systematic Surface Survey—44MA127; Systematic Testing—44MA127.

Cultural Description: The White Oak Run Cluster, with its five sites and 5,158 lithic and ceramic artifacts, contains what is potentially the single most important site documented for Madison County: 44MA127, the Roadhouse Site. Of the total artifacts in the cluster assemblage, thirty-three percent are diagnostic projectile points or ceramics, reflecting artifact collection bias. Seventy-two percent of diagnostics are from 44MA127. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Late PaleoIndian though Late Woodland sub-periods, with heaviest occupation during the Early Woodland sub-period (twenty-nine percent of diagnostics). All cluster sites are multi-component, with the hamlet, 44MA127, occupied during every cultural sub-period between Late PaleoIndian and Late Woodland. The cluster also contains four small base camps. The artifact assemblage includes eighteen lithic raw material types, with fifteen from the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Indeed, a

distinguishing characteristic of 44MA127 is the wide variety of raw material in the assemblage, including exotic cherts and jaspers. The greatest mobility is evidenced in what is believed to be an exhausted Late PaleoIndian tool kit manufactured from a non-regional nodular gray chert of unknown provenience. The grouping includes two single-flute points, three preforms, two biface fragments, and fifteen flakes, flake tools, and core fragments. The flake assemblage is highly curated, all artifacts exhibiting extensive modification through use or intentional flaking. Included are punches, scrapers, cutting edges, burins, and a spokeshave. Because the projectile points are similar to Plano-style Late PaleoIndian points recorded in the northern Middle Atlantic and western Ohio Valley, the first occupants of 44MA127 may well have been pioneers into the region, traveling from a great distance (Nash 2008a). The Strode 3 Site is the fifth site in the study area from which a PaleoIndian diagnostic was recovered. In this instance, a single-flute projectile point manufactured from high quality vein quartz provides evidence of a non-local form being manufactured on local material. Sixty-six percent of the lithic artifacts are manufactured from vein quartz; high quality cobbles of this material are found in White Oak Run. Twenty-four percent of the lithic raw material is Antietam quartzite, chert, and jasper, which points to interactions with western-oriented groups or travel from the Shenandoah Valley-Blue Ridge. Aside from the PaleoIndian artifacts, the most distinctive characteristic of the White Oak Cluster is the recovery of eighteen steatite bowl

fragments from 44MA127. This is the highest number of such artifacts recorded for the study area and is unusual for a non-quarry related sites. Further chemical testing is necessary to determine the origins of the steatite fragments, but the frequency indicates that the site was a node in a Late Archaic-Early Woodland distribution or ritual system. The White Oak Cluster is also unique in the occurrence of ceramics in all site assemblages (446 sherds total). Early Woodland (Selden Island and Accokeek), Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), Late Woodland (Albemarle, Potomac Creek and Dan River) ceramics support increasing sedentism through the Woodland period, along with connections to the Potomac and Dan River Piedmont (extreme northern and southern Virginia) during the Late Woodland sub-period. Like Strode B of the Banks Mountain Cluster and Strode A of the Hebron Cluster, 44MA127 yielded a large number of Late Woodland ceramics (fifteen percent of diagnostic artifacts). 44MA127 falls within the catchment defined by Dunham (1994) for the Rapidan Mound, located eight miles to the south. While in the cluster, the occupants engaged in a variety of tool manufacturing and resource processing activities: intensive bifacial reduction and projectile point manufacture; spear production; stone axe production; hunting; hide working; wood working; plant processing; and possible horticulture. White Oak Run, constricted by the White Oak High Stress Zone, created a broad, isolated floodplain in this cluster;

this unique topographic feature may be key to the longevity and intensity of Native occupation here.

S. Isolated Inner Piedmont Sites (Figure 30; Appendix III, Table 36).

Eight isolated sites that do not meet the cluster criteria outlined in Chapter Two are documented for the Inner Piedmont province in the study area. Unlike the isolated sites in the Blue Ridge province, eighty-eight percent of the Inner Piedmont sites can be assigned to cultural periods and one hundred percent are functionally identifiable. The group includes one large base camp, five small base camps, one limited activity camp, and a lithic workshop. Several are notable because of their artifact assemblages. The Jane Aylor Site is a large base camp in Deep Hollow, an eastern feature of the Blakey Ridge monadnock system. Located on a narrow terrace of an unnamed first-order tributary to the White Oak Run drainage, the site has yielded over 90 diagnostic projectile points representing every sub-period from the Early Archaic through the Middle Woodland, along with eleven metabasalt chipped stone axes. The latter occurrence is striking, considering that the closest stream carrying metabasalt cobbles is three miles northeast, and the metabasalt formations over seven miles northwest. Because the Aylor family did not collect debitage, it is not known if the axes were brought to the site fully formed or if they were manufactured from cobbles on site, but considerable effort was expended to bring

the dense, heavy material to the hollow. 44MA118, a lithic workshop focused on the bifacial reduction of quartz, is located on a hilltop overlooking the third-order Rapidan River. The site is a smaller version of the Devil Fence Site of the Neal Mountain Cluster, located three miles northwest. 44MA74, a small base camp overlooking Elk Run, is unique for its intensive use of mylonite in bifacial reduction. The Strode W Site, a small base camp located in the headwaters of Beautiful Run in a highly dissected topographic setting, is the only ceramic-bearing isolated site in the study area. In addition to 250 lithic artifacts (one-half of which are diagnostic projectile points from the Early Archaic through the Late Woodland sub-periods), forty-five sherds representing Middle to Late Woodland ceramic types (Popes Creek/Albemarle) are included in the artifact assemblage. As with other sites in the Elk Run drainage, Strode W was heavily occupied during the Early Woodland sub-period, with its artifact assemblage containing twenty-four Calvert projectile points. The occupants of this multi-component site engaged in intensive bifacial reduction, hunting, wood working, hide working. The recovery of a pestle indicates horticultural activity.

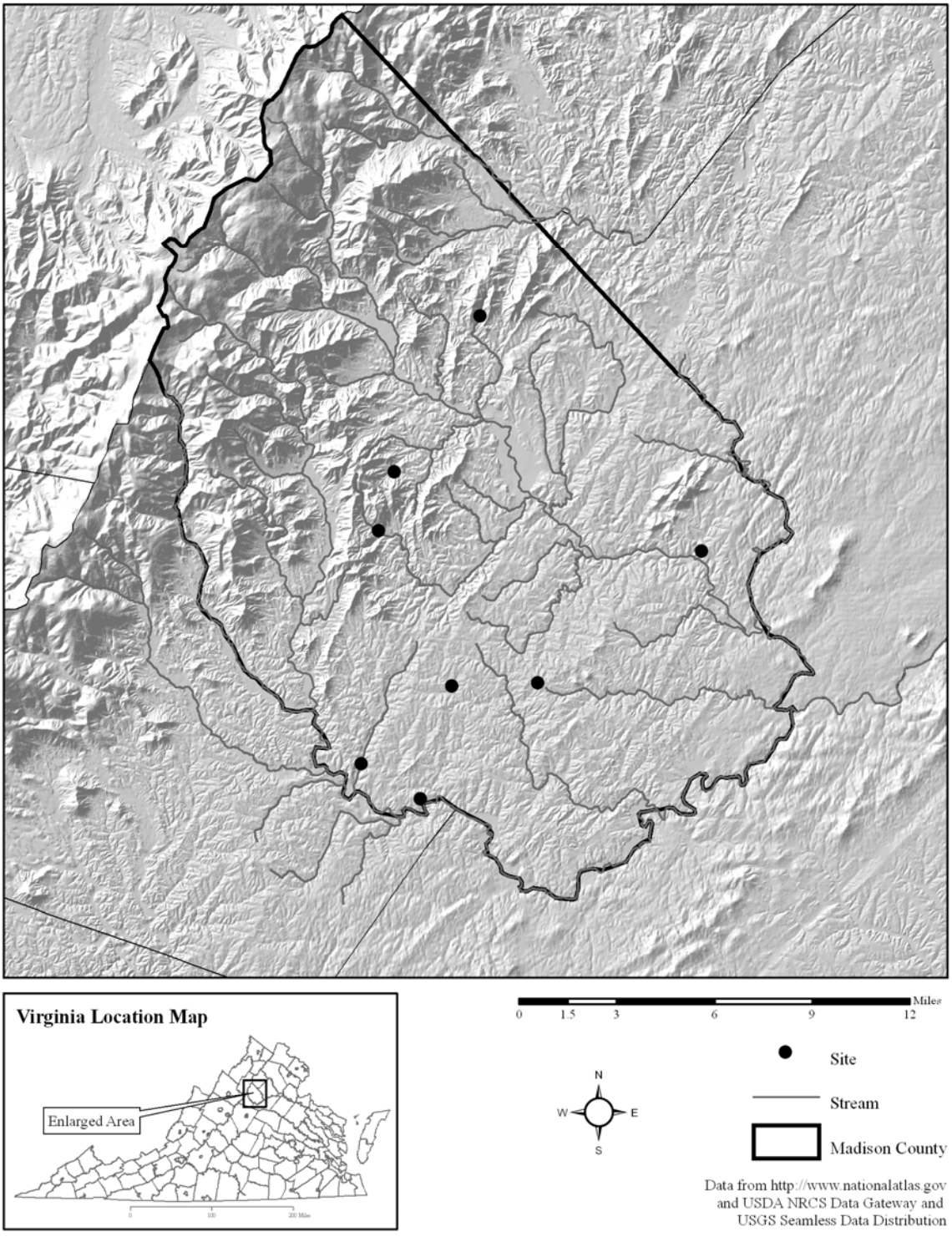


Figure 30. Isolated Inner Piedmont Sites, Madison Archaeology Project

Cluster Descriptions, Mesozoic Basin Physiographic Province

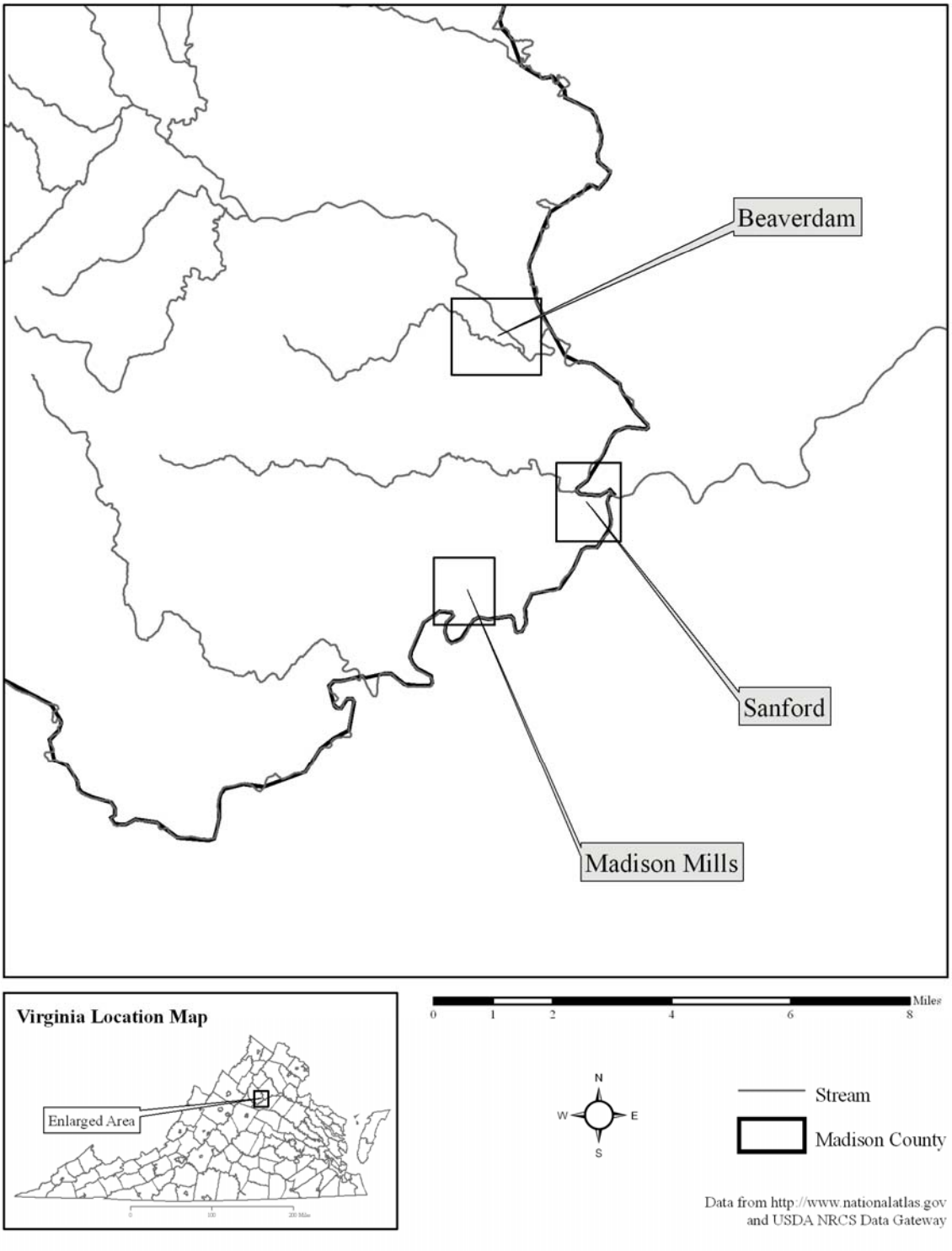


Figure 31. Mesozoic Basin Site Clusters, Madison Archaeology Project

A. Beaverdam (Table 49; Appendix II, Figures 65 and 66; Appendix III, Table 37).

Table 49. Beaverdam Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope (%)	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
7	E15	335	8	298	E-SE-S-W-NW	1.65

Location: Madison/Culpeper County border in far southeastern study area; near Locust Dale.
Setting: Hilltops overlooking floodplain and floodplain terraces; U.S. Route 15 and County Road 634 cut the cluster; in area where Robinson River is constructed by high bluffs.
Hydrology: Second-order Beaverdam Run; second-order Beaverdam Run/third-order Robinson River confluence.
Geology: Lynchburg Group/Charlottesville Formation; Catoctin Metabasalt.
Soils: Starr silt loam; Chewacla silt loam; Hiwassee loam.
Vegetation: Basic Oak-Hickory Forest (Matrix); Piedmont/Mountain Floodplain Forest.
Comments: Documented steatite quarry (44MA4) 1.25 miles west of cluster. Robinson River cobble load in cluster includes Catoctin metabasalt for stone axe production and metagreywacke, quartz, and Catoctin metabasalt jasper for stone tool production.
Archeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA114, 44MA115, 44MA116.

Cultural Description: The seven sites of the Beaverdam Cluster, along with 609 lithic and ceramic artifacts, were documented by Sandra Speiden of the Archeological Society of Virginia. Sixty-two percent of the artifacts are diagnostic projectile points and ceramics. The high percentage of diagnostics reflects artifact collection bias at four sites. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with

heaviest occupation during the Early Woodland sub-period (twenty-seven percent of diagnostics). Four of the sites are multi-component, while no diagnostic artifacts were recovered from the three sites tested in a highway compliance study (44MA114, 44MA115, 44MA116). Due to a paucity artifacts and a lack of diagnostics, two of these sites (MA115 and 116) cannot be assigned to a cultural period or function. Two sites are limited activity camps, two are small base camps, and one is a hamlet. The assemblage contains fourteen lithic raw material types, thirteen of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Seventy-four percent of the lithic artifacts from the Beaverdam Cluster are manufactured from vein quartz, an indication of a strong orientation toward the Inner Piedmont (east), although twenty percent of the assemblage is comprised of Antietam quartzite, chert, and jasper, signaling regular movement and/or exchange in the western Blue Ridge/Shenandoah Valley. Three of the seven sites in the cluster (two small base camps and the hamlet) were occupied during every sub-period between the Early Archaic and Late Woodland. The Strode I Site is deserving of greater attention; aside from the Inner Piedmont rockshelters, its assemblage includes the greatest number of Late Woodland/Contact Period Madison projectile points, the only chunkey stone in the study, and a variety of Late Woodland ceramics. It falls within the catchment identified by Dunham (1994) for the Rapidan Mound, located nine miles to the southeast. The ceramics from the Late Woodland

component, together with the triangular projectile points (Levanna/Yadkin and Madison), comprise forty-one percent of the diagnostic artifact assemblage. The identification of the site as a hamlet is largely based on the occurrence of these artifacts, as well as its location on the second terrace of the Beaverdam floodplain. The occupants of the Beaverdam Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, wood working, probable horticulture, and ritual gaming. The presence of Early Woodland (Accokeek), Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle and Potomac Creek) ceramics in the cluster supports increasing sedentism, as well as connections to the Late Woodland/Contact period culture of the Potomac Piedmont. As one of three Mesozoic Basin clusters, the Beaverdam sites are located along the highest order streams in the study area. The distinguishing characteristic of the topography of this cluster is not, however, broad floodplains, but highly constricted streams and dissected topography which creates an upland setting in a low-elevation region (300 feet amsl). The Beaverdam area marks the transition between the Inner Piedmont and the Mesozoic Basin and may have represented an upland setting for groups more oriented to the Outer Piedmont.

B. Madison Mills (Table 50; Appendix II, Figures 67 and 68; Appendix III, Table 38).

Table 50. Madison Mills Cluster Physical Attributes

Number of Sites	Hydrologic Unit	Mean Elevation (feet i.e.)	Mean Slope	Mean Distance to Water (feet)	Aspect	Mean Site Area (acre)
8	E13	344	4	333	E-SE-S-W	1.59

Location: Five Forks at Madison/Orange county border, in southern study area.
Setting: Hilltops overlooking half-mile-wide floodplain (Walkers Bottom); lowlands crossroads at intersection of State Route 230 and U.S. Route 15.
Hydrology: Deep bend of third-order Rapidan River; unnamed first-order tributaries have been channeled to control wetland formation in agricultural fields.
Geology: Conglomerate—mixed clasts.
Soils: Calverton/Creedmoor silt loam; Rapidan silt loam; Congaree loam.
Vegetation: Basic Oak-Hickory Forest (Matrix); Piedmont/Mountain Floodplain Forest.
Comments: Rapidan River cobble load in cluster includes Catoctin metabasalt and quartz for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites; Shovel Test Pitting—44MA106, 44MA107, 44MA108.

Cultural Description: The Madison Mills Cluster assemblage includes only 137 lithic artifacts from eight sites. Given its location on hilltops overlooking a major bend in the Rapidan River, larger sites with denser artifact frequencies were expected. Eight percent of the artifacts are diagnostic projectile points; no ceramics have been documented for the cluster, which was occupied from the Early Archaic through the Late Woodland sub-periods. The heaviest occupation was during the Early Woodland sub-period (forty-five percent of diagnostics). Due to a paucity of artifacts and a lack of diagnostics, three sites cannot be assigned to a cultural period or

function. The remaining five are identified as limited activity camps. Three of these are multi-component and two, single-component. Along with the limited size of the assemblage is the limited variety of lithic raw material types; the assemblage contains eight lithic raw material types, seven of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Eighty-nine percent of the lithic artifacts from the Madison Mills Cluster are manufactured from vein quartz, an indication of a stronger orientation toward the Inner Piedmont. Cluster occupants primarily engaged in bifacial reduction and projectile point manufacture at sites that may have functioned as hunting camps. Survey by Sandra Speiden of the Archeological Society of Virginia resulted in the location of few artifacts on the broad floodplains the Rapidan River, west of the terraces of the Madison Mills Cluster. This may indicate a pattern of stream aggradation and site burial, as hypothesized for the upstream Rapidan River floodplain of the Lambs Bottom Cluster.

C. Sanford (Table 51; Appendix II, Figures 69 and 70; Appendix III, Table 39).

Table 51. Sanford Cluster Physical Attributes

Number of Sites	**Hydrologic Unit**	**Mean Elevation (feet i.e.)**	**Mean Slope (%)**	**Mean Distance to Water (feet)**	**Aspect**	**Mean Site Area (acre)**
11	E13; E15	312	3	212	N-E-SE-S-SW-NW	3.04

Location: Border of Madison, Orange, and Culpeper counties in far southeastern study area.
Setting: Hilltops overlooking confluence of Robinson and Rapidan Rivers; floodplain terrace of unnamed first-order stream; County Road 671 borders cluster on southern side.
Hydrology: Third-order Robinson River; third-order Rapidan River; unnamed first-order tributaries to Rapidan River.
Geology: Conglomerate—greenstone clasts.
Soils: Rapidan silt loam; Congaree loam; Penn loam.
Vegetation: Basic Oak-Hickory Forest (Matrix); Piedmont/Mountain Floodplain Forest.
Comments: Robinson River cobble load in cluster includes Catoctin metabasalt for stone axe production and greywacke for stone tool production; Rapidan River cobble load in cluster includes Catoctin metabasalt for stone axe production and Quartz and Catoctin metabasalt jasper for stone tool production.
Archaeological Data Recovery Methods: Surface Survey—All Sites.

Cultural Description: The eleven sites of the Sanford Cluster, all documented by Sandra Speiden, have yielded 1,498 lithic and ceramic artifacts. The sites are located in agricultural fields. The cluster represents the lowest mean elevation (312 feet amsl) and the least slope (two percent) of all clusters in the study area. Twenty percent of the artifacts are diagnostic projectile points and ceramics. Based on frequency counts of diagnostic artifacts, the cluster was occupied from the Early Archaic through the Late Woodland sub-periods, with heaviest occupation during the Late Woodland sub-period (sixty-four percent of diagnostics). Due to a paucity of artifacts and a lack of diagnostics, two sites cannot be assigned to a cultural period or function. 44MA63 is identified as a hamlet, 44MA72 as a large base camp, four sites as small base camps, and three as limited activity camps. Seven sites in the

cluster are multi-component. The assemblage contains thirteen lithic raw material types, eleven of which are found in the Shenandoah Valley-Blue Ridge-Inner Piedmont-Mesozoic Basin region. Fifty-two percent of the lithic artifacts from the Sanford Cluster are manufactured from vein quartz, an indication of a strong orientation toward the Inner Piedmont, although thirty-two percent of the assemblage is comprised of Antietam quartzite, chert, and jasper, signaling regular movement and/or exchange in the western Blue Ridge/Shenandoah Valley. The most significant site is the hamlet 44MA63, which is the only cluster site occupied during every sub-period from Early Archaic through Late Woodland. The 44MA63 assemblage includes an argillicious shale stone pipe fragment, indicative of Middle-Late Woodland ceremonial activity. The ceramics and projectile points from the Middle and Late Woodland components, as well as the site's location on the floodplain first terrace at the confluence of the Rapidan and Robinson Rivers, led to the identification of 44MA63 as a hamlet. It falls within the catchment identified by Dunham (1994) for the Rapidan Mound, located ten miles to the southwest. The occupants of the Sanford Cluster engaged in bifacial reduction and projectile point manufacture, hunting, hide working, wood working, and probable horticulture. The presence of Middle Woodland (Popes Creek), Middle-Late Woodland (Albemarle), and Late Woodland (Albemarle and Potomac Creek) ceramics in the cluster supports increasing sedentism and connections to the Late Woodland/Contact

period culture of the Potomac Piedmont. Settlement in this well-watered cluster was oriented toward stream confluences (Great Run/Rapidan and Robinson/Rapidan), with sites located as little as 300 feet and as much as 1600 feet from each other. Because of this configuration and the number of multi-component sites, the Sanford Cluster provides an interesting study of community development over time, particularly during the Late Woodland sub-period.

D. Isolated Mesozoic Basin Sites (Figure 32; Appendix III, Table 40).

Five isolated sites that do not meet the cluster criteria outlined in Chapter Two are documented for the Mesozoic Basin province in the study area. Eighty percent of these sites can be assigned to cultural periods and sixty percent are functionally identifiable. The identifiable group includes one quarry, one limited activity camp, and one small base camp. The steatite quarry, 44MA4, was the first archaeological site investigated in Madison County. Smithsonian archaeologist Gerard Fowke described it in 1894 as "half a mile in length . . . (with) five or six excavations." Based on comparative research, Fowke described the quality of the material as "too porous to be suitable for aboriginal purposes." The small base camp, Strode T, was occupied during every sub-period from the Early Archaic through the Early Woodland, and again in the Late Woodland. The Nash Garden Site, a limited activity camp, is an example of small, re-occupied site in the interriverine Piedmont.

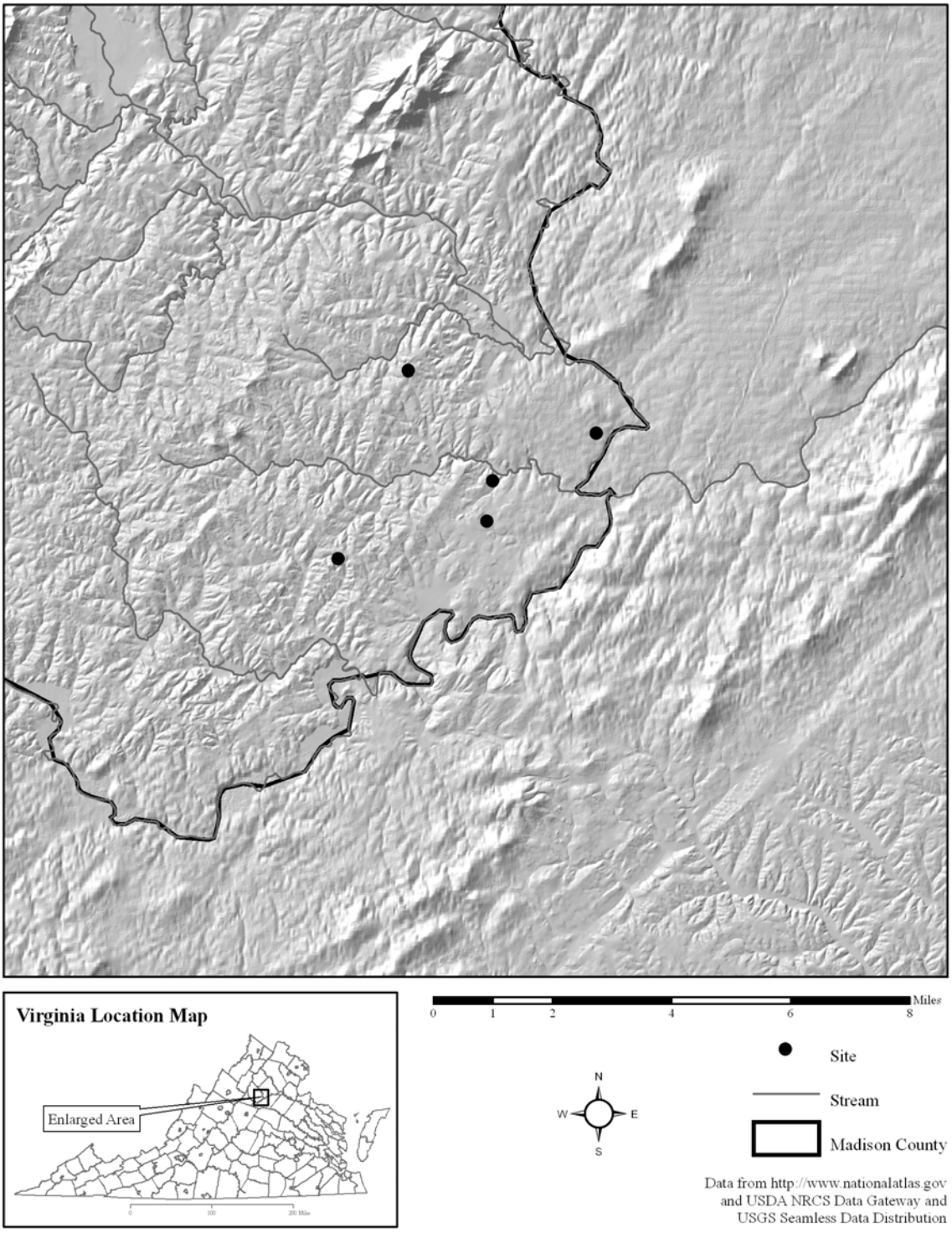


Figure 32. Isolated Mesozoic Basin Sites, Madison Archaeology Project

The Patterns in the Details

As basic as the micro-scale is to contextualized discussions of settlement, the spatial and temporal scales that reveal the long-term physical and social patterns of human occupation are found at the meso- and macro-scales. In the following chapter, case studies will be used to examine connections between site clusters in the same watershed (meso-scale) or across broad physiographic provinces (macro-scale). Analyses at these larger scales, tied together by 'persistent places' that were re-occupied over millennia, allow access to the 'nested' social worlds of the Native American inhabitants of the Upper Rappahannock.

Chapter Six: Selected Applications of Scaled Analysis in the Upper Rappahannock Basin

The geodatabase created for this project, which includes 233 archaeological sites, twenty-one fields, and over fifty thousand artifacts, provides almost five thousand entries that can be combined in a multitude of queries. This tool allows the user to visualize and analyze a wealth of data pertinent to hunter-gatherer archaeological studies. According to Crumley (2002), a major contribution of the geodatabase is its ability to manage large amounts of data for scaled, comparative research. For example, to test predictive models of archaeological site location, a query can be constructed that will display the location of multi-component sites within a certain distance of a perennial stream. Or, if the focus of research is more descriptive, a query can be constructed to display the distribution of a particular variety of raw material. The current study is an initial attempt to demonstrate the descriptive and analytical potential of the geodatabase for hunter-gatherer studies.

As described in Chapters One and Two, the nested scales of analysis for this project include macro (physiographic province), meso (the watershed, or hydrologic unit), and the micro (cluster). The following case studies illustrate the potential of GIS to assist archaeologists in integrating multiple scales and environmental variables in

the study of hunter-gatherer settlement through time. Based on the descriptions of micro-scale clusters in Chapter Five, these case studies shift focus to the spatial meso- and macro-scales, demonstrating short-term cultural change and long-term continuity at local and regional levels. Two hydrologic units, E03 (Hughes River) and E14 (Upper Robinson River/White Oak Run), are selected for this analysis due to the level of documentation associated with each. E03, with its mountain focus, allows for the study of mobility and site function, two major issues in upland hunter-gatherer archaeology. E14, with the largest and longest-lived sites in the study area, provides the basis for the analysis of persistence in settlement, with landscapes of aggregation in both mountain and foothills settings. Based on the findings presented below, recommendations for the analysis of the remaining hydrologic units (E11, E12, E13, and E15) are made in Chapter Seven.

A Comparison of Conventional Settlement Modeling and the Landscape Approach in Hydrologic Unit E03 (Hughes River)

Forty sites having prehistoric archaeological components are recorded for the mountain hollows and narrow foothills floodplains of E03 (Figure 33). Given the level of investigation from previous cultural resource management studies in this section of Shenandoah National Park (Hoffman et al.1979; Horning 2004), as well as the condition assessment undertaken in the wake of the 2000 Old Rag Fire

(Kimberley 2001), the sites of Hydrologic Unit E03 provide a solid basis for conventional settlement modeling and the scaled landscape approach.

The Hughes River Hydrologic Unit (E03) is a large mountain hollow/fan configuration that displays significant topographic diversity from the Blue Ridge summit to an Inner Piedmont floodplain (Figure 34). With an elevational drop of 2840 feet across nine miles, E03 samples the roughest mountain terrain in the study area. The dominant landform is Old Rag Mountain, aptly named for its rugged profile and formidable approach. The underlying granitic bedrock controls for narrow stream valleys with limited terrace development. Except for the floodplains of Popham Run, Rosson Hollow Run, and the Hughes River in the Inner Piedmont, rich ecological settings are limited in E03.

Outline of Hughes River Culture History

E03 site artifact assemblages comprise only two percent of the county artifact total, but all cultural periods from Paleoindian through Late Woodland are represented (Figures 35; 36). A single Mid-Paleo point from the Barbara Yowell Site signals the earliest occupation for the Hughes River drainage. Early Archaic occupations are associated with multi-component sites, indicating that initial, Early Holocene

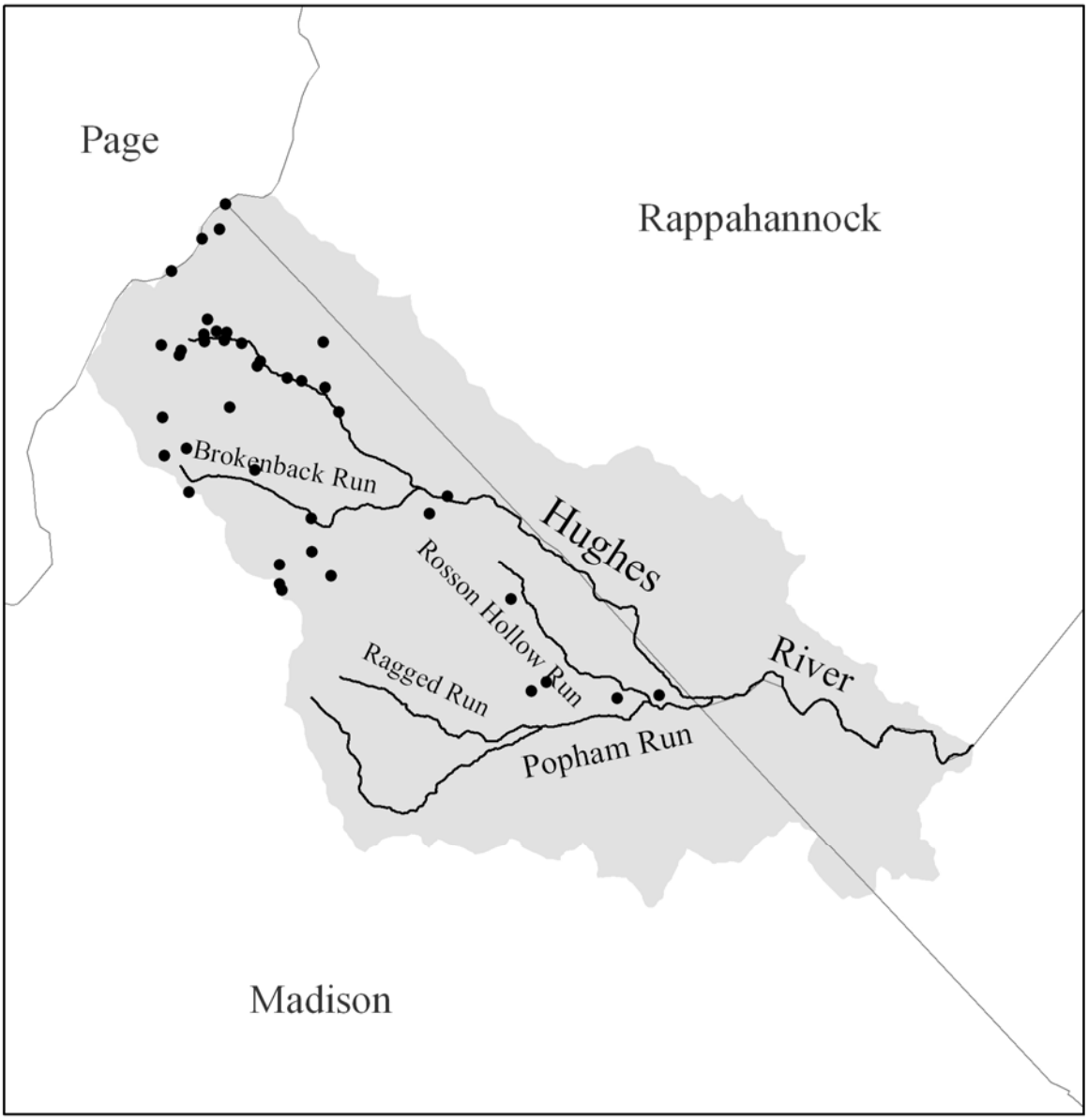


Figure 33. Prehistoric Archaeological Sites, Hydrologic Unit E03

hunter-gatherer forays into the lower elevations of the Blue Ridge focused on settings that would be visited for millennia. Only one Early Archaic component in the E03 sample (44MA54) approaches the higher elevation Blue Ridge at 2771 feet amsl. E03 was more intensively occupied during the Middle and Late Archaic, with

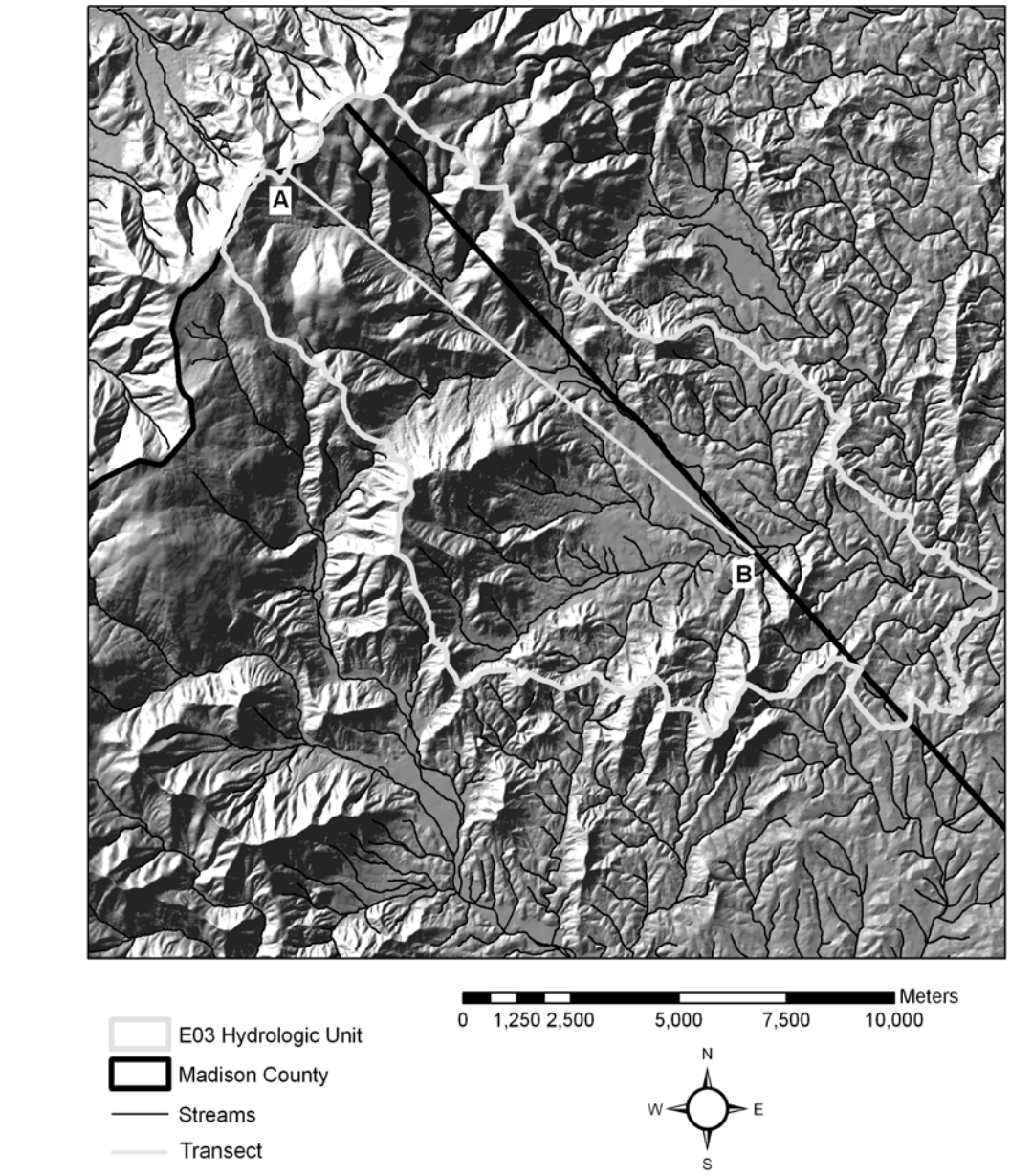


Figure 34. Transect Profile, Hydrologic Unit E03

the already-established Early Archaic sites anchoring higher elevation settlements. Middle and Late Archaic occupations account for forty-six percent of the components having a known cultural association, with the greatest use of the Hughes River drainage in the study area during the Late Archaic Savannah River phase. The spike in frequency of Savannah River Broadspears is unmatched by any other diagnostic form (Figure 37). E03 occupations declined during the Early Woodland, with a focus on lower elevation sites in higher-order tributary drainages. Middle Woodland occupations, even fewer in number, were sited in the mid-elevation hollows, while the Late Woodland use of the drainage was focused on the lowland floodplains, with scattered sites in the high elevations. The recovery of a small number of Middle and Late Woodland Popes Creek and Albemarle ceramics from two small base camps (44MA150 and Graves Bee Hive) indicates increased sedentism in the lower elevations. Somewhat surprising is the recovery of several sherds of Early Woodland Accokeek ceramics from 44MA2, a small, multi-component base camp situated at 1500 feet amsl at the head of Weakley Hollow. In the Blue Ridge, ceramics are rarely found at open air sites, and early ceramics are virtually unknown above the foothills zone (Nash 2008b).

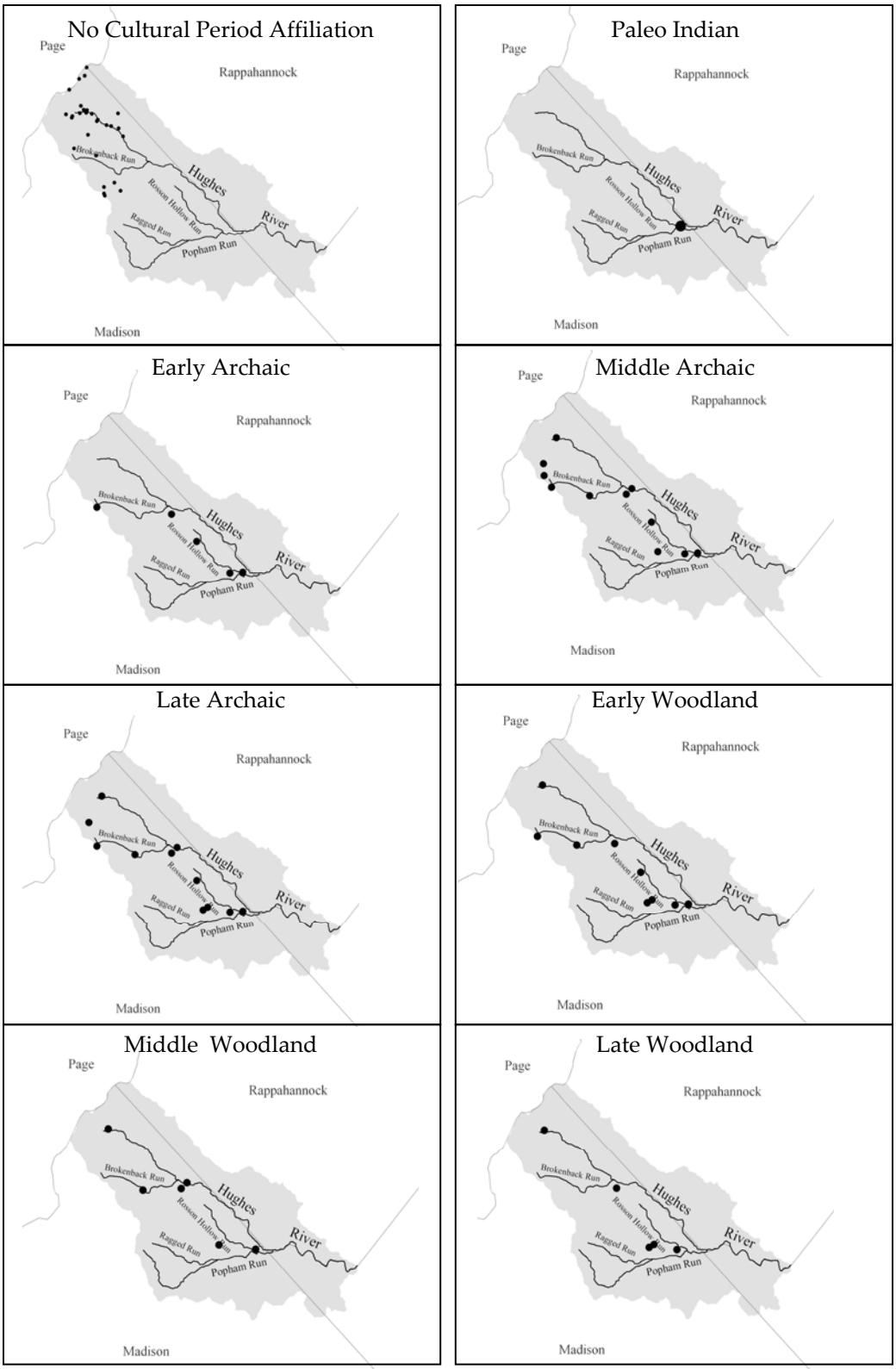


Figure 35. Distribution of Components by Cultural Period, Hydrologic Unit E03

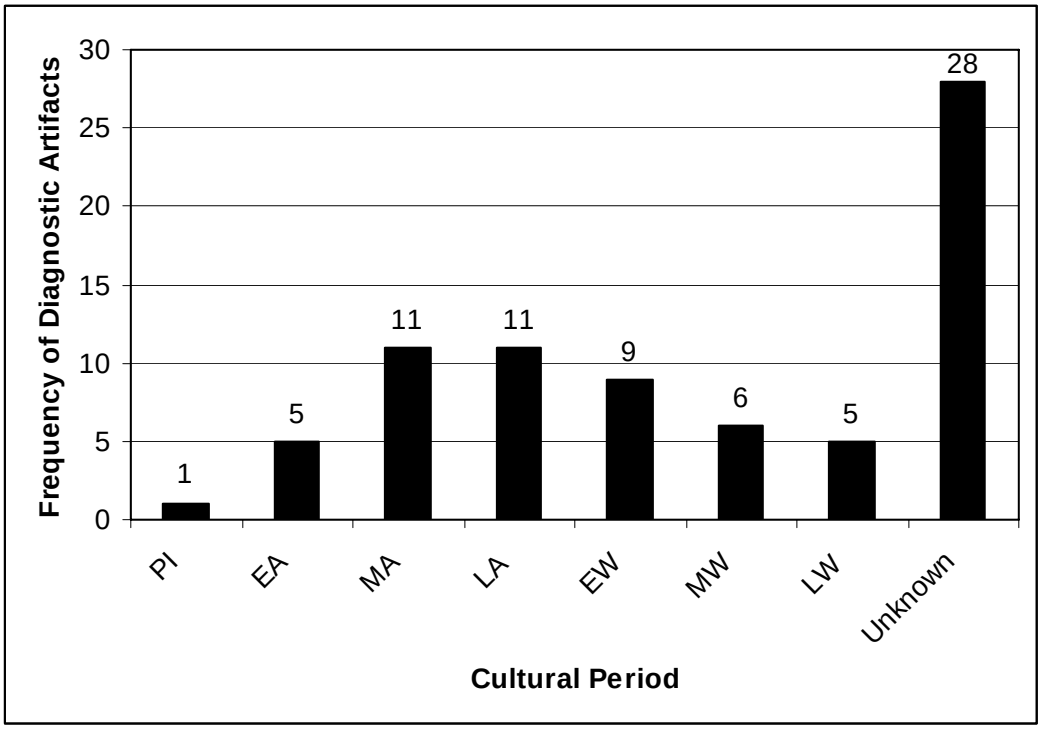


Figure 36. Frequency of Components by Cultural Period, E03 Hydrologic Unit

From the perspective of culture history, the most striking characteristic of the E03 Hydrologic Unit is the high percentage of sites lacking association with a specific cultural period due to the absence of diagnostic artifacts (Figure 35). Seventy percent of the E03 sites fall into this category, the bulk of these located along the main stem of the Hughes River above 1800 feet amsl. This pattern is also prevalent in the high elevations of the E11 (Upper Rapidan) and E14 (Upper Robinson River/White Oak Run) Hydrologic Units.

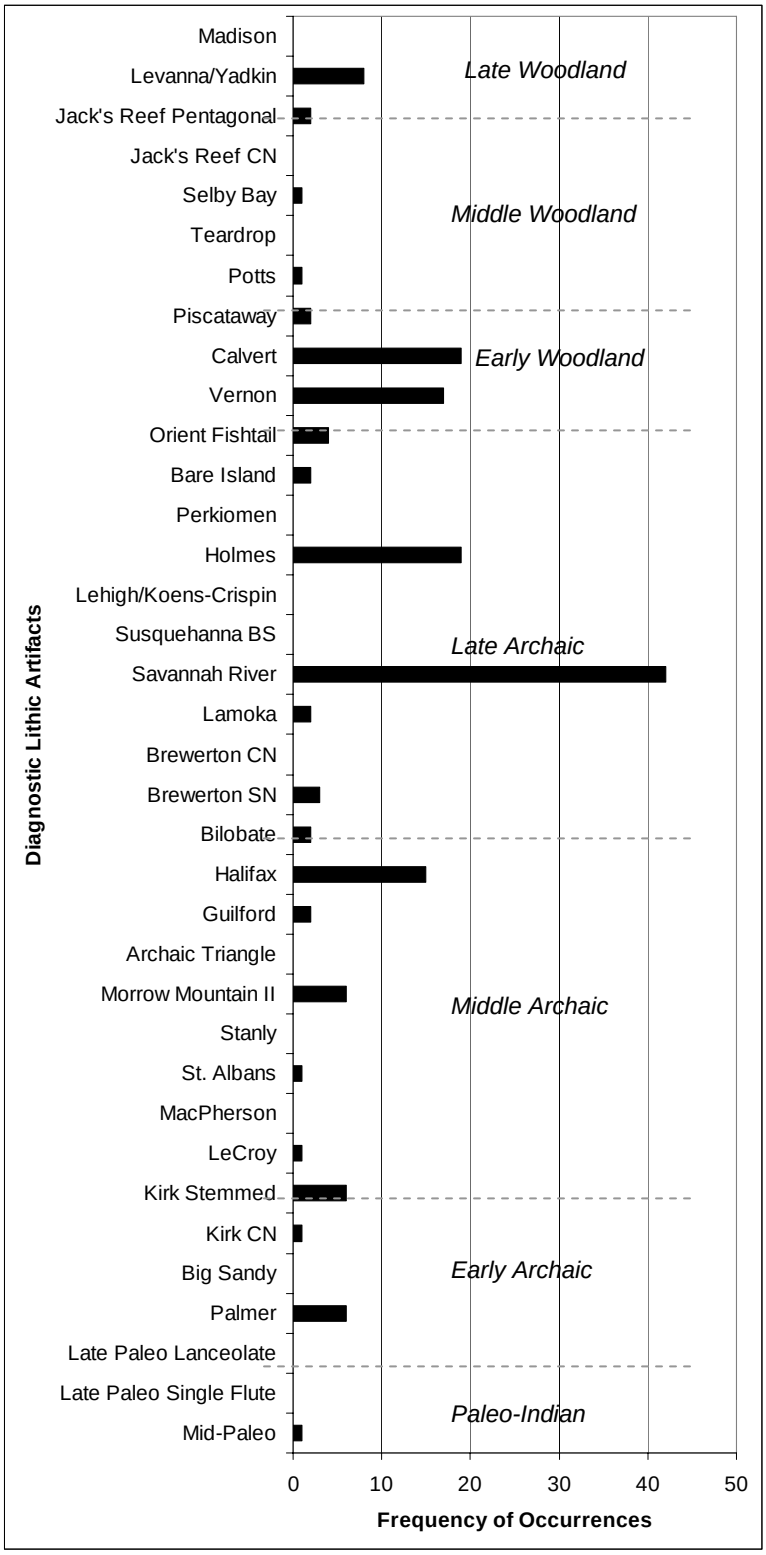


Figure 37. Frequency of Diagnostic Lithic Occurrences, Hydrologic Unit E03

Site Function and Setting

Hydrologic Unit E03 exhibits the lowest diversity of site functional types of all hydrologic units, with only three identifiable functions (Figures 38; 39): large base camp, small base camp, and limited activity camp. Sixty-three percent of sites cannot be assigned a function due to their small, generalized assemblages. While not uncommon in the Appalachians and usually classified as 'lithic scatters,' these small sites present a challenge to conventional settlement modeling and are often considered too ephemeral to offer meaningful information concerning cultural change and settlement activities (Barber 2001; Perazio 2005). In themselves, they may not provide a great deal of information—few diagnostics or features, low artifact density, and small in area. These are the kinds of sites usually deemed 'insignificant' and cleared during the Section 106 review process (Wandsnider and Camilli 1992). However, if treated in an additive fashion, the patterning of such sites can provide important insight into long-term cultural change, including transformations in social organization, regional interactions, and shifts in resource use. The large and small multi-component base camps, located in the low-to-mid-elevation zones (below 1530 feet amsl), share the topographic setting of floodplain (large base camp) or inner stream terrace (small base camps and three limited

activity camps). With the exception of the Graves Coates Site, located in the Inner Piedmont, the limited activity camps are high elevation phenomena.

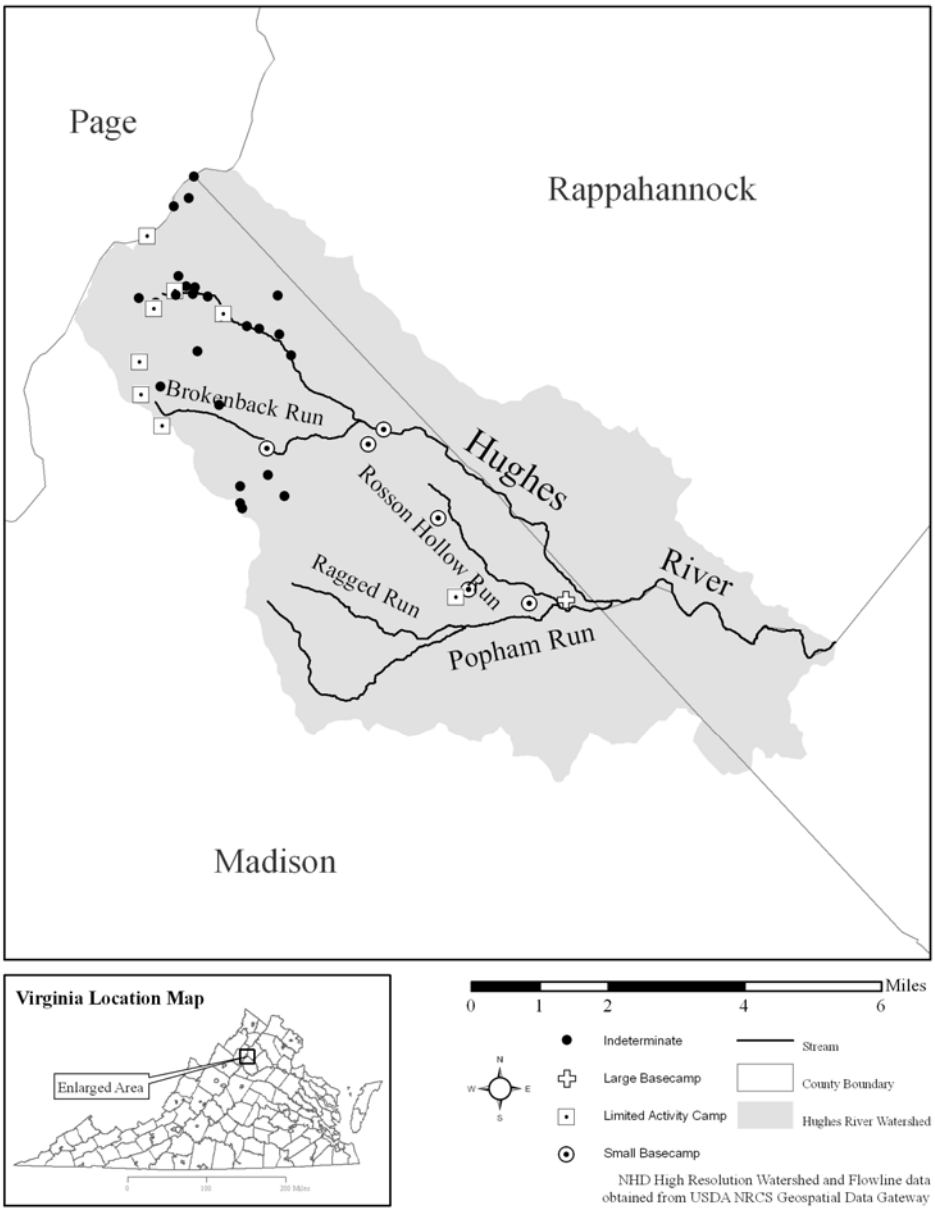


Figure 38. Archaeological Site Distribution by Function, Hydrologic Unit E03

.

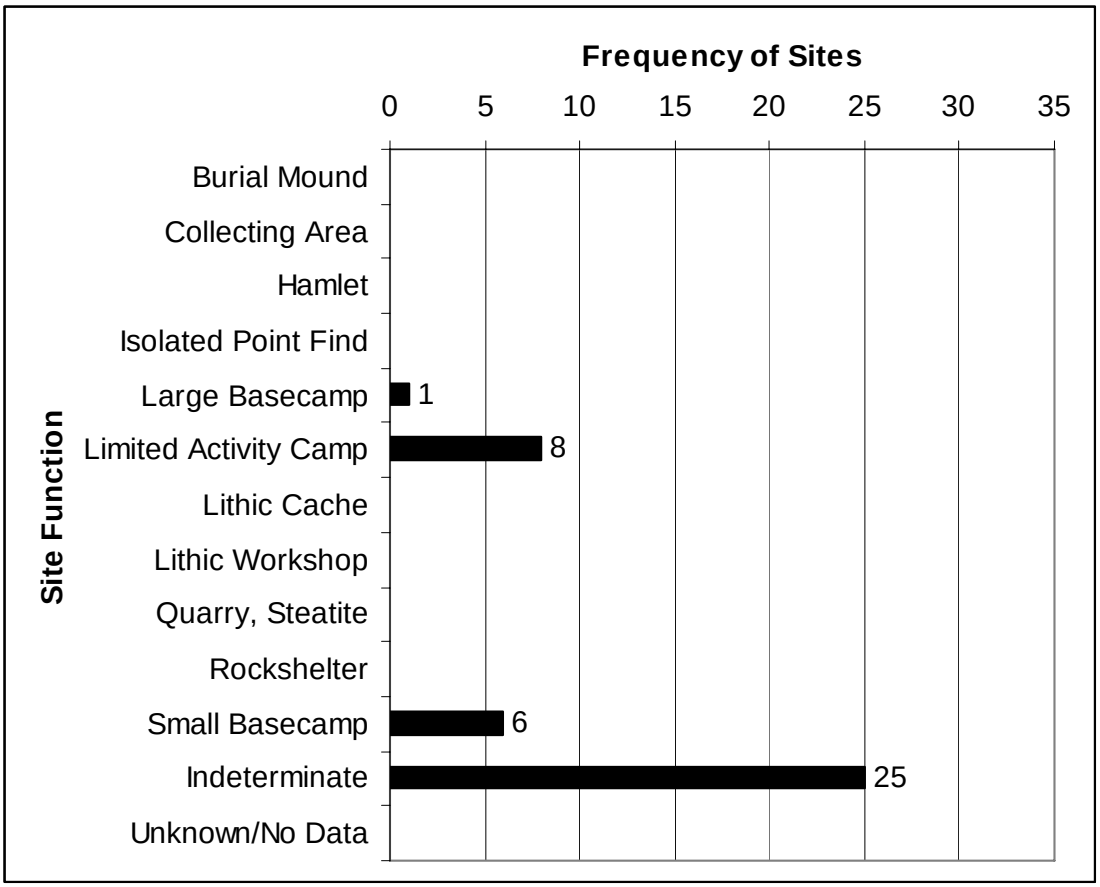


Figure 39. Frequency of Archaeological Site Functions, Hydrologic Unit E03

The site database for the E03 Hydrologic Unit is largely derived from trail-associated surveys, resulting in an emphasis on stream courses as the basis for settlement in the region. The compliance work undertaken in the aftermath of the catastrophic Old Rag Fire (Kimberley 2001) forced archaeologists off the trails and into settings normally overlooked in cultural resources management studies, such as the side slopes of Corbin Mountain or the ridges of Robertson Mountain. In search of documented historic features such as cemeteries or outlying farmsteads,

archaeologists recorded twelve prehistoric sites, two of which are multi-component limited activity camps in what were previously believed to be low-probability locations.

Conventional Settlement Modeling and the E03 Hydrologic Unit

By the numbers, Hydrologic Unit E03 meets the criteria for a sub-region occupied by small groups of mobile hunter-gatherers whose short-term use of higher elevations was tethered to lower elevation sites and focused on specific sets of resources, with the most intensive use during the Middle and Late Archaic sub-periods. Removing the large base camp, the Barbara Yowell Site, from the sample, the mean E03 site area is .89 acre, the smallest of all hydrologic units. Using the Hoffman and Foss settlement typology described in Chapter Two (Figure 14), the large, multi-component Barbara Yowell Site is the only known example of a Grade 5 site (large, centrally located, long-term residences of repeated occupation) in the Hughes River Valley. The E03 small base camps are classified as Grade 3 sites (occupied by a small task group from one night to a week) due to their proximity to a perennial spring or watercourse, a size of several hundred square meters, and their function as exploitation camps for a limited set of resources. These sites may have served as staging areas for higher elevation forays involving limited activity camps and single occupation sites located above 1500 feet amsl. Foss (1977) noted that prehistoric

hollow occupation in Shenandoah National Park was variable with the size of stable landforms, and that given a constant supply of water and access to other mountain zones, such settings were preferred for base camps by mobile hunter-gatherers. The E03 limited activity camps can be classified as Grade 2 sites: ephemeral, extremely small in size, exhibiting a light scatter of waste artifacts, and used as hunting stands or as tool maintenance stops.

In the Hoffman-Foss model, the E03 settlement system is largely Piedmont-focused, with the size and intensity of site use changing with elevation and stream order. A basic pattern of band fissioning from the Barbara Yowell Site and other Grade 5 Piedmont sites was established by the Middle Archaic sub-period and carried out through the Early Woodland. Mid-elevation Grade 3 sites were occupied by smaller family groups, who, over several millennia, intermittently settled the resource-rich hollow settings of the Hughes River during mast-producing season (late summer or fall). The Grade 2 sites represent short, focused forays into higher elevations. Although the actual functions of the E03 sites are difficult to determine due to the limitations of surface investigation, the predictive model of site location developed by Hoffman and Foss for the Hughes River (and specifically Nicholson Hollow) does not afford a good fit for the data. Using the Nicholson Cluster as a test, a GIS-based query of the most basic site parameters outlined by Hoffman and Foss in their

predictive model—less than 350 feet from water and less than fifteen degree slope - demonstrates a match for only three of sixteen sites (Figure 40). The three, 44MA25, 44MA48, and 44MA49, are culturally non-diagnostic and of indeterminate function. None of the limited activity camps meets the basic parameters of the model due to the high degree of slope in their respective settings. The site settings and settlement patterns envisioned by the model are not met by the data. The model is also challenged by the high frequency of sites of indeterminate function, a difficulty repeated in all high elevation hydrologic units in the study area.

The Landscape Approach at the Meso-Scale: Hydrologic Unit E03 Settlement

Undertaken at the meso-scale of the hydrologic unit, a contextualized, landscape-based analysis of archaeological site patterning provides alternate scenarios of prehistoric hunter-gatherer settlement. In this instance, the meso-scale analysis encourages a comparative study of microenvironments, residential mobility, access to and movement through the uplands, gender-specific work sites, and the use of particular plant resources.

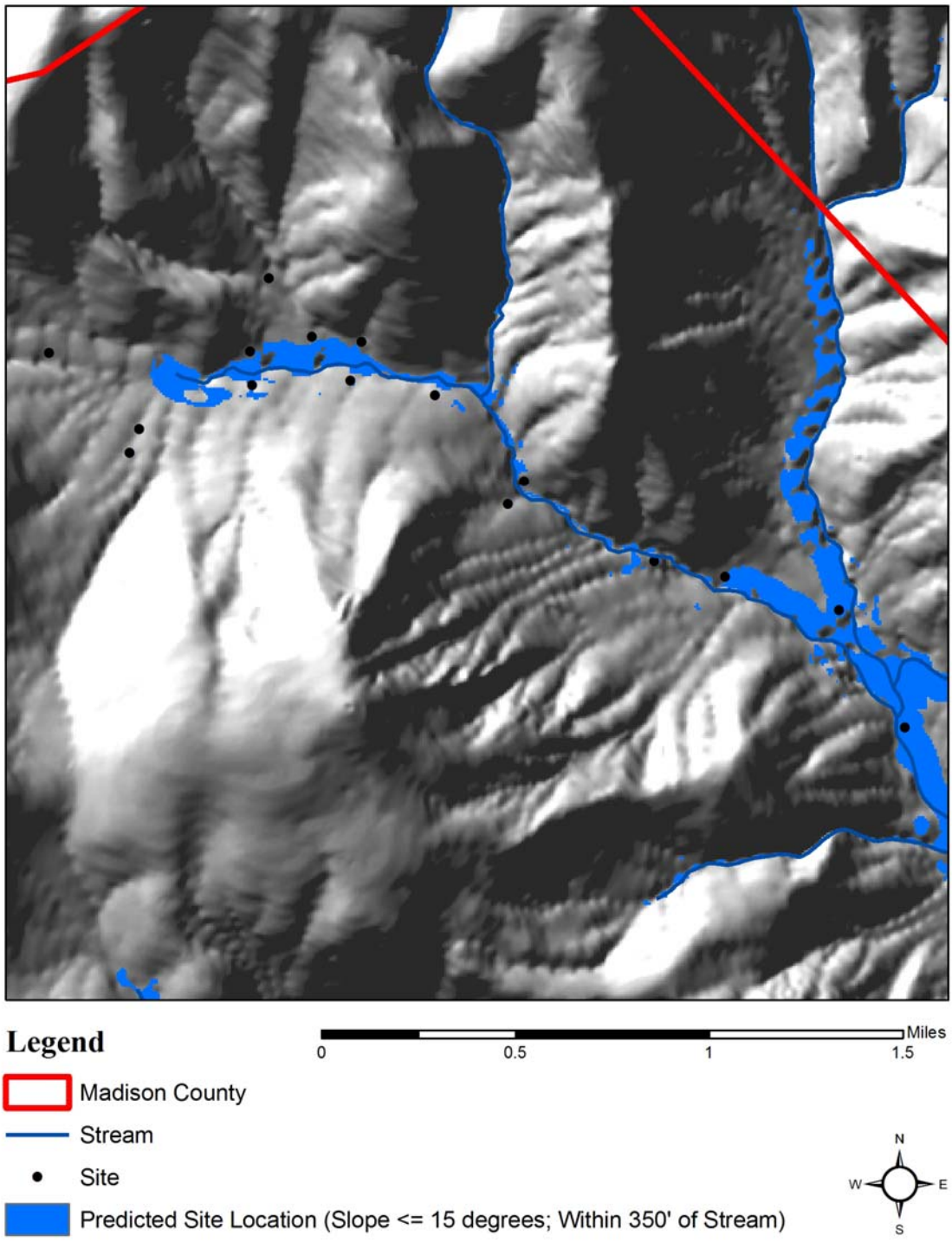


Figure 40. Hoffman/Foss Predictive Model for Prehistoric Archaeological Sites, Nicholson Cluster, Hydrologic Unit E03

Microenvironmental Heterogeneity and Site Function

Recent vegetation studies (Young et al.2006; DCR 2006) demonstrate a more complex mosaic of ecological communities in the E03 Hydrologic Unit than previously described (Figure 41). From higher to lower elevations, E03 evidences high elevation acidic heath barrens (above 3000 feet amsl), northern red oak forest (between 3000-2000 feet amsl), Central Appalachian Northern Piedmont chestnut oak forest (between 2800-800 feet amsl), patches of Central Appalachian rich cove forest (between 3000-1000 feet amsl), and successional tulip tree forest (below 1800 fee amsl).

With the exception of the tulip tree forest, which represents re-vegetation after centuries of Euroamerican farming, these communities were established during the Sub-Boreal (5,000-3,000 B.P.) and created the environmental matrix in which hunter-gatherers moved during their most intensive use of the area, the late Middle Archaic and Late Archaic sub-periods (Nash 2008c).

The six small base camps of low- and mid-elevations are sited in the oak-chestnut forest, the only major mast producing zone in the study area. Intensive gathering of chestnut, hickory, and oak could have been a major activity at these sites, whose

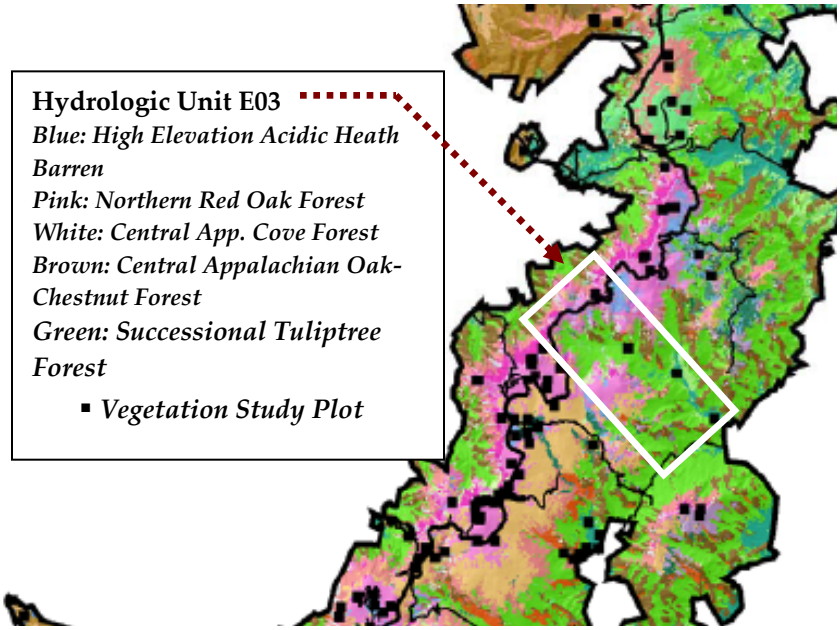


Figure 41. Forest Communities, Hughes River Drainage, Shenandoah National Park
Excerpt from Vegetation Map, Version 1.1, Central District,
Shenandoah National Park (Young et al.2006)

artifact assemblages include grinding stones and steatite bowl fragments, typical artifacts in Late Archaic assemblages. In contrast, five of the sites discovered during the Old Rag Fire compliance study (two indeterminate and three limited activity camps) were sited in patches of Central Appalachian rich cove forest, dominated by stands of yellow poplar (*Liriodendron tulipifera*) and a wide range of medicinal plants including blue cohosh (*Caulophyllum thalictroides*). Tool assemblages from the five sites signal short-term use and include sixty-four flakes, one scraper, one biface, and projectile points associated with the Middle Archaic (Morrow Mountain II) and Late Archaic (Savannah River) sub-periods.

Yellow poplar was known to early Europeans as 'canoe wood' because of the Indian practice of making dugout canoes from the hollowed logs (Reynolds 1976). The bark, peeled in sheets in the late spring, was used for a folded basket form throughout the Eastern Woodlands. English explorer John Lawson (1709:208) wrote of the Indians of the Carolina backcountry: "In these quarters, at Spare-hours, the Women make Baskets and Mats to lie upon . . . and Bowls, Dishes, and Spoons, of Gum-wood, and the Tulip-Tree." The tulip tree bark and flowers were widely used for medicinal purposes, and blue cohosh was well-documented by early European settlers as 'squaw root' or 'pappoose root,' as it was gathered and processed by Indian women to facilitate contractions during childbirth (Erichsen-Brown 1979). Recent research (Barron 2007) demonstrates a close relationship between the spring-emerging wild morel mushroom (*Morchella esculenta*), which was prized for nutritional and medicinal qualities, and healthy yellow poplar stands in the Middle Atlantic.

Ethnohistoric sources associate basketry and plant-gathering/processing with women of Eastern Woodlands Indian cultures (Rountree 1998), and gender-specific gathering forays were incorporated into seasonal patterns of resource use. Together, the information about gendered activities, the setting, and the limited artifact

signature of the five sites (largely flakes and cores with a limited number of bifaces and expedient flake tools) lead to hypotheses concerning gender-specific task groups among hunter-gatherers of the Blue Ridge. In Potomac River Valley shell midden sites identified as potentially gender-specific, Klein (1999) observed a distinctive pattern in the lithic assemblages: the near absence of extensively worked stone tools of any type and the presence of expedient tools based in a core and flake technology and local raw materials. This generalized tool tradition may reflect the need for efficient, locally-produced tools in the face of the multiple demands placed on Native women. Blume (1991) documented a similar pattern of flake tool manufacture for a Woodland-period upland nut processing camp interpreted as the locus of female activity in the Delaware Inner Coastal Plain. Thus, what was once a 'lithic scatter' in a site-based settlement model becomes, in a more contextualized landscape program, a catalyst for the study of seasonal, gendered hunter-gatherer activities.

A second alternative hypothesis for the function of the small sites in Hydrologic Unit E03 is derived from the patch dynamics concept of the landscape ecology: stable ecological communities (i.e. *climax*) will collapse in patches, creating openings for multiple successional stages in the same general area (Forman 1995). In the Blue

Ridge such collapses can be caused by a short-term meteorological event, such as an ice storm that damages the upper canopy, or a landslide associated with excessive rainfall and slope. For example, the intensive slope of the Hughes River drainage makes it vulnerable to small-scale debris flows, evidenced by relict fans and channels in the mid-elevation hollows that are visible on satellite imagery (Figure 42). While hunter-gatherers 'map' onto important resources (Binford 1980) at the habitat scale and plan seasonal movements around them, both small-and large-scale ecological changes challenge the predicted availability of resources. In this example, a specific site may no longer be available or productive because of small-scale ecological change, despite the stability of the surrounding area. The discrete, localized concentrations of resources represented by patches may lead foragers to encounter several in the course of a day. Movement among patches does not require a change in residence (thus, the small number of identifiable base camps) but limited tool signatures at small sites may indicate patch movement (Winterhalder 2001). This 'order without predictability' (Price and Thompson 1997) could explain the presence of small sites with limited archaeological signatures in areas that fall outside optimal predicted ranges. More important for the long-term success of the group, multiple successional stages produce broad-scale diversity, ensuring resource availability over the long term. Again, when examined at the meso-scale, a site with

little interpretive potential at the micro-scale illustrates a process that may have shaped foraging behavior.

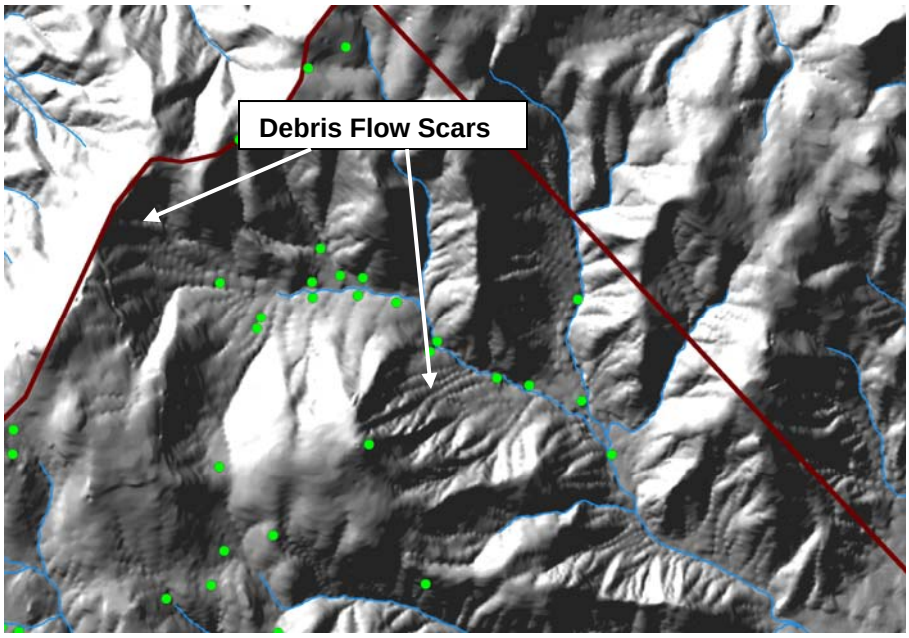


Figure 42. Debris Flows in the Mid-Elevation Hollows, Hydrologic Unit E03
(Hillshade layer derived from 10 Meter Digital Elevation Model)

Macro-Scale Analysis: Mobility in Mountain Settings

In all societies, regardless of cultural complexity, certain points on the landscape are connected by routes. The system of travel used by a group should reflect something of its internal composition, value system (the choice of certain locations over others), and its adaptation to the natural environment. For example, hunter-gatherers are more concerned with controlling the paths running between places, as opposed to

agricultural societies that tend to enclose resources (Muir 2001). The places connected by these paths may provide vantage points and define hunter-gatherer territories by commanding a view across them.

In the Appalachians, archaeologists and historians have documented trails, footpaths, and roads that guided Native people from lower to upper elevations and within mountain systems (Sullivan and Prezzano 2001b). Used for long distance exchange, migration, hunting, and daily travel, these lines of movement are dotted with sites of varying size. "If we can identify routes as empirical entities, a potentially powerful tool will be at our disposal to decipher an important facet of regional prehistory" (Trumbold 1991). Trails may be inferred from site locations, particularly if the sites mark significant topographic features, but their demarcation by the archaeologist relies on a willingness of the analyst to include 'siteless' areas in the reconstruction. This way of envisioning settlement is a challenge to the empirical tradition that permeates hunter-gatherer archaeology; however, as noted by Ingold (2007:2), "Modern thought has fixed place to spatial locations (but) to be a place, every somewhere must lie on one or several paths of movement to and from places elsewhere." Blue Ridge Mountain gaps have been singled out as particularly

significant locations for the archaeological investigation of mobility and cultural interaction (Gardner 1987; Nash 2005c).

For example, two of the E03 culturally unaffiliated and functionally indeterminate sites are located in a high elevation acidic heath barren along Pinnacle Ridge, near Skyline Drive (Figure 43). These sites, 44MA100 and 44MA101, were identified during Skyline Drive construction-associated surveys in the early 1980s, when VDHR policies allowed site recordation based on a small number of flakes. A similar pattern of small, culturally unaffiliated sites is also noted for the Blue Ridge summit in hydrologic units E11 and E14; in total, thirteen indeterminate sites, all above 2970 feet amsl, dot the spine of the Blue Ridge in Madison County. Despite the paucity of artifacts, it is still possible to comment on the function of these sites by employing macro-scale analysis.

The E03 assemblages contain quartzite, quartz, and rhyolite raw material, none of which is available in the immediate vicinity. The summit drops off precipitously to the west but is linked to the Shenandoah Valley by Shaver Hollow and the Dry Run drainage. On the east, the summit is linked to the lower elevation Nicholson Hollow

by an unnamed tributary to the Hughes River (Figure 43). The person(s) who created the small summit sites moved from lower elevations on either the west (Shenandoah Valley) or east (Piedmont) side of the Blue Ridge, perhaps along stream drainages, making the far northwestern corner of the study area either a

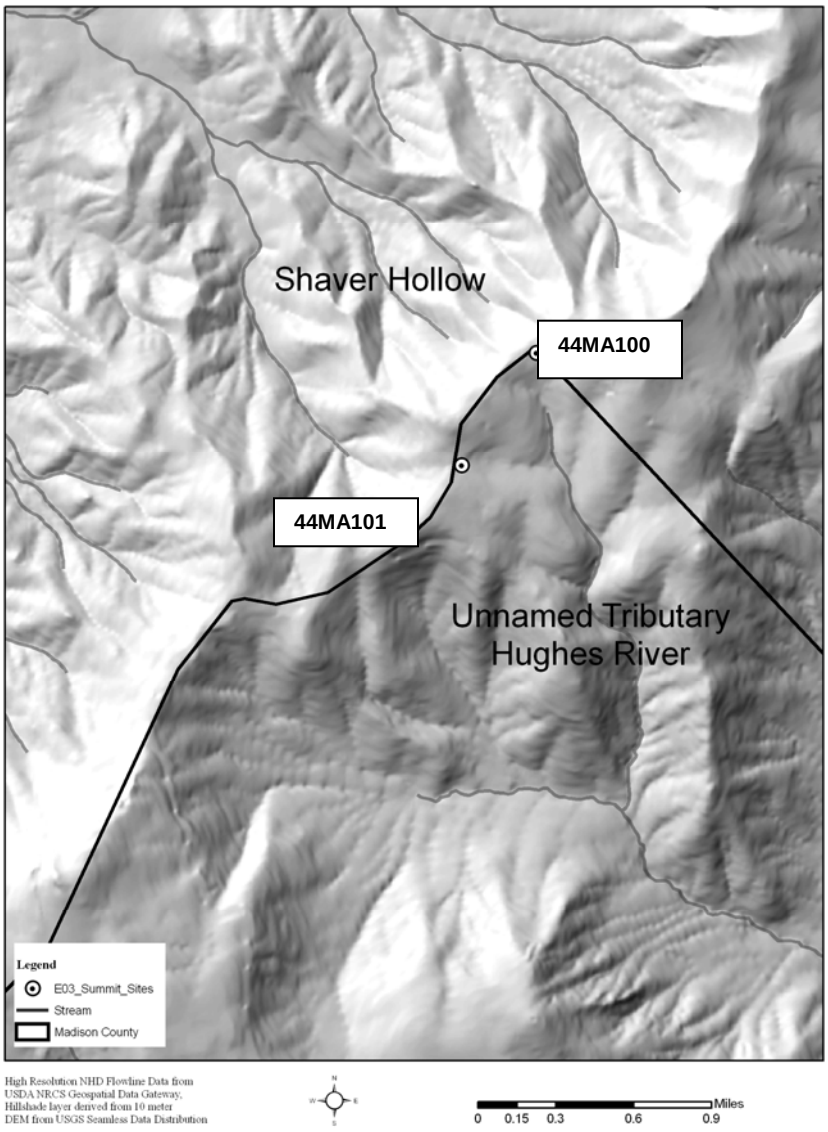


Figure 43. Blue Ridge Summit Archaeological Sites, Hydrologic Unit E03

crossing point or a vantage point. A pause at the summit after a long walk or a short encampment to establish a viewshed would have allowed time to resharpen or finish a tool, creating an archaeological signature. An understanding of such movement awaits further survey of the Dry Run drainage and the unnamed Hughes River tributary, as no prehistoric sites are yet documented for these areas. Despite their use as crossings, evidence demonstrates that the some of the mountain summits in the study area were less desirable, perhaps due to lack of ready access. The well-surveyed stem of the Hughes River through Nicholson Hollow can be viewed as a topographic 'dead end,' despite being a second-order stream. The hollow is surrounded by steep slopes in three directions, with the only outlet to the east. Thirteen of sixteen sites in the Nicholson cluster are of indeterminate function and only one of sixteen, 44MA20, can be assigned to a cultural period. The limited use of Nicholson Hollow by hunter-gatherers may be related to the lack of links to other drainages and the subsequent limitations placed on movement. Such topographic constraints are noted as significant for site location and mobility by archaeologist working in other mountainous areas (Bender and Wright 1988), as well as in Shenandoah National Park (Nash 2000a).

The Hughes River Valley is topographically insular when compared to adjoining drainages that head in the northern Blue Ridge and drain eastward into the Piedmont. Flowing out of the mountains between outlying ridges and monadnocks until it joins the Hazel River in western Culpeper County, it forms a ¾ mile-wide floodplain at Peola Mills where the largest sites are found (Figure 44; Figure 45 A-B). Five miles upstream, Nicholson Hollow nestles a concentration of small sites on the lower fan of Pinnacle Ridge at 1500 feet amsl (Figure 44; Figure 45 C-D). An unnamed hollow lies another mile upstream where a second concentration of small sites is found at 2000 feet amsl (Figure 44: Figure 45 E-F). While the temporal and functional linkages between these sites will be understood only through excavation, all evidence points toward E03 as an example of a foothills-mountain region occupied by families and small task groups who were well acquainted with its resources and trails, but who spent much of their time elsewhere.

As a comparison, the Corbin Cluster in the headwaters of Brokenback Run, while seemingly isolated, contains four limited activity camps between 3000-3200 feet amsl, all identified with cultural periods. One of these sites, 44MA54, was occupied intermittently for 8,000 years. The extremely narrow hollows (Figure 44; Figure 45 G-H) do not meet the expectation of an optimal setting for limited activity camps.

Perhaps the key to understanding this difference between this setting and the upper elevations of Nicholson Hollow may lie in the geographic proximity of the Corbin Cluster to the headwaters of the Robinson River drainage (Hydrologic Unit E14). A

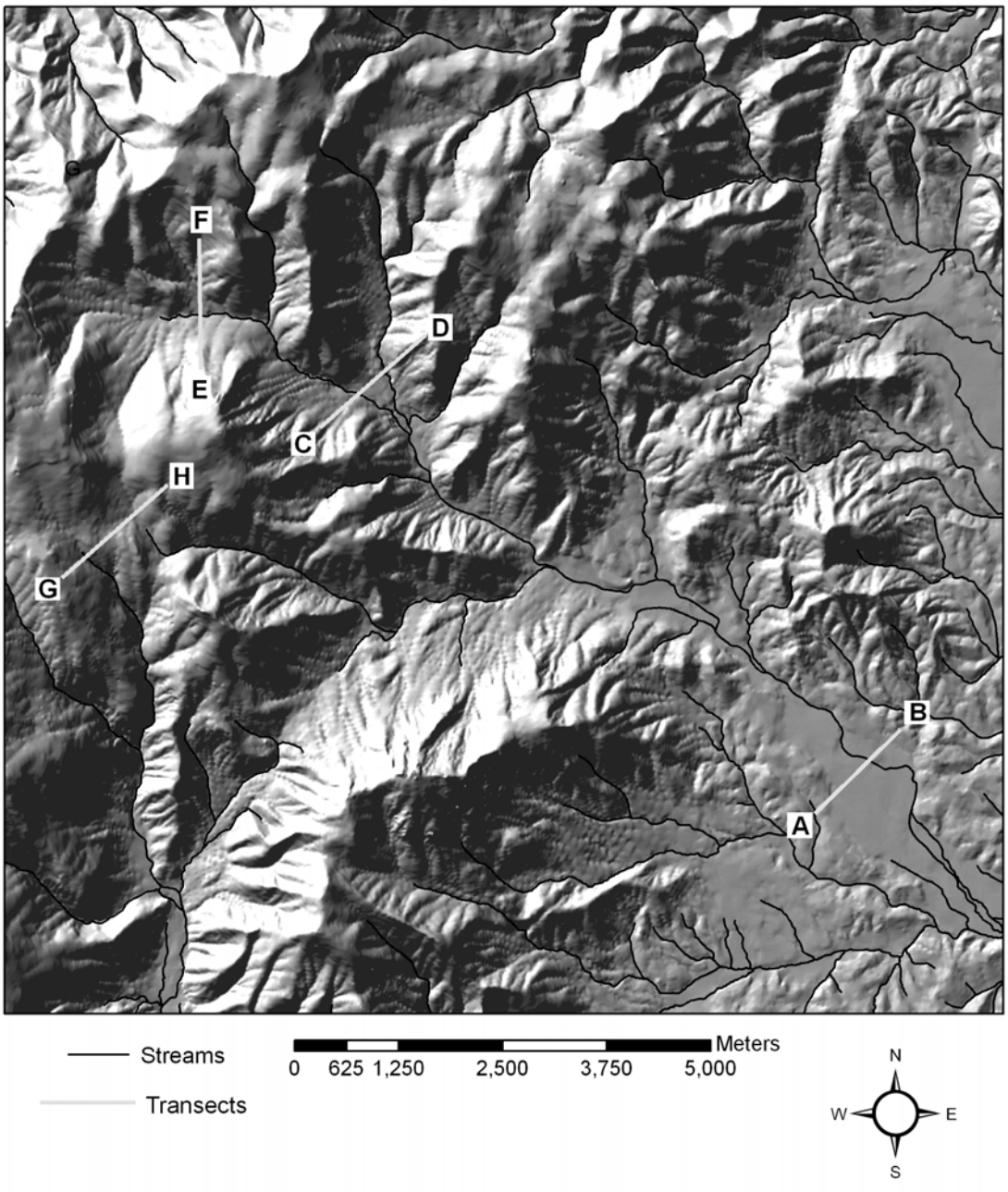


Figure 44. Selected Transects, Hydrologic Unit E03

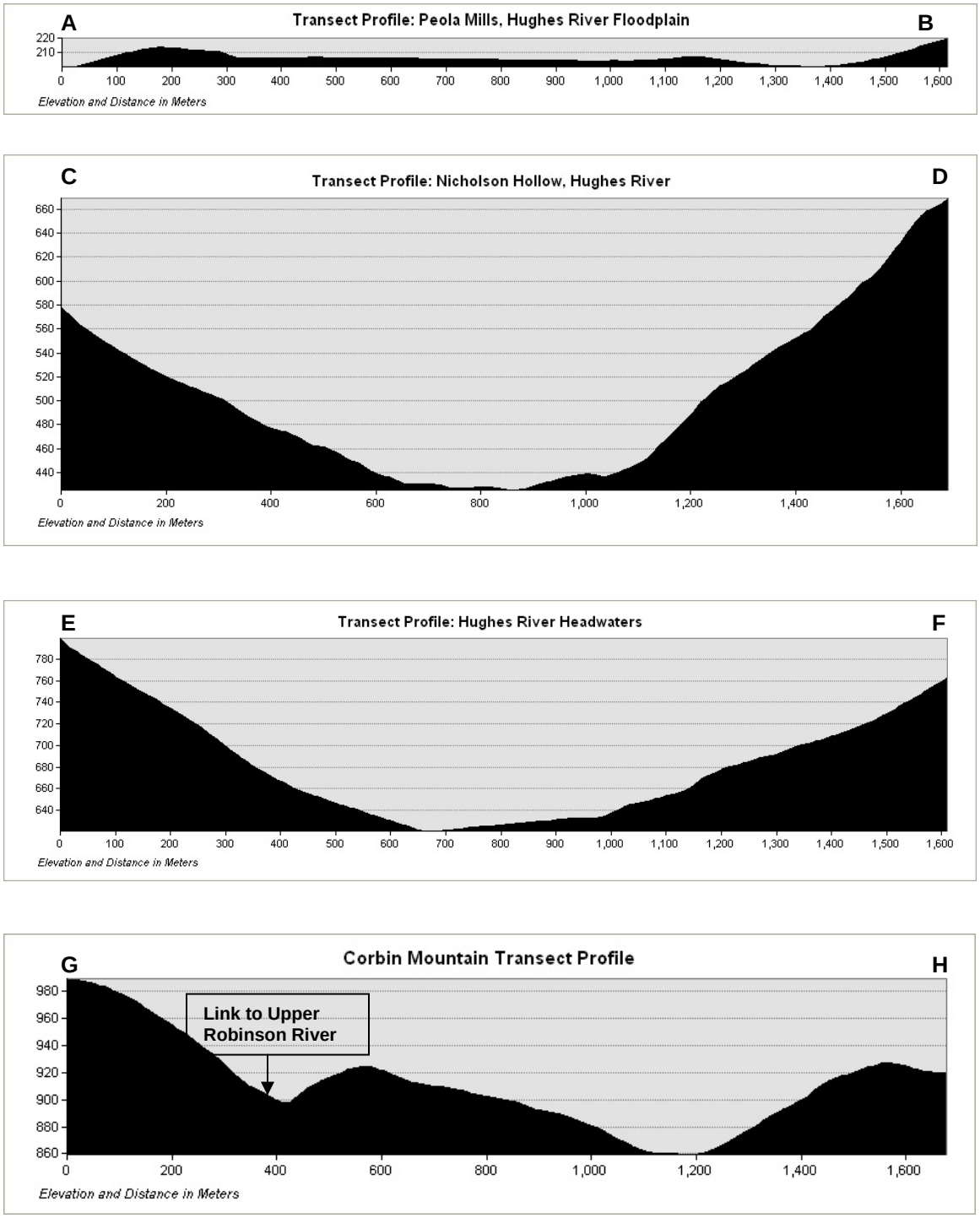


Figure 45. Transect Profiles to Accompany Figure 44

major cultural conduit for much of prehistory, this drainage was also a historic travel route, first as Piper's Path, a mid-18th century wagon road, and then as the 19th century Blue Ridge Turnpike. A discussion of this watershed will be taken up later in this chapter.

Lithic Raw Material and Residential Mobility

Stone tool analysis can provide important insights into hunter-gatherer settlement patterns and residential mobility strategies, particularly if such an analysis considers raw material sources and stone tool production technologies (Andrefsky 2005). The availability of raw material poses constraints on hunter-gatherers and can greatly affect their social organization and group movements (Andrefsky 1994). Because the artifact assemblages in the entire study area include a variety of raw materials, an occurrence analysis at different scales can highlight mobility and exchange patterns, further contextualizing idealized settlement patterns.

E03 assemblages evidence the lowest diversity of lithic raw material in the study area, with thirteen of twenty-three types (Table 52). Raw material use indicates relatively restricted movement of groups affiliated with both the Piedmont and Ridge and Valley. Of the 986 total lithic artifacts, 44.9 percent are manufactured of

quartz, 36.6 percent of quartzite, and 5.3 percent of mylonite. While none of these materials outcrops in E03, quartz and mylonite of the Blue Ridge Basement Complex can be found within a few hours' walking distance southeast, via the headwaters of the Robinson River. Quartzite of the Antietam Formation is accessible within a few hours' walking distance west, via Shaver Hollow.

Table 52. Frequency of Artifacts by Raw Material, Hydrologic Unit E03

Raw Material	#
Argillicious Shale	2
Basalt	2
Chalcedony	5
Chert	21
Greywacke	3
Jasper	12
Metabasalt	73
Mylonite	52
Quartz	443
Quartzite	361
Rhyolite	9
Sandstone	1
Steatite	2
TOTAL	**986**

All three materials are known regionally for their use in flaked tool traditions (Nash 2000b). Catoctin Formation metabasalt, which outcrops in the headwaters of Brokenback Run, is the single raw material of interest found in the immediate E03 vicinity. Typically used in ground stone technologies because of its density,

metabasalt artifacts comprise seven percent of the E03 lithic artifact total. Interestingly, over half are associated with flaked technologies, indicating an immediate knapping need for an inferior, but local material. The low numbers of the remaining raw material types make it difficult to discern patterning; however, the few crypto- and micro-crystalline artifacts from longer distances (1.6 percent of the E03 total) indicate less intensive occupations during the Paleoindian, Early Archaic, and Late Woodland sub-periods when these were favored resources (Barber et all 2003).

Of the 160 diagnostic projectile points recorded for E03, seventy-eight percent are manufactured from quartz and quartzite and represent types well-documented for the Virginia Piedmont, Blue Ridge, and Ridge and Valley. Exceptions are seen in the Middle Paleoindian Mid-Paleo point from the Barbara Yowell site, which is manufactured from a blue chert, macroscopically identified as non-local to the Shenandoah Valley; Early Archaic Kirk Stemmed varieties manufactured from argillicious shale of the Mesozoic Basin and rhyolite of the Maryland/Pennsylvania Blue Ridge; and the Middle Woodland Selby Bay point manufactured from rhyolite of the Maryland/Pennsylvania Blue Ridge. The non-local raw materials demonstrate the pattern of high mobility well-documented for the Paleoindian-Early Archaic of

western Virginia (Inashima 1994). The two steatite bowl fragments and the Selby Bay point provide evidence of exchange during the Late Archaic and Middle Woodland, respectively.

A Landscape-Based Culture History at the Meso-Scale

The chronological control necessary for the study of change in site location preference as an indication of changing site function is lacking for twenty-eight of forty sites in E03, but diagnostic artifacts from twelve site assemblages can be used to infer settlement location by cultural phases (Table 53). The Mid-Paleo point from the Barbara Yowell Site supports the hypothesis that earliest occupation of the region was not by the descendants of Clovis groups who incorporated the Blue Ridge-Inner Piedmont into season band movements, but rather, by 'newcomers' unfamiliar with the resources of the region (Nash 2008a). Given that this site sits only thirty-five miles southeast of the Flint Run Quarry and well within the predicted catchment of that resource (Turner 1989), the non-local chert point demonstrates the initial settlement of the Hughes River foothills by a group traveling some distance, a topic that is taken up later in this chapter. The northern hardwood forest of the Late Pleistocene/Early Holocene evidenced at the Brook Run Site (44CU122), located twenty-five miles southeast of the Barbara Yowell Site,

Table 53. Diagnostic Artifacts by Site Type and Elevation Range, Hydrologic Unit E03

Cultural Diagnostic	**Period**	**Site Type (LBC: large base camp; SBC: small base camp; LAC: limited activity camp)**	**Physiographic Province**	**Elevation Range**
Mid-Paleo	Middle Paleoindian	LBC	Inner Piedmont	Low
Palmer	Early Archaic	LBC, SBC	Inner Piedmont, Blue Ridge	Low, Mid
Kirk Corner-Notched	Early Archaic	LBC	Inner Piedmont	Low
Kirk Stemmed	Early Archaic	LBC, SBC, LAC	Inner Piedmont, Blue Ridge	Low, Mid, High
LeCroy	Middle Archaic	LBC	Inner Piedmont	Low
St. Albans	Middle Archaic	LAC	Blue Ridge	High
Morrow Mtn. II	Middle Archaic	LBC, SBC, LAC	Inner Piedmont, Blue Ridge	Low, Mid, High
Guilford	Middle Archaic	SBC, LAC	Inner Piedmont, Blue Ridge	Low, Mid, High
Halifax	Middle Archaic	SBC, LAC	Inner Piedmont, Blue Ridge	Low, High
Bilobate	Middle Archaic	LBC, SBC	Inner Piedmont, Blue Ridge	Low
Brewerton SN	Late Archaic	LBC, SBC	Inner Piedmont	Low
Lamoka	Late Archaic	SBC, LAC	Blue Ridge	Mid, High
Savannah River	Late Archaic	LBC, SBC, LAC	Inner Piedmont, Blue Ridge	Low, Mid, High
Holmes	Late Archaic	SBC	Inner Piedmont, Blue Ridge	Low
Bare Island	Late Archaic	SBC	Inner Piedmont	Low
Orient Fishtail	Early Woodland	LBC, SBC	Inner Piedmont	Low
Vernon	Early Woodland	LBC, SBC, LAC	Inner Piedmont, Blue Ridge	Low, High
Calvert	Early Woodland	LBC, SBC, LAC	Inner Piedmont, Blue Ridge	Low, High
Piscataway	Early Woodland	SBC, LAC	Inner Piedmont	Low
Accokeek	Early Woodland	SBC	Blue Ridge	High
Potts	Middle Woodland	LBC	Inner Piedmont	Low
Popes Creek	Middle Woodland	SBC	Blue Ridge	Low
Selby Bay	Middle Woodland	SBC	Blue Ridge	Mid
Jacks Reef	Middle Woodland	SBC, LAC	Inner Piedmont, Blue Ridge	Low, High
Levanna Yadkin	Late Woodland	SBC, LAC	Inner Piedmont, Blue Ridge	Low, High
Albemarle Cord	Late Woodland	SBC	Inner Piedmont, Blue Ridge	Low

can be used as an analog for the low foothills region. Such an environment would have provided a wide range of soft mast, available during warmer months, with hunting a focus closer to the Blue Ridge.

Not until the Kirk Stemmed phase of the Early Archaic-Middle Archaic transition, well into the Holocene, did hunter-gatherers occupy the highest elevations of the E03 drainage, and then only intermittently until the Morrow Mountain phase of the Middle Archaic, when all elevations saw an increase inoccupation. Limited activity camps near the head of Nicholson Hollow were first occupied during this phase (Table 53). The Savannah River phase of the Late Archaic, which evidenced the heaviest occupation during the prehistoric era, was the last interval during which all elevations were occupied. From that time forward through the Late Woodland, occupations waxed and waned between high and low elevation settings. Mid-elevation settings were particularly important during the Archaic period, with the hollows the focus of more substantial occupation.

Tool Technology and Residential Mobility

Lithic analysts commonly discuss the effects of different hunter-gatherer mobility strategies on ranges of tool design and production (Cowan 1999; Barber 2001;

Clarkson 2008). A curated tool kit, identified through extensive re-shaping of a bifacial technology manufactured from high quality raw materials, emphasizes portability and is indicative of high mobility. In contrast, an expedient core-and-flake technology manufactured from local, often lesser-quality materials signals lower mobility. The informality of the tools, the fragility of the tool edges, the wastefulness of raw material use, and the weight of the cores significantly reduces the portability of this technology. At sites where a variety of activities occurred (such as a base camp), "tool production methods are likely to have been eclectic" (Cowan 1999:597), employing both core/flake and bifacial curation depending on tool needs. When analyzed at multiple scales, the patterned lithic assemblages from the E03 sites yield clues to more specific site function and social organization.

The functional artifact assemblage for E03 classified as follows:

- 70 percent debitage (core, flake, shatter)
- 16.4 percent projectile points
- 5.9 percent non-projectile point bifaces
- 3.4 percent formal flake tools (drills, gravers, scrapers)
- 2.9 percent cobble tools
- 0.9 percent prehistoric pottery
- 0.5 percent ground stone tools

The high percentage of projectile points relative to other tool types reflects landowner collection bias at the large base camp and four small base camps; the assemblages from these sites account for seventy-seven percent of the lithic

diagnostics. However, the bulk of the sites were documented using professional methods and their assemblages are believed to adequately represent site types in the E03 drainage. After Cowan, the high percentage of debitage relative to bifaces indicates a preference for flake and core technology, giving further credence to the raw material evidence for lower mobility among the E03 groups. This pattern is also seen in the low percentage of formal flake tools, all of which were recovered from the lower elevation base camps. The distribution of formal tool types indicates that high mobility patterning is expressed in low- and mid-elevation settings in E03, and with the raw material evidence, points to initial settlement and exploration by groups cycling in and out of the region. All evidence points to the high elevation sites as short-term occupations by groups focused on the immediate region. The overall pattern of small sites with extremely limited assemblages contrasts with continued occupation at low- to mid-elevation 'persistent places.'

The Sociality of Uplands and the Significance of Persistent Places in Hydrologic Unit E14 (Upper Robinson River/White Oak Run)

The Upper Robinson River/White Oak Run Hydrologic Unit (E14) is the most significant for the study. Its large sample of ninety-six sites is the largest meso-scale grouping in the study (Figure 46). Field work conducted by professional and trained avocational archaeologists provides the most comprehensive coverage of any area

within the Upper Rappahannock Valley. Local landowners and artifact collectors have displayed an interest in the artifacts of this area for the past eighty years, and several well-provenienced surface collections contribute to seventy-two percent of the artifact assemblage total for Madison County. E14 also includes the five documented rockshelters of the study area, two of which (44MA1 and 44MA9) are the only fully excavated sites in Madison County. This watershed provides important case studies for upland-lowland patterns of social interaction and the unification of scale through multi-component sites ('persistent places').

With an elevational drop of 3550 feet across fourteen air miles, E14 displays the greatest topographic diversity of the study area (Figure 47); it includes Hawksbill Mountain, the highest peak in the Northern Virginia Blue Ridge. E14 is the only hydrologic unit completely contained within the study area, sampling from the Blue Ridge and Inner Piedmont macrophysiographic zones. Two topographic features framing the unit have contributed to the level of archaeological study: the Big Meadows Basin in the headwaters and the Hebron Valley at the down-river outlet. Big Meadows, recognized as a one of the most unique ecological settings in the Appalachians, is the center of the largest drainage catchment in the Northern

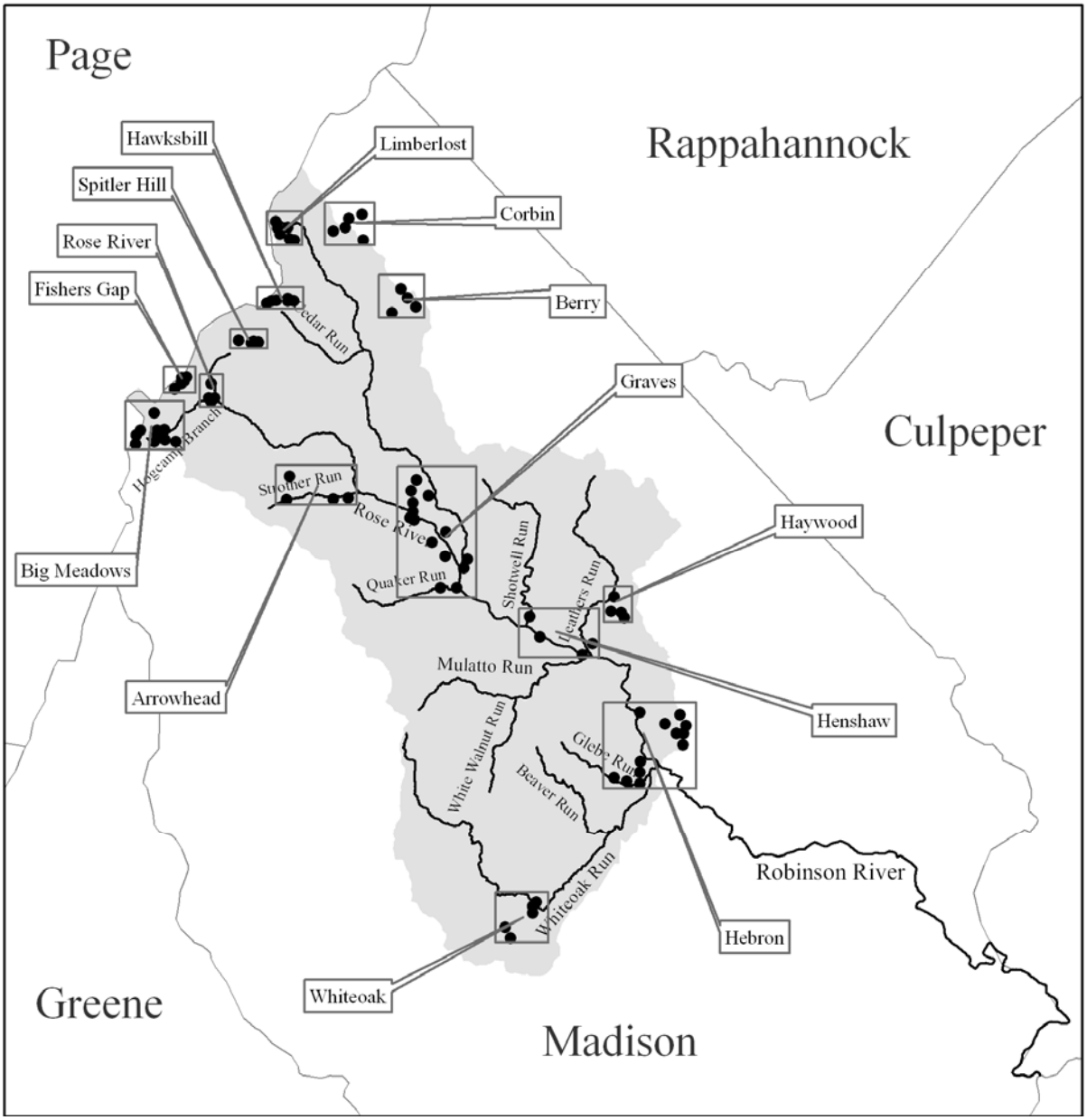


Figure 46. Prehistoric Archaeological Site Clusters and Sites, Hydrologic Unit E14

Virginia Blue Ridge and has been the focus of the most extensive archaeological studies in Shenandoah National Park for thirty years. The Hebron Valley evidences the broadest floodplains in the Rappahannock Blue Ridge foothills, with the

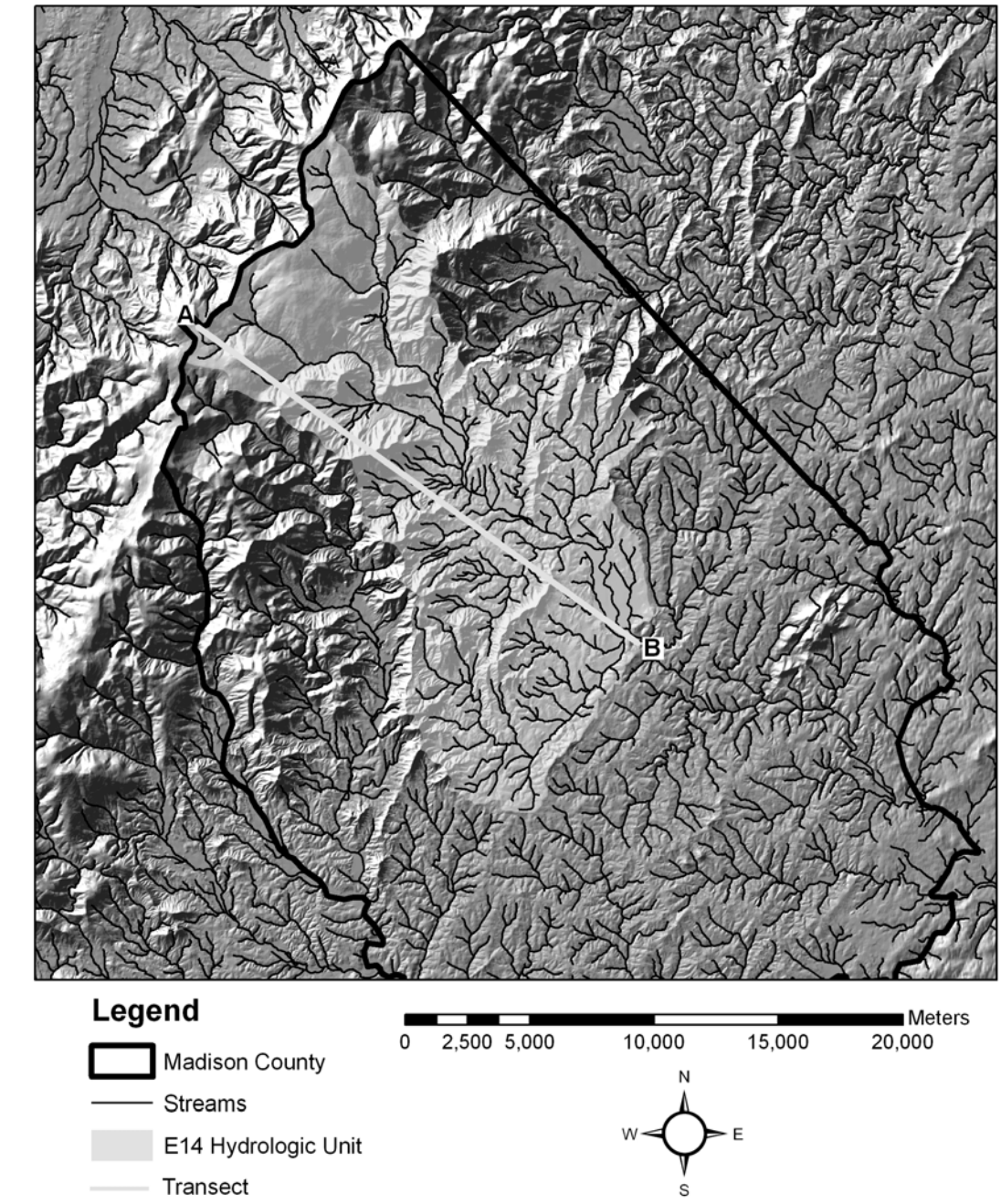


Figure 47. Transect Profile, Hydrologic Unit E14

Robinson River forming extensive wetlands near its confluence with White Oak Run.

Outline of Upper Robinson River Culture History

The 36,268 artifacts from the E14 site assemblages comprise seventy-two percent of the study total. All cultural periods from Paleoindian through Late Woodland are represented (Figures 48; 49). Contrary to the common observation that Blue Ridge and Inner Piedmont counties offer evidence of only scant habitation during the entire PaleoIndian period (Turner 1989), two E14 sites contain Mid-Late Paleoindian components, both located in the White Oak Run drainage along the White Oak Run Fault (Nash 2008a). The diagnostic artifacts from these components demonstrate the Paleoindian culture characteristics of high mobility and long-distance travel and exchange, while the lack of Clovis phase materials and the discovery of Plano-like projectile points indicate the arrival of Mid-to-Late Paleoindian pioneers from outside the region, perhaps the northern Middle Atlantic (Nash 2008a).

The E14 area saw greater occupation during the Early Archaic sub-period, when twenty-six floodplain and wetland locations that would be used into the Woodland period were first settled. The high elevation Blue Ridge at Big Meadows saw its first

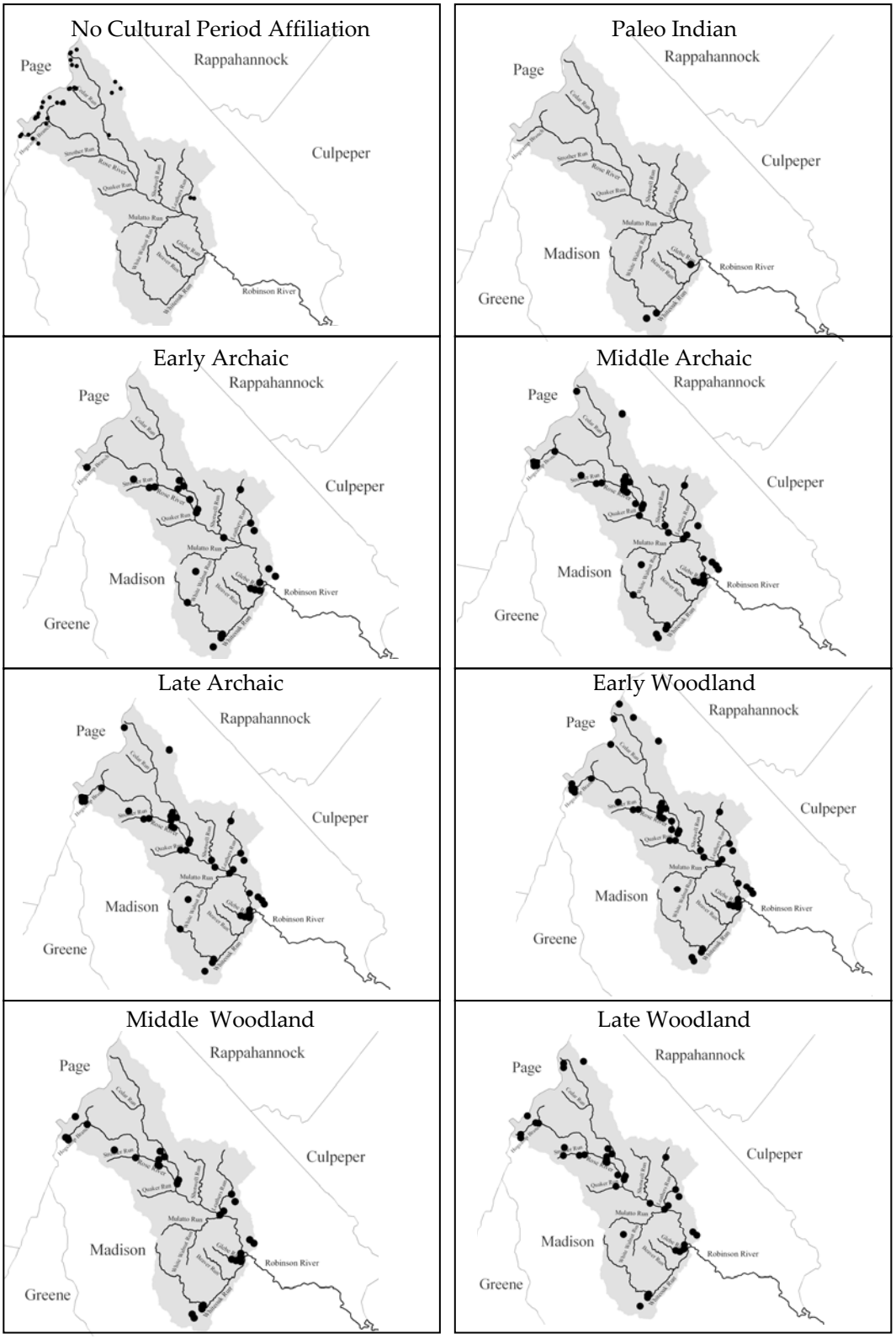


Figure 48. Distribution of Components by Cultural Period, Hydrologic Unit E14

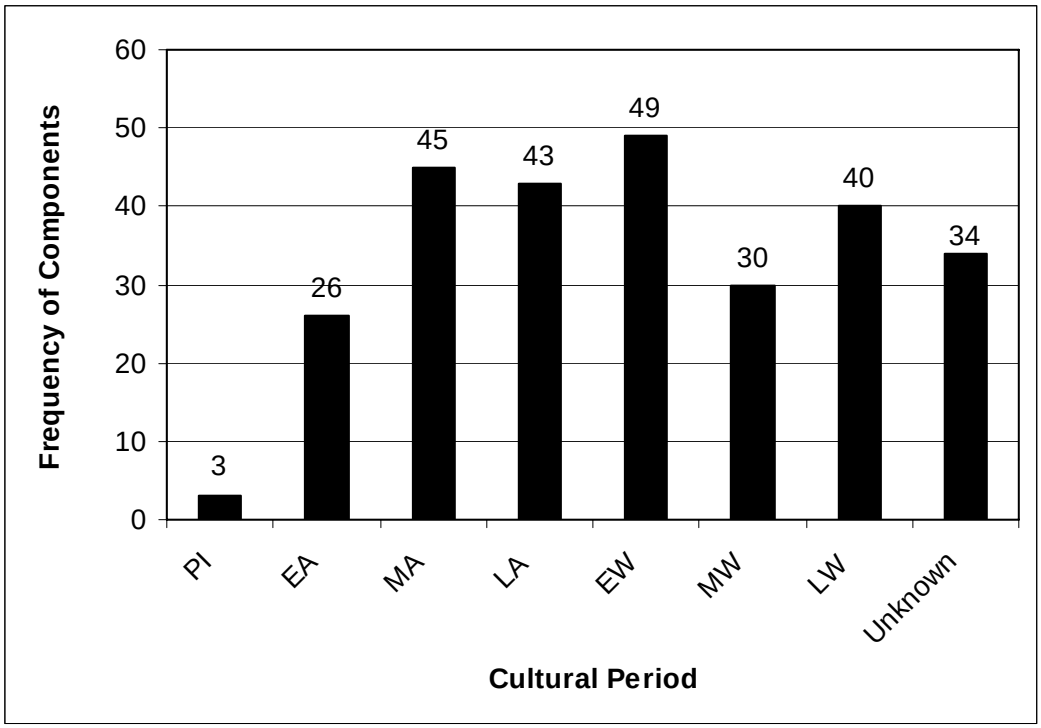


Figure 49. Frequency of Components by Cultural Period, Hydrologic Unit E14

occupation during the final phase of the Early Archaic. E14 was more intensively occupied during the Middle and Late Archaic, as with the other hydrologic units that include the Blue Ridge (E03, E11). Middle and Late Archaic occupations account for thirty-three percent of the components with a known cultural association. The first significant increase in E14 settlement came during the Halifax phase of the Middle Archaic (5300-4900 B.P.), when the Upper Robinson River Valley funneled settlement into the Blue Ridge along its two main tributaries, the Rose River and the Robinson River headwaters (Figure 50). Based on the frequency of diagnostics, E14 did not see the overall intensity of Halifax phase settlement again until the Holmes

phase of the Late Archaic at roughly 3000 B.P., although the Blue Ridge portion was heavily occupied during the Savannah River phase at roughly 3800 B.P. (Nash 2008c).

A distinguishing characteristic of E14 is the frequent occurrence of carved steatite bowl fragments at a small number of sites. Of the fifty-nine documented steatite bowl fragments from the study area, seventy-six percent are found at ten E14 sites (Figure 51). The largest number from any site in the study area is eighteen at the Roadhouse Site (44MA127) on White Oak Run, followed by twelve from 44MA59 at Big Meadows. Each of these sites is located at the two major headwaters of the watershed, with the Robinson River Valley acting as a conduit for hunter-gatherer movement. The implications of this distribution are considered below.

A major increase in activity came during the Vernon and Calvert phases of the Early Woodland (Figure 50), when large base camps created a nexus of settlement at the confluence of the Rose and Robinson Rivers near Syria. The entire county saw an overall increase in components associated with these phases, from the lowest elevation Mesozoic Basin settings to the highest elevation Blue Ridge settings. An increase in both the size and frequency of sites was seen in interriverine areas (Nash

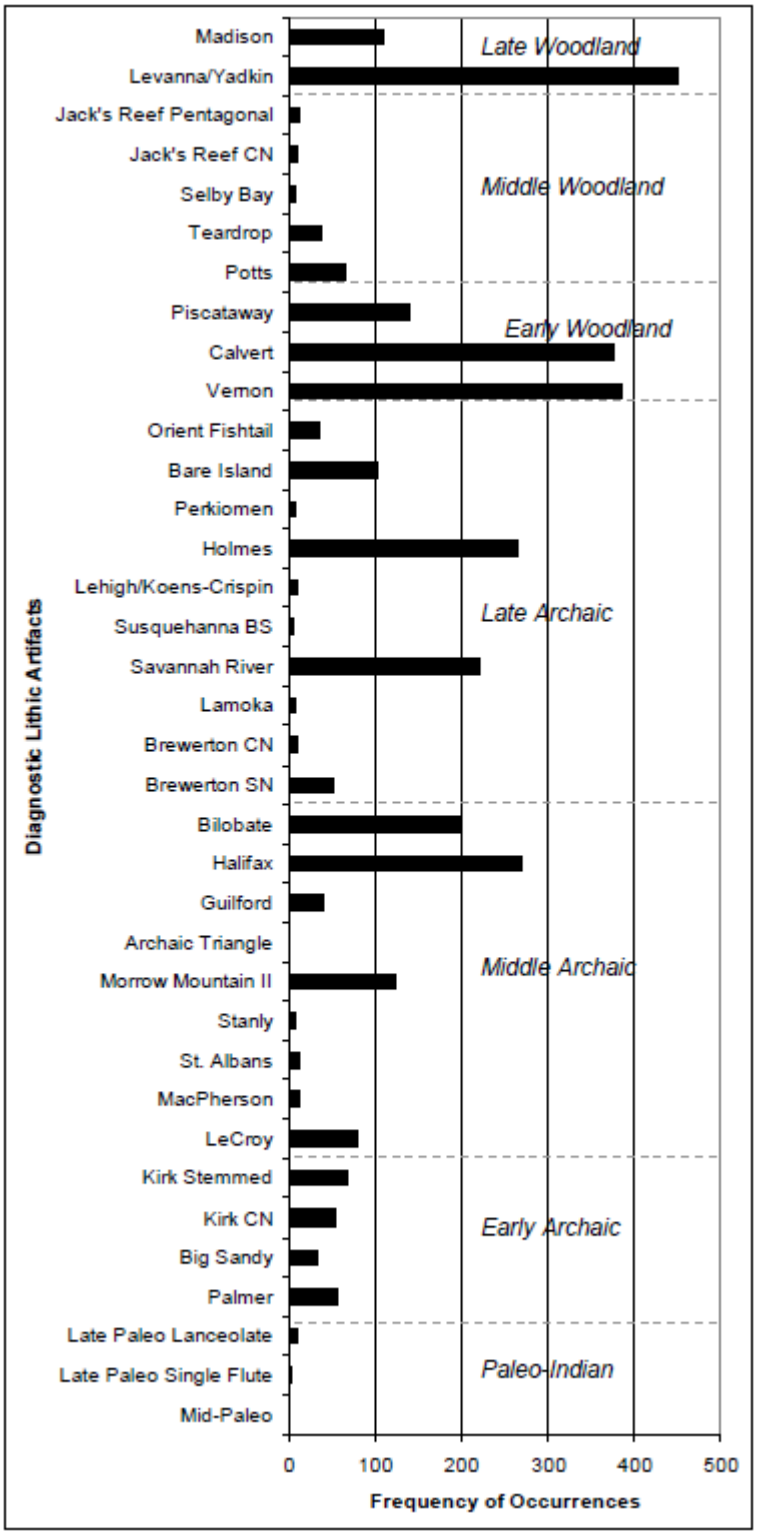


Figure 50. Frequency of Diagnostic Lithic Occurrences, Hydrologic Unit E14

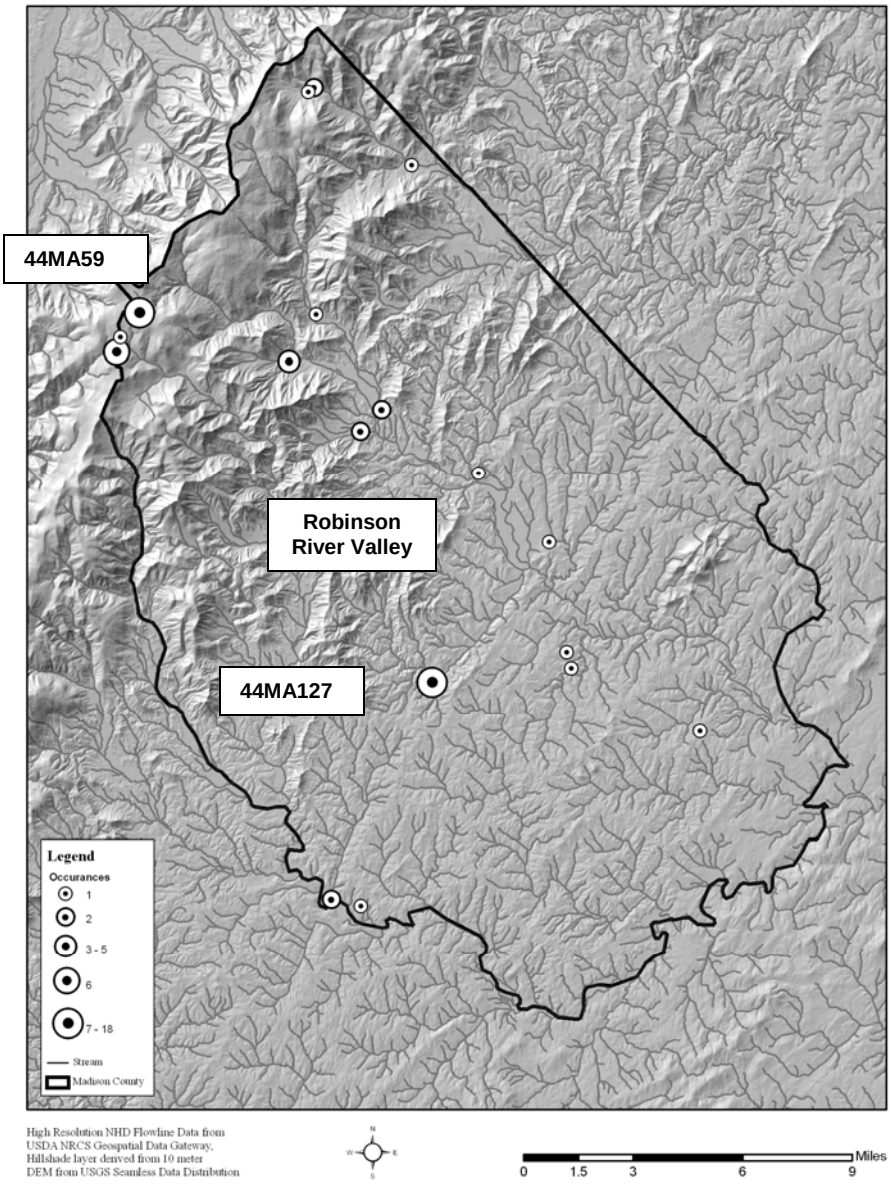


Figure 51. Occurrences of Steatite Bowl Fragments, Madison County

2001a). The earliest occurrence of ceramics in the study area, a single steatite-tempered Selden Island sherd, is documented for 44MA127 in the low elevation White Oak Run floodplain. The subsequent Accokeek form was also identified in this site assemblage, as well as those of four additional sites, replicating the

documented pattern of the gradual adoption of ceramic container technology in the Virginia interior (Klein 1994). Following this, Piedmont ceramic sequences were well established in the watershed for the remainder of the prehistoric era (Figure 52).

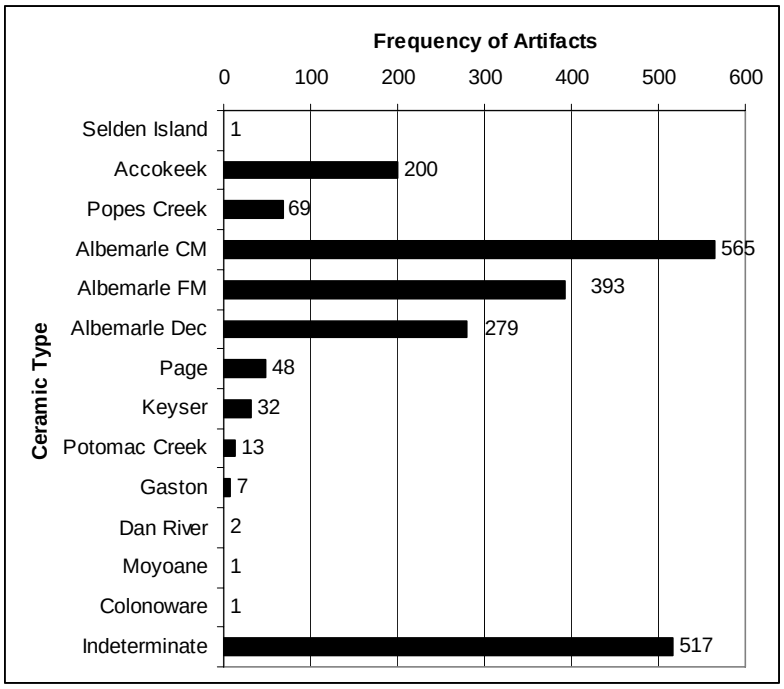


Figure 52. Frequency of Ceramic Artifacts by Type, Hydrologic Unit E14

As with much of the Virginia and Maryland Piedmont, the frequency of Middle Woodland components in the Upper Robinson River/White Oak Run region is in question (Nash 2001a; 2008d). Using the lithic and ceramic diagnostic markers normally attributed to this sub-period, occupation decreased in all areas of the county, particularly in the higher elevations. However, a core area of settlement persisted at E14 rockshelters and large base camps and hamlets located adjacent to higher order streams in the Upper Robinson and Hebron valleys. The net-marked

ceramic tradition, Popes Creek, is in evidence in lesser numbers in the assemblages from seven E14 sites (Figure 52). The Hebron Valley, in particular, became an important locus with its cluster of stone burial mounds and cache of quartzite bifaces attributed to the Middle Woodland and described in Chapter Four.

Settlement intensified in E14 during the Late Woodland, both in terms of number of components and diagnostics. Triangular projectile point forms are found in large quantities at large and small base camps, in rockshelters, and at high elevation basin sites. The known ceramic sequence for the Northern Virginia Piedmont, with an emphasis on Albemarle wares, is replicated in E14. The large number of Albemarle sherds in E14 is due to the excavation of the rockshelters 44MA1 and 44MA9, which account for fifty-nine percent of all Albemarle ceramics in the study area. Settlement decreased in the study area toward the end of the Late Woodland sub-period, with the E14 region becoming the focus of Proto-Historic and possibly Contact Period settlement. The decorated forms in the Albemarle series (incised and cord-wrapped dowel impressed), non-local ceramic forms from the Southern Virginia Piedmont, Shenandoah Valley, and Coastal Plain, and the latest projectile point form documented for the Piedmont (Madison), are found in more site assemblages in E14 than any other hydrologic unit.

Thirty-three percent of E14 sites lack association with a specific cultural period due to the absence of diagnostic artifacts. While this is significantly less than the seventy percent of unaffiliated E03 sites, the patterning is similar. All of the E14 unaffiliated sites are located in the Blue Ridge macrophysiographic province, and all but two above 3000 feet amsl.

Site Function and Setting

Hydrologic Unit E14 exhibits the greatest diversity of site functions of all hydrologic units, with seven identifiable types in evidence (Figures 53; 54): burial mound, hamlet, large base camp, limited activity camp, lithic cache, rockshelter, and small base camp. Twenty-six percent of sites, all located above 2800 feet amsl, cannot be assigned a function due to their small, generalized assemblages. While not as extreme a number as that of the unassigned sites in Hydrologic Unit E03, these sites underscore the pattern of highly restricted activity near the Blue Ridge summit. The single collecting area in the MAP study, the Graves Duck Farm Site, is found in Hydrologic Unit E14. This extensive, long-term artifact collecting locale with poorly documented boundaries is over 100 acres in area. While the collections associated with it contain diagnostic artifacts from all cultural periods except the PaleoIndian, it will not be considered in this discussion due to the lack of detail regarding artifact

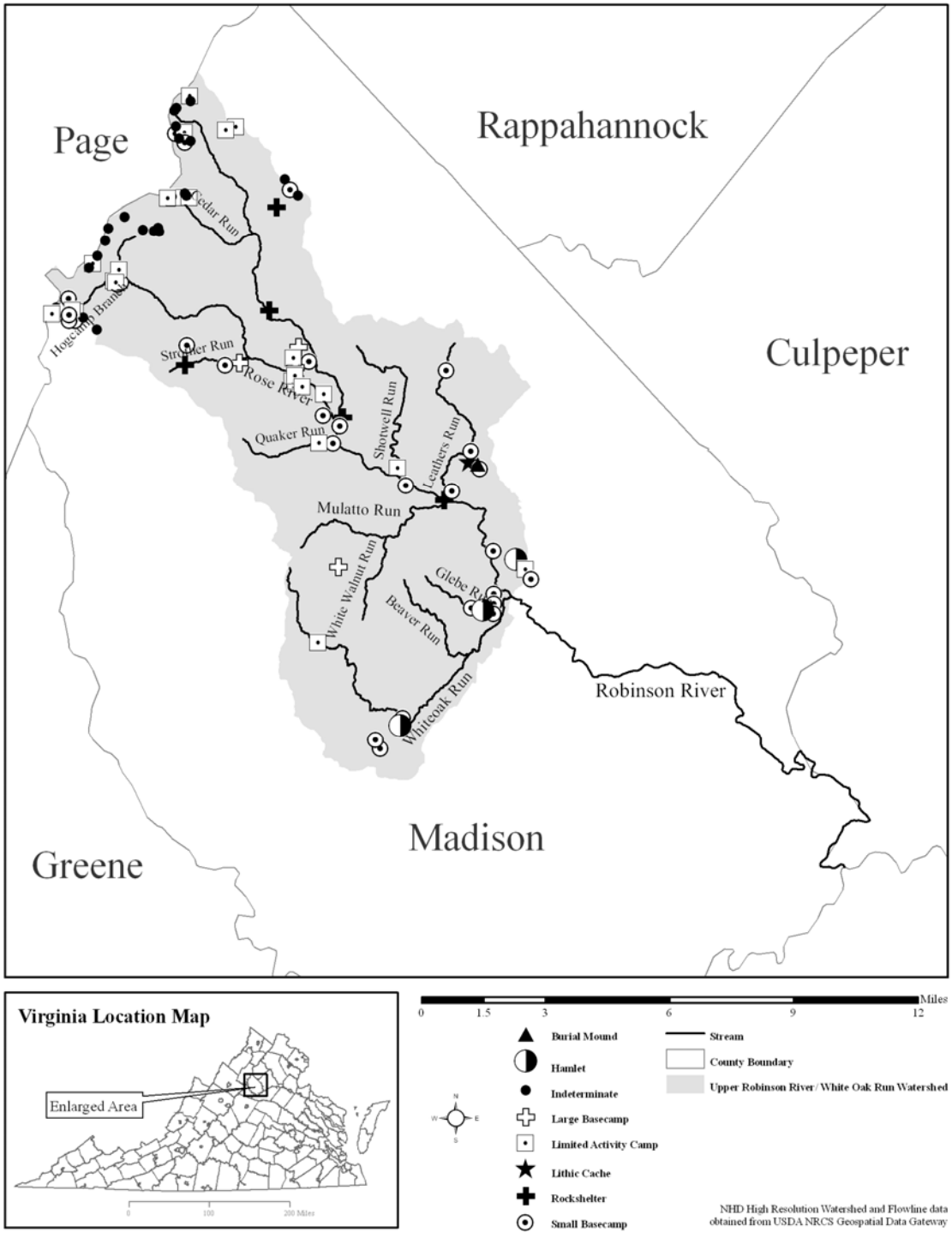


Figure 53. Site Distribution by Function, Hydrologic Unit E14

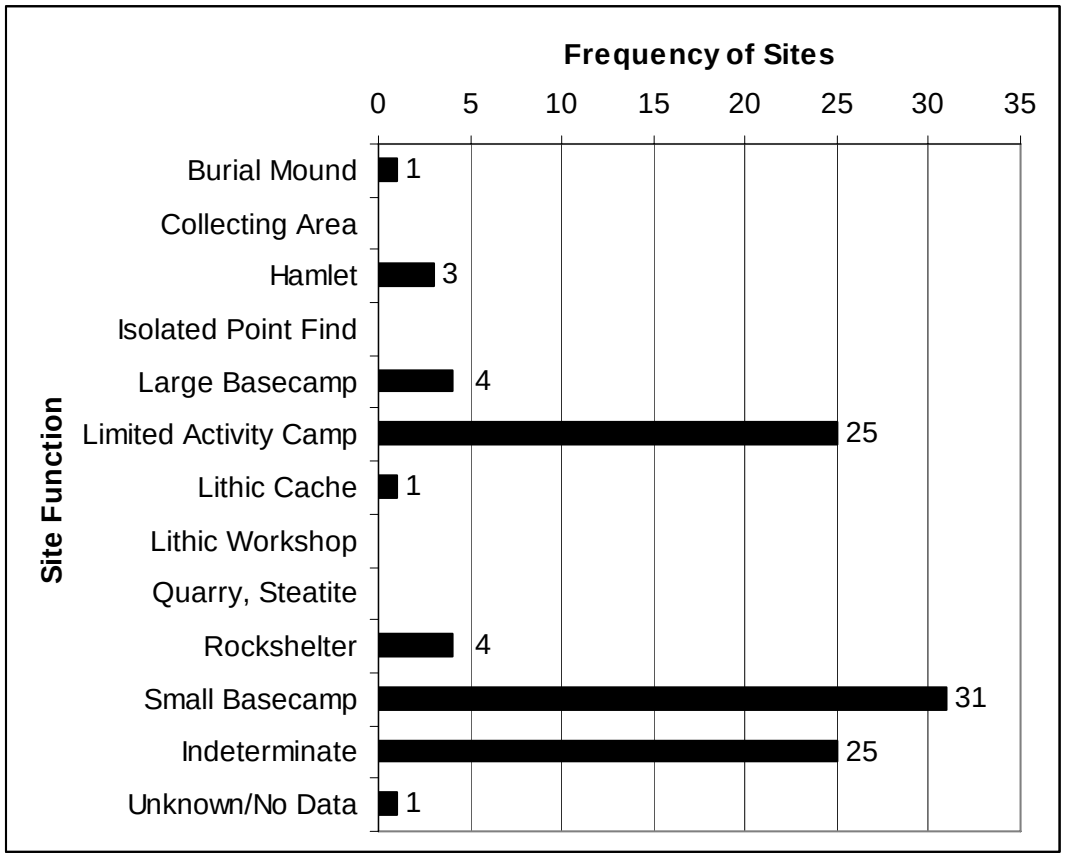


Figure 54. Site Function by Frequency, Hydrologic Unit E14

concentrations, as well as the high probability of distinct sites yet to be defined. MAP volunteers have placed a high priority on the Graves Duck Farm collecting area for future survey, assuming access is granted.

A unique characteristic of Hydrologic Unit E14 is the location of three hamlets on the floodplains of White Oak Run and the Robinson River. Situated in a northeast to southwest-trending pattern across five air miles, these sites are found on the

broadest floodplains of the study area (Figure 55). Classified as hamlets due to large ceramic assemblages and areal extents that average twenty-four acres, two of these sites (Strode A and 44MA127) evidence occupation during every sub-period from the Late PaleoIndian through the Late Woodland. The third, Graves Duck Farm Roy Crigler, was occupied during every sub-period from the Early Archaic through the Late Woodland. These locations form the framework for settlement in the region; the sites grew from small, limited activity camps to semi-sedentary hamlets over the thirteen thousand years of Native occupation here.

Four large base camps are identified for E14; one is located at the confluence of the Rose and Robinson Rivers near Syria, and three on large alluvial fans at the eastern base of the Blue Ridge. All are situated below 950 feet amsl, and all are multi-component sites occupied from the Early Archaic through the Late Woodland. Holland (1980) hypothesized that such sites should be located throughout the Blue Ridge/Inner Piedmont interface and serve as aggregate, seasonal occupations for multi-family groups.

Thirty-one small base camp sites are distributed along floodplains and inner stream terraces throughout E14, from higher-order confluences below 400 feet amsl to over

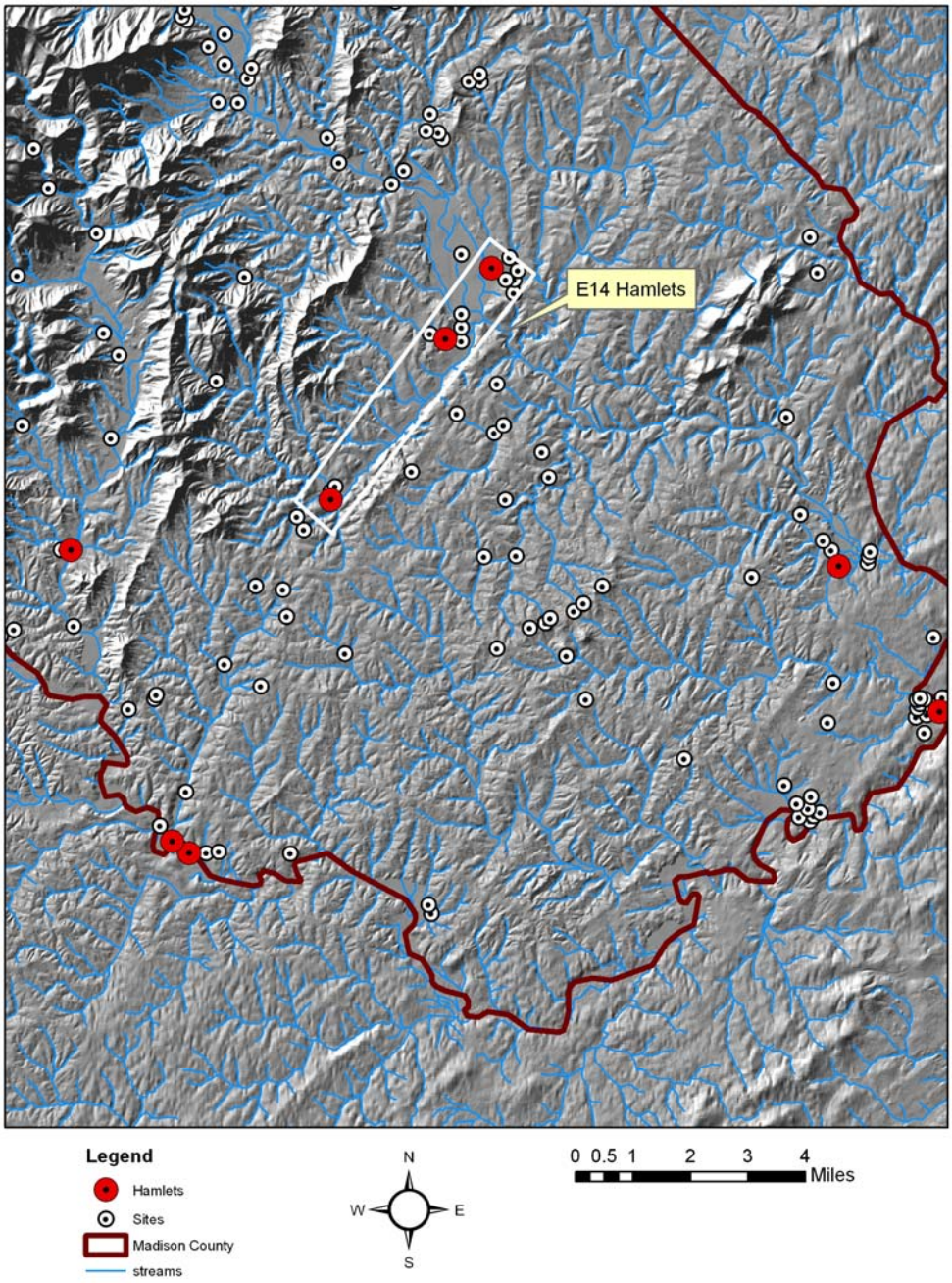


Figure 55. Hamlet Locations, Madison County, Virginia

3400 feet amsl in mountain basins. Ninety-four percent are multi-component, indicating that the restricted but intensive occupations of E14 were included in long-

term patterns of movement. Six small base camps are found in the Big Meadows-Rose River Clusters, located one mile from each other on the Hogcamp Branch drainage.

As in Hydrologic Unit E03, the twenty-five limited activity camps identified for E14 are largely located in the Blue Ridge at elevations above 2200 feet amsl. Unlike E03, however, an interesting pattern is in evidence for this site type in E14: thirteen of fifteen sites are single component, either associated with an Early Woodland or Late Woodland occupation. All are associated with stream terrace or wetland settings. Below 2200 feet amsl, the limited activity camps are all multi-component and associated with higher-order stream terraces or floodplains. A grouping of eight limited activity camps is found in the Syria-Rose River-Quaker Run confluence area near Syria, at the Blue Ridge/Inner Piedmont interface.

The five identified rockshelters in the study area are found in the E-14 Hydrologic Unit within eight miles of each other. These small shelters are adjacent to the third-order Robinson River or one of its tributaries, Strother Run and Rose River (Figure 56). The E14 rockshelters mirror a pattern seen in other Virginia and Maryland Inner

Piedmont and Blue Ridge settings in that they are formed by the differential weathering of granitic rocks (Israel 1998; Nash 2008a).

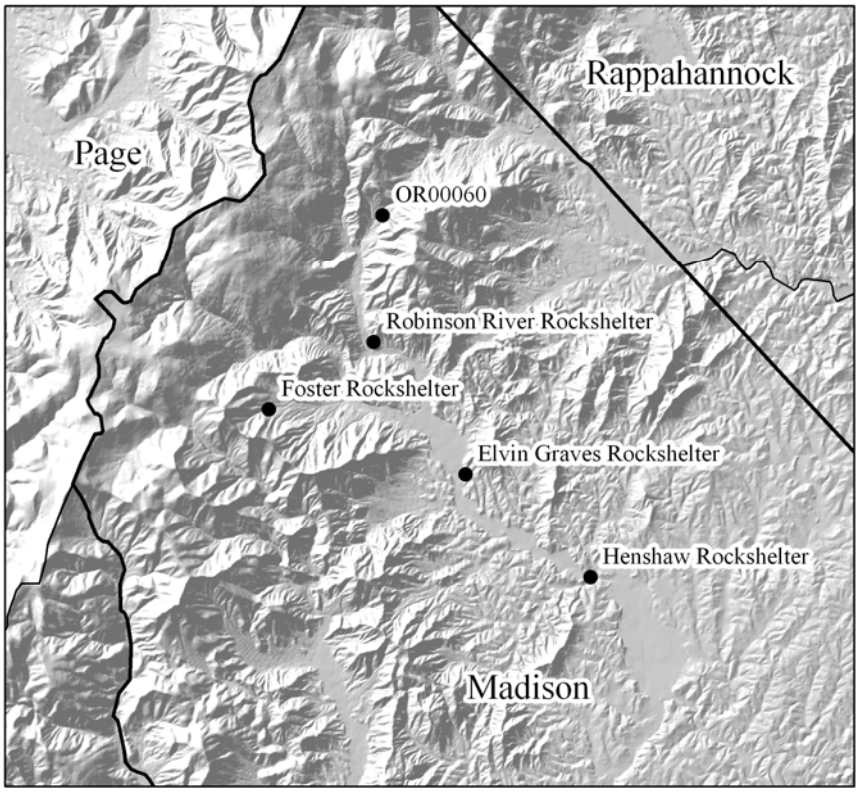


Figure 56. Documented Rockshelters, Madison County, Virginia

Outcrops of Catoctin Formation metabasalt are more common and massive in this region but typically weather to rounded and smooth configurations, with openings too small for human habitation. Because three of the rockshelters are known only from surface finds, a more descriptive function cannot be assigned them. The two excavated rockshelters, 44MA1 (Henshaw) and 44MA9 (Elvin Graves), contain pit and hearth features, a wide range of artifact types and raw materials, and appear to

be associated with base camps located on the floodplains below them. A more thorough discussion of these sites is found below.

The only two examples of the stone burial mound and lithic cache site types documented for the study area are found in Hydrologic Unit E14, both at the head of the Hebron Valley. It is likely that these sites are associated with each other. The mound site actually includes the bases of five probable stone burial mounds situated on a north facing alluvial fan of Arrington Mountain and overlooking an unnamed tributary to Leathers Run, a high order tributary to the Robinson River. The Works Progress Administration (WPA) Historical Inventory for Madison County alludes to "three high Indian mounds," located 300 yards north of Haywood, "situated in a grove of lovely oak and hickory trees, on an elevated plateau which commands a splendid view in every direction" (Tunison 1936). Such a site is extremely rare in the Virginia Piedmont, although Bushnell (1933) documented isolated stone burial mounds in Albemarle County, approximately twenty-five miles south of the study area. In the Shenandoah Valley where the stone burial mound tradition is more well-known, common site locations are high bluffs or hilltops overlooking the floodplains of high-order streams (Gardner 1993).

The lithic cache, thus far known from twenty-five finely knapped quartzite bifaces, is located at a springhead one thousand feet west of the mounds; this spring feeds a tributary to Leathers Run. The bifaces have been recovered by a local landowner after heavy rains erode the stream bank near the spring head. Again, Bushnell (1933) documented a similar occurrence in Albemarle County: the Berkeley Cache of fifty quartzite bifaces, all recovered from within four to five feet of a relict springhead.

As with Hydrologic Unit E03, the meso-scale review of culture history and site function for Hydrologic Unit E14 provides a baseline for theoretical questions concerning hunter-gatherer sociality in the uplands. Geodatabase queries of site location, landforms, and artifact distributions acrossthe Upper Robinson River/White Oak Run watershed, as well as viewshed studies of critical site locations, contribute to the study of upland-lowland interaction, the establishment of territories, and *place* as a source of long-term identity (Rodman 2003).

The Big Meadows Case Study: Aggregation and Territoriality during the Late Archaic Sub-Period

The archaeological sites currently documented for Hydrologic Unit E14, when analyzed using the landscape approach, indicate that the veneer of long-term, persistent mountain lifeways may have masked transformative changes in upland

sociality that were directly tied to similar changes in lowland settings. The uplands of the Middle Atlantic were part of a broader pattern of Late Archaic social negotiation in which seasonal mobility was tied to the emergence of social complexity.

Between 2000 and 2004, James Madison University (JMU) archaeology faculty and students, directed by the author, participated in a multidisciplinary study of Big Meadows to test the Hoffman/Foss settlement model described in Chapter Two of this work. The project was funded by Shenandoah National Park as part of a long-term management study of this unique setting. Much of the Hoffman and Foss transect study at Big Meadows focused on one site, 44MA59, located five hundred feet east of the modern fen at the lowest point of the basin. First interpreted by Foss (1977) as a temporary hunting and gathering station due to low artifact density and a limited assemblage of artifact forms, later excavations by Hoffman et al. (1979) identified the site as the prototype for the (Grade 4) base camp occupied by a band segment for several weeks or a month. A twenty-five meter-square excavation yielded evidence of activity areas, including a greenstone axe production zone, a concentration of twelve soapstone bowl fragments in an otherwise unoccupied sector near a large greenstone outcrop, a large number of bifacial tools, and an

incised slate fragment. Diagnostic artifacts associated with the Middle and Late Archaic and Middle Woodland were recovered, indicating repeated occupations over several millennia. Ultimately, the site (and Big Meadows in general) was interpreted as a catchment that drew in lowland groups in search of deer, chestnut, wild turkey, berries and nuts during two periods of occupation in June/July and early fall. The major occupations at 44MA59 corresponded to the peak use of the Blue Ridge by Native peoples, the Late Archaic. In this scenario, Xerothermic-induced climatic stress forced lowland groups from both sides of the Blue Ridge to intensify their use of resources in different mountain zones, a pattern represented by site clusters at different elevations. Given the ecological focus of the Hoffman-Foss model, only subsistence-related activities and associated group mobility were addressed.

The JMU field methodology involved systematic shovel test pitting at twenty-five and fifty- foot intervals across the twenty acres surrounding the Big Meadows fen. Contrary to Hoffman and Foss' finding of a distinct, intensively occupied site (44MA59) on the north side of Hogcamp Branch, artifact distributions from the JMU testing suggest that the larger fen area was a sizeable locus of overlapping occupations from the Middle Archaic through the Early Woodland sub-periods,

making site boundary identification between 44MA59, 44MA60, and 44MA102 difficult. While at eighteen acres the area is spatially extensive, the fact that only eight widely-dispersed units contained twenty or more artifacts suggests that no single area saw intensive use.

Of the seventeen diagnostic projectile points recovered from Big Meadows by JMU, sixteen are associated with the Middle Archaic, Late Archaic, and Early Woodland sub-periods (Table 54). Represented by eight points, the Late Archaic occupations appear to represent distinct, but roughly contemporaneous cultural traditions, including Savannah River (Coe 1964), Brewerton (Ritchie 1980), and Susquehanna Broadspear (Kinsey 1972). That these were recovered within several hundred feet of Hoffman's twelve steatite bowl fragments may be significant for understanding the Meadow's use during this period.

The steatite, projectile points, and other stone tools cluster at the lowest point of the basin, along Hogcamp Branch. Today the stream is more a 'gully,' rarely carrying surface water. However, during the heyday of prehistoric occupation, it was fed by a vernal pond. A test excavation found the pond to be only 0.8 feet deep, and nearby

Table 54. JMU-Big Meadows Mafic Fen Survey, Diagnostic Projectile Points

Cultural Sub-Period	**Diagnostic Projectile Point Type**	**Number**
Middle Archaic	Halifax	4
	Morrow Mountain	2
Late Archaic	Savannah River Broadspear	1
	Brewerton	2
	Susquehanna Broadspear	1
Early Woodland	Orient Fishtail	1
	Vernon	3
	Calvert	1
	Piscataway	1
Late Woodland	Levanna/Yadkin	1

soil coring by the U.S.G.S. suggests a late Pleistocene origin (Litwin et al.2004). Stratigraphic profiles and diagnostics demonstrate that at 4,000 B.P., the stream ran fifty feet to the north of its present-day location. As it migrated downward over the millennia, the watercourse became choked with slopewash from the basin walls, an indicator of open terrain. When the Meadow was host to Late Archaic cultural groups with ties to different points of origin, the pond and stream must have presented a very attractive upland setting (Nash 2003).

Palynological studies also demonstrate the establishment of American chestnut forests in the high elevation Blue Ridge by 3500 B.P. (Figure 57). The American chestnut (*Castanea dentata*) once dominated forty to fifty percent of southern Appalachian forests (David 2006). A single mature tree, 120 feet tall and fifteen feet

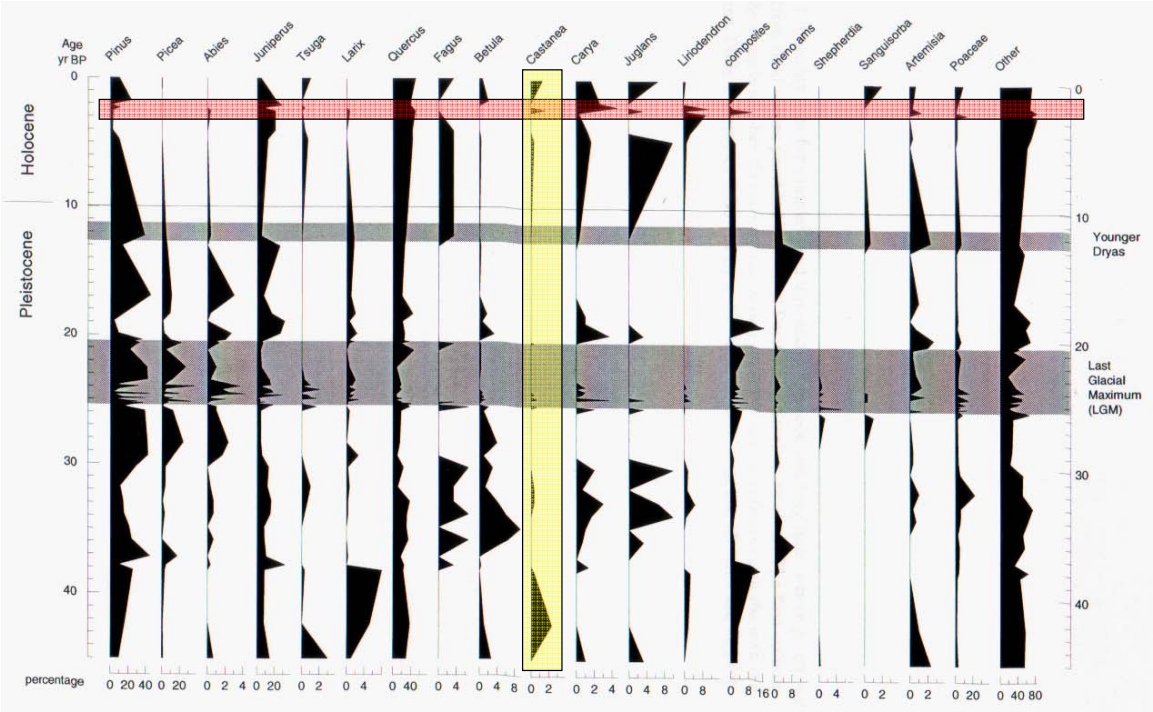


Figure 57. Vegetation Response to Climate in the Blue Ridge over the past 45,000 Years, with emphasis on American Chestnut *(Castanea)* (after Litwin et al.2004)

in diameter, could produce six thousand nuts per year. Growth was exceptionally fast, with a tree attaining twenty-five feet in height in fifteen years. Unlike oak and hickory, American chestnut flowered in June to early July, avoiding the killing frosts that can make acorn and hickory nut production unreliable from year-to-year (Lord 2007). The nuts dropped from late September through October, providing a nutritious staple high in protein and fat. Unlike acorns, chestnuts did not require boiling to be palatable but required roasting to retain their sweetness for any length of time (Lutts 2004).

Chestnut groves are often mentioned in historic memoirs, with natural stands cleared of underbrush to facilitate nut gathering (Lutts 2004). An alleopathic species that secretes a chemical to kill competing species, it is also fire tolerant. Forest ecologists have hypothesized that chestnut stands were managed and culturally redefined by Native peoples, leading archaeologists to consider the possibility that chestnuts were removed from the foraging commons (Brown 2000).

In Shenandoah National Park ecologists posit that the mature stands of chestnut described for Big Meadows in early historic records extend back to the Late Archaic. While no chestnut stands are intact today due to the Chestnut Blight that killed an estimated four to six billion trees between 1910 and 1950, the modern Northern Red Oak community that surrounds Big Meadows today can be seen as a proxy. Northern Red Oak becomes dominant at high elevation when American chestnut is removed (Young et al. 2006).

Definitive evidence for the indigenous creation of chestnut groves at Big Meadows is difficult to access, but test units excavated on the terraces above the fen include definite charcoal lenses at the base of the E soil horizon, which is associated with Late Archaic diagnostics (Nash 2008c). Radiocarbon assays from bulk charcoal

in two of the more distinct units 'straddle' the Late Archaic and Early Woodland, averaging 3600 B.P. (Litwin et al. 2004). The spike in chestnut pollen is accompanied by a spike in *chenopodium* and *amaranthaceae*—the starchy, seedy plants that thrive in disturbed areas and that provided the basis for early plant experimentation in lower elevation settings (Delcourt and Delcourt 1998). Taken together with the faunal resources of white tailed deer, black bear, and wild turkey, Big Meadows would have offered an abundance of food resources.

A type of feature documented for the high elevation Blue Ridge by Inashima (1990b) was also found at three Big Meadows sites during the JMU study: the shallow basin of fire-hardened clay. Typically three to four feet in diameter and a half-foot deep, these contain little heat altered rock. The recovered artifact assemblages are dominated by unifacial cutting edges, pestles, and mortars (Nash 2008c), indicating a possible function as shallow nut roasting pits and preparation areas.

The hunter-gatherer literature is filled with examples of the establishment of territories and the emergence of social complexity in areas of great resource richness (Arnold 1996; Cannon 1999). Multiple lines of evidence associated with the Late Archaic occupations at Big Meadows point to this locale as a gathering and feasting

center for corporate groups, where the cycle of upland mobility that emerged during the Middle Archaic found new expression during the Late Archaic.

The establishment of American chestnut-dominated forests, ca. 3500 B.P., in the high elevation Blue Ridge could have been a catalyst toward the intensification of resource use, resulting in the creation of upland gathering territories. Requiring both physical and social maintenance, these territories supported changes recognized by archaeologists for lowland settlements of the same time: social networking and material exchange systems perhaps necessitated by significant population growth. As noted in Chapter Four, the emergence of territoriality during the Late Archaic among Virginia Piedmont hunter-gatherers was proposed by Mouer (1990) for the lowlands; it is here proposed that such a shift also occurred in the uplands.

Two final pieces of evidence support this proposal: the exchange system associated with steatite bowls, and a shift in lithic resource availability between the Late Archaic and Early Woodland sub-periods. Stewart (1989) and Klein (1997) posit carved steatite bowls as markers of social interaction and regional exchange during the Late Archaic, when population growth and resource stress associated with the Xerothermic pushed groups to the limits of previously defined territories,

necessitating ritualized trading partnerships. Broad-based exchange networks of this sub-period were characterized by hand-to-hand, down-the-line exchange in which predominantly technomic artifacts were circulated through a series of web-like or chain-like personalized relationships (Stewart 1989).

Recovered in the midst of the bowl fragments was an incised slate fragment (Figure 58) similar to those excavated by Coe (1964) in Late Archaic contexts at the Hardaway and Gaston sites in the North Carolina Piedmont. The meaning of this small artifact is unknown, but it is assumed to have made its way to Big Meadows through a similar exchange system.



Figure 58. Incised Slate Fragment (6x4.5 cm), 44MA59 (Hoffman et al.1959)
(Courtesy John Amberson, Shenandoah National Park Archives)

Chemical analysis undertaken by Luckenbach et al. (1975) on the 44MA59 steatite bowl fragments narrowed the steatite source locations to Albemarle and Nelson counties, sixty to one-hundred miles to the south of Big Meadows. Three pairs of sherds were linked through trace element analysis and another two through physical mends. Hoffman et al. (1979) interpreted the tight spatial distribution of the sherds as an indication of breakage in the vicinity. If the bowls were exchanged via face-to-face contact, the act of exchange may have derived its meaning from the location, which would have served as a "spiritual landscape" (Crumley 1999:272). If simply left near the greenstone outcrop that served as their repository, the bowl fragments could be characterized as a 'hoard' or 'cache,' their removal from further exchange serving to sacralize the location. The deposition of fragments in one location from widely separated places may also signal their 'burial' upon breakage—an act of reverence at the end of the use-life of the bowl in a landscape of affiliation and exchange (Klein 1997).

According to Stewart (1989), steatite bowls should appear with more frequency at other locations in the Late Archaic settlement round if they represent a common container technology. However, as is probable at Big Meadows, steatite bowls were often cached on large, cyclically reused sites. This pattern is also seen at the southern

end of the E14 hydrologic unit, where eighteen steatite bowl fragments were recovered from 44MA127 (Figure 51). Trace element analysis has not yet been performed on these artifacts, but this site, with its long history of occupation and exotic raw materials, and non-local artifact forms from the Late PaleoIndian through the Late Woodland sub-period, would fit the pattern of a symbolically charged landscape (Nash 2008a; Lozny 2007; Lane 2008).

The possible emergence of territoriality may also be found in lithic raw material frequencies between the Late Archaic and Early Woodland sub-periods. The Late Archaic Savannah River projectile point is commonly manufactured from fine-grained Antietam quartzite that outcrops at the western base of the Blue Ridge, five miles from Big Meadows. Quartzite Savannah River points are found across all macro-physiographic zones, accounting for fifty-three percent of this type in the study area. However, the movement of quartzite through the Blue Ridge into the Inner Piedmont slowed at the end of the Late Archaic. Thirty-three percent of Holmes projectile points, the form following the Savannah River point, were manufactured from quartzite. With the appearance of the Early Woodland Vernon form, quartzite accounted for only sixteen percent of the assemblage. The long-lived pattern of movement and access across macrophysiographic zones, with broad

access to quartzite quarries, ended. From the Early Woodland and into the proto-historic era, archaeological evidence supports the further regionalization of landscape use, resulting in more restricted movement across macrophysiographic provinces and greater attention to meso-scale lifeways.

Rockshelters, Buffers, and Persistent Places

Rockshelters, unlike open-air sites, are fixed in place and, depending on specific topographic characteristics that increase their attractiveness, were repeatedly occupied in the Eastern Woodlands throughout the Holocene by both mobile hunter-gatherers and small parties from settled hamlets and villages (Walthall 1998; Barber 2005). While specific conditions for each shelter may have changed over time (access may become more difficult; roof falls may limit occupation space, etc.), as a whole they were known to indigenous populations as viable settlement locations for millennia.

The five rockshelters in the study area (Figure 56; Table 55) are all described as 'small' (Holland and Graves 1951; Holland 1967; Nash 2008b; VDHR DSS 2008), the measured sites ranging from twenty to twenty-five feet at the opening and fifteen to twenty feet to the back wall. Walthall classifies such sites as "hunting stations" (1998: 234) used for overnight forays by small groups. Three higher elevation

Table 55. Environmental and Cultural Attributes of Rockshelters, Madison County, Virginia

Name	**Phys. Prov**	**Cluster**	**Elev. (Feet)**	**Aspect**	**Dist. To H2o (Feet)**	**Opening (Feet)**	**Depth to Back (Feet)**	**Dist. to Base Camp (Feet)**	**Cult. Pd.**
44MA1	IP	Henshaw	499	NW	120	20	15	1400	M/LA, E/M/LW
44MA9	IP	Graves	680	SW	100	20	20	1000	E/M/LA, E/M/LW
44MA17	BR	Isolated	1027	W	347	Small	small	5400	prehis
MA200	BR	Berry	1581	S	75	Small	small	2400	prehis
Foster	BR	Arrowhead	1792	SE	49	25	15	2500	LW

rockshelters—Foster, 44MA17, and 44MA200—may fall neatly into this category for small sites with extremely limited artifact assemblage. Neither Foster nor 44MA200 has been tested, however, resulting in limited artifact numbers and low artifact type diversity. Any work undertaken at 44MA17 remains unreported. In contrast, the two lower elevation rockshelters, Henshaw (44MA1) and Elvin Graves (44MA9), account for twenty-one percent of the documented artifacts for the entire county and forty-three percent of the documented ceramics. Archaeological evidence in the form of features and diagnostic artifacts demonstrate intermittent occupations across 9,000 years, from the late Early Archaic through the Late Woodland sub-periods.

From the Middle Archaic Halifax phase through the Late Woodland Madison phase, these two shelters are better classified as Walthall's "residential camps," with features, larger numbers of artifacts, and wider diversity of artifact types (1998: 234).

Both the Henshaw and Elvin Graves shelters are adjacent to lowland base camps in the Henshaw and Graves Clusters, respectively (Figure 59). Henshaw overlooks a broad floodplain at the head of the Hebron Valley near the confluence of Mulatto Run and the Robinson River. The shelter is 1400 feet south of the Martens Site and 3500 feet east of the Strode M Site, small base camps occupied in the Robinson River floodplain during the Early Archaic through the Late Woodland sub-periods. Elvin Graves, located three miles upstream of Henshaw, overlooks the floodplain at the confluence of the Robinson and Rose Rivers. The shelter is 1200 feet from the Graves Around Hill Site and 1700 feet from 44MA8, also small base camps in the Robinson River floodplain that were occupied during the Early Archaic through the Late Woodland sub-periods. As noted by Stewart for the Upper Delaware Valley, the "association between rockshelters with lots of pottery and nearby lowland sites" suggests a close connection, with the rockshelters functioning as "re-used special activity areas" (2005:115) for groups occupying the base camps.

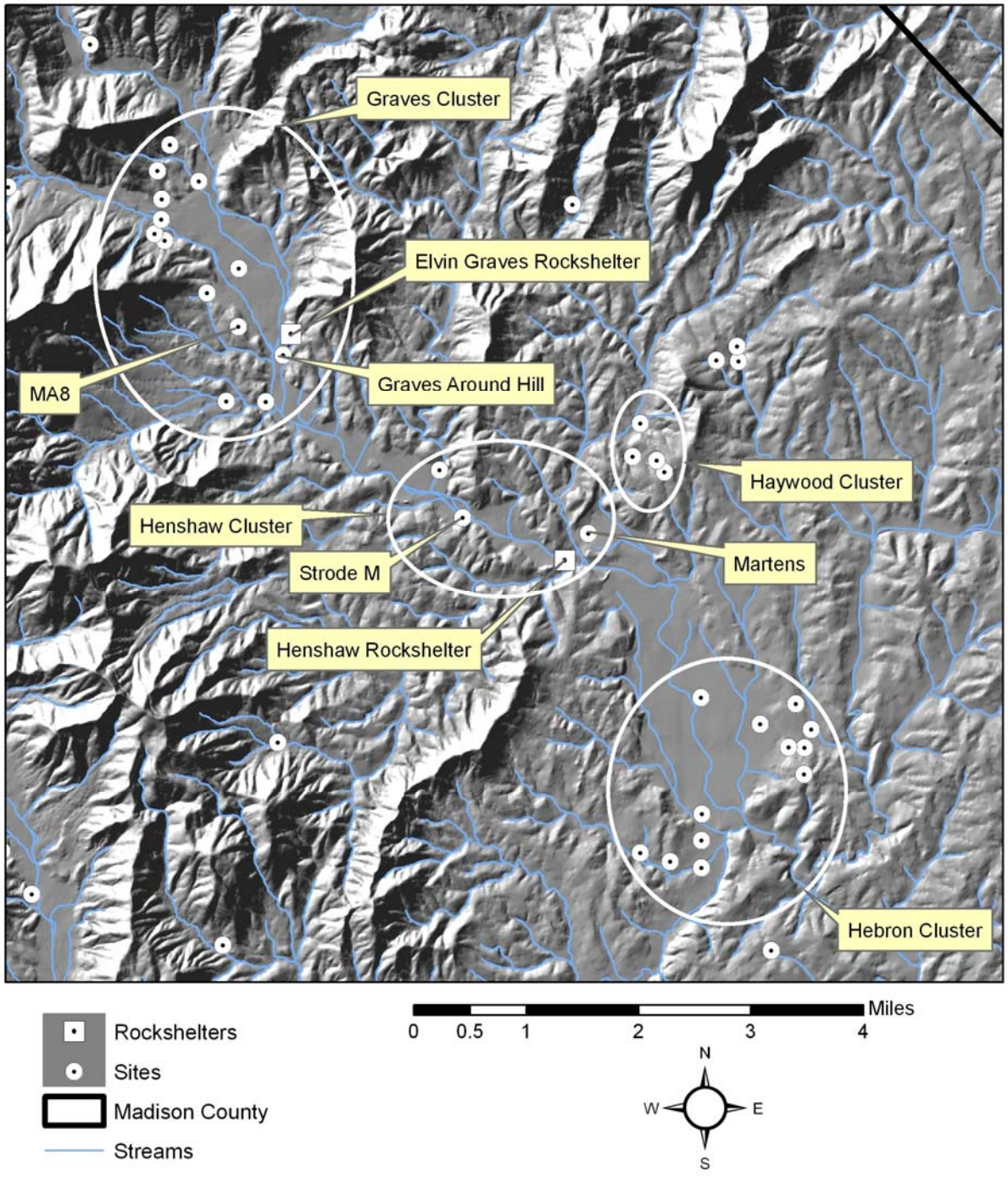


Figure 59. Henshaw and Elvin Graves Rockshelters and Associated Base Camps and Site Clusters

The elevated setting for the shelters is a zone of transition between the floodplain and steeper mountain slopes, offering access to the resources of each. The hearth features and faunal assemblages from each shelter are evidence of the hunting and processing of terrestrial and riverine species. However, this site-specific approach cannot fully explain the intensive occupation of the shelters when more substantial open-air settlements having similar suites of artifacts are so close by, particularly when the non-advantageous northwestern (Henshaw) and southwestern (Elvin Graves) aspects are considered.

The shelters' settings are remarkably similar (Figure 60). The Elvin Graves shelter overlooks a constriction at the confluence of the Robinson and Rose Rivers, where bluffs channel the rapidly-flowing stream and force down-cutting. The constriction is located at the southern end of the Syria Valley, a half-mile-wide river valley between the Blue Ridge and Carpenter Mountain monadnock. The Henshaw shelter also overlooks a major constriction in the Robinson River valley, where granitic bluffs funnel the river onto the softer sediments of the Hebron Valley floor. Here, the river becomes much broader and slower in a two mile-wide valley. Topographically, the Elvin Graves shelter and the Henshaw shelter are 'bookends' for a narrow, high-relief section of the Robinson River drainage.

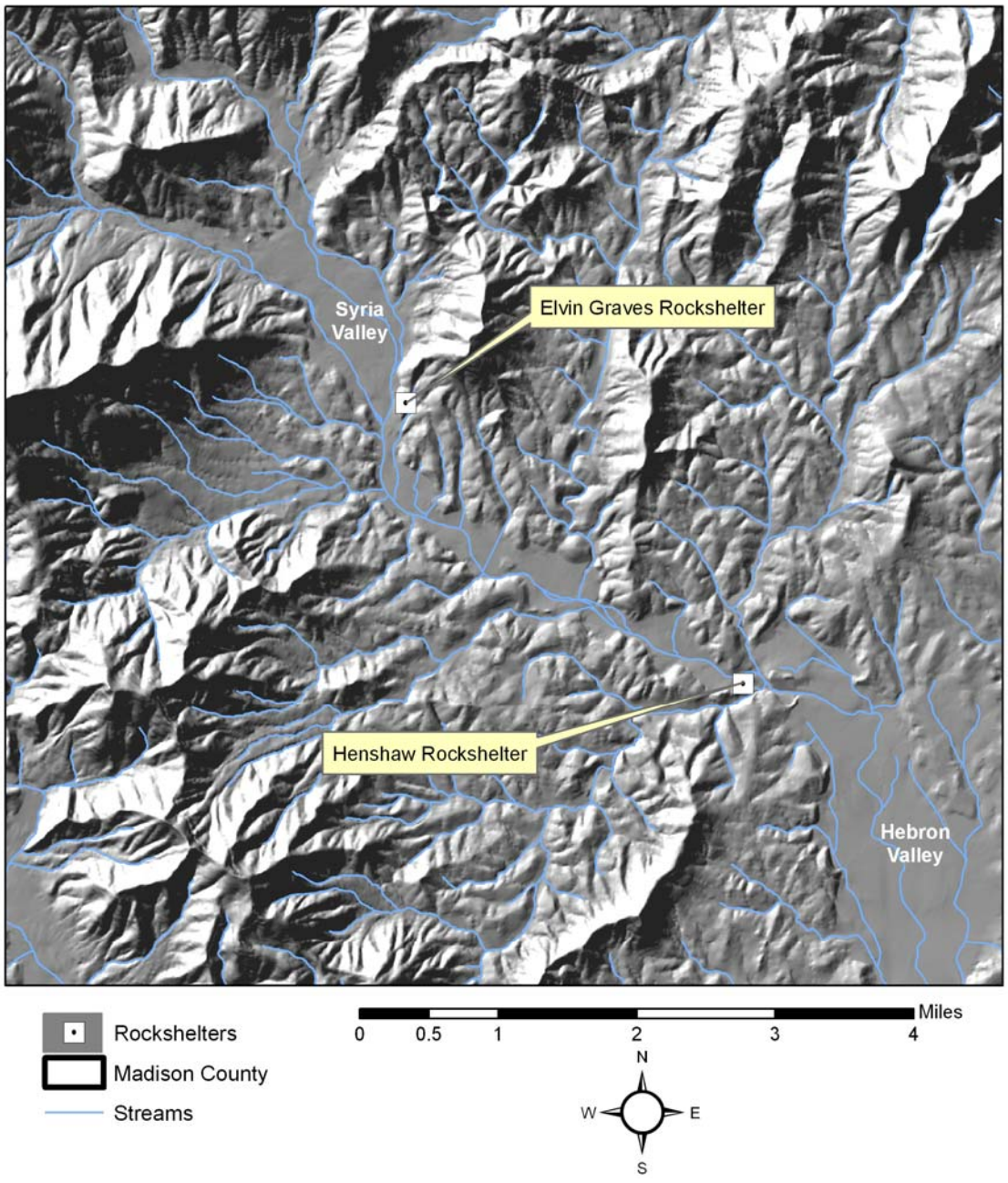


Figure 60. Robinson River Valley Constriction

A GIS viewshed analysis furthers our understanding of these sites. A viewshed is the sum of what can be seen from any particular point on the landscape. In this

application, the GIS viewshed analysis allows the establishment of an observation point from which a virtual observer's line of sight is mapped onto a Digital Elevation Model (DEM). The user can specify a location (e.g., Henshaw Rockshelter), the height of the viewer (e.g., five feet), a maximum potential distance to which a person can see (e.g., one-quarter mile), and derive an output showing which portions of the landscape would be in view (Vogel 2008). For archaeological studies that attempt to reconstruct lines of sight, viewshed analysis assumes a continuity of landscape between the prehistoric past and today, as well as a line of sight cleared of vegetation or other obstructions (Nash 2006). The viewshed analysis for the Henshaw and Elvin Graves Rockshelters demonstrates a visible connection between rockshelters and at least one adjoining base camp.

An occupant of the Henshaw shelter had a narrow line of sight upriver (northwest) to the Strode M Site, but the view downriver (southeast) to the Hebron Valley was blocked (Figure 61). Major peaks visible from the rockshelter include Doubletop Mountain, Spitler Hill, and Old Rag Mountain. The Martens Site across the Robinson River to the northeast would have been highly visible. From the Elvin Graves Shelter, an occupant could see the confluence of Quaker Run and the Robinson River directly south (Figure 62). The Graves Around Hill Site, but not 44MA8, would have

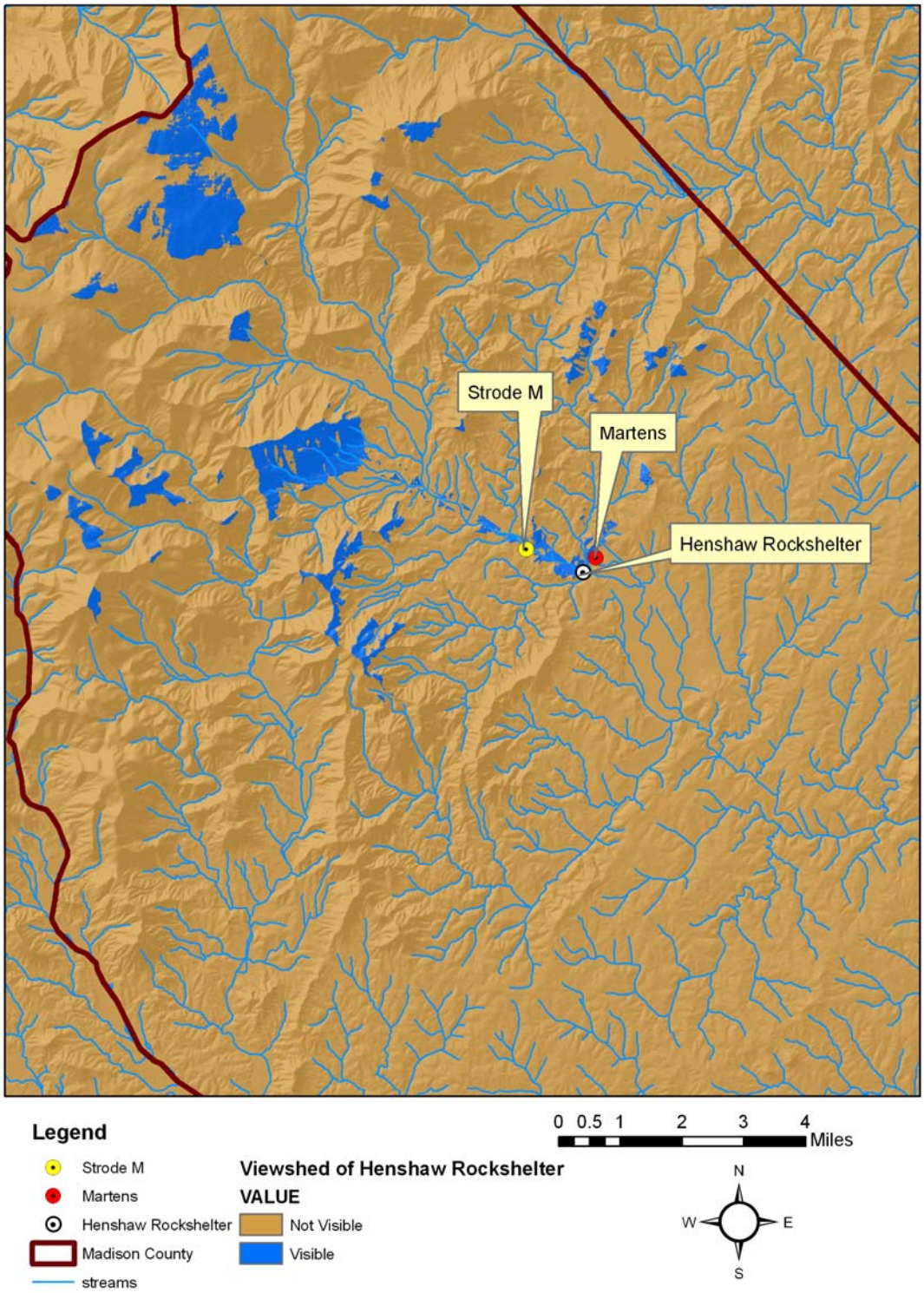


Figure 61. Henshaw Rockshelter Viewshed and Associated Base Camps

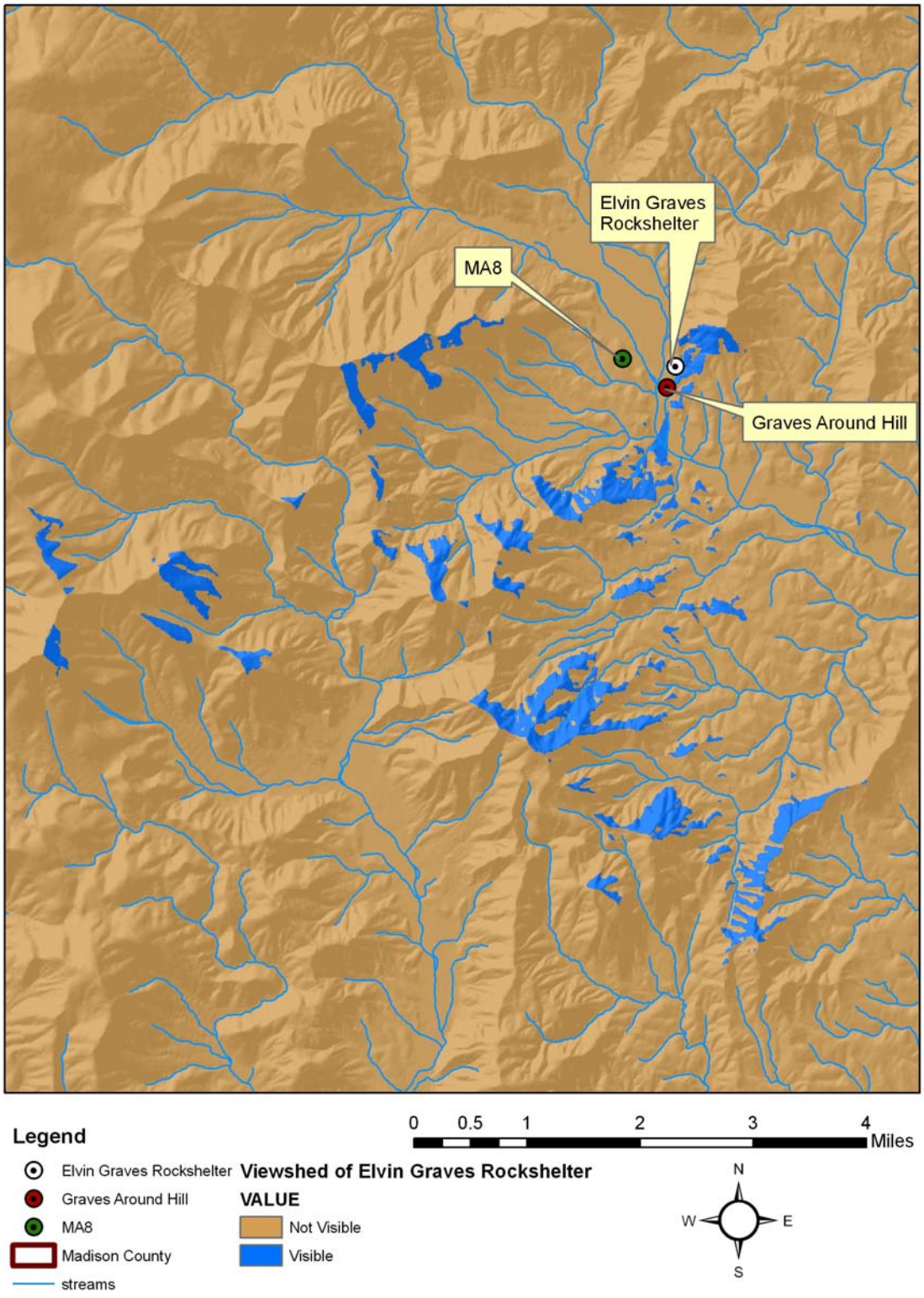


Figure 62. Elvin Graves Rockshelter Viewshed and Associated Base Camps

been visible from the rockshelter opening. The low elevation ridges surrounding the Quaker Run drainage frame this viewshed.

The area of river constriction *between* the rockshelters may have marked a boundary between two contemporaneous communities, one (Elvin Graves) focused on the Syria Valley and the other (Henshaw) on the Hebron Valley. These two sites anchor their respective sub-valleys within the Robinson River system, a pattern that began during the Middle Archaic and continued through the Late Woodland at Henshaw, and persisted from the Early Archaic through the Late Woodland at Elvin Graves.

The possibility that these re-visited rockshelters were a locus of ceremonial activity is seen in the items that indicate ritual activities or personal adornment. A steatite bowl fragment was recovered in each shelter, although the available documentation does not associate these with specific features (Holland and Graves 1951; Holland 1967). One stone pebble pendant and a bone bead blank were recovered from the Henshaw shelter and a small steatite object 'of unknown use' (1967:106) was recovered from the lower stratum of the Elvin Graves shelter. This piece, described as rounded on both ends and two sides, and flattened on two sides, is very similar to an object recovered from the surface of the Duck Farm Site in the lower end of the

Hebron Valley, four miles south of the Elvin Graves shelter. These objects could be broken lugs from steatite bowls, refashioned for some other purpose (Holmes 1897, Plate LXXVII). Excavations at the Elvin Graves Shelter also recovered four clay pipes and pipe fragments. No human remains were excavated at either rockshelter, and to date, no such site in the Virginia Blue Ridge or Piedmont has been found to contain burial features, although these are known from Southern Appalachian rockshelter settings (Whyte 2004).

The heaviest use of the Syria and Hebron areas came during the Middle to Late Woodland sub-periods, to which eighty-seven percent (Henshaw) and seventy-eight percent (Elvin Graves) of the diagnostic artifacts are attributed. These assemblages include almost one thousand ceramic sherds and 314 projectile points. At present, no vessel reconstructions or analysis of the minimum number of vessels have been undertaken, but the rim count led Holland (1967) to estimate thirty vessels for the Elvin Graves Rockshelter assemblage. Analyses of similar assemblages from small rockshelters in the Upper Delaware Valley have produced estimates of twenty to forty vessels (Stewart 2005). Rim diameter analysis of the Graves shelter assemblage demonstrates the pots were small (less than thirty-centimeter orifice diameter) and "easily portable, probably used primarily for culinary purposes" (Holland 1967:104).

While occupation in the E14 Hydrologic Unit lessened significantly toward the end of the Late Woodland, the region may have assumed a different function and meaning at that time. The assemblages of both rockshelters, plus that of the Foster Rockshelter, contain a limited number of ceramic sherds representing terminal Late Woodland/proto-historic/Contact period cultural traditions from outside the study area (Table 56).

Table 56. Non-Local Ceramics Recovered from Rockshelters, Hydrologic Unit E14

	Page	Potomac Creek	Keyser	Gaston	Moyaone	Colonoware	TOTAL
Henshaw	15	0	6	7	0	0	28
Elvin Graves	31	6	21	0	0	0	58
Foster	0	0	4	0	1	1	6
TOTAL	46	6	31	7	1	1	92

The recovery of small numbers of artifacts associated with non-local traditions is common for Middle Atlantic rockshelter contexts, indicating travel and/or exchange networks that crossed recognized, but flexible cultural boundaries (Stewart 2005). The location of the Henshaw, Elvin Graves and Foster Rockshelters in the Upper Robinson River Valley, with direct access to the Blue Ridge, places these sites along a route well-traveled throughout prehistory. These non-local artifacts associated

with the very late prehistoric period are extremely limited in the study area; that eighty-two percent were recovered from the three rockshelters underscores the Robinson River Valley as a corridor of interaction at this time. Recent morphological studies of ceramics excavated from the Rapidan Mound (44OR1), located ten miles south of the Hebron Valley, indicate that Albemarle wares were slow to change over the Late Woodland period (Klein and Duncan 2004). Taken as indication of the lack of significant cultural interaction with groups of different affiliations or major changes in diet, the 'persistent pots' of the mound may represent a long-lived pattern of restricted mobility in an ecologically-rich region. The question of the insularity of the Inner Piedmont and Blue Ridge during a time of great cultural reorganization is one of the most significant for future studies.

The temporal element that allows the consideration of settlement over 13,000 years, combined with meso- and maco-scale spatial analyses of Hydrologic Units E03 and E14, illustrate the efficacy of the landscape approach for generating alternative hypotheses and creating more textured, social explanations of hunter-gatherer cultures. This multi-scalar approach to the study of prehistoric settlement in the Hughes River and Upper Robinson River watersheds demonstrates the value of analyzing larger landscapes than those afforded by site-specific analyses, affirming

Darville's observation that "in social terms, space is essentially continuous and that what varies is the way that people differentially value, categorize, subdivide, and use the spaces available to them" (2008:63). The challenge facing archaeologists is the correlation of research questions to the appropriate analytical scale. As described in Chapter Two and demonstrated by the discussion of archaeological data from Hydrologic Units E03 and E14, the macro-scale provides a window on questions of human territoriality, resource exploitation, and communication. The meso-scale engages a large diversity of relevant processes occurring on an intergenerational interval, such as the transition from small-scale to middle range societies, well-illustrated in the E-14 analysis. The GIS created for the Madison Archaeology Project will allow similar analyses for the remaining hydrologic units (E-11, E-12, E-13, and E-15) in the study area. Specific research questions for each of these are included in the final chapter, which considers the viability of this approach for archaeological practice and heritage resource planning.

Chapter Seven: Concluding Remarks

A project such as the one described in this work, designed to be open-ended for a multitude of queries and analyses, does not easily lend itself to conclusion. It is possible to offer a synthesis of results thus far and an opinion on the success of the methods used—all goals of this concluding chapter. However, any piece of writing that attempts to meld the tight-fisted empiricism of Americanist archaeology, an analytical approach derived from French historiography, geospatial technology, and ecosystems ecology requires a thoughtful ending. This chapter proceeds from the practical (an overview of prehistoric settlement and culture history in the study area) to the reflective (a consideration of the potential of the landscape approach for archaeological practice in the Middle Atlantic, particularly in upland settings). It closes with a consideration of the role of personal history and lived experience in intensive landscape studies, as well as an overview of future research questions.

A Preliminary Settlement Model for Madison County

The 233 sites recorded for this study provide adequate information on settlement throughout the prehistoric period (Figure 63) to allow the development of a preliminary settlement model. The following discussion is based on archaeological site location, diagnostic artifact frequency (Figure 64), and general lithic raw

material patterns. Given the limitations of the sample, specific parameters for site location (e.g., distance to water, elevation) are not included in this discussion but are available in the geodatabase. Ideally, more intensive analysis will result as the geodatabase is populated with additional sites and assemblages.

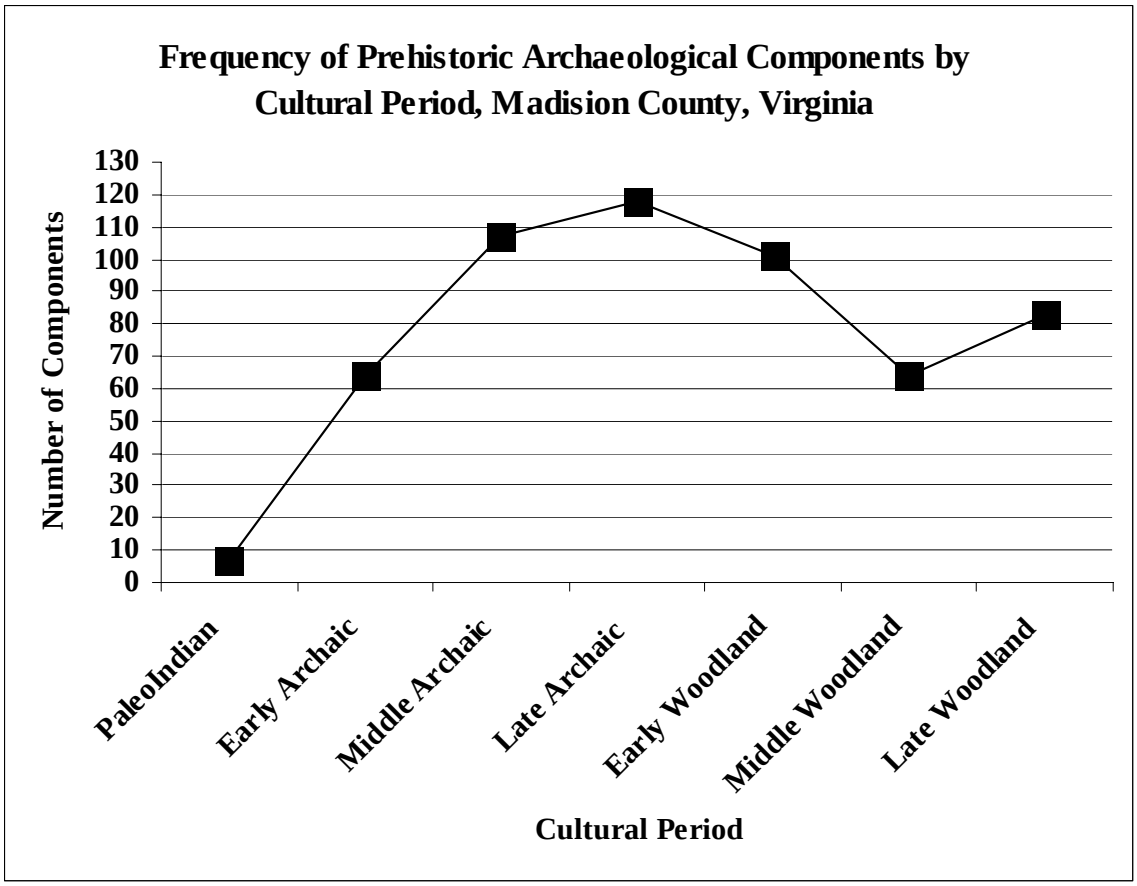


Figure 63. Frequency of Archaeological Site Components by Sub-Period

PaleoIndian occupation is documented for Madison County at seven sites, six of which were discovered by MAP volunteers (Figure 65). Four of seven sites are

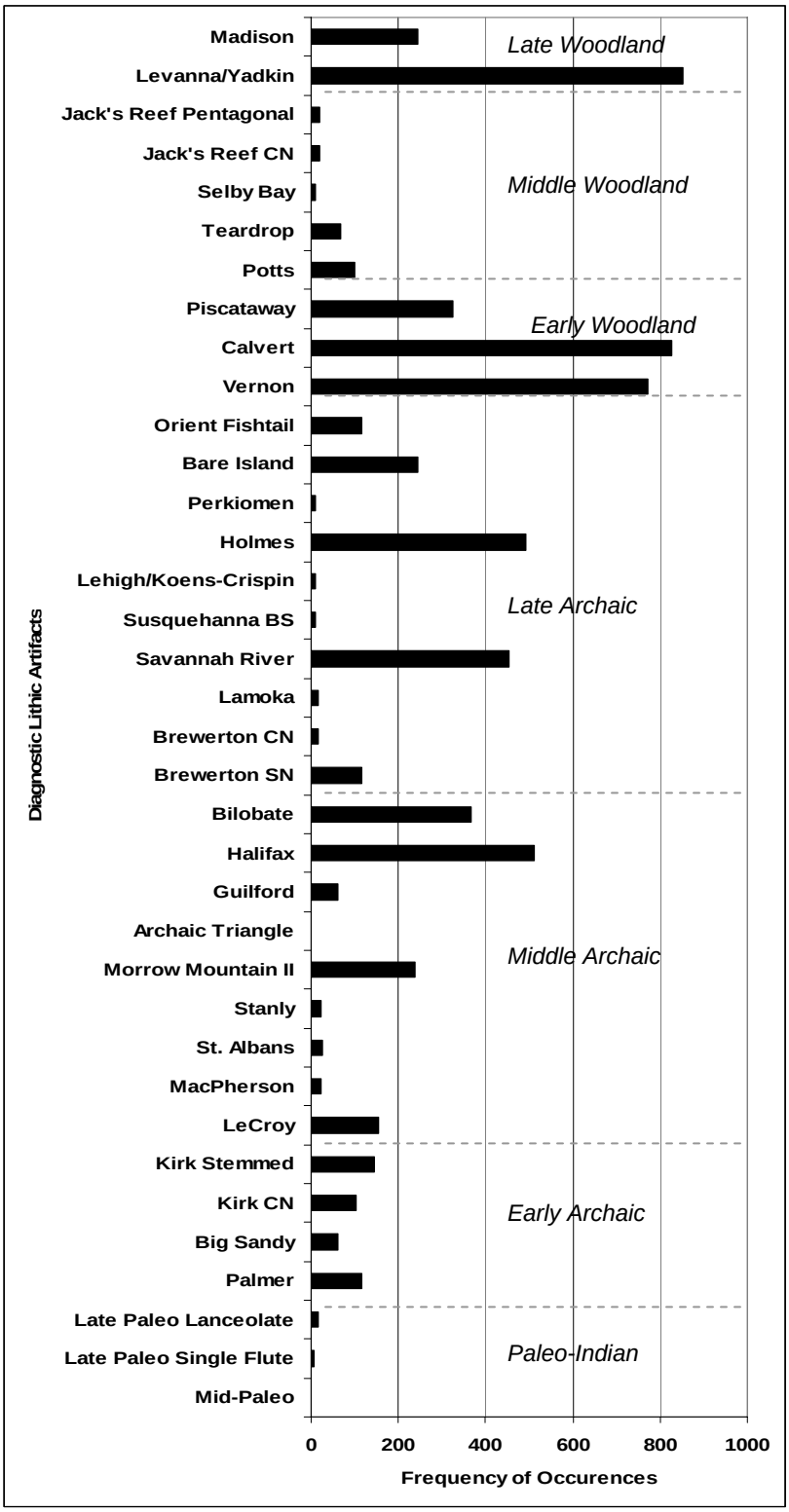


Figure 64: Frequency of Diagnostic Lithic Occurrences, Madison County, Virginia

located on floodplain terraces of the major rivers (Robinson, Rapidan, and Hughes), with three located near relict or ponded springheads overlooking interior streams. A concentration of activity is noted for the White Oak Run High Strain Zone in the center of the county, where alluvial backwash has created broad, marshy floodplains. The unique assemblages and settings for these sites calls into question the traditional Clovis-Mid-Paleo-Dalton sequence documented for other interior Virginia areas. Assemblages of exotic raw materials and Upper Great Lakes/New England (Late Paleo single fluted and parallel-flaked forms) indicate high mobility, long distance travel/exchange, and the arrival of small groups of pioneers in a region that saw little if any Clovis or Mid-Paleo activity. The study area may be a southern terminus of a Late PaleoIndian migration during the Younger Dryas chronozone. PaleoIndian components are documented in Hydrologic Units E03, E11, E12, and E14, all within the Inner Piedmont macro-physiographic province and situated below five hundred feet amsl. The four floodplain sites having PaleoIndian components (Strode A, Strode B, Roadhouse, and Barbara Yowell) were occupied during every subsequent cultural sub-period in the prehistoric era, indicating an early beginning to the pattern of locational persistence.

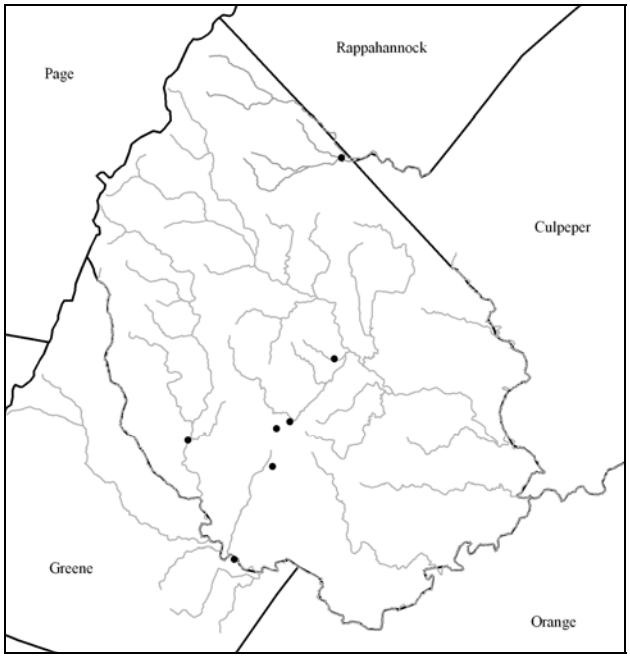


Figure 65: Paleoindian Components,
Madison County, Virginia

During the Early Archaic sub-period, the Inner Piedmont continued as the focus of settlement, although the locations of sixty-four documented components include the Blue Ridge and Mesozoic Basin by the final phase (Figure 66). Site distributions indicate that Late PaleoIndian sites continued to be occupied by Early Archaic groups who were also expanding into a variety of settings. Preferred micro-environmental settings include backwash floodplain terraces, high-order interior stream terraces, and hilltops overlooking high-order streams. The first evidence of regularized settlement in the Blue Ridge occurred during the Kirk Stemmed phase at the end of the Early Archaic; the same is true for the Mesozoic Basin. The first rockshelter occupation also occurred during the Kirk Stemmed phase.

Early Archaic lithic raw material use patterns indicate the beginning a trend away from the PaleoIndian reliance on micro- and crypto-crystalline resources and a focus on local materials. During the Big Sandy phase, for example, lithic raw material preference shifted local vein quartz. Quartzite from the western Blue Ridge began to make its way into the county in significant amounts during the Kirk Stemmed phase. However, patterns of long-distance mobility or exchange remained important to these early hunter-gatherers, as seen in the occurrence of rhyolite from the Maryland and Pennsylvania Blue Ridge and oolitic quartzite from the Fall Line.

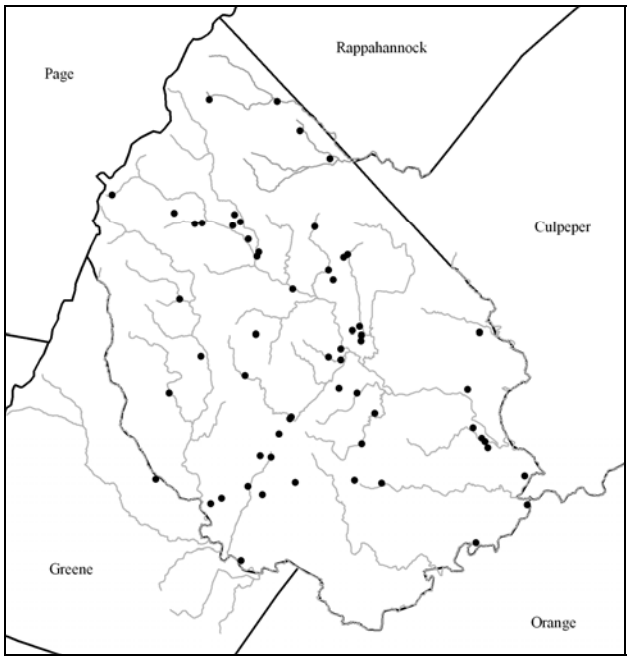


Figure 66: Early Archaic Components,
Madison County, Virginia

Middle Archaic settlement in all areas of the county increased dramatically from that of previous periods (Figure 67). 107 documented components are found in all macrophysiographic provinces, all hydrologic units, and in all documented settings,

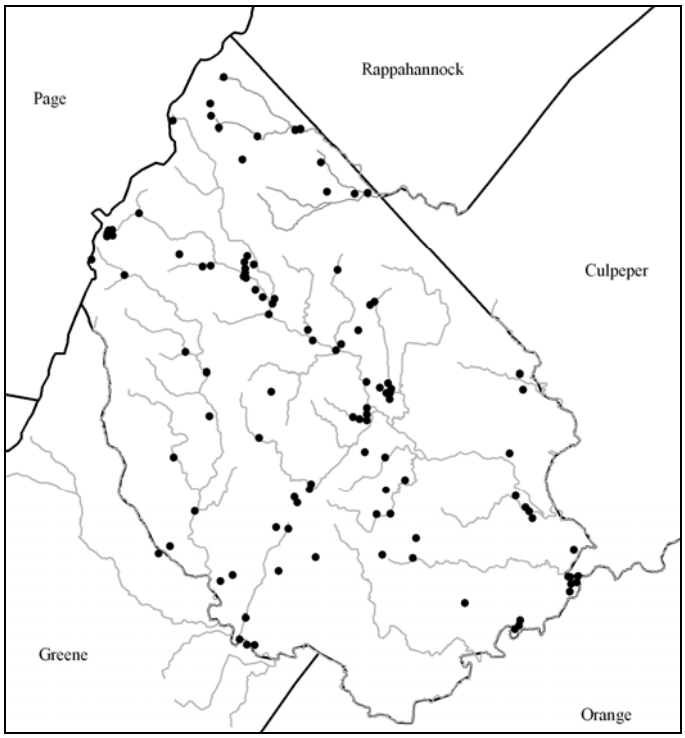


Figure 67: Middle Archaic Components,
Madison County, Virginia

including rockshelters. The increase in component numbers was not constant during the sub-period, however. After initial growth during the LeCroy phase (and a focus on high-order stream terraces and floodplains), there was a decline in settlement over the next 1600 years until a dramatic increase occurred during the Morrow Mountain phase. During this phase, Blue Ridge settlement began in earnest and

would continue for the next 3500 years. A concomitant increase in components was seen throughout the E14 Hydrologic Unit, with the Upper Robinson River/White Oak Run drainage becoming a conduit between the Inner Piedmont and Blue Ridge. The Morrow Mountain phase marked the first intensive use of Big Meadows and the high elevation Blue Ridge, while in the Inner Piedmont and Mesozoic Basin, interriverine areas were settled with some frequency. The ensuing Halifax and Bilobate phases continued this trend, with large base camps established on floodplain terraces in the lowlands and foothills. Lithic raw material usage demonstrates a clear preference for local materials, with seventy-eight percent (n=1056) of diagnostics manufactured from quartz and only .4% (n=6) from the non-local rhyolite. The lithic raw material frequencies associated with the Morrow Mountain phase offer further evidence of restricted mobility: diagnostics were manufactured from eleven raw materials, ten of which are native to the adjoining Shenandoah Valley, Blue Ridge, Inner Piedmont, and Mesozoic Basin. This indicates a well-developed familiarity with the knappable lithic materials of the region. The Middle Archaic grooved stone axe tradition is evidenced at large and small base camp sites in the Inner Piedmont and low elevation Blue Ridge, indicating the further integration of wood-based technologies and perhaps more sturdy shelter construction at these sites. Taken together, these lines of evidence point to a

growing, more settled population that formalized patterns of seasonal movement by focusing on local resources.

The greatest number of components in the study is associated with the Late Archaic sub-period (Figure 68). One hundred-eighteen sites were occupied, from interriverine zones of the Inner Piedmont and Mesozoic Basin, to the large

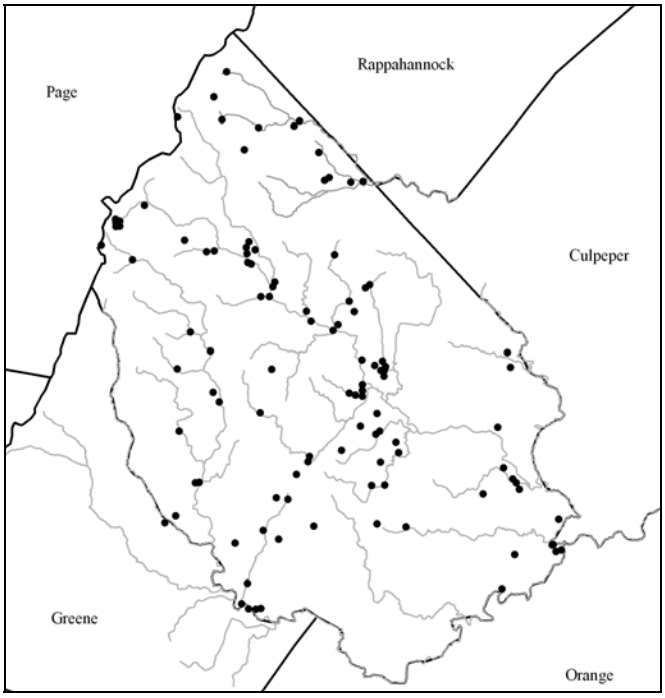


Figure 68: Late Archaic Components,
Madison County, Virginia

zones of the Inner Piedmont and Mesozoic Basin, to the large floodplain base camps established during the Middle Archaic, to high elevation Blue Ridge springs. During the Savannah River and Holmes phases, component size in the high elevation Blue

Ridge rivaled that of the Inner Piedmont, indicating a bifurcated settlement pattern. The Mesozoic Basin saw significant settlement for the first time during the Savannah River phase.

The Late Archaic saw the greatest use of western Blue Ridge quartzite across the study area (37 percent of diagnostics), although the large broadspears of the Savannah River and Holmes traditions were also commonly manufactured from metabasalt and quartz. During the Savannah River and Holmes phases, projectile point styles associated with cultural traditions external to the region appeared in the study area. The Brewerton, Susquehanna Broadspear, Perkiomen, and Lehigh Koens-Krispin types represent Late Archaic traditions of the northern Middle Atlantic, and while few in number, their presence at large Late Archaic base camps is further evidence for participation in long distance exchange and interaction during a time of population growth. This pattern is also seen in the increased frequency of non-local rhyolite from .04 percent in Middle Archaic diagnostic assemblages to 2 percent in Late Archaic diagnostic assemblages. The steatite bowl phenomenon discussed at length in the previous chapter supports the hypothesis of the Late Archaic as a pivotal time in the emergence of regularized social relations between non-kin groups. The Upper Robinson River/White Oak Run drainage

served as a conduit for the movement of steatite through the area, signaling regularized routes of travel during the Late Archaic.

The same large and small base camps that were occupied during the Late Archaic continued to see use in all settings during the Early Woodland sub-period, but the intensity of occupation shifted to the lowlands (Figure 69). The five thousand year pattern of limited activity camps in the Blue Ridge all but disappeared during the Early Woodland, and the frequency of high elevation base camp use declined by the Piscataway phase. Based on lithic diagnostic artifacts alone, the most intense use of the Inner Piedmont and Mesozoic Basin may have occurred during the Early Woodland (Figure 64). This, coupled with the overall decline in the number of components from one hundred eighteen to one hundred one could be taken as evidence of aggregation at lower elevation sites. Interriverine areas between the higher-order streams, such as Elk Run in the E12 Hydrologic Unit, saw increases in settlement, and the Early Woodland components at large, stream-side camps were more intensively occupied. This pattern, coupled with the adoption of ceramic container technology and the decrease in artifacts manufactured from Shenandoah Valley and Blue Ridge raw materials, signals a continuation in mobility restriction and the possible emergence of territories in the Inner Piedmont. The lack of

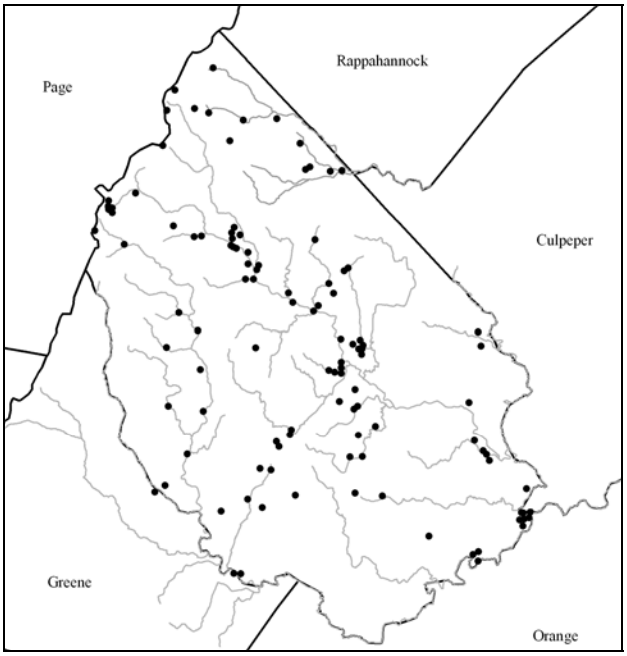


Figure 69: Early Woodland Components,
Madison County, Virginia

evidence of cultigens in the study area makes it difficult to attribute this shift to the emergence of horticulture, although this is presumed to have begun during the Late Archaic/Early Woodland transition. Settlement in the Hebron Valley increased in intensity, as did the use of the Elvin Graves and Henshaw rockshelters. Based on the occurrence of Accokeek ceramics and Piscataway projectile points of the terminal Early Woodland, the larger camps were split between four loci: Syria Valley, Hebron Valley, Elk Run/Rapidan River confluence, and Rapidan River/Robinson River confluence.

The Middle Woodland sub-period is enigmatic in the study area. Using the recognized diagnostics (Popes Creek ceramics; Potts and Jacks Reef projectile points), the number of components decreased to sixty-four (Figure 70). The four settlement loci identified for the Early Woodland in the Inner Piedmont and Mesozoic Basin continued as nodes in the overall settlement pattern, which became more riverine-oriented. It is only during the Middle Woodland that every site type identified for the study area (including burial mounds) was occupied. However, higher elevation Blue Ridge base camps that had been occupied for 3500 years

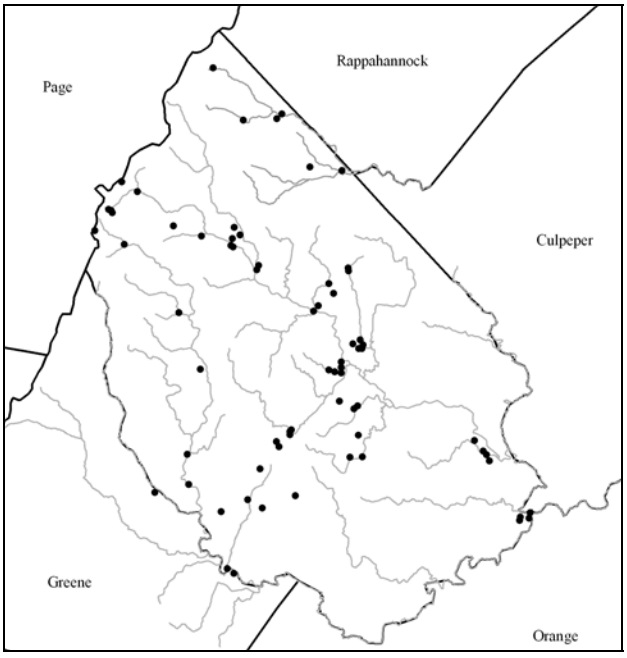


Figure 70. Middle Woodland Components,
Madison County, Virginia

were abandoned, as were those in the lower elevation interriverine zones. While seemingly supporting the hypothesis discussed in Chapter Four concerning the Middle Woodland abandonment of the Middle Atlantic interior, the evidence for such population loss is extremely limited and the decrease in site numbers may be better explained by an error in the diagnostic ceramic sequence for the Central and Northern Virginia Piedmont. The Albemarle ceramic series, hypothesized by Nash (2008d) to have emerged during the Middle Woodland, is largely identified as a Late Woodland phenomenon in the archaeological literature. If the Albemarle Cord Marked variety, demonstrated by radiocarbon assays to have a Middle Woodland association, is considered a Middle Woodland diagnostic, the Middle Woodland occupation of Madison County would be only slightly less than that of the Early Woodland, with ninety-five components (Figure 71). Given the evidence of burial ceremonialism and exchange in the Haywood Cluster burial mounds and biface cache, it is plausible to propose that the study area was not abandoned during the Middle Woodland, but rather, saw a continuation and elaboration of the emergent sedentism of the Early Woodland.

Like the Middle Woodland, the Late Woodland sub-period in the study area is not well understood. The number of Late Woodland components decreased from that

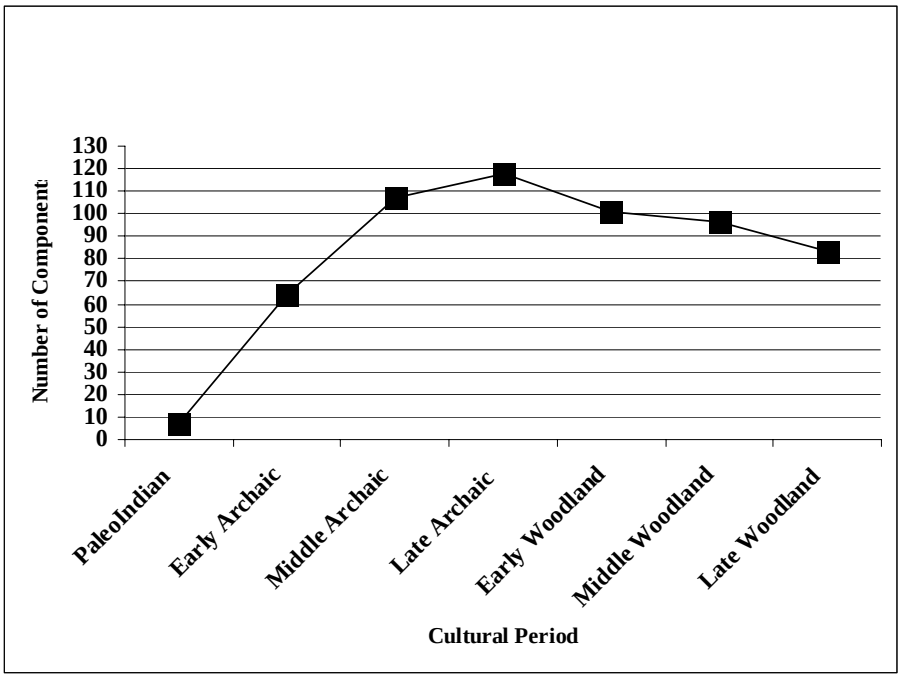


Figure 71. Frequency of Archaeological Site Components by Sub-Period (with Middle Woodland Components Identified by Cord-Marked Albemarle Rims)

of the Early Woodland to eighty-four, while the number of diagnostic artifacts saw a dramatic increase (Figure 72). This may represent the full elaboration of a more settled, community-oriented pattern, with sites becoming larger but fewer in number. The higher elevation Blue Ridge was again occupied, with a focus on limited activity camps in wetland settings. For the first time since the terminal Late Archaic, significant numbers of quartzite artifacts began to make their way into the Piedmont from the western Blue Ridge, as did chert and jasper from the Ridge and Valley.

The lack of evidence for maize agriculture in the study area, which is presumed for Piedmont Late Woodland cultures, is attributed to the lack of excavation at open-air hamlet sites. Gold (2004) reported small carious lesions on the teeth of 22.8 percent of burials analyzed from the Rapidan Mound (44OR1), indicating the introduction of maize but a continued, significant reliance on wild foods. Stable isotope data support the mixed-subsistence practices of the Rapidan Mound population. Late Woodland features excavated at the Henshaw and Elvin Graves rockshelters contained a wide variety of riverine and terrestrial faunal remains, but as techniques such as flotation that would have allowed for the recovery of botanical data were

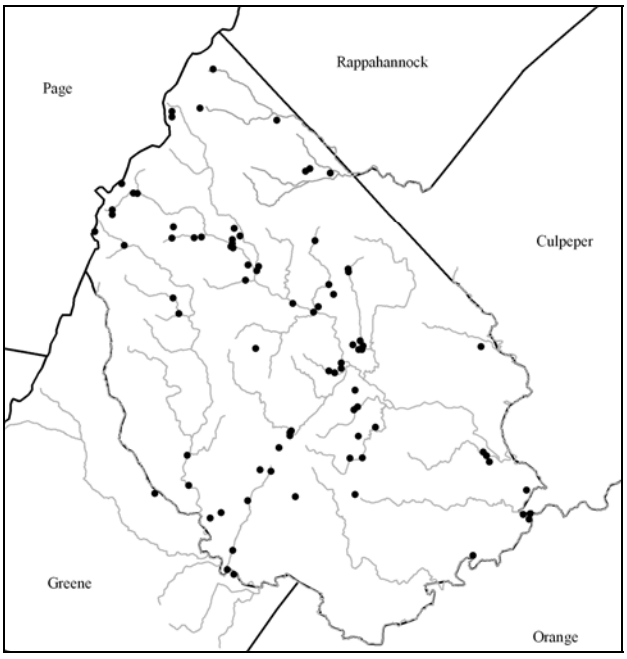


Figure 72. Late Woodland Components,
Madison County, Virginia

not common practice in American archaeology when these sites were excavated, plant subsistence data are lacking.

A single artifact from the Graves Duck Farm Roy Crigler Site provides a possible link to Late Woodland agricultural ritual in the Hebron Valley. Discovered in the 1960s, a small stone effigy face was documented by MacCord (1966) as one of eight known in the state. Carved in *bas-relief* from a flat surface of fine-grained green steatite, the face is similar in size to others found in Middle-Late Woodland settings. Only 32 mm by 20 mm, the face exhibits a prominent forehead, pronounced supraorbital ridges, vertical ovals for eyes, a squared nose with shallow nostrils, and a horizontal, ridged mouth (Figure 73). The background from which the face protrudes is broken, rendering the original shape and size of the piece a mystery.

Identified by MacCord as a probable slab pendant, no evidence of suspension perforation is visible. It is unlike other such effigies documented for Virginia in its *bas-relief* character; others are complete, free-standing objects. Like the other effigies, however, the Graves effigy is described as having engraved lines around the top of the head and chin, described by MacCord as 'hair' and 'whiskers.'

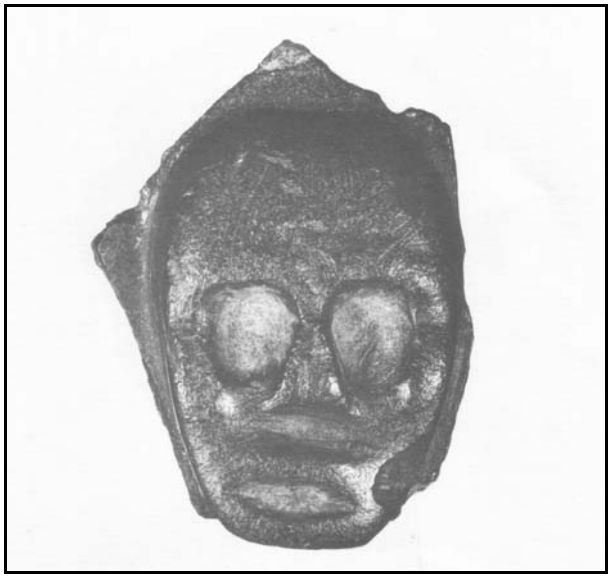


Figure 73. Graves Effigy Face, Duck Farm Roy Crigler Site
(from MacCord 1966)

Subsequent to the publication of MacCord's article over forty years ago, little research has been undertaken on these objects. Because they were recovered from surface collections that provide little context, affiliation with a specific cultural period or tradition is difficult. Stewart (1998b) describes a comparable human effigy face on two clay pipe bowl fragments from the Abbott Farm Complex near Trenton, New Jersey. One, excavated from Excavation 14, Burial 60, has a Late Woodland association. Blanton (2003) describes a life-sized wooden mask found eroding from a bank of the James River in the western Piedmont. Although context was lacking for this find, AMS dating placed its age at A.D. 1160-1290 (two sigma calibration), also in the Late Woodland time frame. Comparing it to wooden masks of Iroquoian

tradition (e.g., 'False Faces'), marine shell maskettes of the Chesapeake region, and MacCord's stone effigy faces, Blanton concludes that the Summers Mask, as the object is known, falls within the Late Woodland trend of increased human iconography in Eastern North America. A review of ethnohistoric accounts found such masks, created by both the Munsee Delaware and North Carolina Piedmont Siouan groups, to represent ancestral, guardian spirits. According to Iroquoian scholars William Fenton (1978) and Elizabeth Tooker (1978), the cornhusk masks ('husk faces' or 'brushy heads') used in mid-winter curing ceremonies by the Northern Iroquois, represented agricultural spirits. Perhaps the 'whiskers' and 'hair' described by MacCord for the stone effigy faces could be a local attempt at such depiction.

The Graves Duck Farm Roy Crigler Site, a Late Woodland hamlet in the largest floodplain of Madison County, is found on what are recognized today as the most productive agricultural soils in the Inner Piedmont (Wickham Loam). The preponderance of evidence points to the stone effigy faces as Late Woodland phenomena, perhaps emerging at a time of cultural transition when a foraging way of life gave way to a more settled, agricultural pattern. The Late Woodland focus on high-order stream floodplains in the Piedmont was also noted for Albemarle

County, where Hantman (1985) documented a settlement shift to large, permanent rivers at the beginning of the sub-period.

While the lack of refinement for the Albemarle ceramic series sequence thwarts attempts at determining the presence of Protohistoric/Contact period components in the study area, the occurrence of decorated rims (cord-wrapped dowel, incised, and punctuated) identified as 'evolved Albemarle' is limited to only fifteen sites, all located in large floodplains or rockshelters. These ceramics co-occur in artifact assemblages with Madison projectile points, the most recent lithic diagnostic for the Northern Virginia Piedmont. Further, both evolved Albemarle ceramics and Madison projectile points co-occur in artifact assemblages containing non-local ceramics (Gaston, Dan River, Potomac Creek, Keyser) known to date to the Protohistoric/Contact period and found at four sites in the study area. While further work is needed to tease apart these associations, they indicate a Native occupation of limited areas of Madison County into the Contact period. The four loci (Syria Valley, Hebron Valley, Elk Run/Rapidan River confluence, and Rapidan River/Robinson River confluence) identified as settlement nodes during the Early Woodland are the locations of the last sites to see occupation during the prehistoric era, indicating a

long-lived connection to those places. Archaeological research on the historic Manahoac should focus on these locations.

Landscape Archaeology and Settlement Modeling in the Middle Atlantic Uplands

Landscape archaeology holds that the scale of human action and adaptation varies with time, space, and culture, and at any given time, meaning is constructed at multiple levels by individuals and groups inhabiting a place. Landscapes, the spatial and temporal ground upon which the exchange between the natural world and humanity occurs, are operationalized at multiple scales, the result of interactions between individuals in a variety of social groupings and within a variety of settings. The physiographic diversity and compressed ecological zonation of the Upper Rappahannock basin in the Northern Virginia Piedmont and Blue Ridge have provided the setting for a multi-scalar study of the variability of adaptive responses by prehistoric hunting and gathering societies known through the archaeological record.

The spatial scales of analysis that framed the study include the macro-scale (physiographic province, the scale at which long-term biologically-based population changes are visible, and which has direct relevance to human territoriality and

communication); the meso-scale (watershed/hydrologic unit, the scale at which cultural processes occur on an inter-generational level, and the scale at which diverse human activities are visible as influences on landforms); and the micro-scale (the micro-environment, or the scale at which landforms are highly responsive to small-scale, high-frequency processes and are likely to be unstable and reflective of immediate conditions). Likewise, temporal scales of analysis include the macro-scale (cultural period), the meso-scale (cultural sub-period), and the micro-scale (phase). Diagnostic artifact assemblages focused the discussion of temporal scaling, while a geodatabase containing detailed site and artifact information allowed the author to design queries and visualize spatial relationships over time.

Such an approach is presented as an alternative to generalized settlement modeling, one of the most basic tools of Middle Atlantic archaeology that is often employed in the study of hunter-gatherer occupations of upland settings. While the development of such models and their use has extended archaeologists' thinking and revealed much about hunter-gatherers in areas once neglected, many models of upland prehistoric settlement and subsistence have not moved beyond the generalizations of their early formulations. Perhaps the underlying cause of this problem is not simply theoretical in origin (stemming from the processualist ecological approaches

that shaped much of modern Americanist practice) but also methodological: conventional settlement modeling has sometimes confounded spatial and temporal scale by employing large-scale analysis (often at the macro-scale level) to answer questions better studied at the micro-scale, and vice-versa (Fisher and Feinman 2005). The result has been the application of highly generalized settlement models—better suited to the consideration of long-term, broad patterns of cultural development—to the analysis of small-scale, short-term cultural processes. This has encouraged the study of prehistoric settlement and subsistence at only the grossest level in areas that are only marginally comparable.

The application of the scaled approach was presented through case studies in Chapter Six, which proposes that archaeologists should develop approaches that take into account a wide range of decisions made by prehistoric groups as environmental and social conditions changed over time, instead of relying on settlement models that include simple signatures of past human behavior that are limited and easily recognized. The remarkable diversity of resources in the Appalachian highlands requires anthropologists to envision a variability of human responses that honors millennia-old cultural patterns.

The challenge of the landscape approach, and its potential to make significant contributions to archaeological practice, lies in the unification of spatial and temporal scales to create a more contextualized understanding of cultural persistence and change in small-scale societies. Because culture operates at nested temporal and spatial scales, the 'deep time' emphasis of archaeology situates it as one of the few disciplines that accesses proximate and ultimate causes of cultural change. The key to scale unification is the multi-component site, occupied intermittently for thousands of years. The long-term transmission of ecological and social knowledge that occurs at such persistent places is better adapted to serve individual and collective needs than are immediate decisions regarding resource availability and efficient use.

Mithen (2000b) describes the "routinization" of landscape use by hunter-gatherers, noting that a particular location may be chosen due to practical concerns such as access or resource richness. However, through time, the routine of moving through the landscape may lead to the site becoming a *place*, imbued with historical and social meaning. Thus, despite short-term, micro-environmental change (and perhaps even the disappearance of the resource that first led to settlement), the site continues to be used. It becomes a landmark in a regional pattern of movement, significant for

the social interaction that occurs there. Multi-component sites, as favored places, represent functional stability in a lifeway that is otherwise predicated on mobility and seasonal variability.

Within the study area, fifty-one percent (n=118) of sites were occupied during multiple sub-periods. Fourteen percent (n=32) were occupied for six or more sequential cultural sub-periods (Figure 74). While these numbers reflect the collecting locations of MAP participants, and especially the floodplain settings that supported large sites, they also point to patterns that transcend particular site location. Given the significant, documented environmental changes throughout the prehistoric era in the study area, as well as the regionally-documented changes in cultural patterns, the fact that so many of the sites were occupied during multiple sub-periods indicates that localized conditions are only partly responsible for settlement location choice. The distribution of these long-lived sites points to the Upper Robinson River/White Oak Run watershed (Hydrologic Unit E14) as an important location throughout prehistory for the Native peoples of the Upper Rappahannock Basin, moving beyond 'persistent place' to 'persistent locale.' As noted by Johnson (2007:175), "landscape is a continuous reminder of the relationship between living and past generations, and consequently of lines of descent and

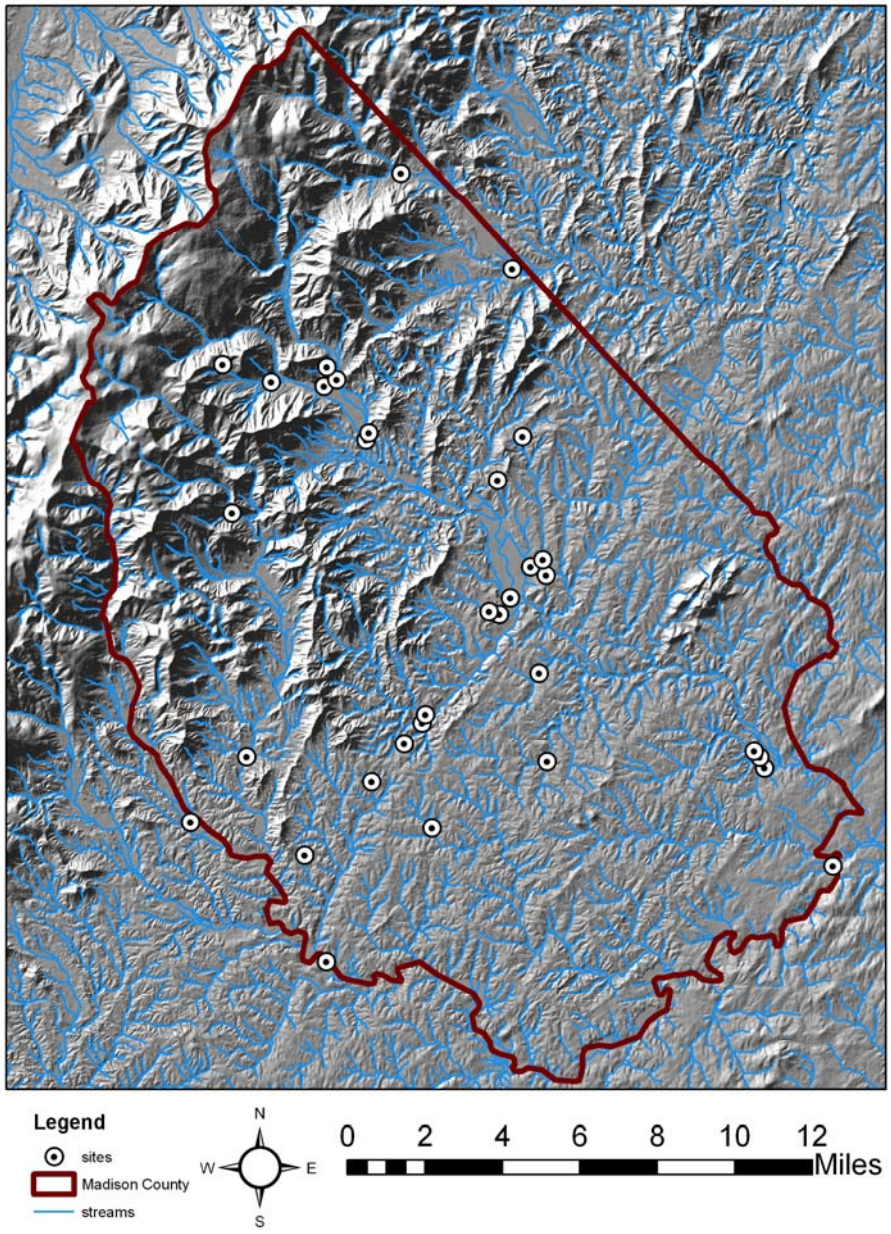


Figure 74. Prehistoric Archaeological Sites with Six or More Components, Madison County, Virginia

inheritance. The continued use of places through time draws attention to the historically constituted connections which exist between members of a community."

Based on the current level of site documentation in Madison County, the Hebron Valley appears to have been that place. It should be made a top priority for further research.

"We Have Often Wondered About an Indian Presence on This Land": The Madison Archaeology Project and the Importance of *Place* for Landscape Studies

This document has considered a detailed familiarity with land as basic to the discussion of cultural persistence and change, an idea that resonates across time and culture to speak to the actual project that served as catalyst for the present work. The title of this section comes from a letter written by a landowner in Madison County, who invited the author to document archaeological sites on her property, provided food and lodging, and like many people in Madison County, joined a volunteer archaeological project. When conceived in 1990, MAP was the first county-wide public archaeology program in rural Virginia, and it was endorsed by the Virginia Department of Historic Resources as a model for other rural counties. Its volunteers continue to work with landowners interested in the archaeological resources on their properties.

The author believes that MAP's success lies in its adherence to the "C2C" principle for building social capital: communication from Citizen to Citizen and Community to Community (Little 2007). While professionally directed, MAP is organized as a grass-roots project and has strengthened horizontal cooperation between volunteers, resulting in a broad network of supporters. The local residents who volunteer information on site locations and collections are credited as partners in the survey. None of the MAP volunteers had any formal archaeological training prior to their association with the project. All, however, had a very strong interest in local history. They demonstrate that preservation issues are intricately linked to the life of the community and an understanding of *place*, "the location of particular sets of intersecting social relations" (Muir 2001:277).

The research design for a prehistoric settlement survey described in Chapter Two was developed out of early meetings with volunteers and landowners. The decision to initially frame the project around collectors was highly pragmatic, not only because of their knowledge of site locations, but because many of them were genuinely interested in archaeological questions and concerned about site preservation. Like many rural jurisdictions, Madison County lacks both the public resources and institutional capacity to systematically research and devise

preservation strategies for its archaeological heritage, and over time, MAP participants came to believe that the best stewards of archaeological sites can be those who live in their midst every day.

While the people engaged in MAP have a very different understanding of place than did the indigenous cultures that lived in the Upper Rappahannock basin for thirteen thousand years, the rurality of existence continues to reinforce particular places as a signifier of community identity (Ching and Creed 2007). The strong ties to land often expressed by MAP volunteers can be encapsulated by the claim that one knows a particular landscape "like the back of your hand," as one volunteer explained his internalization of place. Land is not a piece of ground within a larger spatial system but is seen in terms of social relations, and people are intimately linked to it through history (Muir 2001). This experience is tied to the phenomenological concept of *dwelling*—the sense of continuous being that unites human subjects with their environment (Evans 2003). In close-knit rural communities such as exist in Madison County, public involvement is crucial to success of programs like MAP, as the often multi-generational knowledge base of land and local history that resides with families is integral to the highly detailed site descriptions necessary for landscape-based analyses.

The choice of the landscape approach to a prehistoric settlement study was also influenced by author's family history in Madison County. Since settling in the Hebron Valley with a group of German immigrants in 1724, the author's paternal grandmother's family has moved only ten miles in the last 285 years. Growing up in the Mesozoic Basin, Hydrologic Unit E13, the author saw the Blue Ridge Mountains from the perspective of the lowlands for the first eighteen years of her life. Her experience of place is tied to the Rapidan River/Blue Run/Beautiful Run drainage, a physical environment imbued with social meaning and history (Low and Zuninga 2003). Kinship networks and community-based relations have been a very important means of transmitting information. When giving public talks, the author is referred to as "one of our own."

The social familiarity that comes with longevity in this rural area has been critical to MAP volunteers gaining access to all but one property over the years. But because MAP is more than an information exchange, the social ties that have made it so successful also require maintenance. It is not uncommon for the survey of a small site and the documentation of the associated artifact collection to require two full days' work, as the landowner may want to share family photographs, tell family stories, and invariably, offer a meal.

Life is changing in Madison County, as in most of Virginia's rural areas. In 1900, approximately 81% of Virginia's population lived in what were then defined as rural areas. By the mid-1980s, that figure was 34%; today, it is less than 25% (Bearinger 2005). While the current county population of 13,500 is only now returning to levels previously set in 1880, population increased 9.6% between 2000 and 2005 (Weldon Cooper Center 2007) and is estimated to double within the next thirty years due to overflow from Washington, D.C. to the north and Charlottesville to the south. Twenty-six percent of the population is fifty-five years of age or older, and this percentage is growing. Madison County is fast becoming a retirement area, largely for people who have completed careers in the Washington, D. C. metropolitan area.

While a number of the 'come heres' are MAP volunteers and bring with them needed professional expertise, the continuity between generations that once characterized the area is disappearing, and along with it, knowledge of the land and local history. MAP's most helpful volunteers are often over seventy years of age; these are the people who share concerns about the lessening interest in local knowledge and the loss of historical memory associated with the Euroamerican settlement of and continued presence in the area. The landscape concept comes full circle with their involvement: as described by Zedeñeo (2008), "Although

archaeological and historic landscapes contain the history of past interactions among humans and the natural and supernatural world, landscapes belong in the present, as they are reified in memories about past interactions and present practices aimed at preserving land-based identities" (2008:214). Such identities, while Euroamerian and not Native in origin, are embedded in the very definition of rural and are challenged by modern development pressures. An issue for much of rural America, "many of these communities are currently struggling with the loss of open space and family farms, the transformation of agriculturally-based economies, and the disappearance of skills and traditions that have long been associated with rural life" (Bearinger 2005).

The implications for voluntary site preservation are clear: without a formal preservation zoning ordinance, the successes that MAP has seen with voluntary site protection may not continue. However, given the collaborative nature of the project, MAP volunteers are hopeful that the civic engagement so central to the work will encourage local government officials to use the geodatabase created for the present study for planning purposes and emphasize to landowners the importance of history and archaeology to the community.

Future Directions

Expanding MAP and Engendering 'Citizen Science.' MAP volunteers have maintained a database of local citizens interested in participating in the program, and the number grows with each public event. As of spring 2009, the list includes over one hundred residents. As they are brought into the project, the information on their sites and collections will be entered into the geodatabase. The properties held by these new participants will be organized by hydrologic unit, with the less well-documented HU E13 (Rapidan River/Blue Run/Beautiful Run), HU E11 (Upper Rapidan/Conway River), and HU E15 (Lower Robinson River/Crooked Run/Deep Run) the top priorities. As in the past, any threatened sites will be 'triaged' to the top of the list and efforts made to work with the property owners to minimize impacts. The Madison County Historical Society, which sponsors MAP exhibits in the Madison Arcade and Kemper Mansion, will continue as a partner. Several MAP committee members who were critical to the success of the project have expressed an interest in expanding the work to include newer residents not familiar with the project.

There is also an interest in formalizing the 'citizen science' aspect of the field interviews with property owners. As described in Chapter Two, field visits with property owners have included informal discussions of environmental history to develop a baseline understanding of the topographic and ecological character of the landscape. The discussion focuses on highly localized conditions that may assist in understanding unique characteristics of *place*. Not only is this important for public engagement, but also for the documentation of local knowledge. The families who have lived on and farmed the same tracts of land for as many as ten generations have a particular understanding of that property's cultural and environmental history. Such long-term information has applications beyond archaeology, as seen in the many volunteer-oriented scientific research projects contributing data to the study of climate change (McGimsey and Davis 2000; Cornell Laboratory of Ornithology 2007).

Geodatabase. As demonstrated in Chapter Six, the geodatabase in its current iteration has served well as a data collection/management and visualization tool. It is designed for ease of updating as the number of documented archaeological sites increases. With the availability of new data layers, particularly high-resolution

remotely sensed imagery, the geodatabase may provide the basis for the non-invasive survey of site locations, directing ground operations in large agricultural fields based in infrared vegetation signatures. Looking forward, "GIS provides both a powerful tool to think with and an intellectual environment for developing innovative forms of analysis" (Conolly 2008:591). As the database becomes more populated and larger areas systematically sampled, the geodatabase can be used for quantitative spatial pattern analysis, locational analysis, and the development of highly contextualized predictive models (Conolly 2008). For example, digital elevation base maps (three dimensional representations of topography) combined with the 'cost path' tool of ArcGIS and a statistically valid sample of site location data, can be used to determine high probability pedestrian routes of movement in upland settings. This analysis and visualization could contextualize the now-abstract concept of mobility and be used to guide field survey.

Scaled Research Questions. Continued research organized by the scales outlined in this study is needed to develop the database and explore the efficacy of the landscape approach for Middle Atlantic settlement analysis. Due to studies undertaken in Shenandoah National Park, portions of the Blue Ridge physiographic province within the study area are well-documented for archaeological sites.

Research from some areas, such as Big Meadows and the upper Hughes River watershed, is used for modeling other Appalachian studies. However, macrophysiographic research requires the transcendence of arbitrarily-drawn modern county boundaries. While work on the summit and eastern slopes of the Northern Virginia Blue Ridge has been well underway for decades, the western side has seen little study. Only eighty prehistoric archaeological sites are recorded for the western Blue Ridge in the one hundred fifteen miles between the West Virginia line south to Afton Mountain. Sixty of these sites are listed with VDHR as "unassigned" or "unidentified." Until archaeologists interested in mountain systems have access to a full complement of research data, larger scale questions of hunter-gatherer mobility and exchange will remain unanswered. For example, lithic frequencies from the study area sites indicate regular movement between the Shenandoah Valley and the Inner Piedmont during the Archaic period and Early Woodland sub-period. The frequency of raw material from the Shenandoah Valley and Blue Ridge (chert, jasper, chalcedony, and quartzite) did not decrease until the end of the Early Woodland, when evidence supports the establishment of sub-regional identities and restricted movement. Does this west-to-east pattern in place for over eight thousand years represent seasonal rounds from the Piedmont to the Valley, with groups carrying raw materials as they traversed the mountains and returned east? Does it

represent a one-way movement of groups from west-to-east? Was there change in this pattern over time? Was the Inner Piedmont a crossroads between groups identified with the Ridge and Valley and the Piedmont? What are the implications for cultural interaction? These questions cannot be answered until further research is undertaken on the western slopes and foothills of the Blue Ridge to determine the frequency of non-local raw materials and artifact types in artifact assemblages, as well as the types of sites that exist on the western side.

Turning attention to the lowlands, the Mesozoic Basin requires continued research on several major questions. In the study area, this physiographic province shares topographic characteristics with the interriverine Inner Piedmont and evidences a corresponding lack of large archaeological sites. The Rapidan River in Madison County is deeply entrenched and the floodplain is typically narrow. In stretches of broader floodplain (Lamb's Bottom and Beaverdam Clusters), larger, multi-component archaeological sites are recorded. However, no settlements as intensive as those documented for the wide Robinson River floodplain in the Hebron Valley have been found along the Rapidan River. In the Mesozoic Basin, larger multi-component sites are as likely to be found on the high terraces above the Rapidan River as on the floodplain. Is this a reflection of site formation processes, with the

terrace sites prone to erosion and thus, more visible? Are large, intensively occupied Rapidan River floodplain sites buried by aggradation? If so, why are the large Hebron Valley sites on the surfaces of plowed fields? Is it possible that the Mesozoic Basin was not intensively settled by prehistoric peoples and that the major focus of Piedmont settlement was the Outer Piedmont? MAP's field methodology was largely tied to surface survey, effectively eliminating from consideration buried sites. Deep testing of the Rapidan River floodplain is needed to resolve these questions.

At the meso-scale, Hydrologic Units E11, E13, and E15 require additional survey to develop a better baseline understanding of site locations, cultural periods, and site types. Within Hydrologic E11, the Graves Mill area is a priority for field research. Topographically, it offers a comparison for the Rose River watershed of Hydrologic Unit E14; based on sites recorded at the Blue Ridge summit, the Upper Rapidan River Valley was a major conduit of movement through prehistory. While hydrologic Unit E13 contains only nine percent (n=22) of sites in the study area, the compact Beautiful Run watershed, with its highly dissected topography, should become a focus of research on interriverine settlement. The documented sites of Hydrologic Unit

E13 and E15 indicate more frequent use of lowland settings during the Early to Late Woodland sub-periods; in addition to the Hebron Valley, these study locales should become the focus of research on the transition from hunting and gathering to more a more sedentary way of life.

The development of a micro-scale focused research program in the study area is dependent on sub-surface testing that will better delineate site boundaries and components and allow a better understanding of formation processes. For example, the large plowzone sites of the Hebron Valley, and particularly the Graves Duck Farm collecting area, require systematic testing to better define the concept of 'persistent locale' introduced in Chapter Six. Systematic testing at Big Meadows revealed the evolution of settlement, with small, limited activity camps of the Early Archaic developing into large aggregation sites of the Late Archaic. Such an evolution is expected for other long-lived sites, such as the Roadhouse Site (44MA127). With its record number of diagnostic artifacts and longevity of occupation, the Roadhouse Site should be placed in the forefront of field research. However, given the active and complex geomorphology of the Upper Robinson River/White Oak Run floodplain system, consultations with geoarchaeologists and soil scientists will be

necessary to understand the stability of the landforms for human settlement, as well as the formation processes at work on archaeological sites here.

Also at the micro-scale, further research into the symbolic character of landscape should be conducted at sites in the Blue Ridge that are adjacent to waterfalls. Eight named waterfalls, including the storied Dark Hollow Falls and White Oak Canyon Falls, are found in the study area; seven are located in Hydrologic Unit E14 (Figure 75). The cultural meaning afforded such acoustic spaces is well documented cross-culturally; Feld has named its study "acoustemology" (1996:97), which takes into consideration sensory experience and memory as central to knowing place. As permanent landmarks, waterfalls and their associated plunge pools are documented among some hunter-gatherer cultures as liminal, sacred places (Taçon 1999). In the study area, four waterfalls are are associated with ceramic-bearing, Middle-Late Woodland occupations: Dark Hollow Falls/Big Meadows (44MA102); Rose River Falls/Gentle Site (44MA27); White Oak Falls/Limberlost II and Limberlost III (44MA112 and 113); Big Rock Falls/Laurels (44MA155). While ritual activity associated with Middle-Late Woodland occupations has not been recognized at these locations, future studies must consider this possibility. Given the prevalence of

waterfalls as landscape features of the Appalachians, the study of the relationship between these places and the cultures occupying their vicinities should be encouraged. Taking a cue from humanistic geography, such research would constitute a new approach in Middle Atlantic prehistoric archaeology.

The Manahoac. As described in Chapter Four, the most pressing cultural historical question arising from this work concerns the history and identity of the Manahoac Indians. Initial archaeological assessments of Late Woodland sites in the study area indicate a level of cultural insularity among the peoples of the Inner Piedmont, with limited change in site size from the Early Woodland through the Late Woodland and incremental change in the technology and style of Albemarle ceramics. Is this observation an artifact of the level of research undertaken here, or does it reflect the reality of an upland-focused culture that remained on the periphery of changes well documented in the Potomac Piedmont to the north and the James and Dan River Piedmont to the south? What was the nature of the relationship between the Manahoac and the Monacan? And, perhaps more important,what historical processes made the Manahoac virtually invisible in the documentary record of the post-Contact period?

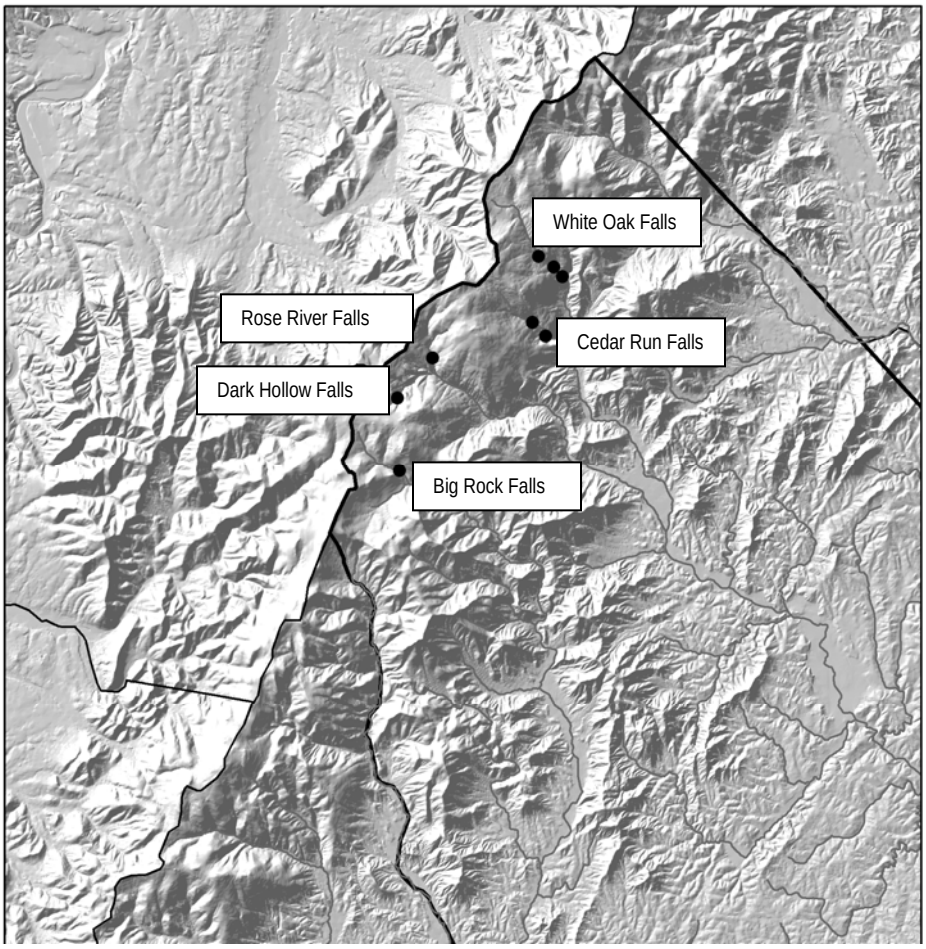


Figure 75. Named Waterfalls of the Blue Ridge, Madison County Virginia.

Environmental Parameters and Cultural Expression. As demonstrated in Chapter Three, considerable effort has gone into documenting environmental variables typically included in settlement studies. The highly contextualized descriptions of the modern environmental characteristics of the clusters, as well as the thorough review of paleoenvironmental data for the Virginia Blue Ridge region, are basic to an understanding of environmental heterogeneity, which is, in turn, basic to an understanding of hunter-gatherer settlement

possibilities. The focus on environmental detail is presented as a correction to the upland settlement models predicated on generalized ecological variables. However, the theoretical framework for this project comes from a landscape archaeology that "concerns not only the physical environment onto which people live out their lives, but also the meaningful location in which lives are lived" (David and Thomas 2008:38). The challenge for the continuation of the present research is finding the balance between the environmental and the social: continuing the tradition of environmental anthropology begun at Catholic University by William Gardner and exploring more fully the significance of ecological heterogeneity for cultural meaning.

Appendix I

Diagnostic Artifact Type Descriptions (Projectile Points and Ceramics)

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Mid-Paleo	PaleoIndian	Clovis: 12964 (44SX202); 12826+/-79 (36MR43); 12793+/-46 (36MR43)	smaller fluted lanceolate point; parallel or slightly convex sides and concave base; basal and lateral grinding; flute terminating at distal on both faces	length: 24.7mm; width: 18.7mm; thickness: 5mm	chalcedony, chert	Gardner 1974; Gardner and Verrey 1979
Late Paleo Single Flute	PaleoIndian	12547 (36FO65)	Crowfield-like; shallow flute on one face; lanceolate shape expanding outward toward tip; ground basal edge	length: 40-65 mm; width: 22-35; thickness:3-5mm	chalcedony, chert, quartz	Deller and Ellis 1984; Speiss et al 1998; Carr and Adavasio 2002; Peterson et al 2002
Late Paleo Lanceolate	PaleoIndian	11809 (44PY152)	Plano-like; fine and regular parallel flaking; elongated lanceolate shape; shallow basal concavity	length: 36-88mm; width: 18-28mm; thickness: 3-11mm	chalcedony, chert, jasper, quartz	Carr and Adavasio 2002; Peterson et al 2002
Palmer	Early Archaic	9950+/-340 (44WR11)	corner-notched (U-shaped notches) point; straight, ground base; pronounced blade serrations	length: 35mm; width: 20mm; thickness: 8mm	chalcedony, chert, jasper, mylonite, oolitic quartzite, quartz, quartzite, rhyolite, silicified slate	Coe 1964; VDHR 2004

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Big Sandy	Early Archaic	8970+/-65; 8850+/-120 (44SX202)	thick, side-notched point; straight-bladed; deeply notched; concave, ground base and notches; rounded ears	18-35mm; thickness: 4-8mm	chalcedony, chert, mylonite, oolitic quartzite, quartz, quartzite, silicified slate	Lewis and Lewis 1961
Kirk Corner-Notched	Early Archaic	9840+/-400 (44RU114); 8945+/-160 (44WR50); 7950+/-220 (44SN226)	large triangular blade with ground straight base and corner notches; regularly serrated	length: 40-100mm; width: 15-25mm; thickness: 5-12mm	chert, jasper, mylonite, oolitic quartzite, quartz, quartzite, rhyolite	Coe 1964; VDHR 2004
Kirk Stemmed	Early Archaic	7730+/-270 (44SN226)	long dagger-like blade with deep serrations, broad stem, and straight base; ground base and notches	length: 70-100mm; width: 30-50mm; thickness: 8-15mm	argillicious shale, chalcedony, chert, greenstone, hornfels, jasper, mylonite, oolitic quartzite, quartz, quartzite, rhyolite, silicified slate	Coe 1964; Broyles 1971; VDHR 2004

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
LeCroy	Middle Archaic	8350+/-110 (44SX6)	small, thin bifurcate point with triangular blade; deeply notched and ground base; blade edges often serrated	length: 19-35mm; width: 16-28mm; thickness: 4-6mm	chalcedony, chert, hornfels, jasper, mylonite, quartz, quartzite, rhyolite	Kneberg 1956; Broyles 1971; Chapman 1975;
St. Albans	Middle Archaic	8880+/-700 (46KA27); 8870+/-500 (46KA27)	long narrow bifurcate point; base smoothed by grinding; base as wide as shoulder	length: 22-49mm; width: 13-19mm; thickness: 5-9mm	chert, mylonite, quartz, quartzite	Broyles 1971; Chapman 1975
Stanly	Middle Archaic	7470+/-160 (44SX6)	broad, triangular blade with small, squared stem and shallowly notched base	length: 40-80mm; width: 25-40mm; thickness: unrecorded	argillicious shale, Catoctin jasper, chert, mylonite, quartz, quartzite, rhyolite	Coe 1964

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Morrow Mountain II	Middle Archaic (?)	6750+/-130 (44SX202); 6520 (44SX6)	small, long-bladed point; narrow, tapering stem	length: 30-80mm; width: 18-30mm; thickness: unrecorded	argillicious shale, Catoctin jasper, chert, chrysoprase, greenstone, hornfels, jasper, mylonite, quartz, quartzite, rhyolite	Coe 1964
Archaic Triangle	Middle Archaic	6340+/-70 (36NM140) to 4420+/-100 (28ME100G)	large isosceles and equilateral triangular points; asymmetrical basal edge angle; extensive pressure flaking	length: 25-31mm; width: 14-19mm; thickness: 3-6mm	jasper	Stewart 1998a
Guilford	Middle Archaic	5030+/-170 (44SX202)	lanceolate point; long, thick blade with straight, rounded, or concave base	length: 50-120mm; width: 20-35mm; thickness: 6-10 mm	greenstone, quartz, quartzite	Coe 1964

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Halifax	Middle Archaic	5320+/-60 (44SX202); 5100+/-400 (44SX6); 4900+/-70 (44SX202); 4380+/-280 (44HN204, with Bilobate point)	slender bladed point with slightly restricted base; shallow side notches; base and side notches usually ground	length: 29-56mm; width: 17-25mm; thickness: unrecorded	chert, greenstone, mylonite, quartz, quartzite	Coe 1964
Bilobate	Middle Archaic	4830+/-280 (44HN204, with Halfax point)	thick side-notched point with concave base as wide as shoulder; ground notches and bases	length: 22-22mm; width: 20-24mm; thickness: 7-9mm	chalcedony, chert, greenstone, mylonite, phyllite, quartz, quartzite	Gleach 1987; Moore 1994; Knepper 1995
Brewerton Side-Notched	Middle-Late Archaic	3 dates: 4980-3723 (Frontenac Island); 4050+/-150 (O'Neil)	broad, thick side-notched point; medium size; triangular blade; ground, expanded base resulting in ears	length:32-57mm; width: 16-28mm; thickness: 8-9.5mm	Catoctin jasper, chalcedony, chert, greenstone, jasper, mylonite, quartz, quartzite, rhyolite	Ritchie 1971; Kinsey 1972; Ritchie 1980
Brewerton Corner-Notched	Middle-Late Archaic	3 dates: 4980-3723 (Frontenac Island); 4050+/-150 (O'Neil)	broad, thick corner-notched point; medium size; expanding, straight base; prominent barbs; basal grinding	length: 32-57mm; width: 16-28mm; thickness: 8mm		Ritchie 1971; Kinsey 1972

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Lamoka	Late Archaic	4000-3700 (36UN82)	small, narrow thick-stemmed point; triangular blade; base often left unworked; shallow side notches common	length: 32-45mm; width: 14-18mm; thickness: 6.4mm	chert, mylonite, quartz, quartzite	Ritchie 1971; Kinsey 1972; Wall 2000
MacPherson	Late Archaic	4056+/-170 (36PI7)	roughly-made, narrow-bladed point; shallow side notches; convex base	length: 32-72mm; width: 20-28mm; thickness: 7-11.4mm	argillicious shale, greenstone, mylonite, quartz, quartzite	Kinsey 1972
Savannah River	Late Archaic	3310+/-90 (44HE313)	large, heavy triangular blade with broad stem; relatively thin; straight to concave base; square stem	length: 70-170mm; width: 35-70mm; thickness: unrecorded	basalt, Catoctin jasper, greenstone, mylonite, oolitic quartzite, phyllite, quartz, quartzite	Coe 1964; VDHR 2004
Susquehanna Broadspear	Late Archaic	3720+/-140 (44WR57)	relatively large, broad-blade, semilozenge point with well-defined side notches; prominent basal ears; ground bases and notches	length: 52-79mm; width: 23-38mm; thickness: 708.3mm	argillicious shale, rhyolite	Witthoft 1953; Ritchie 1971; Kinsey 1972; VDHR 2004

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Lehigh/Koens-Crispin	Late Archaic	3510+/-100 (44LD15)	medium-sized, broad triangular point with straight to excurvate blade edges; thick contracting stem	length: 40-70mm; width: 20-40mm; thickness: 3-10mm	chert, rhyolite	Kinsey 1972; VDHR 2004
Holmes	Late Archaic	5 dates: 4330+/-60 (44HE713) to 2955+/-95 (44NB128); earlier points probably Savannah River, not Holmes	small Savannah River variant with shallow-notched or concave base	never formally defined	basalt, diabase, greenstone, mylonite, quartz, quartzite	Potter 1982
Perkiomen	Transitional	3720+/-100 (28WA16); 3640+/-100 (28WA16); 3620+/-100 (36PI7)); 3500+/-100 (36PI13))	broad-bladed, flat, assymetrical point with narrow stem	length: 38-53mm; width: 32-37mm; thickness: 5-9.3mm	argillicious shale, chert, jasper, rhyolite	Witthoft 1953; Ritchie 1971
Bare Island	Transitional	3850+/-180 (36HU1)	medium-to-large, finely flaked symmetrical point with isosceles triangular blades; straight stem; defined shoulder	length: 45-83mm; width: 16-30mm; thickness: 8-15mm	argillicious shale, basalt, chert, greenstone, hornfels, jasper, quartz, quartzite, rhyolite	Kinsey 1959; Stephenson 1963; Ritchie 1971

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Orient Fishtail	Transitional	2980+/-300 (44WR329)	slender fishtail point with wide, shallow side notches; shoulders rounded and sloped; slightly concave base	length: 10.6-71mm; width: 14-27.7mm; thickness: 5.8-8.9mm	argillicious shale, basalt, greenstone, quartz, quartzite, rhyolite	Ritchie 1971; Kinsey 1972; VDHR 2004
Vernon	Early Woodland	2510+/-90 (44FX1561, with Piscataway and Teardrop Points)	short, thick wide point; side-notched; constricted stem; straight base	length: 24-49mm; width: 16-30mm; thickness: 6-13mm	basalt, chalcedony, chert, greenstone, hornfels, jasper, mylonite, quartz, quartzite, rhyolite	Stephenson and Ferguson 1963
Calvert	Early Woodland	3160+/-70 (44WM119); 3110+/-75 (44WM119); 3070+/-70 (44WM119)	short, thick wide point with rudimentary shoulders; parallel-sided stem; straight base	length: 25-48mm; width: 18-27mm; thickness: 8-13mm	argillicious shale, basalt, chalcedony, chert, greenstone, hornfels, jasper, mylonite, phyllite, quartz, quartzite, rhyolite	Stephenson and Ferguson 1963; VDHR 2004

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Piscataway	Early Woodland	3130+/-70 (44KW81); 2929+/-160 (44HN204); 2510+/-60 (44FX1561, with Vernon and Teardrop Points)	small, narrow thick point with rudimentary shoulders; contracting stem; pointed/rounded base	length: 29-49mm; width: 10-21mm; thickness: 5-10mm	chert, greenstone, mylonite, oolitic quartzite, quartz, quartzite	Stephenson and Ferguson 1963; VDHR 2004
Potts	Middle Woodland	2425+/-65 (44NN7); 2140+/-65 (44NN7); 2125+/-65 (44NN7)	wide, short-stemmed, side-notched point; isosceles triangle blade; slightly concave base		Hornfels, Mylonite, Quartz, Quartzite	McCary 1953; Holland 1970;
Teardrop	Middle Woodland	2510+/-90 (44FX1561 - with Vernon and Piscataway points)	ovoid or lozenge-shaped small point; convex or rounded base	length: 27.5-44mm; width: 13.5-22mm; thickness: 5-7mm	chert, jasper, quartz, quartzite, rhyolite	Mounier and Martin 1994
Fox Creek/Selby Bay	Middle Woodland	5 dates:1630+/-425 (44LD283) to 1125+/-110 (44PG40)	large broad-stemmed or lanceolate point; slightly concave base	length: 26-80mm; width: 20-40mm; thickness:8mm	Catoctin jasper; rhyolite	Mayr 1957; Wright 1973; Potter 1993

Projectile Point Types of the Upper Rappahannock Valley

Projectile Point Type	Cultural Period	Radiocarbon Assay Cal. Yr. B.P.	Description	Defined Metrics	Raw Material Study Area	Citation
Jacks Reef Corner-Notched	Middle Woodland	1210+/-120 (Faucett); 1131+/-170 (Island Field)	broad, thin corner-notched point with well-defined barbs; medium size; angular edges; expanding stem with straight base;	length: 21-48mm; width: 22-28mm; thickness: 5-7mm	chert, jasper, quartz, quartzite, rhyolite	Ritchie 1971; Kinsey 1972
Jacks Reef Pentagonal	Middle Woodland	1095+/-250 (White)	broad, stemless, pentagonal point; straight base	length: 23-54mm; width: 22-28mm; thickness: 5-7mm	chert, jasper, quartz, quartzite	Ritchie 1971; Kinsey 1972
Levanna/Yadkin	Late Woodland	1150+/-60 (44AU51); 925+/-60 (LD15); 860+/-110 (LD250); 830+/-75 (LD15)	medium-to-large, fairly thin triangular point; concave base; equilateral blade	length: 22-76mm; width: 20-45mm; thickness: 4.7mm	argillicious shale, Catoctin jasper, chert, chrysoprase, jasper, mylonite, oolitic quartzite, quartz, quartzite, rhyolite	Coe, 1964; Ritchie 1971; VDHR 2004
Madison	Late Woodland	4 dates: 780+/-80 (LD14) to 420+/-60 (PY144)	small, thin triangular point; sides vary from straight to incuravate; bases straight to incurvate	length: 19-40mm; width: 13-40mm; thickness: 5mm	chert, jasper, mylonite, quartz, quartzite	Ritchie 1971 VDHR 2004

Ceramic Types of the Upper Rappahannock Valley

Ceramic Ware	Type	Radiocarbon Assay Cal Yr BP	Cultural Period	Description	Comments	Citation
Selden Island	Cord Marked	3120+/-138 (7-NC-E-6A)	Early Woodland	hand-molded, bag-shaped vessel; thick with rounded base; cord marked; crushed steatite temper; lug handles	1 body sherd in assemblage (.03%)	Slattery 1946; Evans 1955
Accokeek	Cord Marked	3010+/-120 (44WR329); 2850+/-90 (44WR329); 2790+/-150 (44WR329)	Early-Middle Woodland	cord marked, coiled vessel; conoidal base; friable texture; straight or inverted rims; 20-50% coarse to medium sand temper with lesser amounts of crushed quartz/grit in paste	168 body sherds, 7 rim sherds, 48 unassigned sherds in assemblage (6.8%)	Stephenson et al 1963; Egloff and Potter 1982
Popes Creek	Net Impressed	2440+/-95 (18CH58); 2260+/-90 (44KG105); 2250+/-60 (44HE596); 2235+/-100 (18CH79);	Middle Woodland	coiled, thick, conoidal vessel with hand-molded base; open loop and knotted-net impressed; straight to slightly everted rims; 50-70% coarse sand/crushed rock temper in paste	98 body sherds, 17 rim sherds, 2 unassigned sherds in assemblage (3.6%)	Holmes 1903; Stephenson et al 1963
Albemarle	Cord Marked	1460+/-60; 1150+/-60 (44AU51); 1080+/-100; 1070+/-80; 870+/-80; 750+/-60; 680+/-50 (44WR3)	Middle-Late Woodland	coiled, medium to large vessel; light red to orange-red in color; straight sided; rounded base; slightly tapered rim; parallel cord marked exterior surfaces; smoothed interior; large crushed rock particles (usually quartz) temper in paste	2 basal sherds, 726 body sherds, 47 rim sherds, 221 unassigned sherds in assemblage (30.4%)	Evans 1955

Ceramic Types of the Upper Rappahannock Valley

Ceramic Ware	Type	Radiocarbon Assay Cal Yr BP	Cultural Period	Description	Comments	Citation
Albemarle	Fabric Marked	1460+/-60; 1150+/-60 (44AU51); 1080+/-100; 1070+/-80; 870+/-80; 750+/-60; 680+/-50 (44WR3)	Middle-Late Wodland	coiled, medium to large vessel; light red to orange-red in color; slightly incurved lip; straight sided; rounded base; plain plaited fabric impressed with fine weft and coarse warp; smoothed interior; finer crushed rock (usually quartz) temper in paste	523 body sherds, 25 rim sherds, 79 unassigned sherds in assemblage (19.2%)	Evans 1955
Albemarle	Plain	1005+/-55 (44FV134)	Late Woodland	coiled, medium to large vessel; light orange-tan color; flat topped, vertical rim; straight sided; rounded base; smoothed or smoothed over cord- or fabric marked; smoothed interior; large angular crushed rock (usually quartz) tempered paste	113 body sherds, 99 unassigned sherds in assemblage (6.5%)	Evans 1955
Albemarle	Misc. Rim Treatments (Cord-Wrapped Dowel, Incised, Punctated, Smoothed, Scraped, Combed, Plain)	Shepard 950+/-70 (44CK3); Shepard 840+/-70 (44LD521)	Late Woodland	neck and rim treatments on coiled, medium to large vessels; surface colors ranging from orange-red to tan; typically on cord-marked bodies; crushed rock and grit tempered paste	117 body sherds, 47 rim sherds, 5 unassigned sherds in assemblage (5.1%)	Evans 1955

Ceramic Types of the Upper Rappahannock Valley

Ceramic Ware	Type	Radiocarbon Assay Cal Yr BP	Cultural Period	Description	Comments	Citation
Page	Cord Marked and Plain	815+/-65, 780+/-65 (44BA5); 700+/-50 (44WR2)	Late Woodland	coiled; small to large vessels with conoidal or globular bases; rims vertical to slightly flaring; applied rim strips with oblique slashes common; exterior surfaces cordmarked or plain; crushed limestone tempered paste	33 body sherds, 15 unidentified sherds in assemblage (1.5%)	Manson et al 1944; Egloff and Hodges 1989
Keyser	Cord Marked and Plain	780+/-80 (44LD14); 690+/-50 (44ST2); 580+/-60, 420+/-60 (18M01)	Late Woodland	coiled; wide-mouthed globular body with rounded base; coiled or plain exterior surface; notched lip; slightly constricted neck; pseudo-lug handles; crushed mussel shell tempered paste	24 body sherds, 2 rim sherds, 6 unassigned sherds in assemblage (.98%)	Manson et al 1944
Moyoane	Plain	650+/-50; 540+/-45 (44WM119)	Late Woodland	coiled, small-to-medium globular vessels; smoothed exterior and interior surfaces; contricted neck and everted rim; sand/mica tempered paste	1 rim sherd in assemblage (.03%)	Stephenson et al 1963; Egloff and Potter 1982

Ceramic Types of the Upper Rappahannock Valley

Ceramic Ware	Type	Radiocarbon Assay Cal Yr BP	Cultural Period	Description	Comments	Citation
Dan River	Net Marked	780+/-90, 780+/-50, 530+/-70, 430+/-70 (44BO26); 490+/-50 (44CP1)	Late Woodland	coiled, large vessels; notched lip; everted rim; net marked exterior; heavily scraped interior; conoidal-to-rounded base; crushed quartz tempered paste	1 body sherd, 1 rim sherd in assemblage (.06%)	Coe and Lewis 1952; Ward and Davis 1993
Colonoware	Incised	None	Historic, 17th-19th centuries	low-fired unglazed earthenware produced by Native Americans, African Americans, or both; coil/slab built; vessel forms may mimic European holloware forms; burnished surfaces; shell tempered paste	1 body sherd in assemblage (.03%)	Noël Hume 1962
Undefined	Fabric Marked Limestone Tempered	1890+/-90, 1830+/-80, 1650+/-100 (44LD15)	Probable Middle Woodland	limestone tempered paste	26 body sherds in assemblage (.79%)	Rust 1986; Egloff and Hodges 1989
Unknown	Indeterminate	NA	Woodland	sand, crushed quartz, crushed greenstone, crushed amphibolite, crushed gneiss, crushed chert, crushed limestone, grit	1 basal sherd, 769 body sherds, 20 rim sherds in assemblage (24%)	NA

Appendix II

Site Location Maps by Cluster and

Cluster Diagnostic Artifacts by Cultural Sub-Period

Blue Ridge Macro-Physiographic Province Clusters

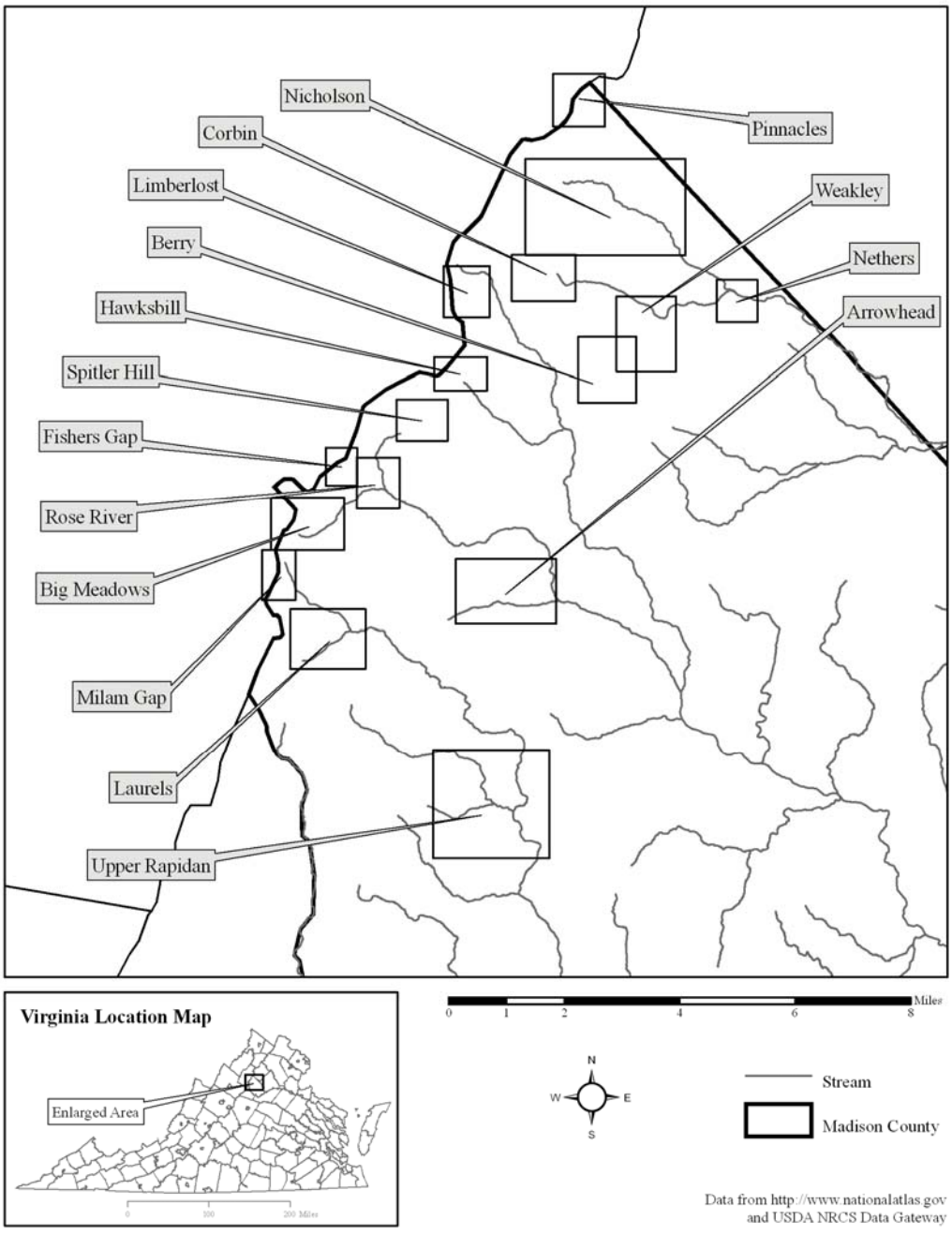


Figure 1: Arrowhead Cluster Site Locations

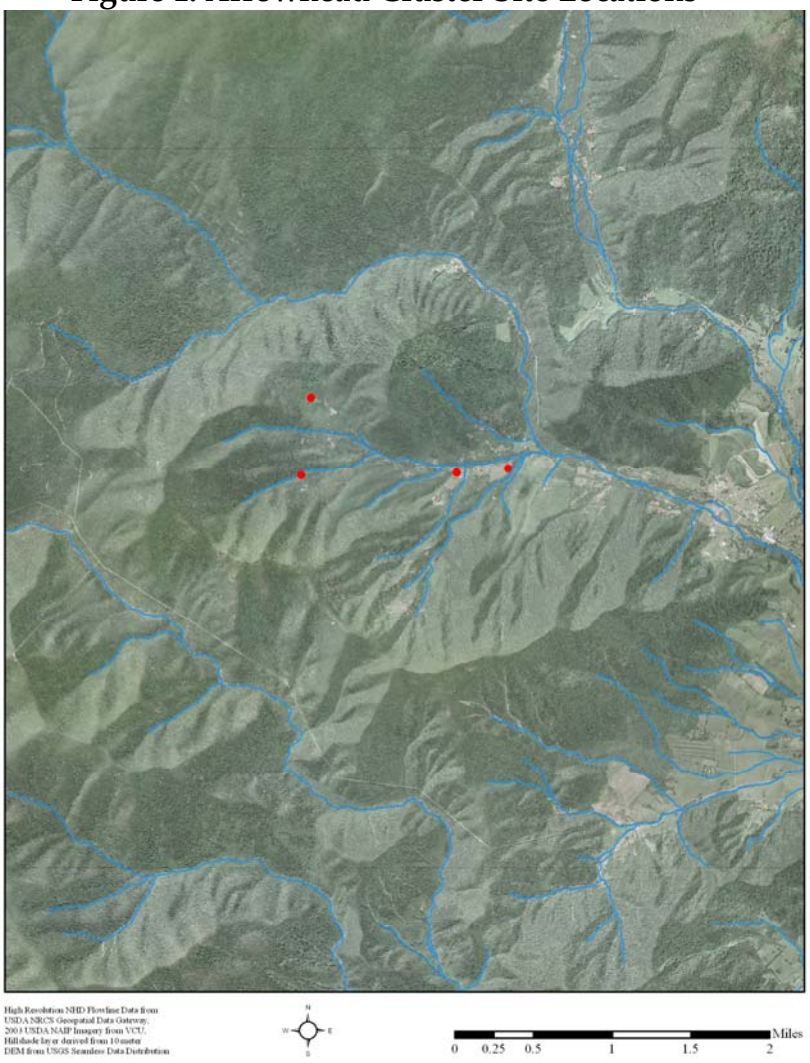


Figure 2: Arrowhead Cluster Diagnostic Artifacts by Cultural Sub-Period

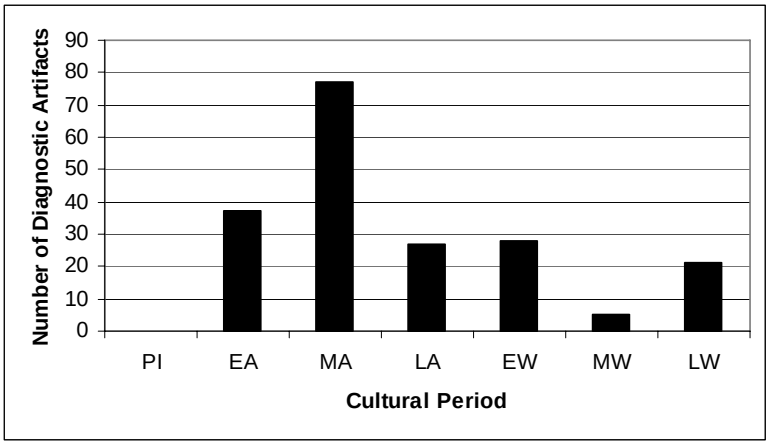


Figure 3: Berry Cluster Site Locations

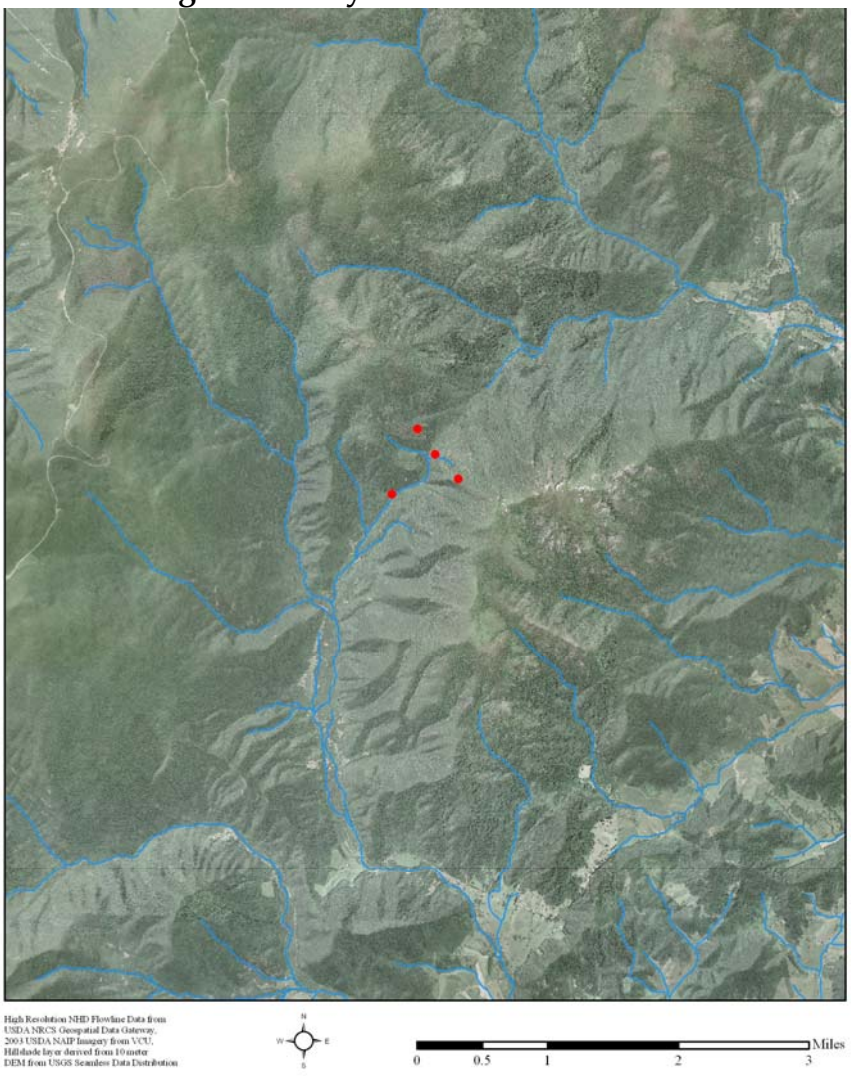


Figure 4: Berry Cluster Diagnostic Artifacts by Cultural Sub-Period

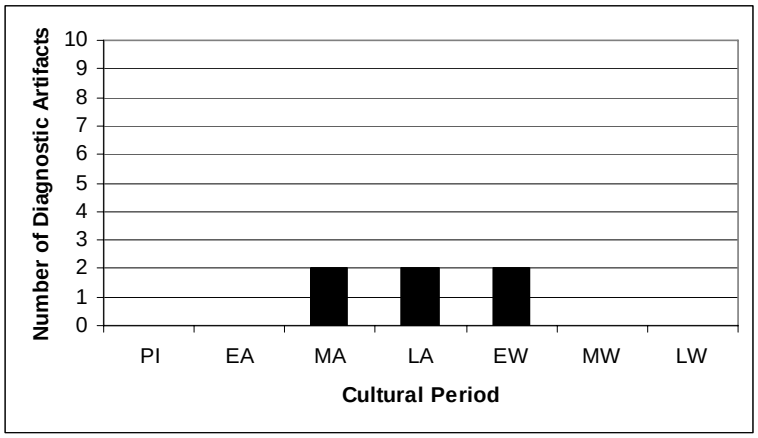


Figure 5: Big Meadows Cluster

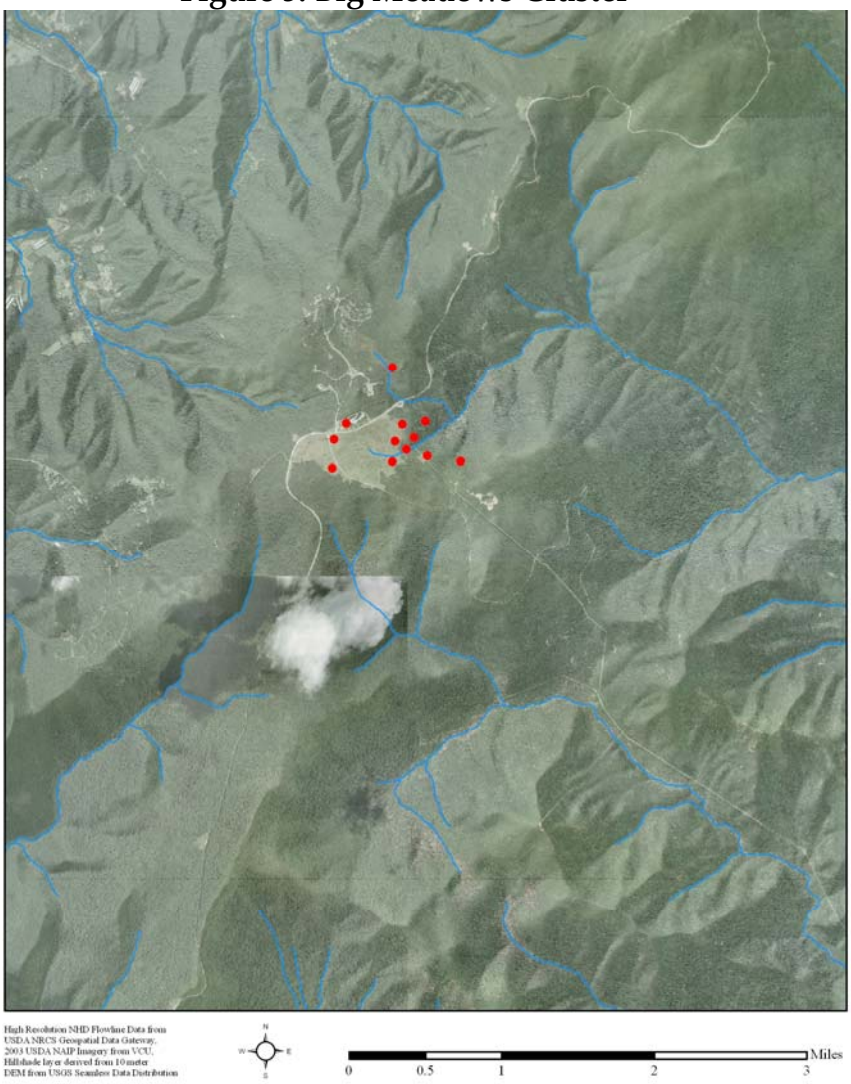


Figure 6: Big Meadows Cluster Diagnostic Artifacts by Cultural Sub-Period

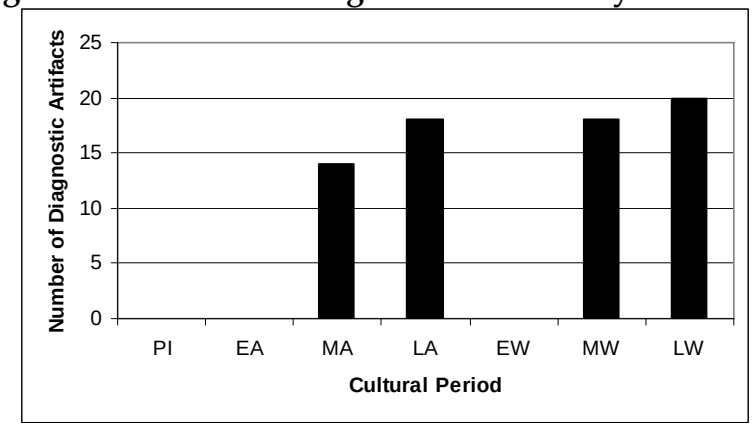


Figure 7: Corbin Cluster Site Locations

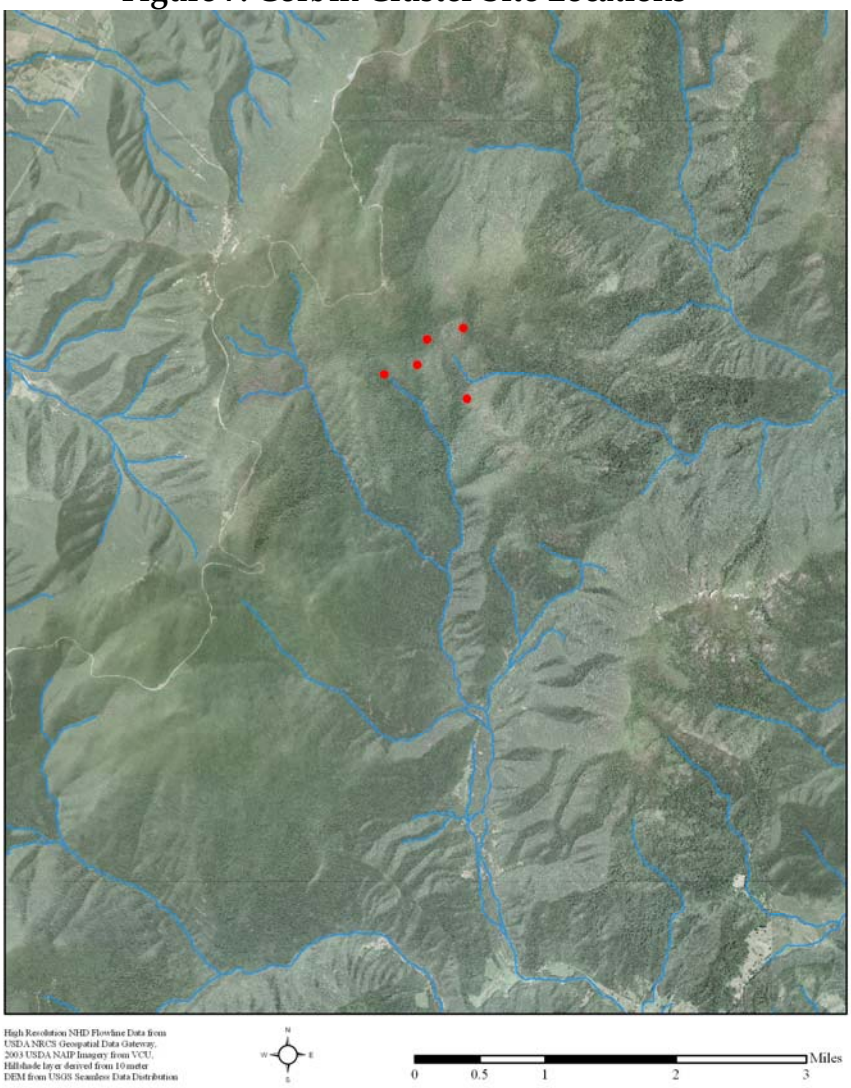


Figure 8: Corbin Cluster Diagnostic Artifacts by Cultural Sub-Period

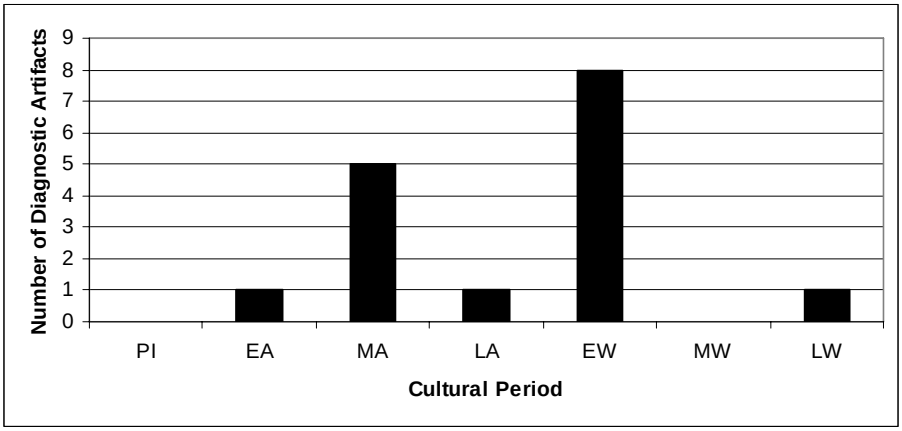
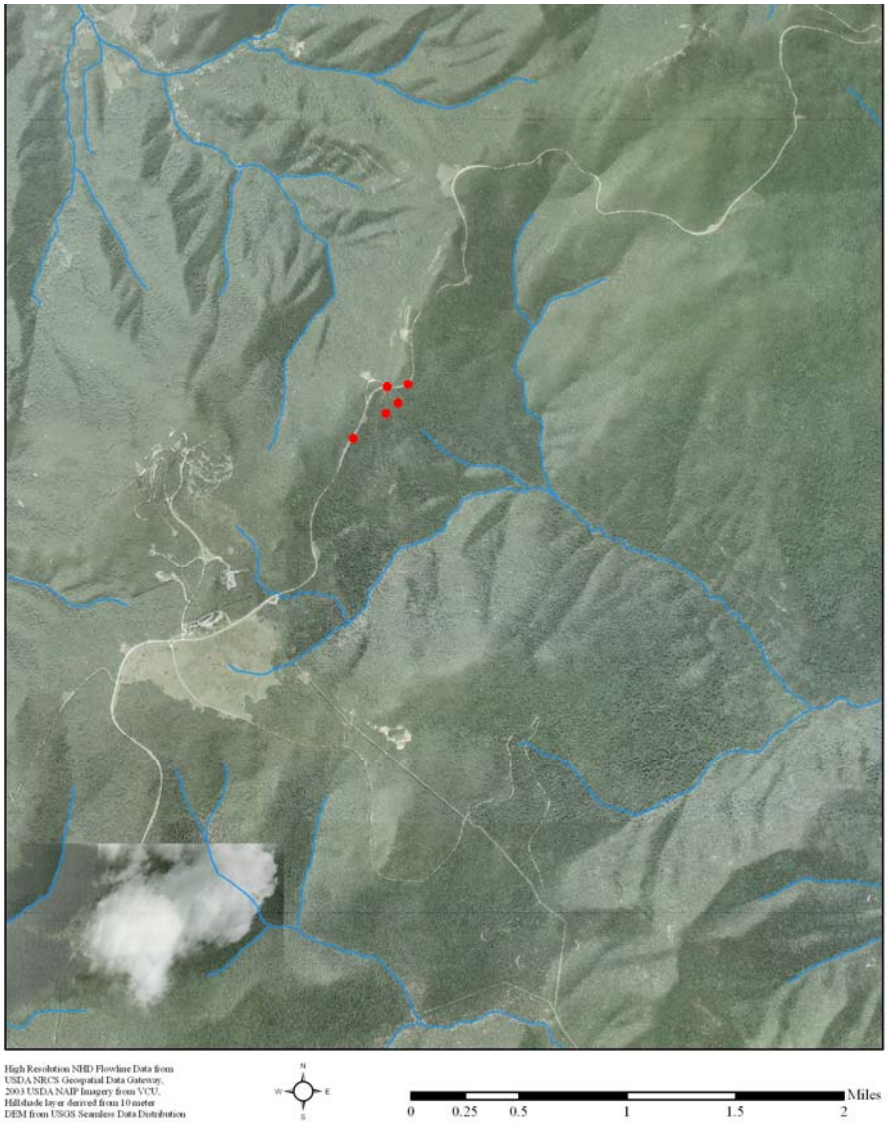


Figure 9: Fishers Gap Cluster Site Locations



There are no diagnostic artifacts from sites in the Fishers Gap Cluster.

Figure 10: Hawksbill Cluster Site Locations

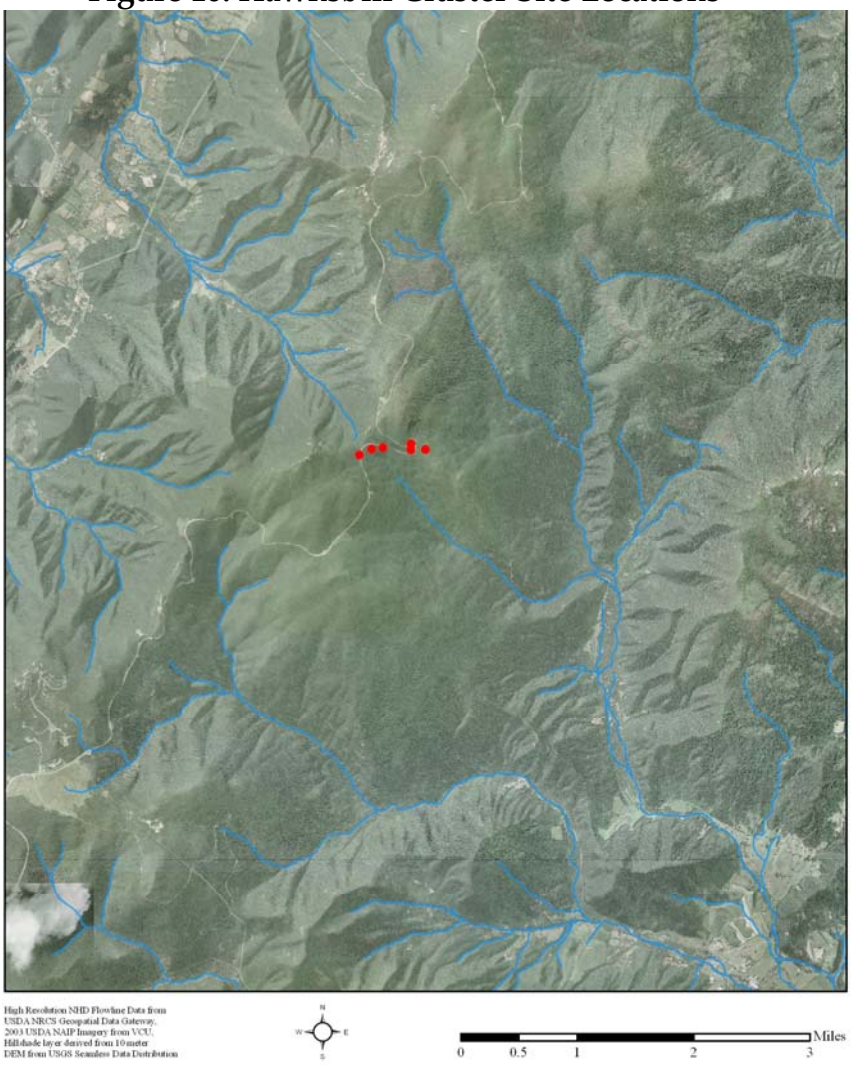


Figure 11: Hawksbill Cluster Diagnostic Artifacts by Cultural Sub-Period

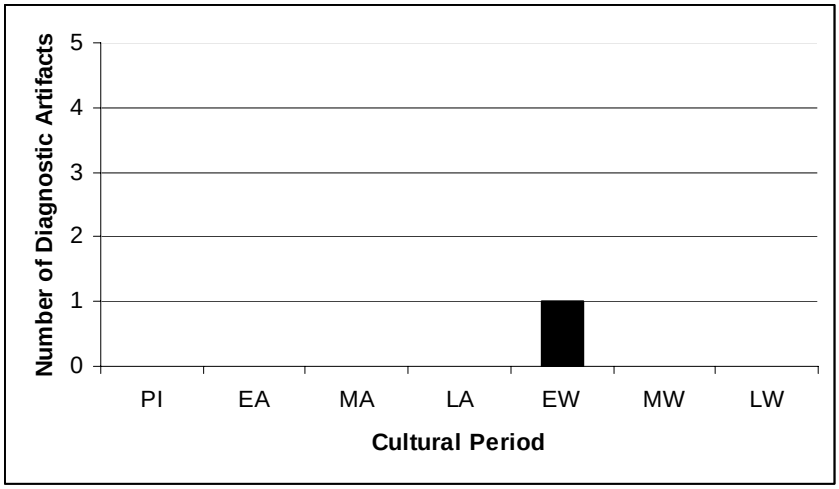


Figure 12: Laurels Cluster Site Locations

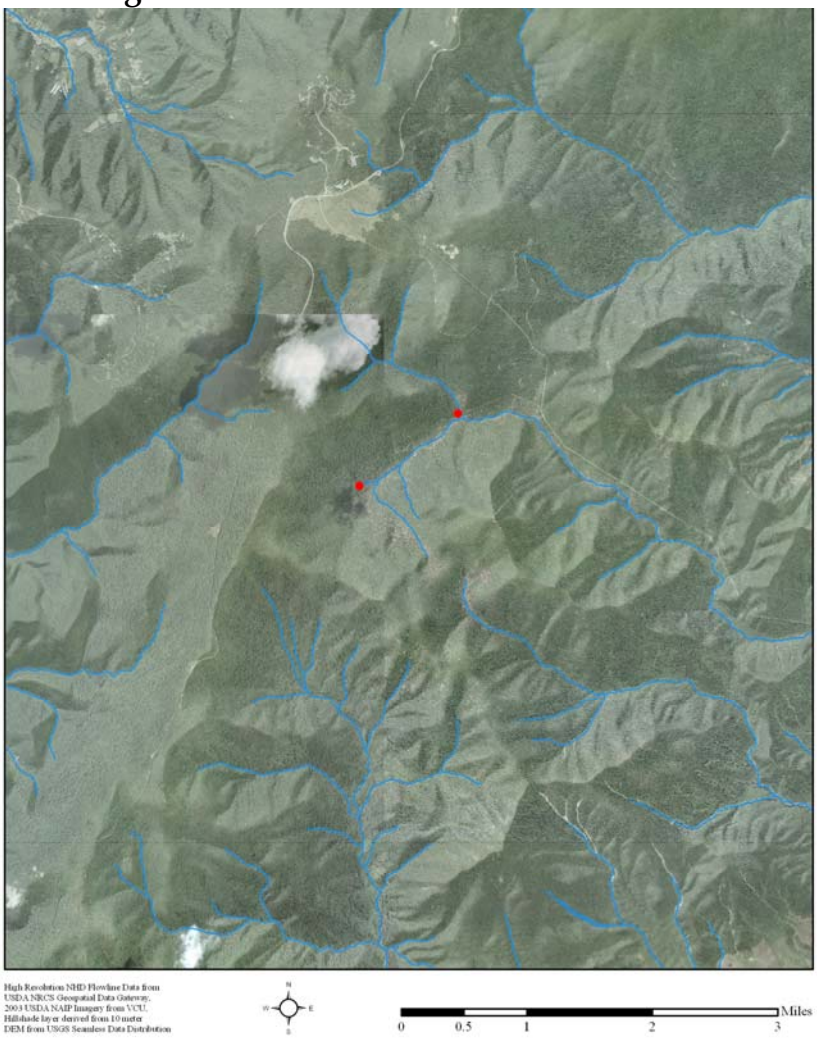


Figure 13: Laurels Cluster Diagnostic Artifacts by Cultural Sub-Period

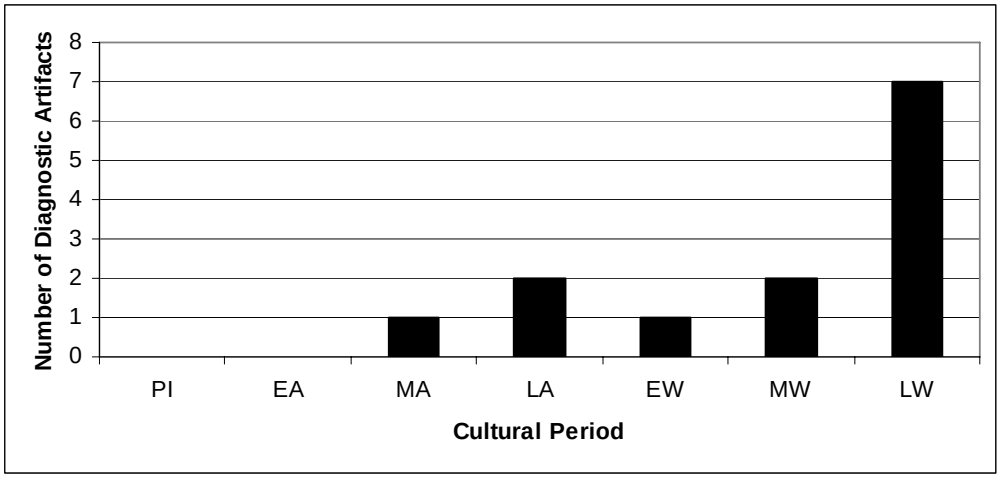


Figure 14: Limberlost Cluster Site Locations

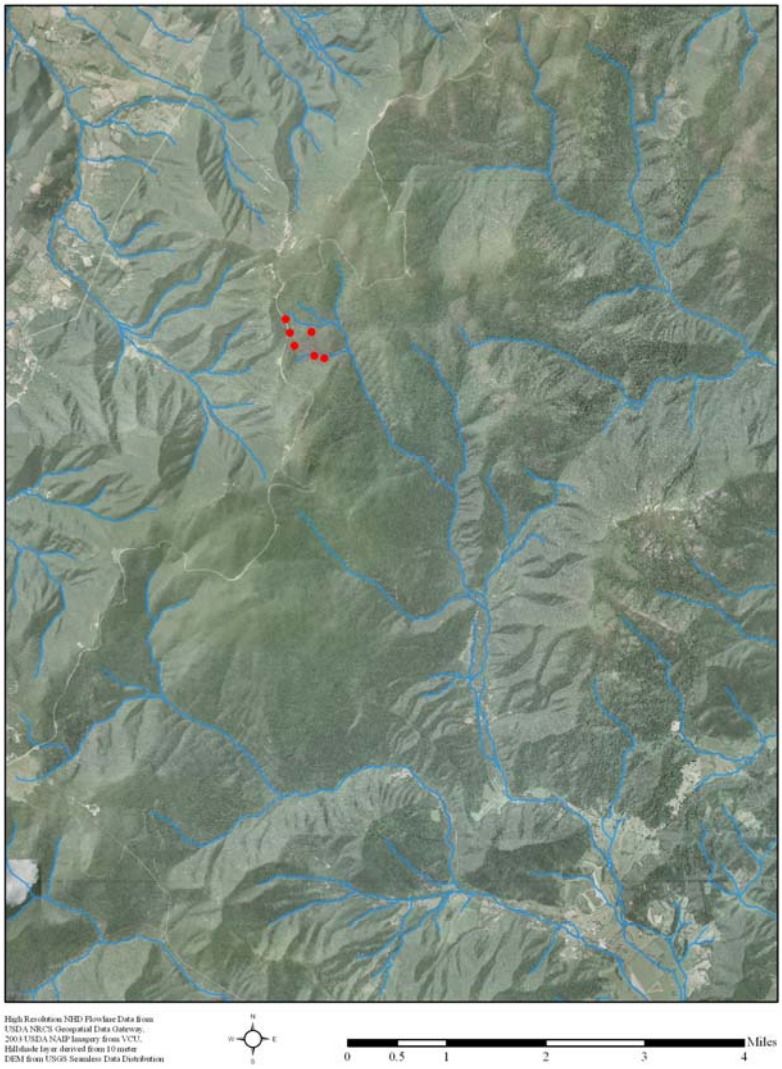


Figure 15: Limberlost Cluster Diagnostic Artifacts by Cultural Sub-Period

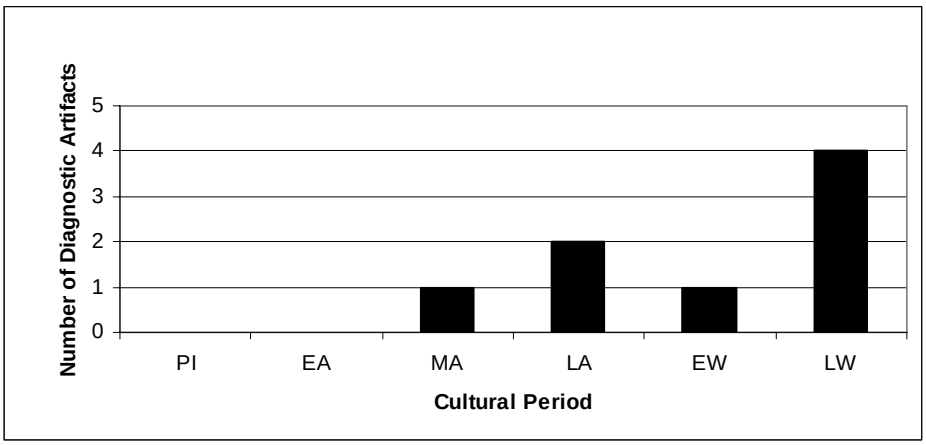


Figure 16: Milam Gap Cluster Site Locations

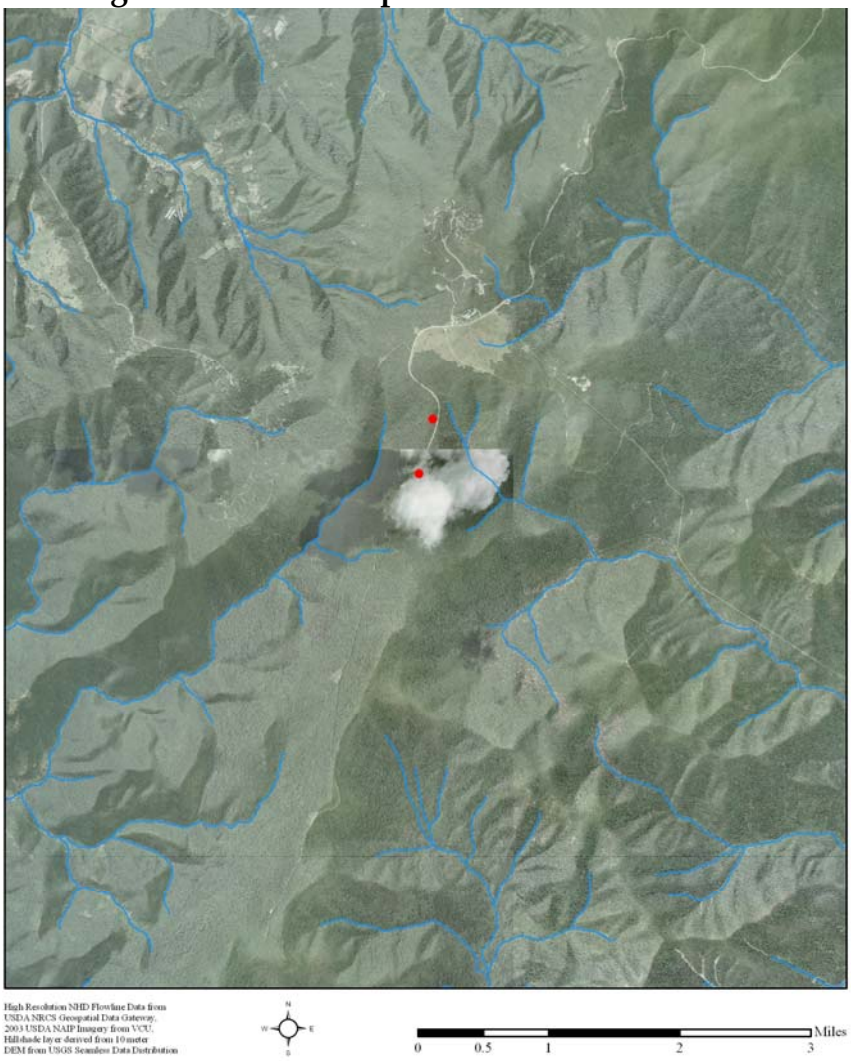


Figure 17: Milam Gap Cluster Diagnostic Artifacts by Cultural Sub-Period

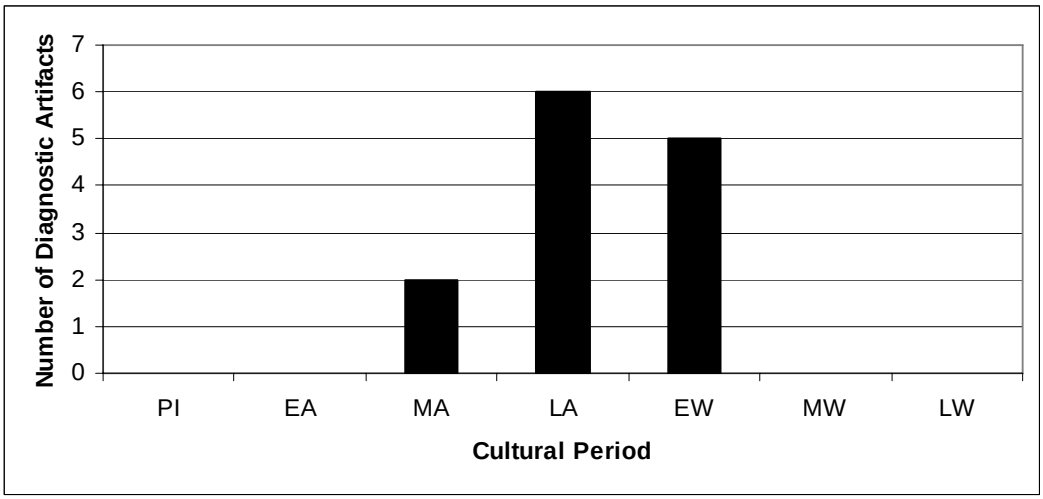


Figure 18: Nethers Cluster Site Locations

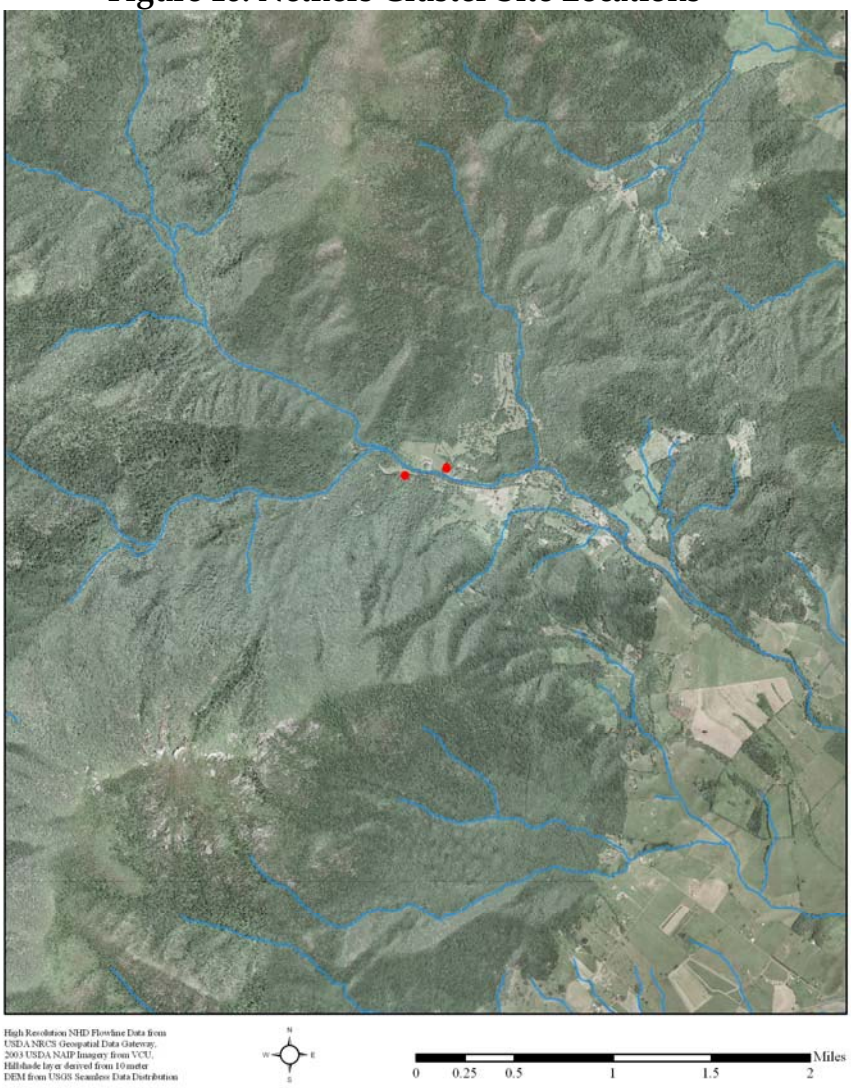


Figure 19: Nethers Cluster Diagnostic Artifacts by Cultural Sub-Period

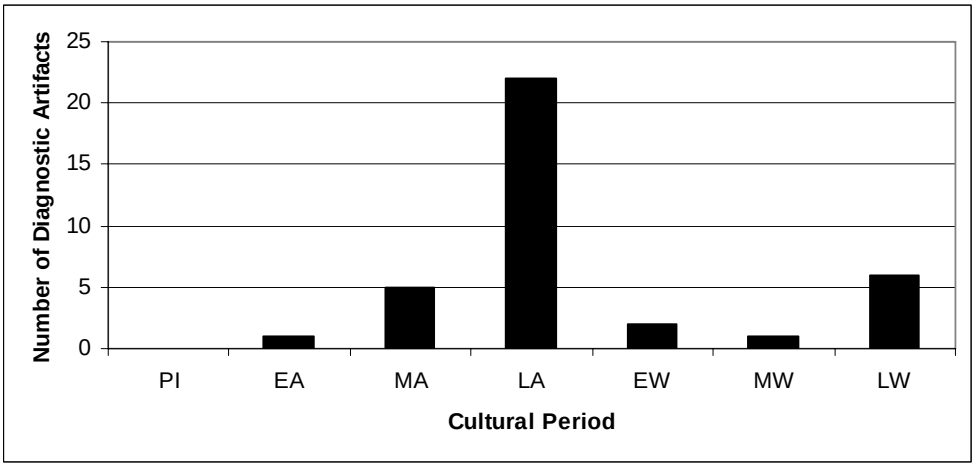


Figure 20: Nicholson Cluster Site Locations

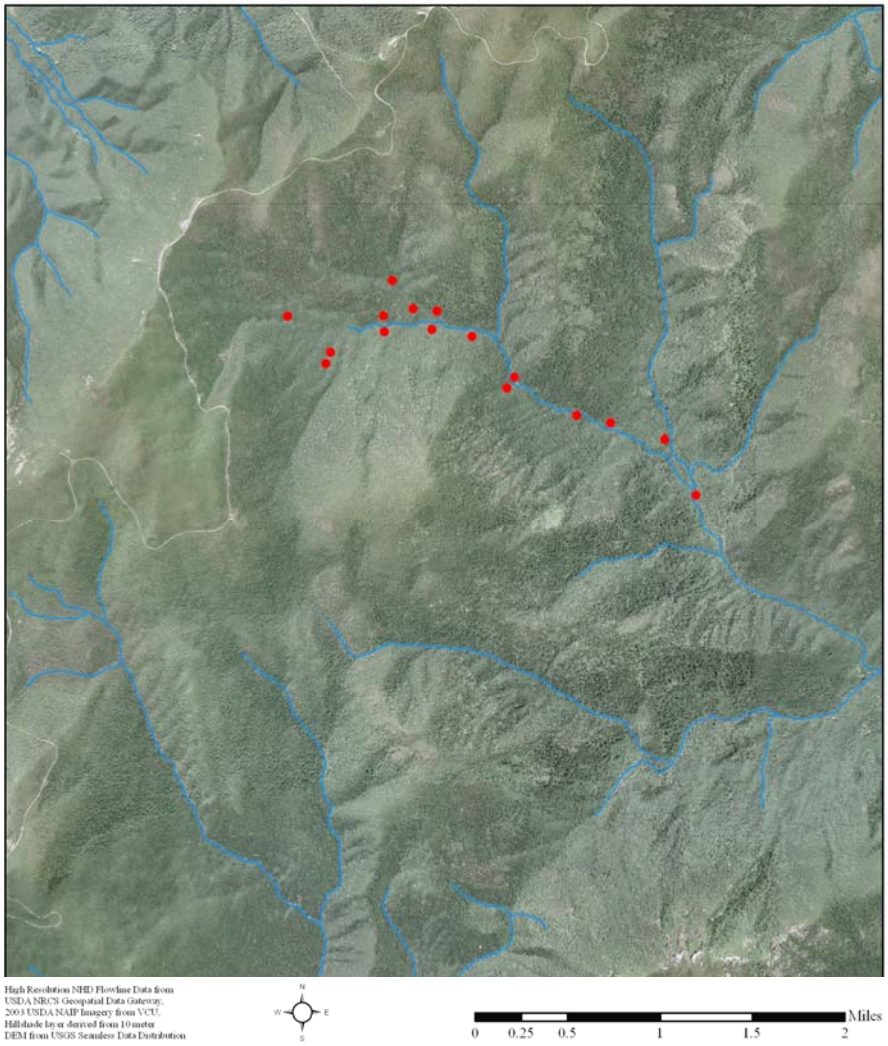


Figure 21: Nicholson Cluster Diagnostic Artifacts by Cultural Sub-Period

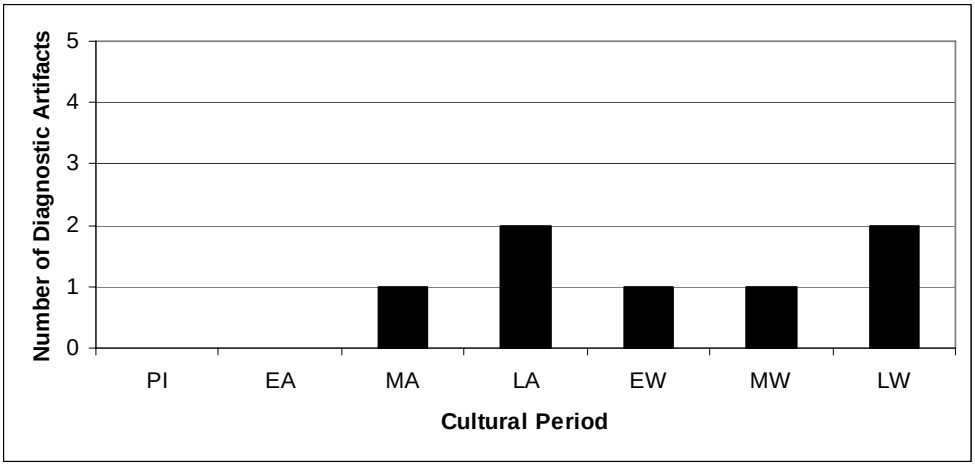
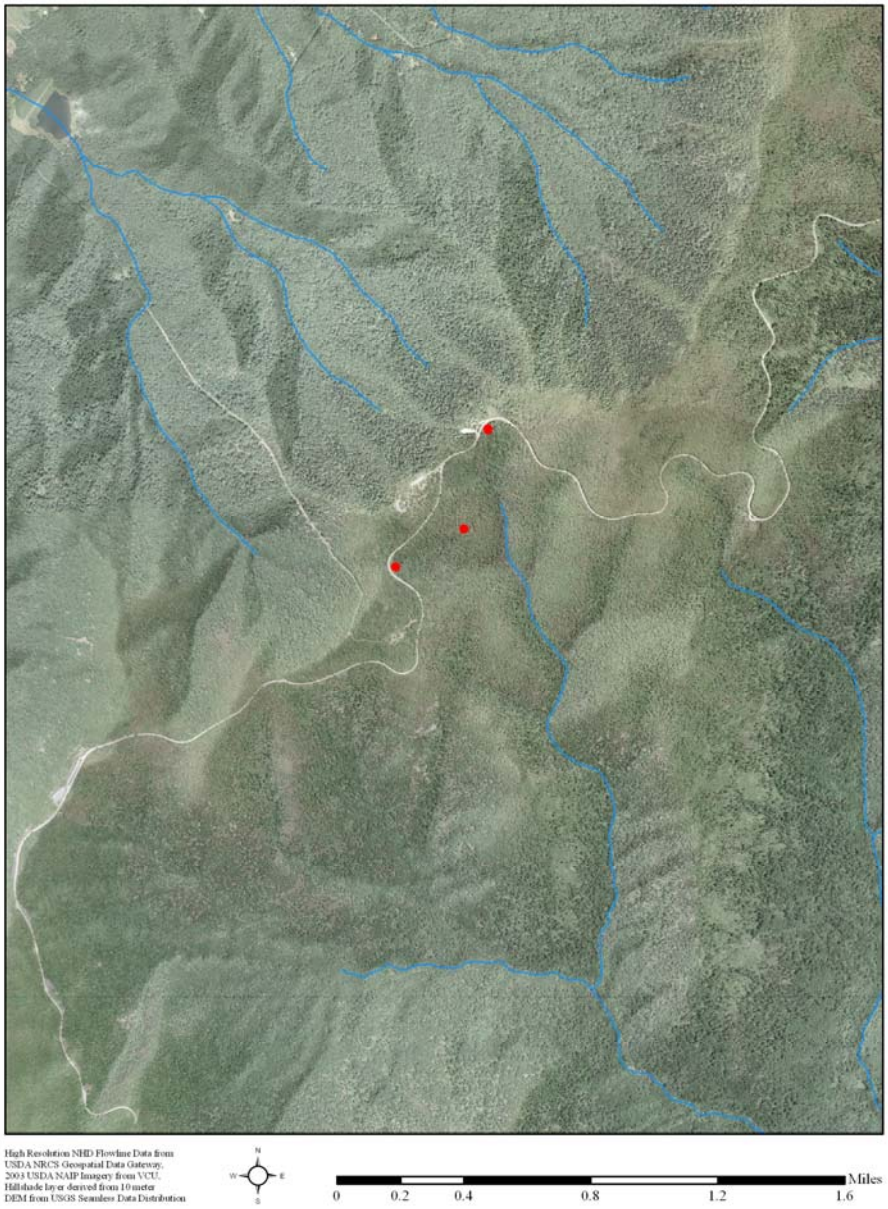


Figure 22: Pinnacles Cluster Site Locations



There are no diagnostic artifacts from sites in the Pinnacles Cluster.

Figure 23: Rose River Cluster Site Locations

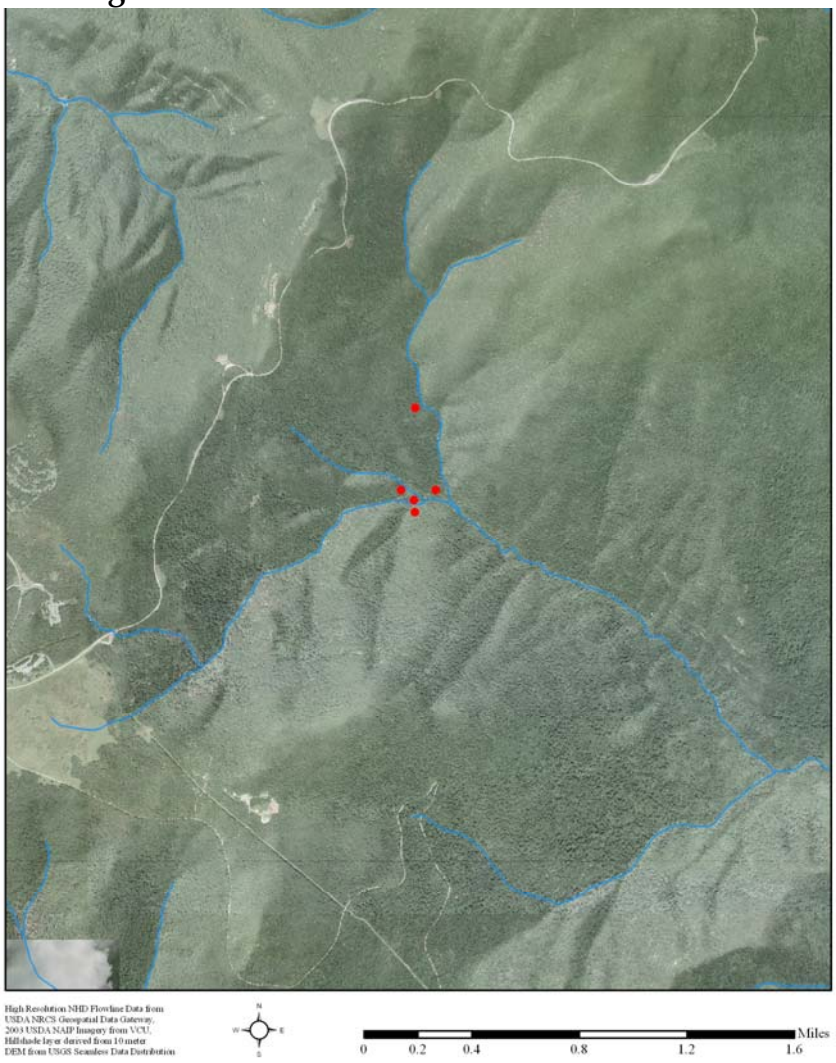


Figure 24: Rose River Cluster Diagnostic Artifacts by Cultural Sub-Period

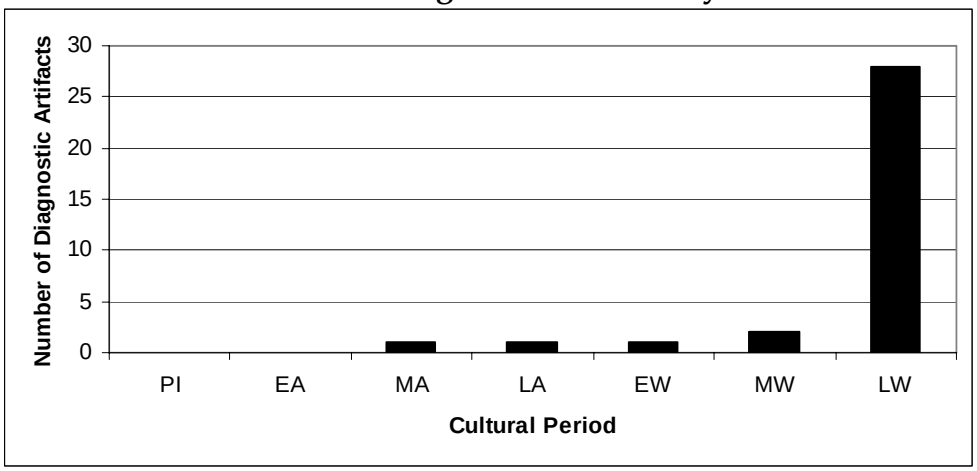
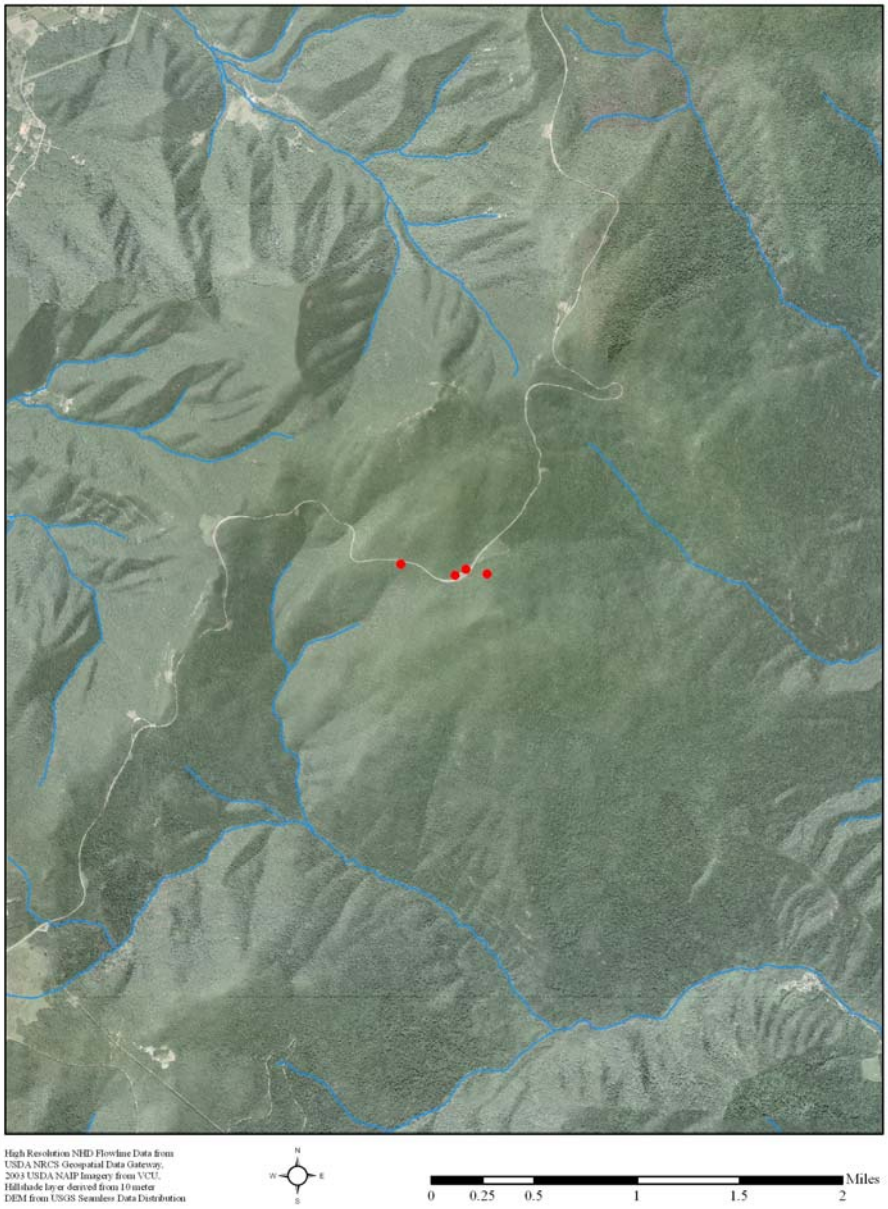


Figure 25: Spitler Hill Cluster Site Locations



There are no diagnostic artifacts from sites in the Spitler Hill Cluster.

Figure 26: Upper Rapidan Cluster Site Locations

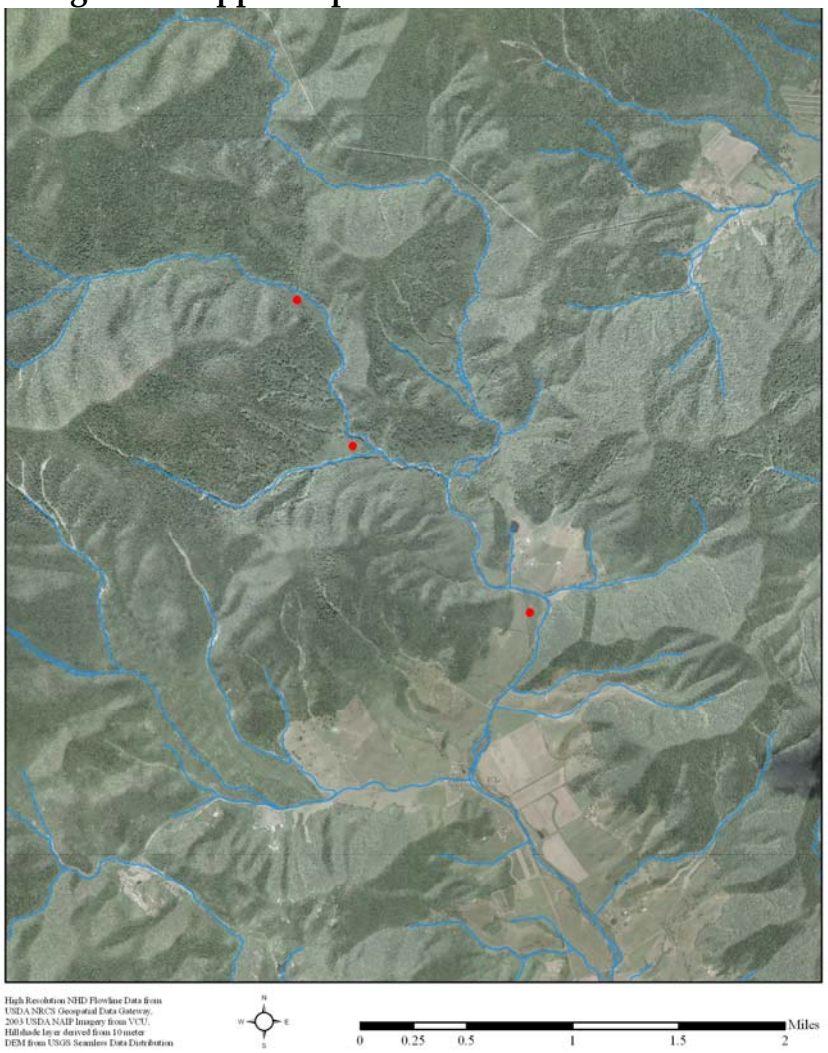


Figure 27: Upper Rapidan Cluster Diagnostic Artifacts by Cultural Sub-Period

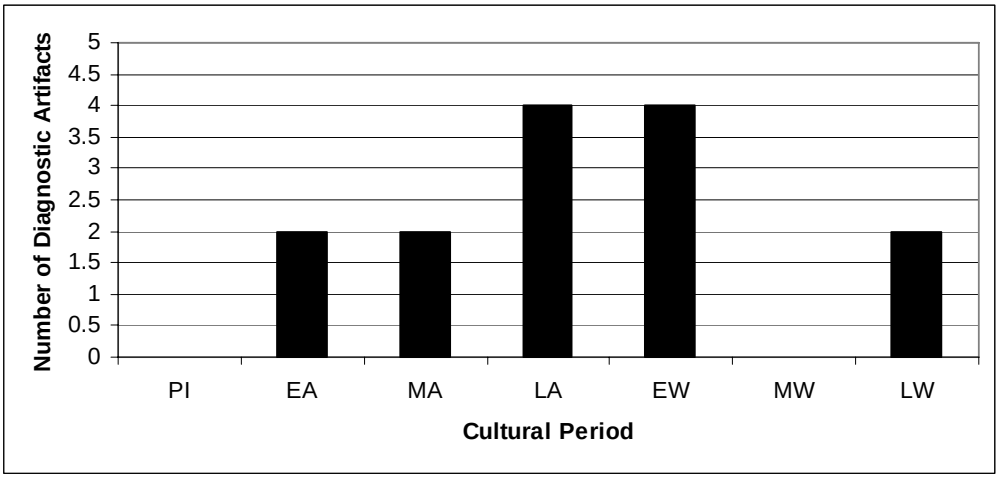


Figure 28: Weakley Cluster Site Locations

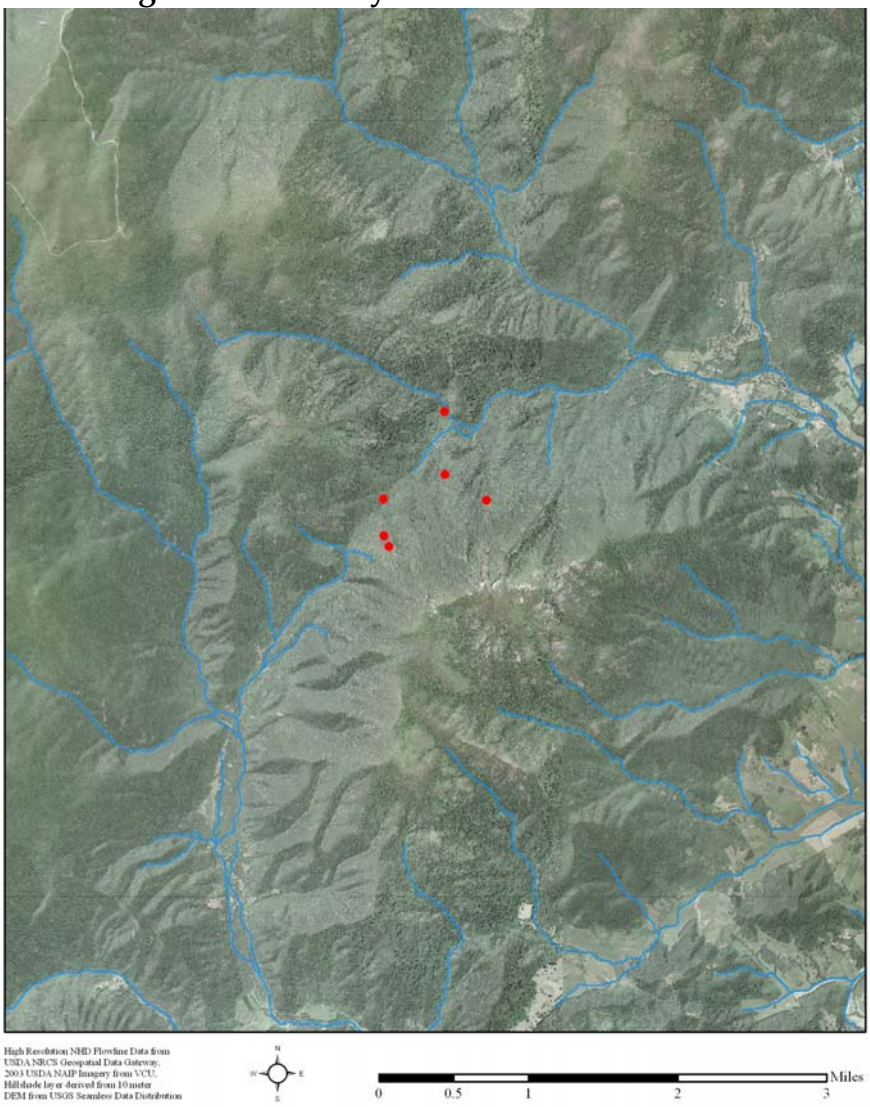
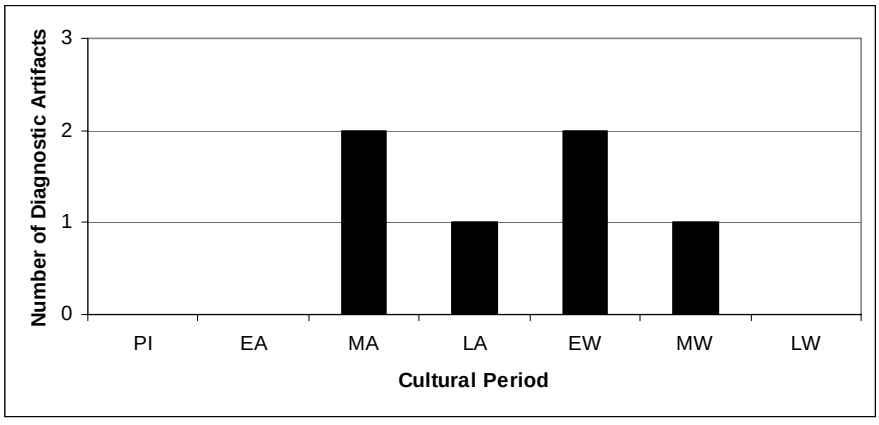


Figure 29: Weakley Cluster Diagnostic Artifacts by Cultural Sub-Period



Inner Piedmont Macro-Physiographic Province Clusters

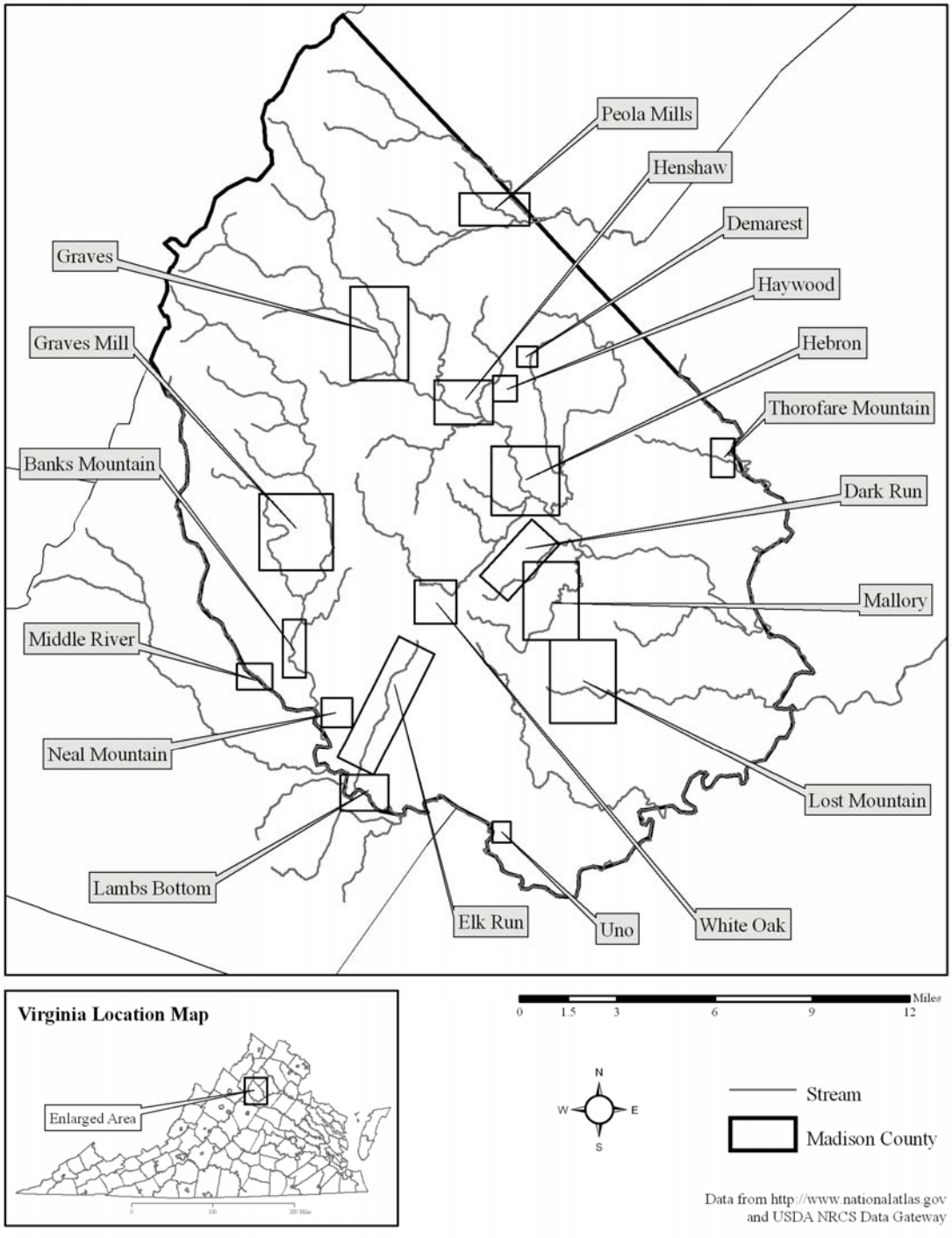


Figure 30: Banks Mountain Cluster Site Locations

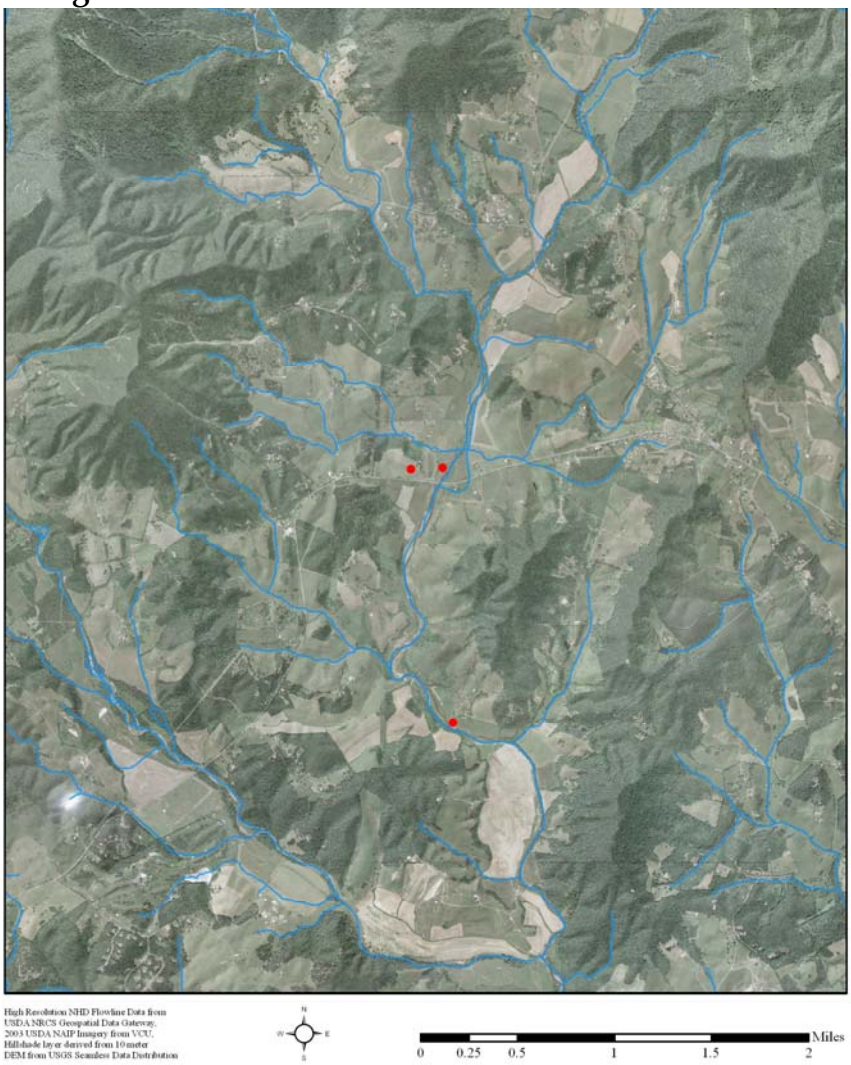


Figure 31: Banks Mountain Cluster Diagnostic Artifacts by Cultural Sub-Period

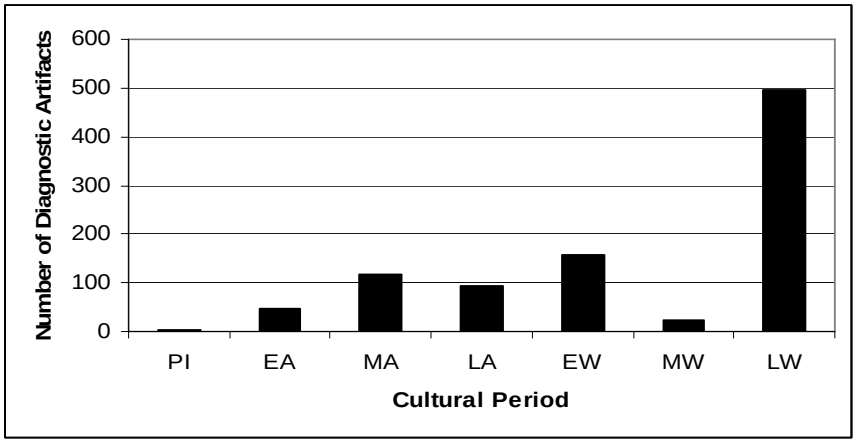


Figure 32: Dark Run Cluster Site Locations

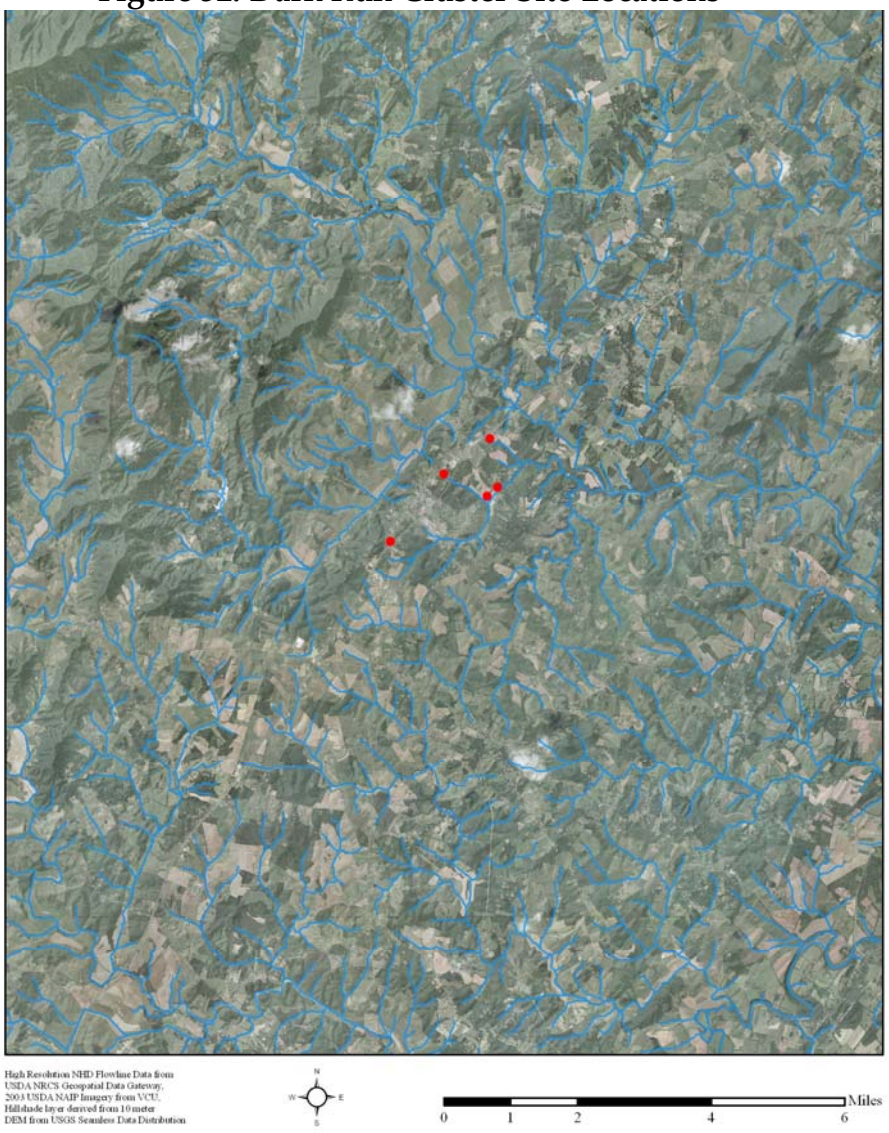


Figure 33: Dark Run Cluster Diagnostic Artifacts by Cultural Sub-Period

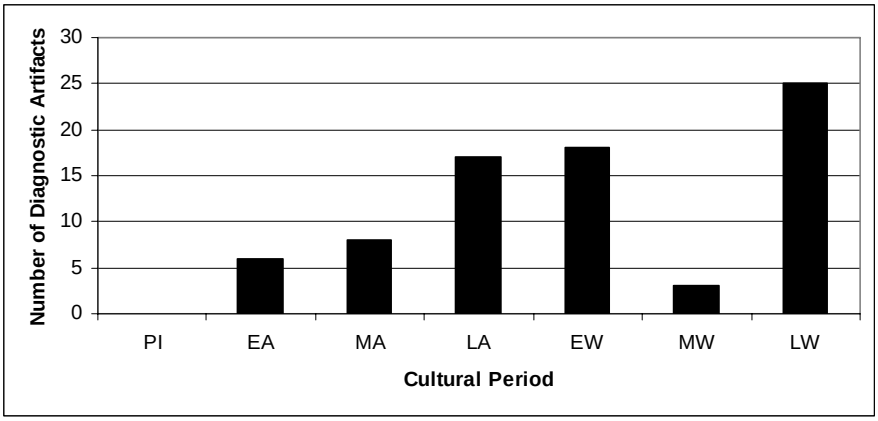


Figure 34: Demarest Cluster Site Locations

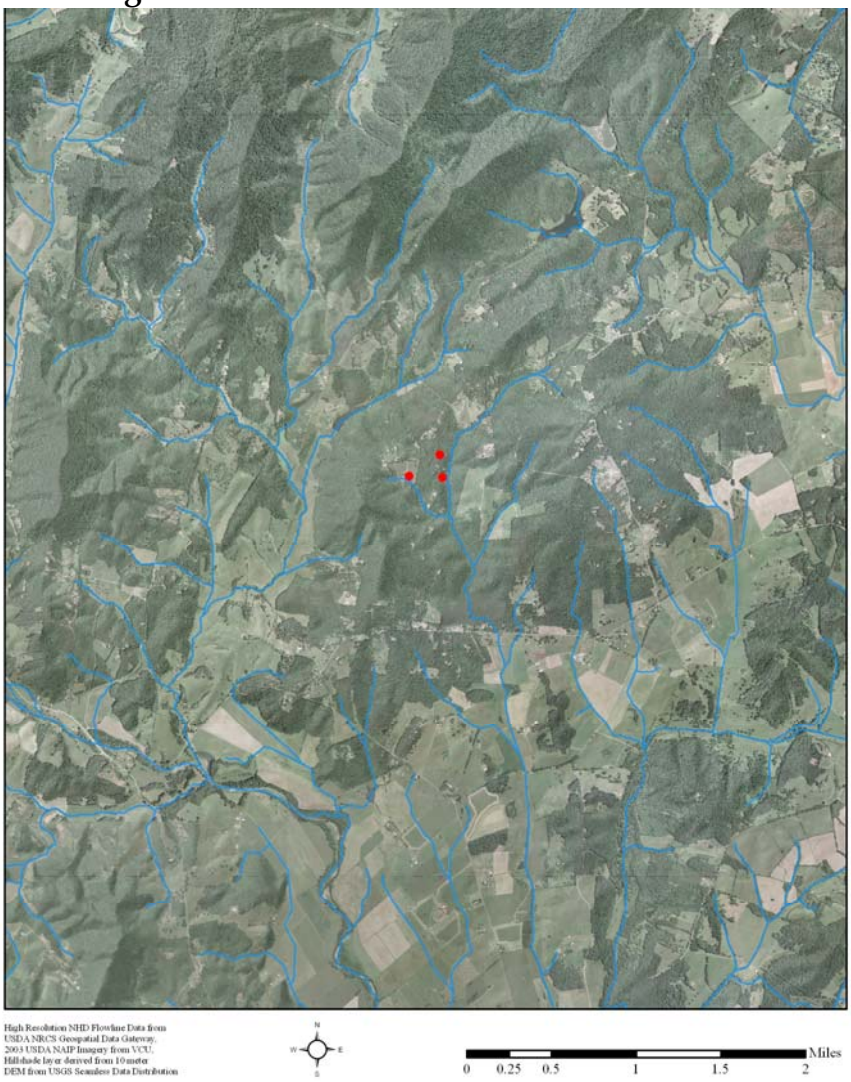


Figure 35: Demarest Cluster Diagnostic Artifacts by Cultural Sub-Period

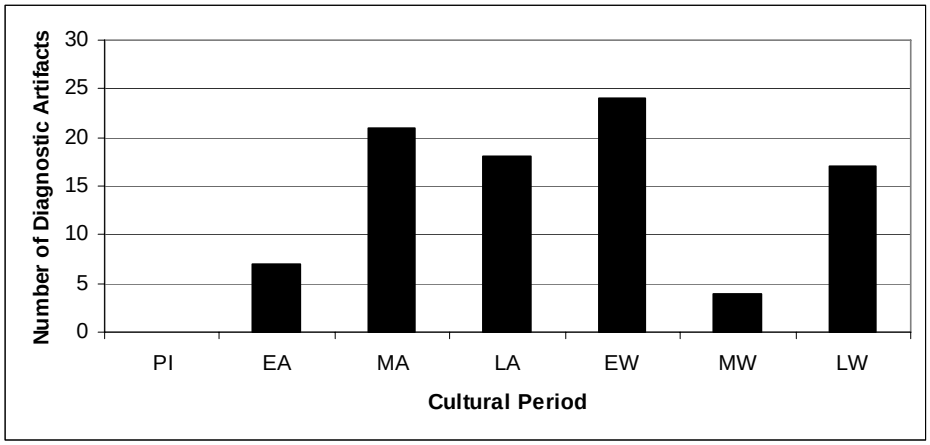


Figure 36: Elk Run Cluster Site Locations

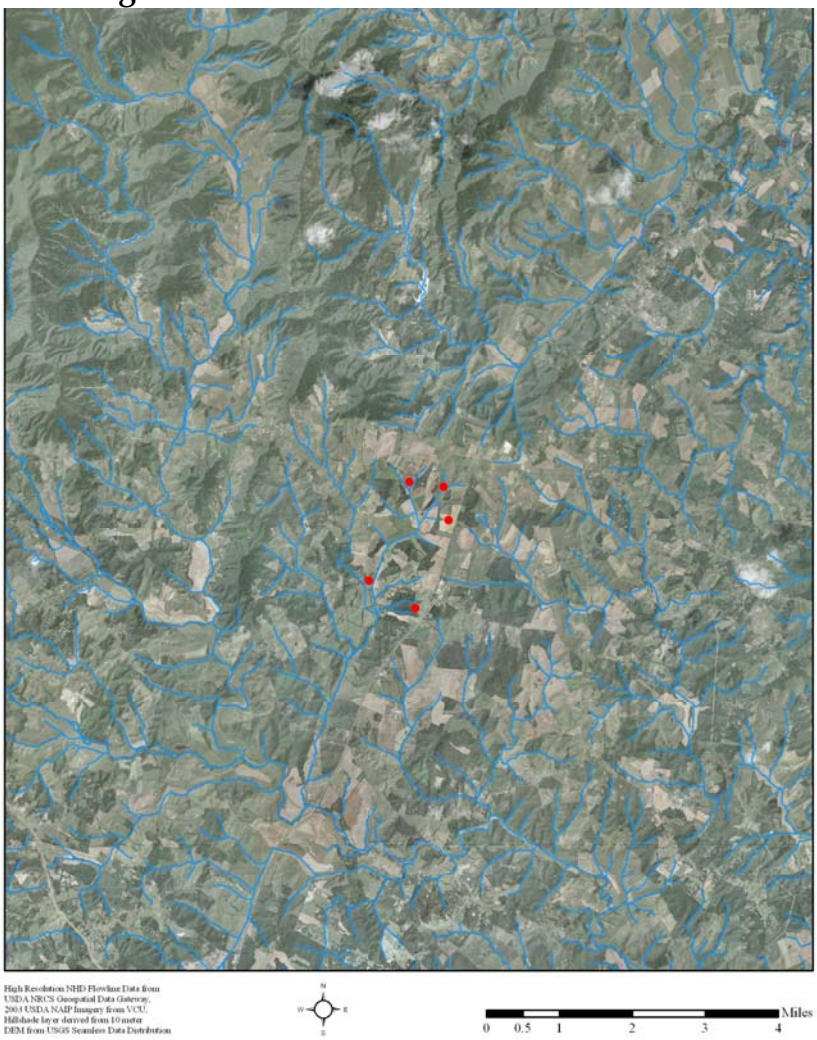


Figure 37: Elk Run Cluster Diagnostic Artifacts by Cultural Sub-Period

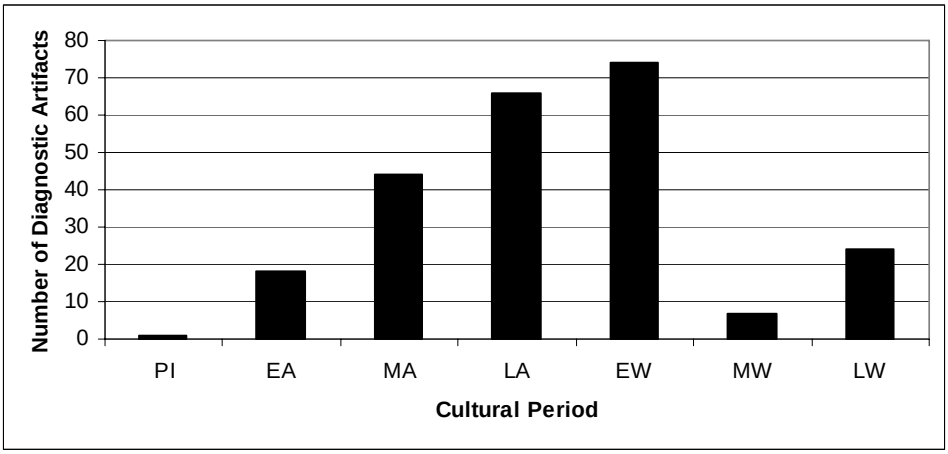


Figure 38: Graves Cluster Site Locations

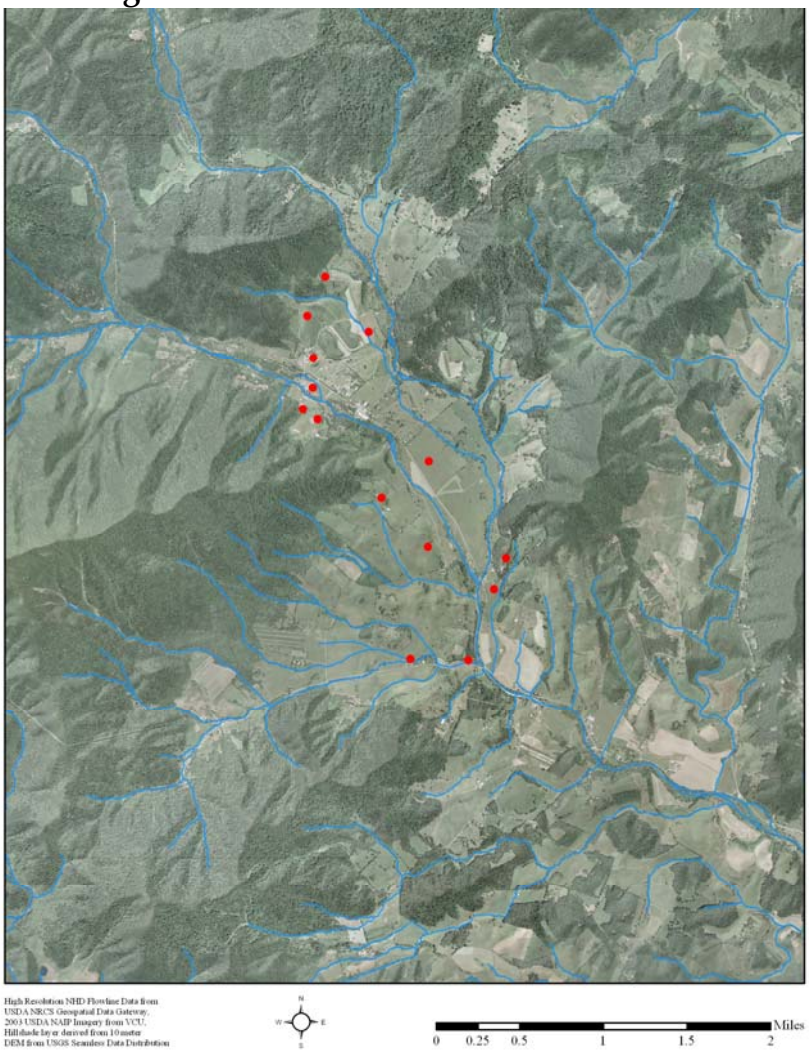


Figure 39: Graves Cluster Diagnostic Artifacts by Cultural Sub-Period

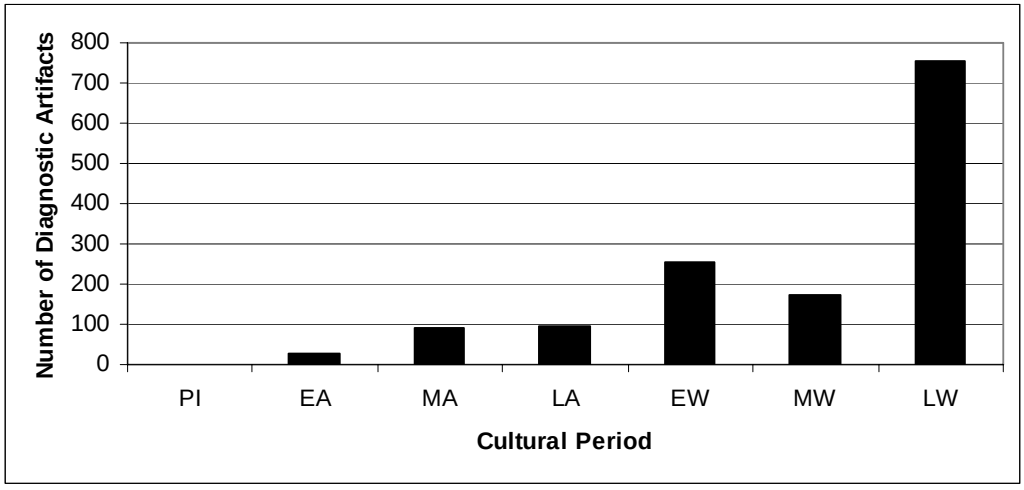


Figure 40: Graves Mill Cluster Site Locations

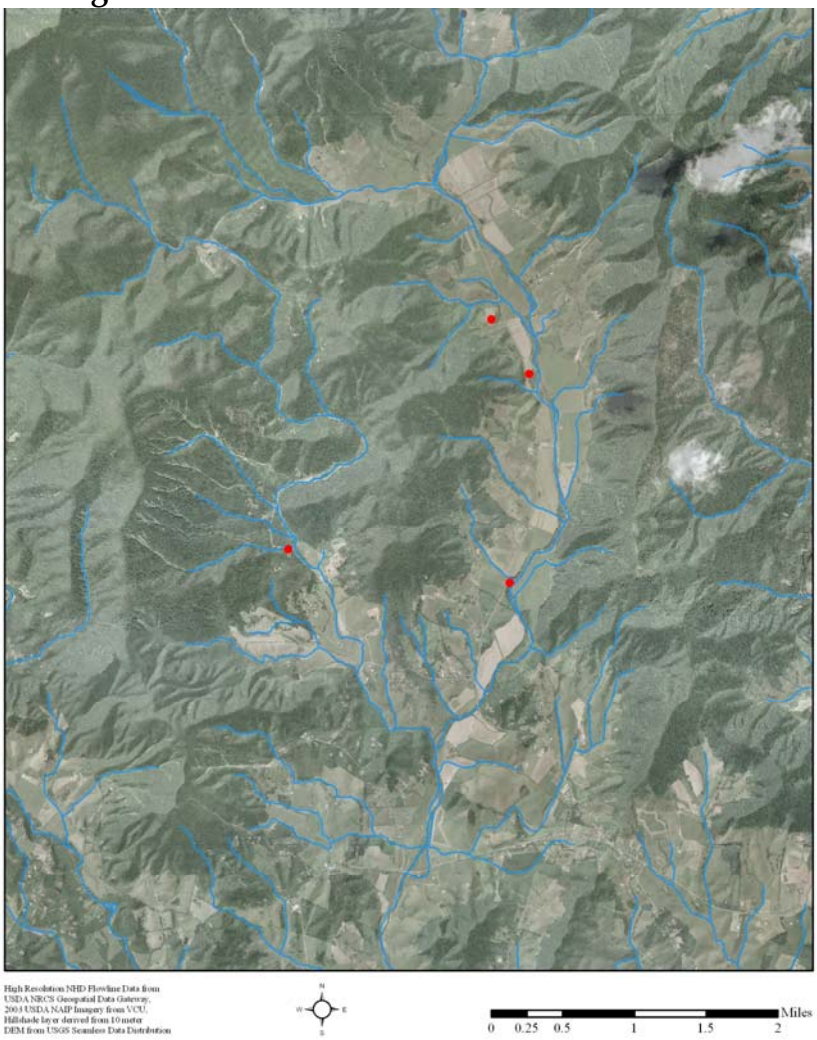


Figure 41: Graves Mill Cluster Diagnostic Artifacts by Cultural Sub-Period

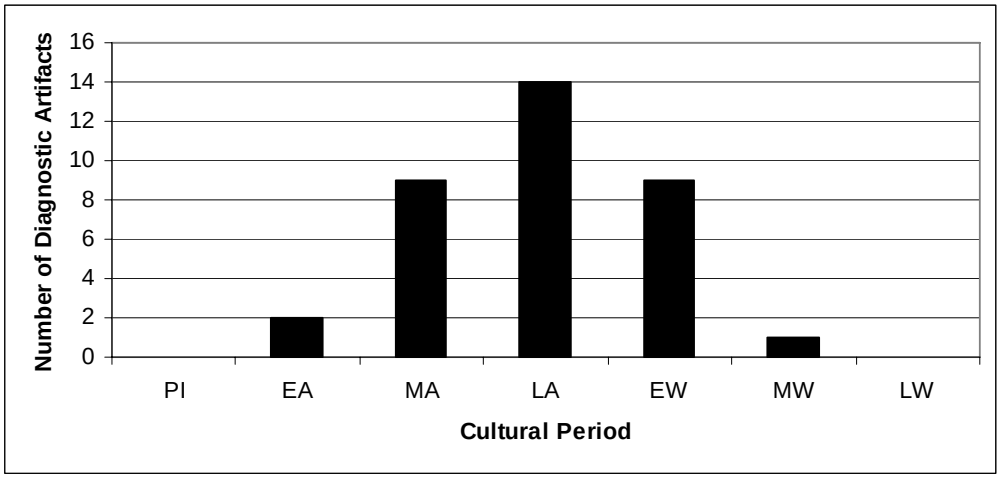


Figure 42: Haywood Cluster Site Locations

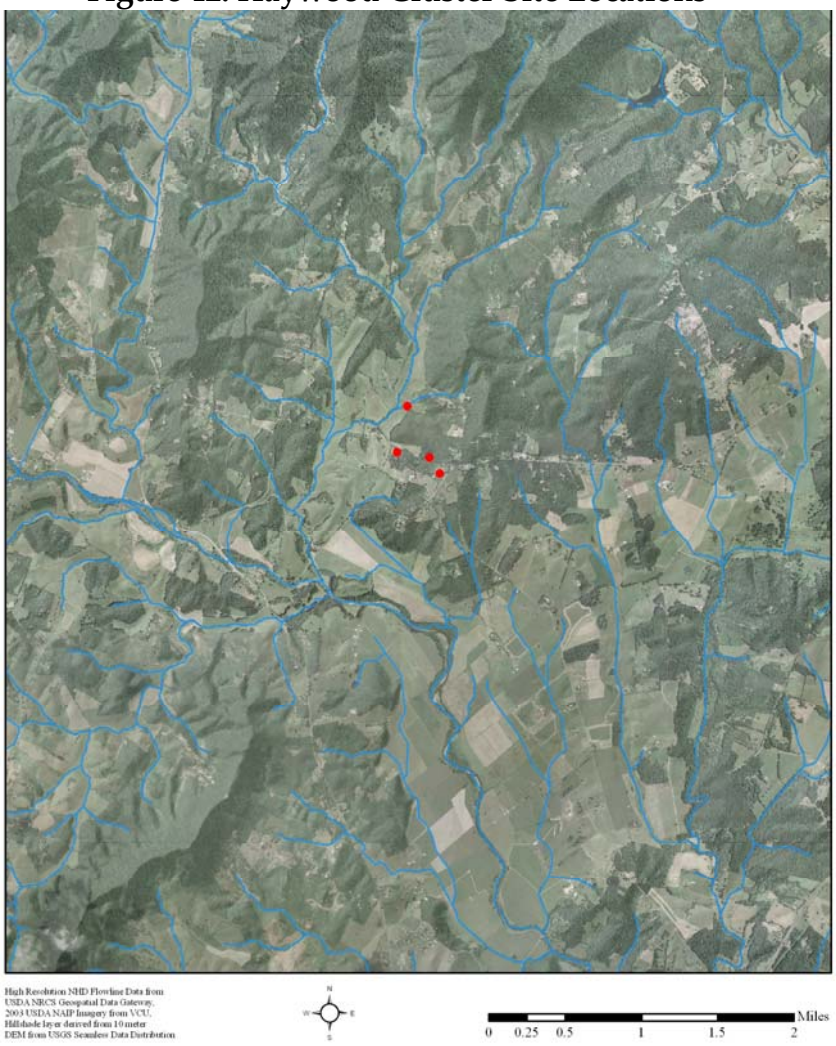


Figure 43: Haywood Cluster Diagnostic Artifacts by Cultural Sub-Period

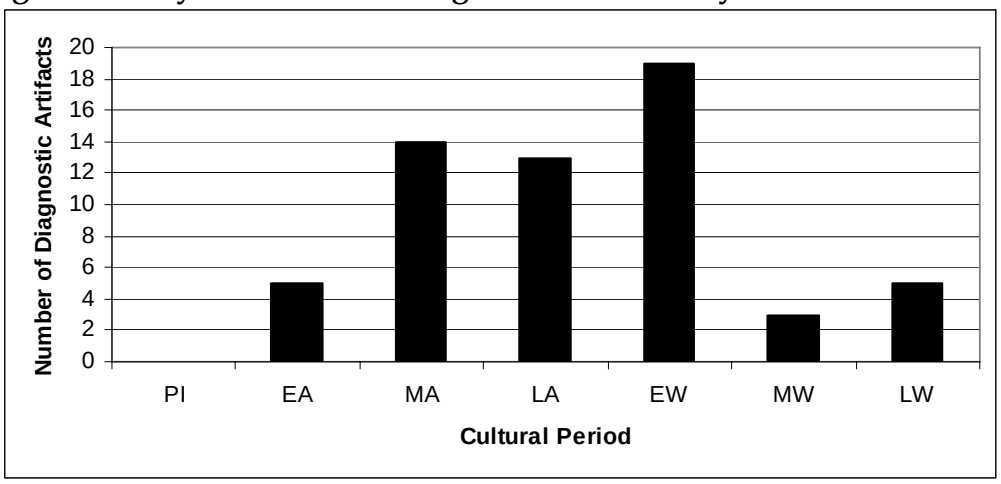


Figure 44: Hebron Cluster Site Locations

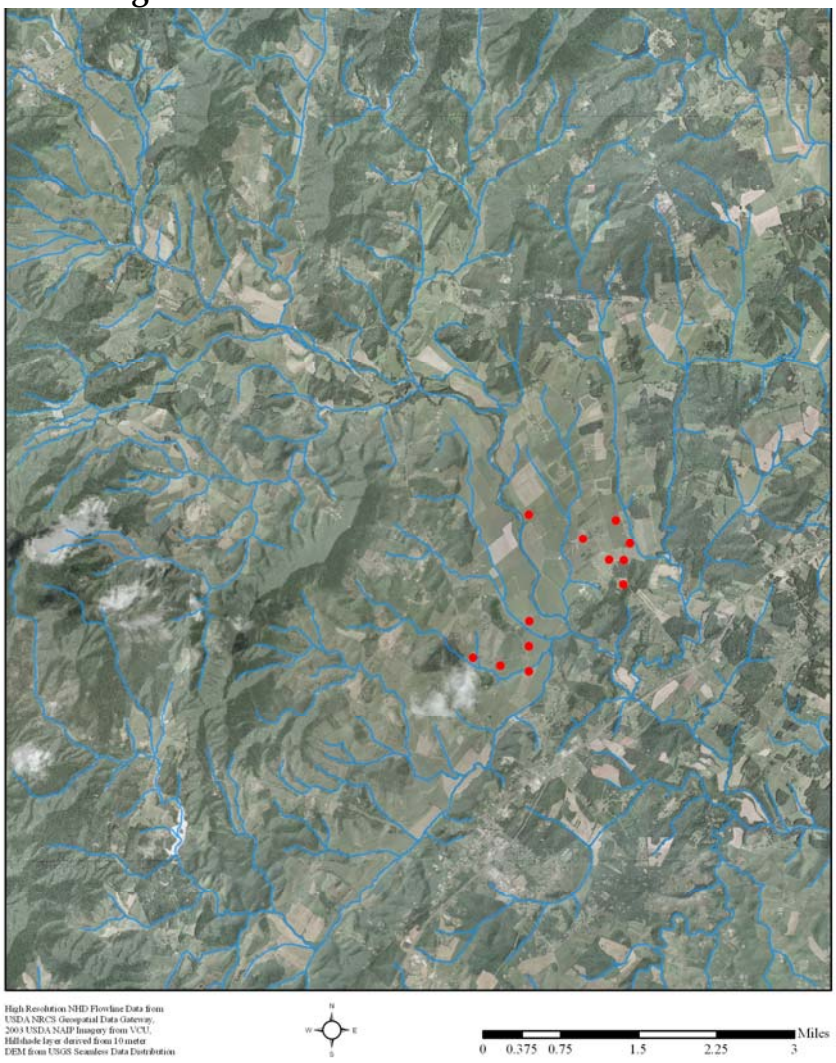


Figure 45: Hebron Cluster Diagnostic Artifacts by Cultural Sub-Period

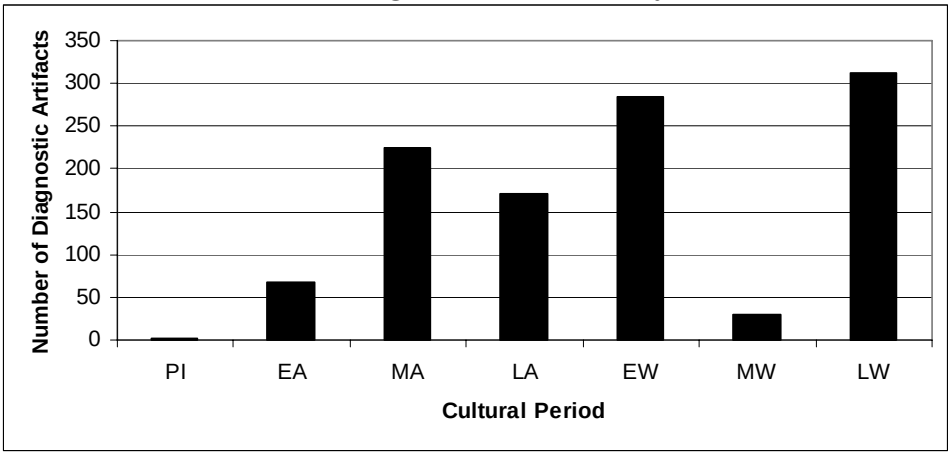


Figure 46: Henshaw Cluster Site Locations

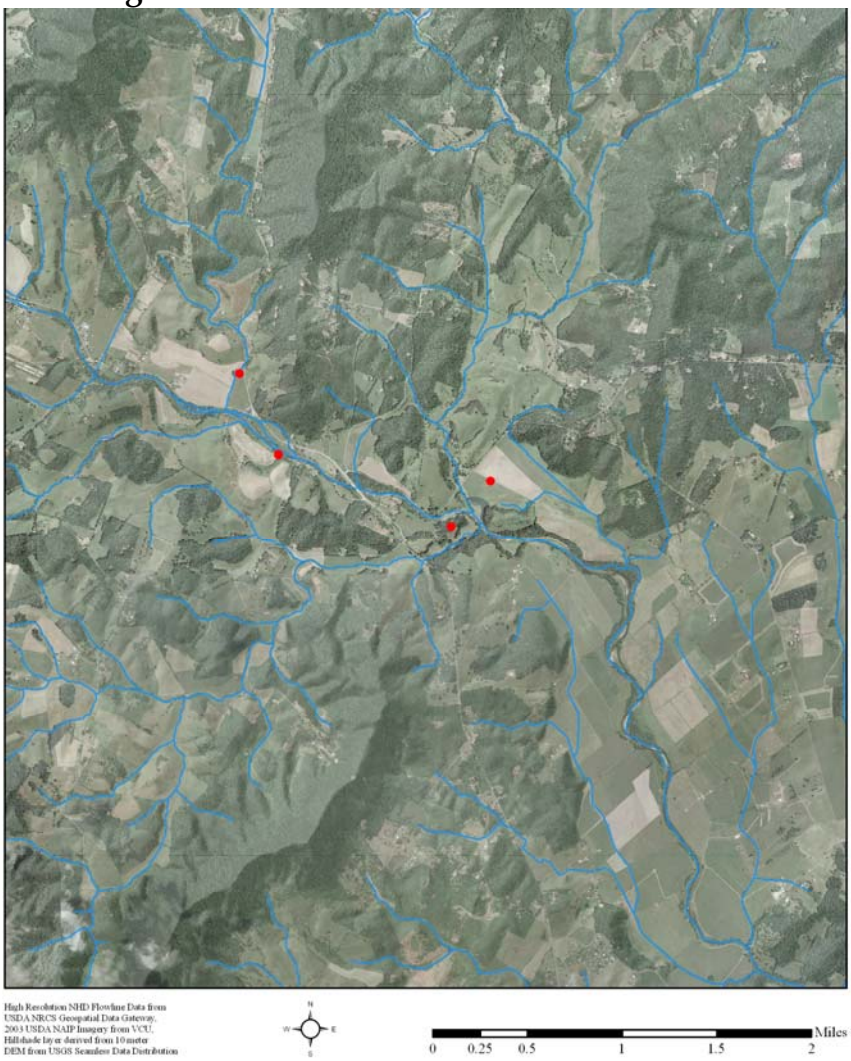


Figure 47: Henshaw Cluster Diagnostic Artifacts by Cultural Sub-Period

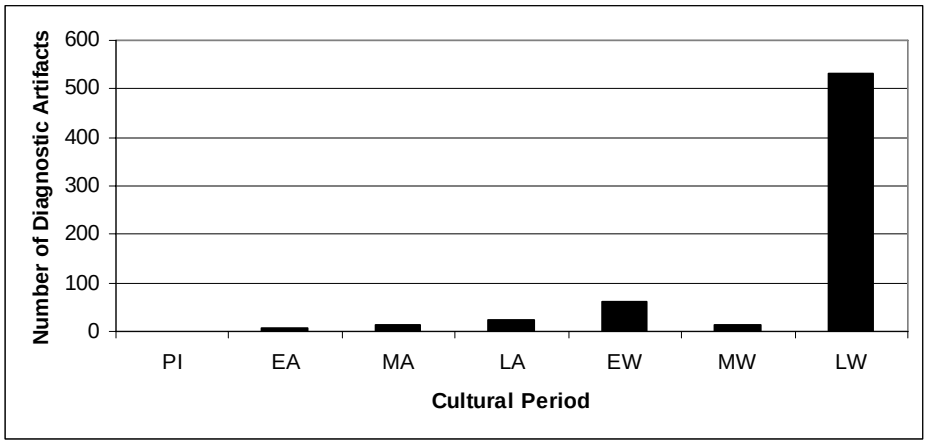


Figure 48: Lambs Bottom Cluster Site Locations

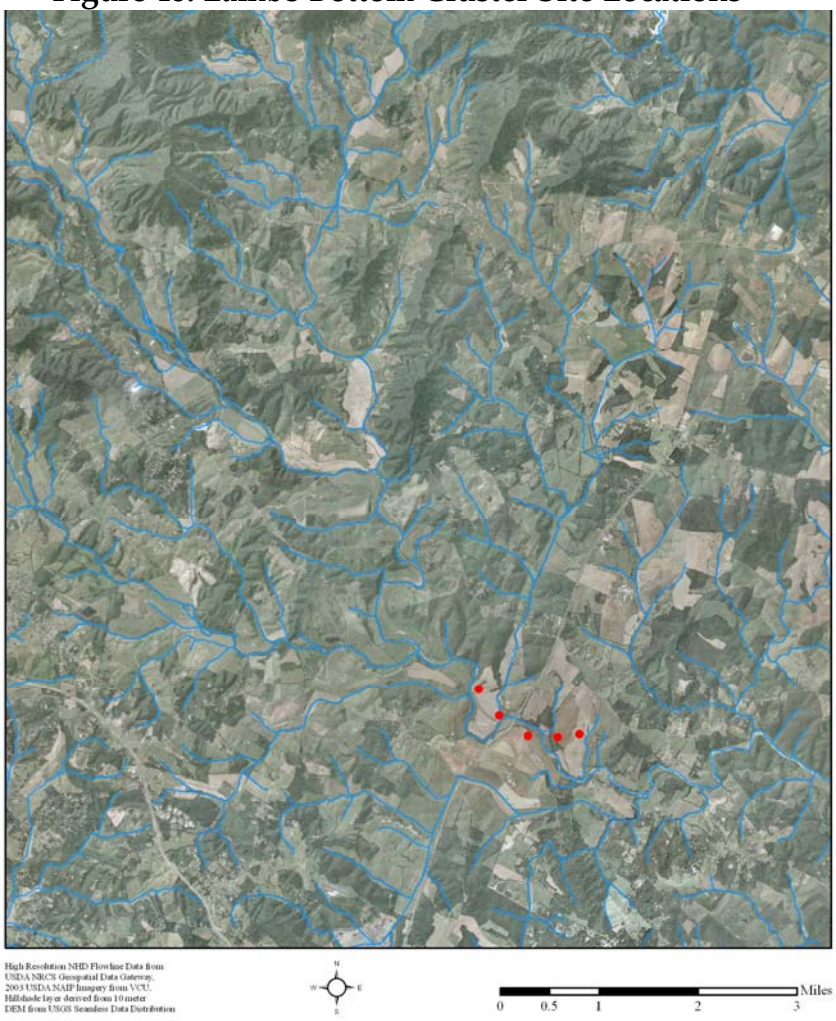


Figure 49: Lambs Bottom Cluster Diagnostic Artifacts by Cultural Sub-Period

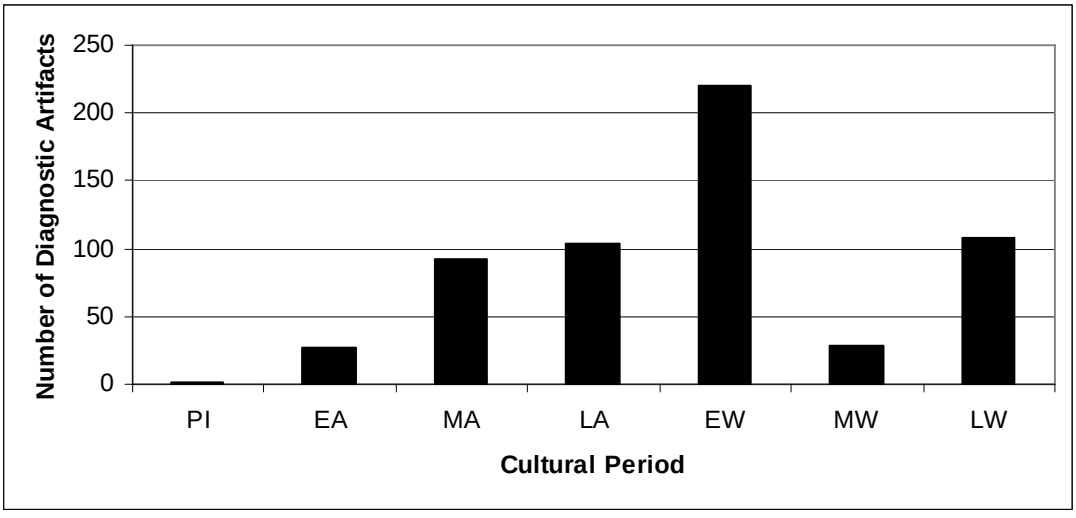


Figure 50: Lost Mountain Cluster Site Locations

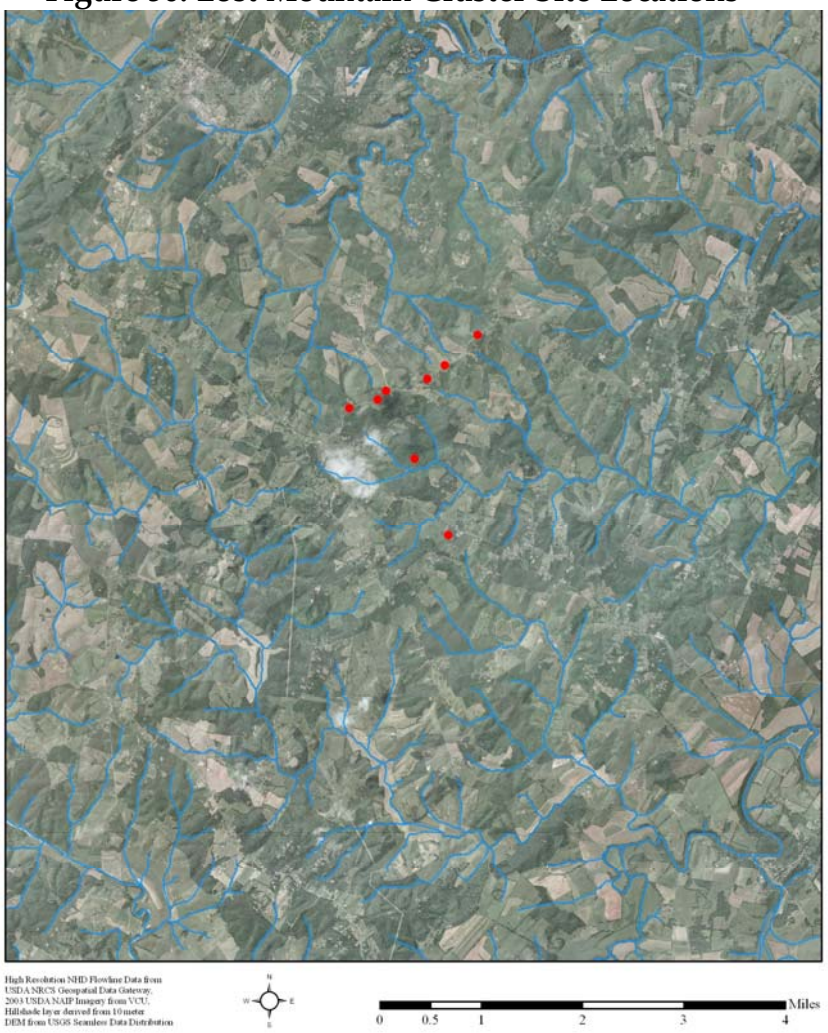


Figure 51: Lost Mountain Cluster Diagnostic Artifacts by Cultural Sub-Period

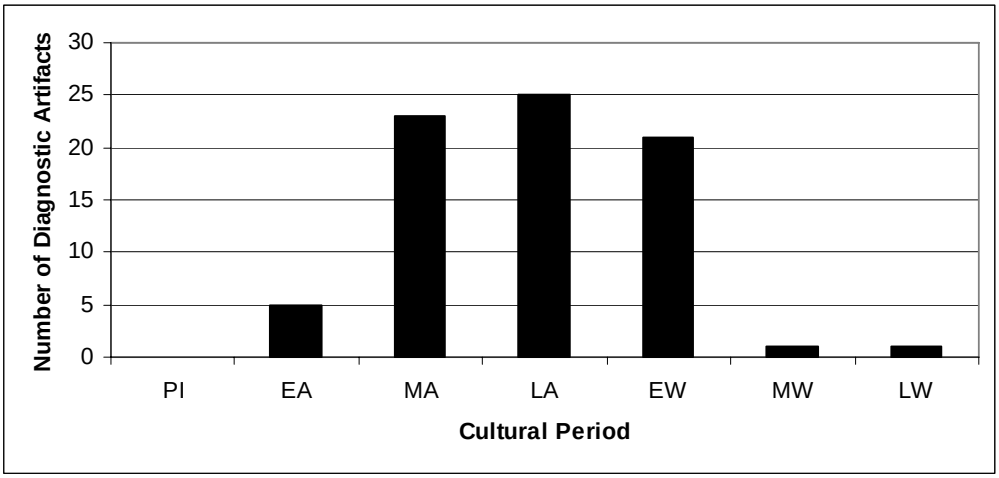


Figure 52: Mallory Cluster Site Locations

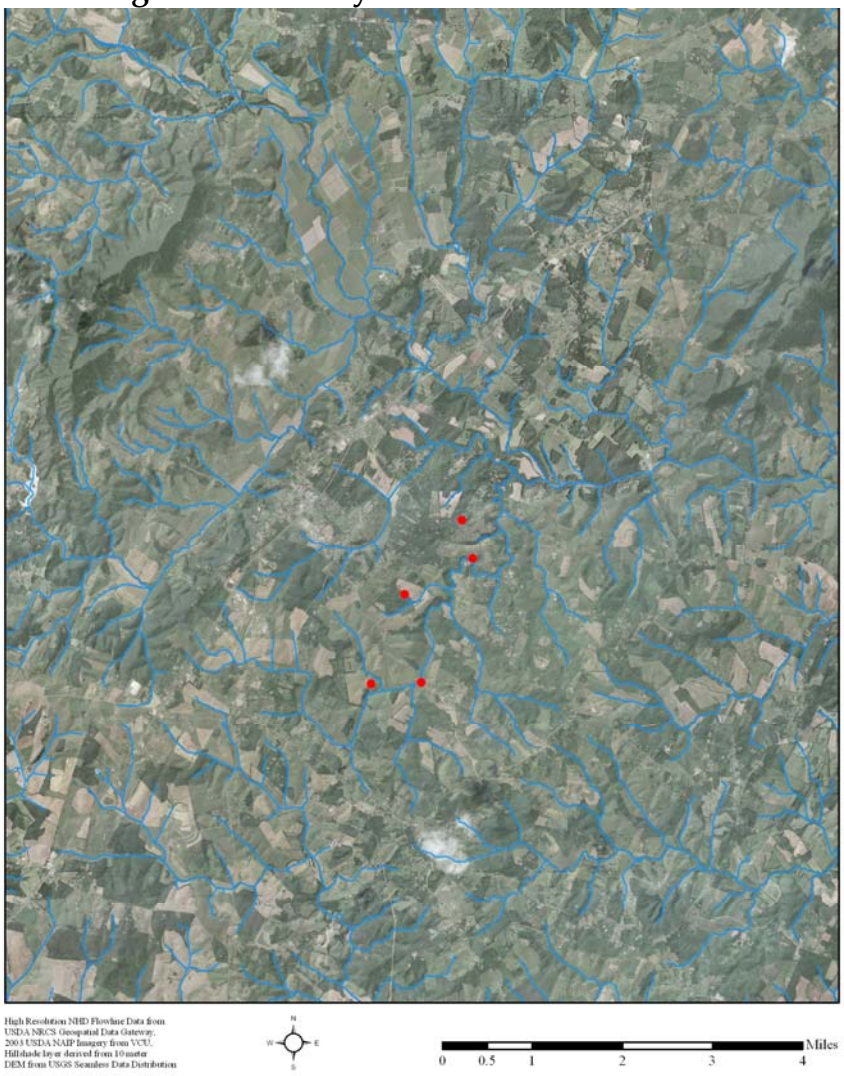


Figure 53: Mallory Cluster Diagnostic Artifacts by Cultural Sub-Period

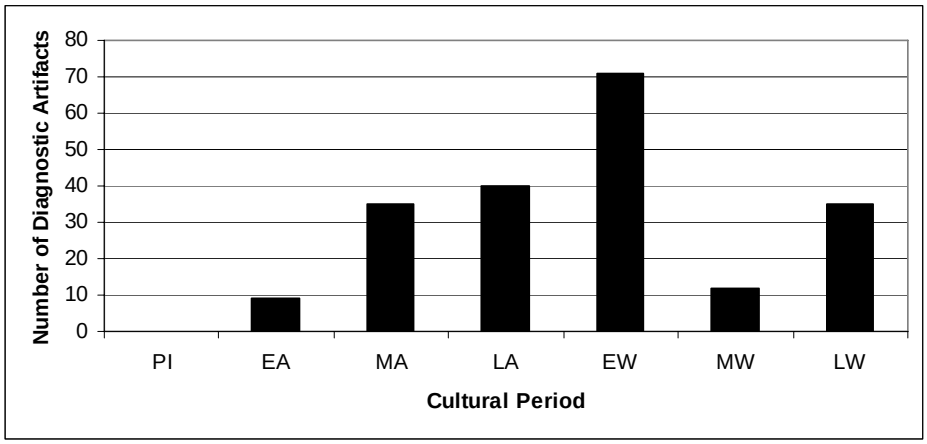


Figure 54: Middle River Cluster Site Locations

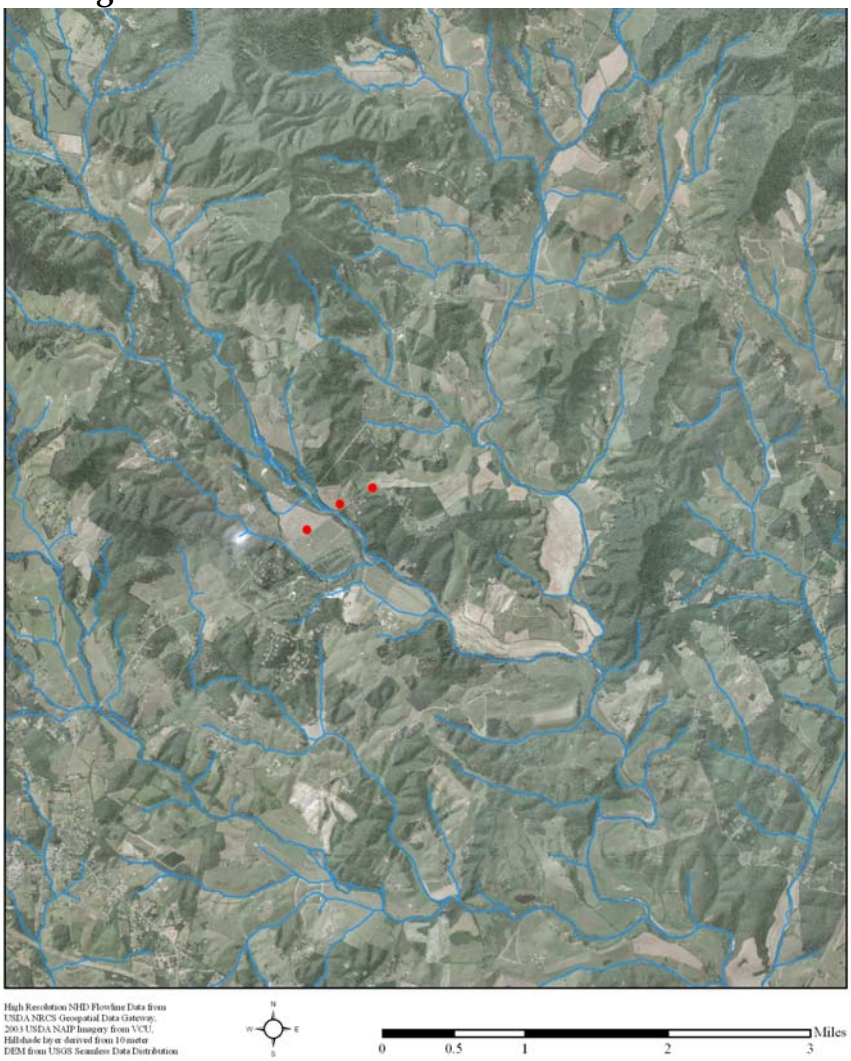


Figure 55: Middle River Cluster Diagnostic Artifacts by Cultural Sub-Period

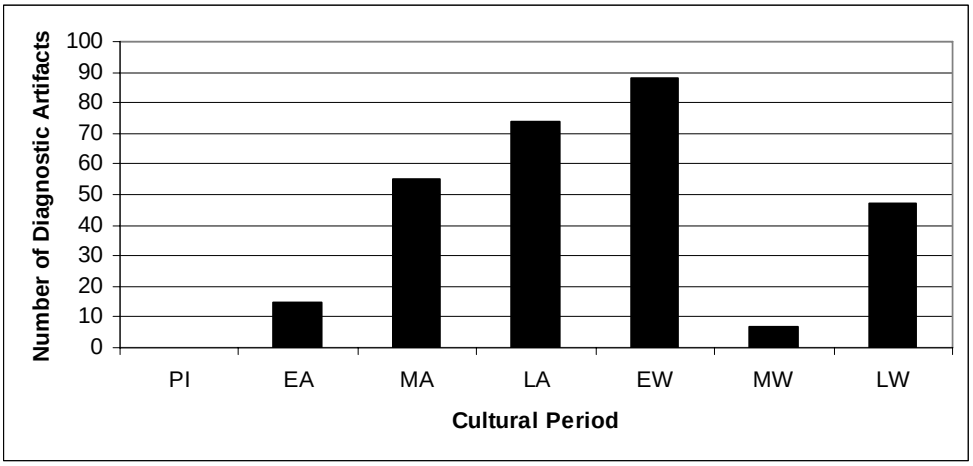


Figure 56: Neal Mountain Cluster Site Locations



Figure 57: Neal Mountain Cluster Diagnostic Artifacts by Cultural Sub-Period

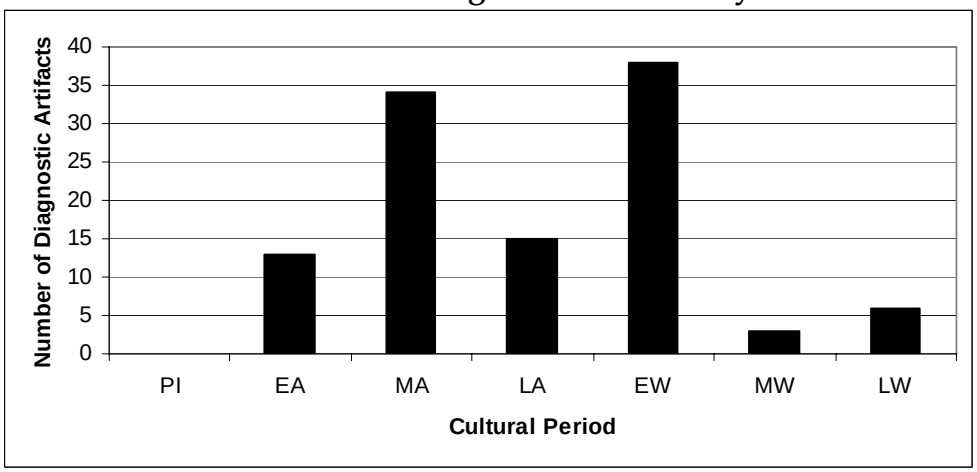


Figure 58: Peola Mills Cluster Site Locations

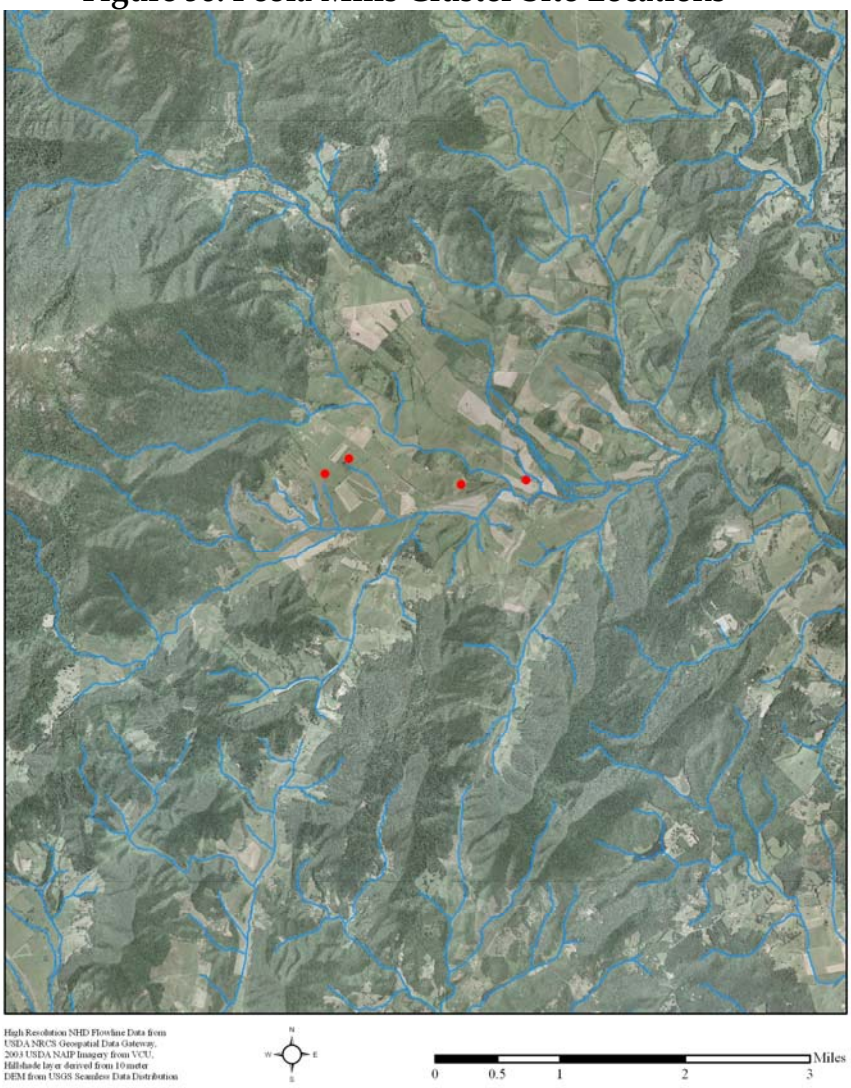


Figure 59: Peola Mills Cluster Diagnostic Artifacts by Cultural Sub-Period

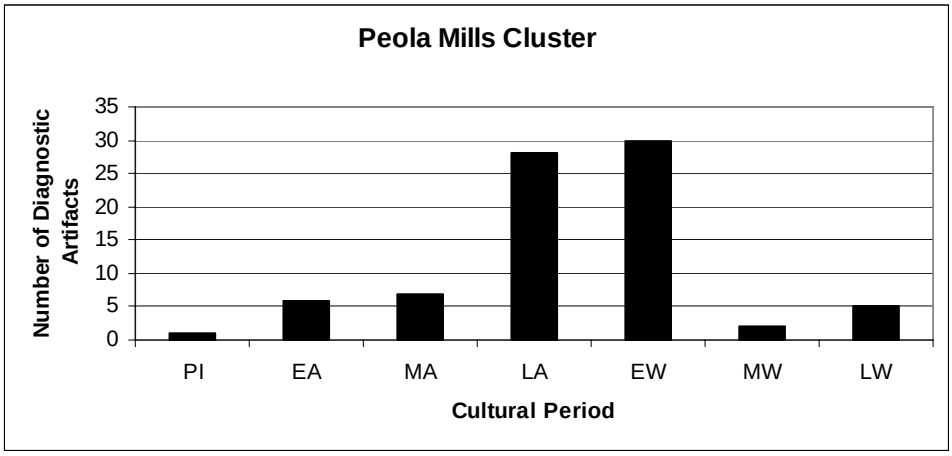


Figure 60: Thorofare Mountain Cluster Site Locations

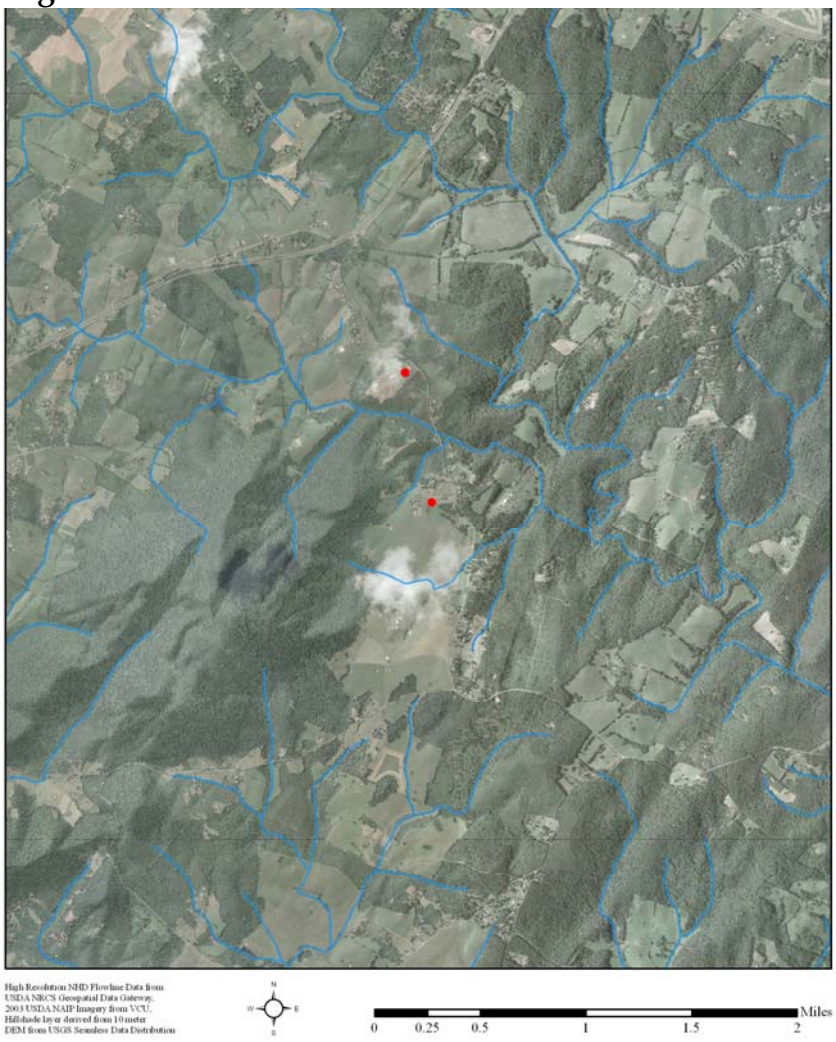


Figure 61: Thorofare Mountain Cluster Diagnostic Artifacts by Cultural Sub-Period

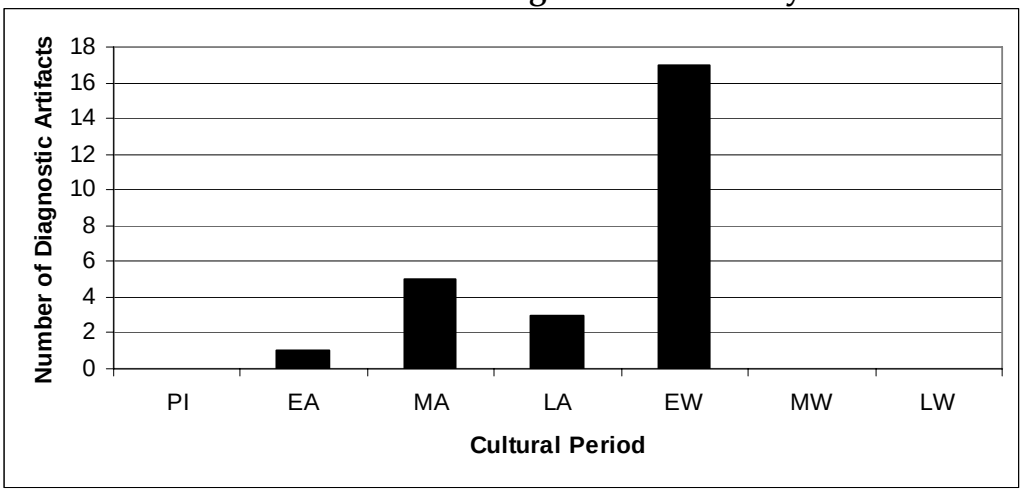


Figure 62: Uno Cluster Site Locations



There are no diagnostic artifacts from sites in the Uno Cluster.

Figure 63: White Oak Cluster Site Locations

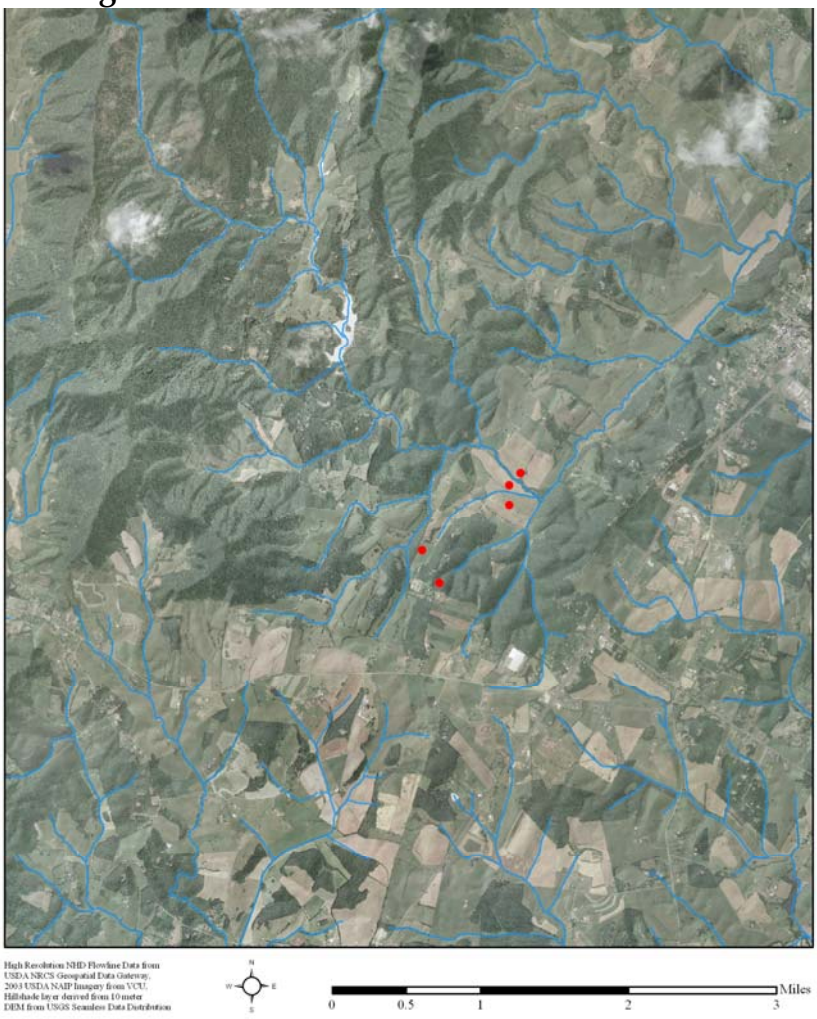
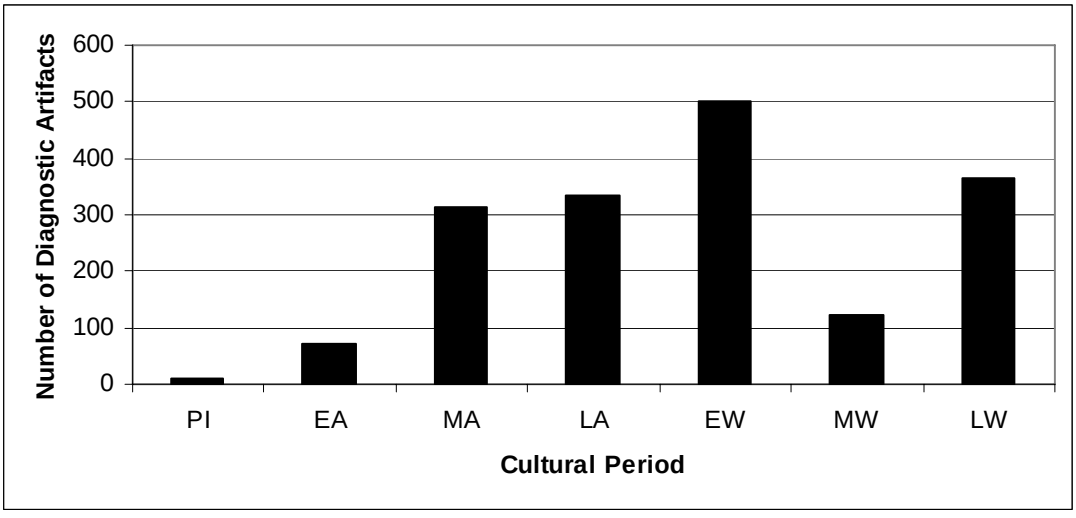


Figure 64: White Oak Cluster Diagnostic Artifacts by Cultural Sub-Period



Mesozoic Basin Macro-Physiographic Province Clusters

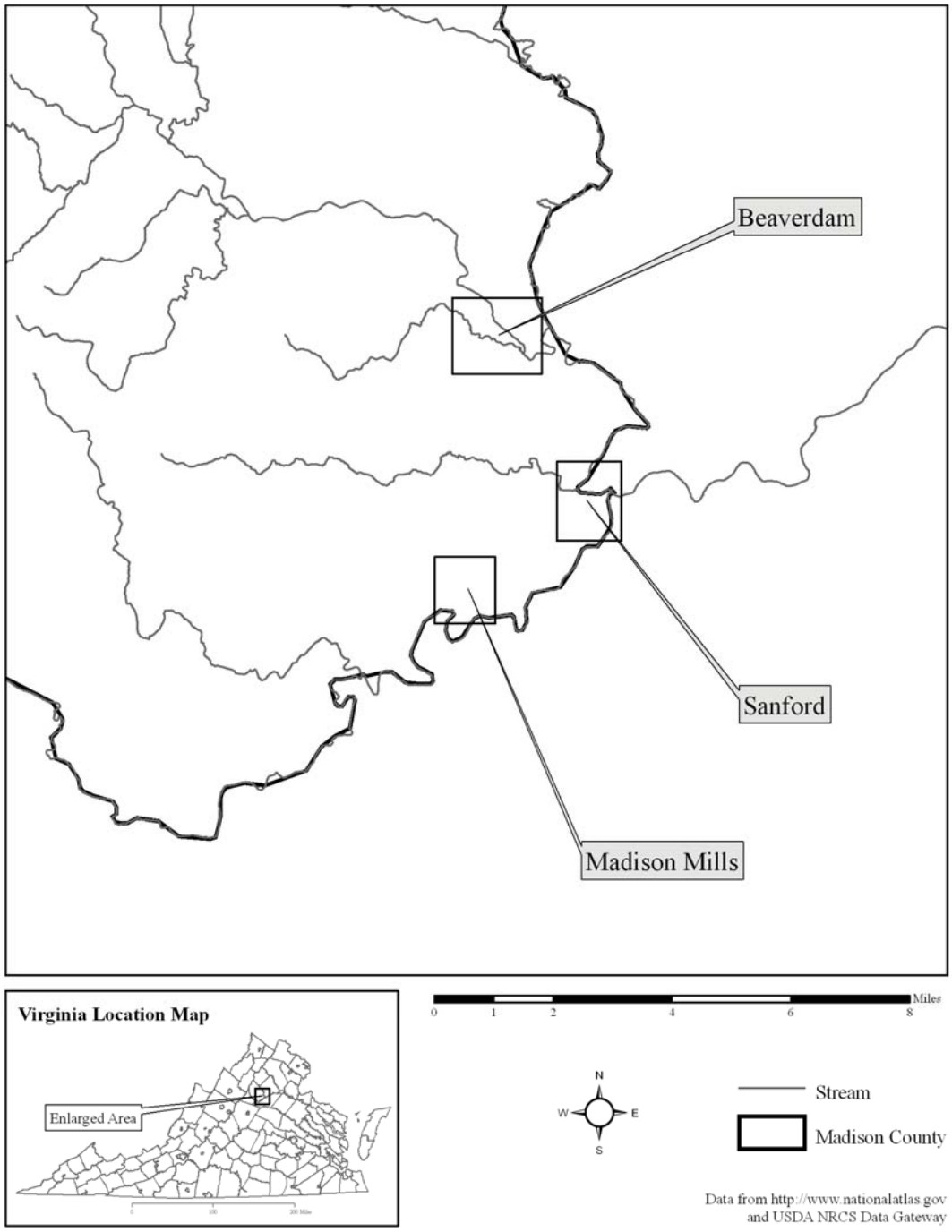


Figure 65: Beaverdam Cluster Site Locations

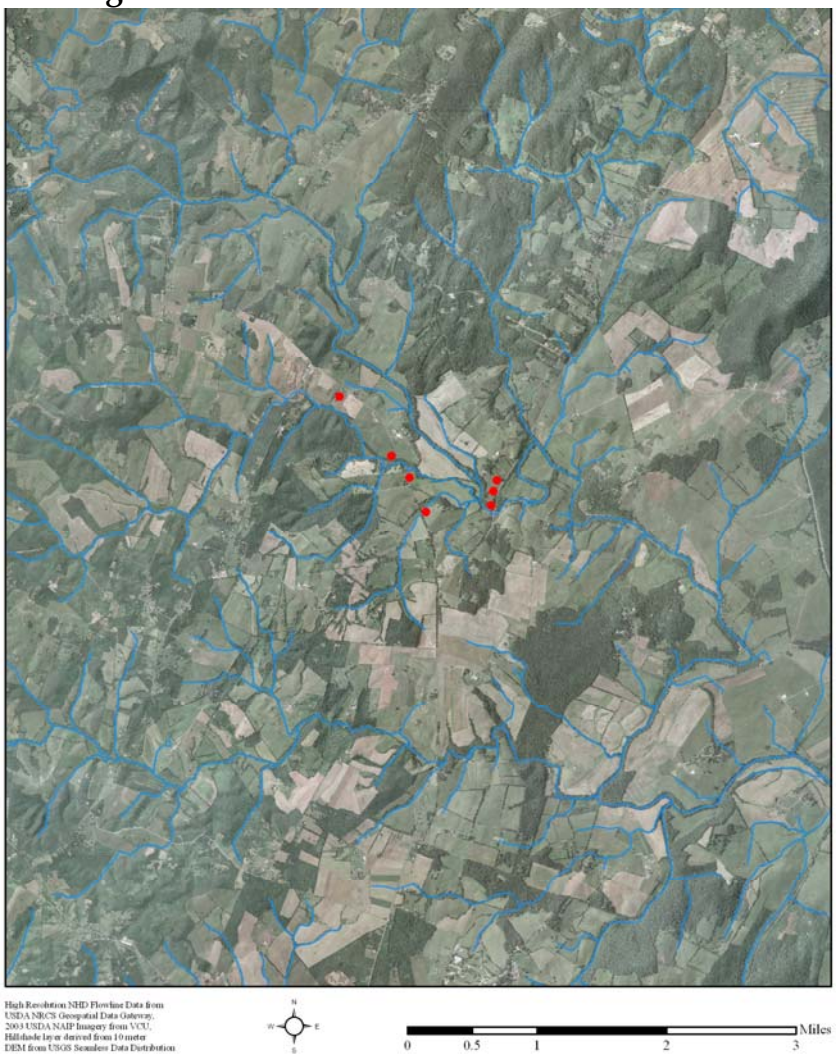


Figure 66: Beaverdam Cluster Diagnostic Artifacts by Cultural Sub-Period

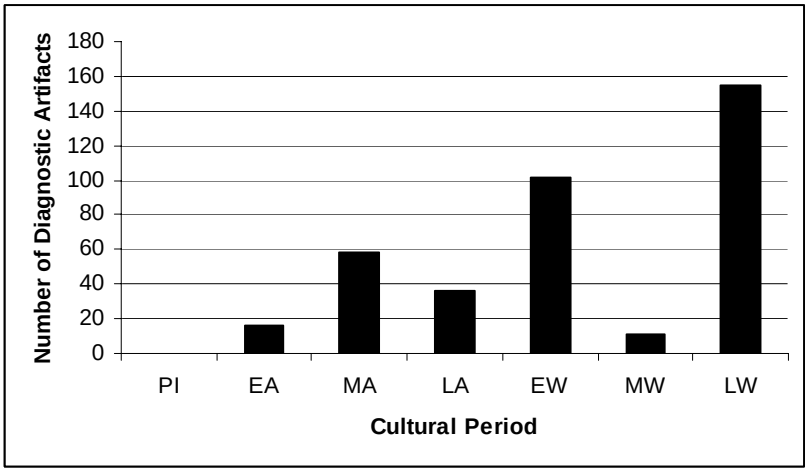


Figure 67: Madison Mills Cluster Site Locations



Figure 68: Madison Mills Cluster Diagnostic Artifacts by Cultural Sub-Period

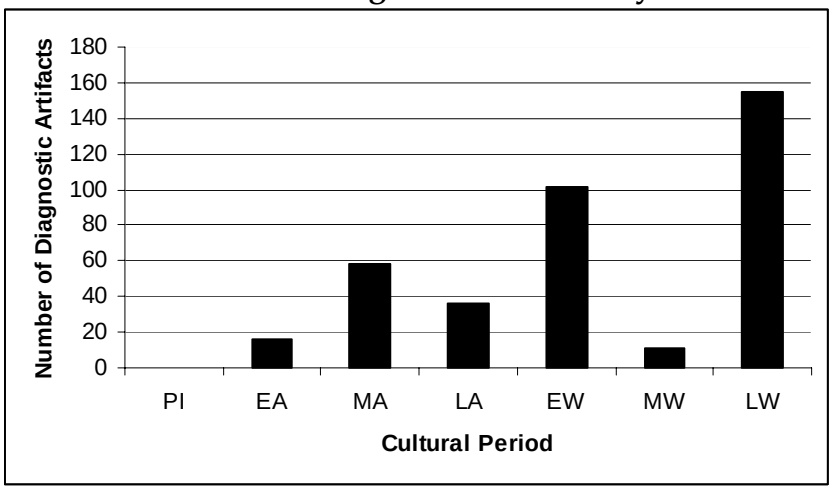


Figure 69: Sanford Cluster Site Locations

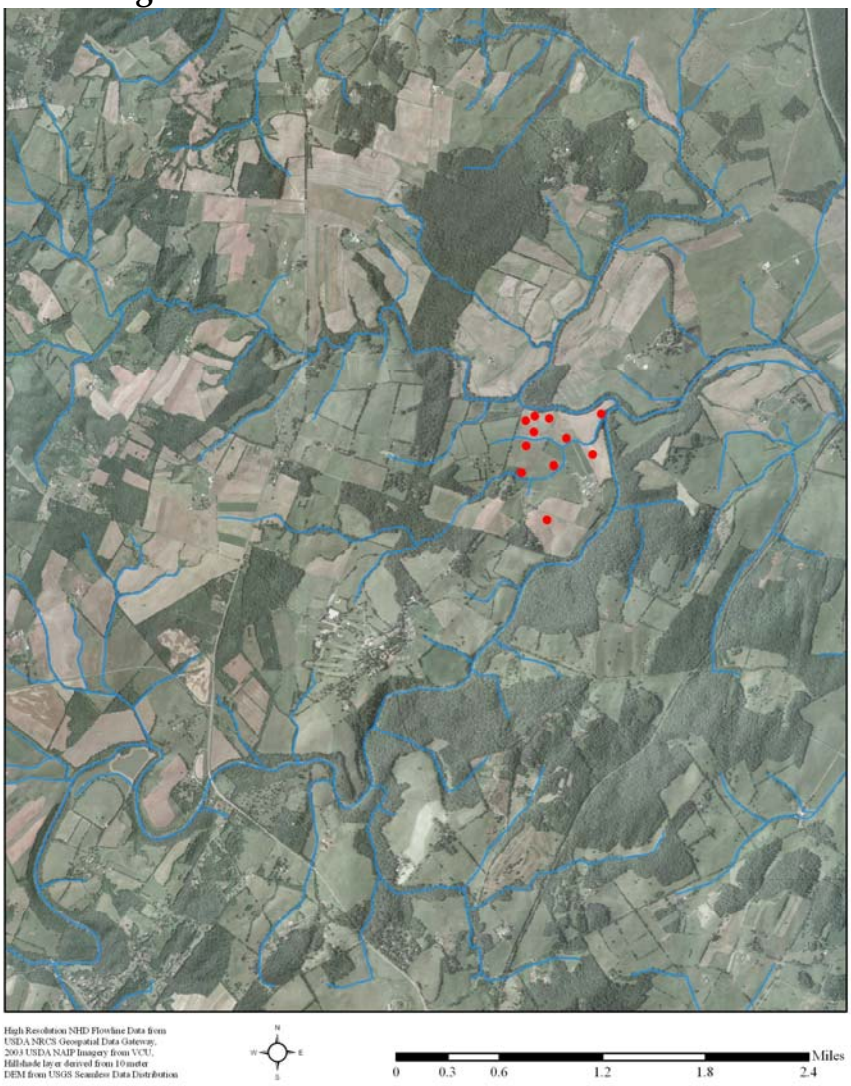
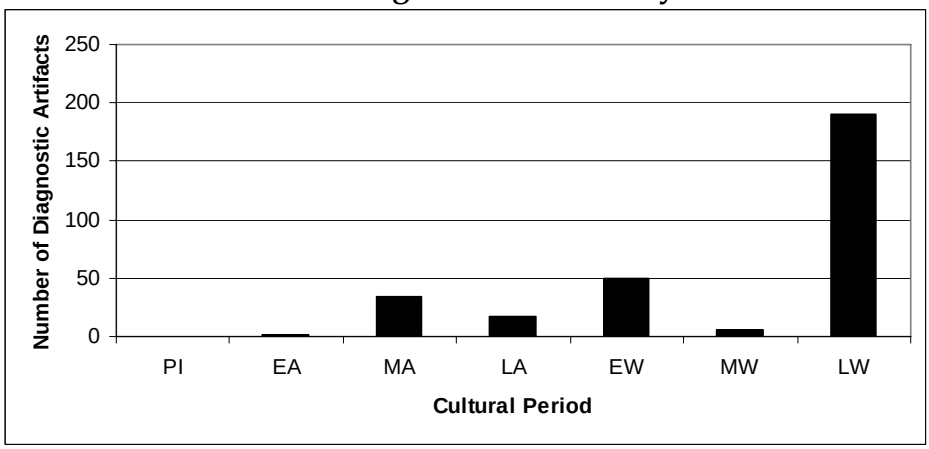


Figure 70: Sanford Cluster Diagnostic Artifacts by Cultural Sub-Period



Appendix III

Individual Site Information by Macrophysiographic Province and Cluster

Blue Ridge Province Clusters

Table 1. Arrowhead Cluster Individual Site Information

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Arrowhead Patch	Large Base Camp	Fan Base	Flake, Shatter, Core, Cobble Tool, Graver, Hammerstone, Spokeshave, Scraper, Drill, Chipped Stone Axe, Grooved Axe, Celt, Stone Bowl, Biface, Projectile Point, Ceramic	Basalt, Chalcedony, Chert, Jasper, Metabasalt, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite, Steatite	233 Lithic; 22 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Strode X	Small Base Camp	Fan base	Flake, Cobble Tool, Graver, Scraper, Drill, Hoe, Biface, Projectile Point	Basalt, Chert, Jasper, Hornfels, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite	57 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-14
Foster	Small Base Camp	Ridge	Flake, Shatter, Core, Scraper, Blade Flake, Drill, Biface, Projectile Point	Basalt, Chert, Jasper, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite	148 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Foster Rockshelter	Rockshelter	Fan Base	Ceramic	NA	0 Lithic; 7 Ceramic	LW	E-14
TOTAL					438 Lithic; 29 Ceramic		

Table 2. Berry Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA3	Indeterminate	Bluff	Flake	Chert, Quartz	4 Lithic; 0 Ceramic	Unknown	E-14
44MA23	Small Base Camp	Bench	Flake, Shatter, Core, Stone Bowl, Projectile Point	Chert, Metabasalt, Quartz, Quartzite, Steatite	1,119 Lithic; 0 Ceramic	MA, LA, EW	E-14
44MA47	Indeterminate	Ridge Toe	No Data	No Data	No Data	Unknown	E-14
44MA200	Rockshelter	Bench	Flake	Quartzite	7 Lithic; 0 Ceramic	Unknown	E-14
TOTAL					1130 Lithic; 0 Ceramic		

Table 3. Big Meadows Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA36	Indeterminate	Mountain Basin	Flake	Quartzite	2 Lithic; 0 Ceramic	Unknown	E-14
44MA37	Limited Activity Camp	Mountain Basin	Flake, Core, Biface	Chert, Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA55	Small Base Camp	Mountain Basin/Seepage Swamp	Flake, Shatter, Core, Scraper, Blade Flake, Drill, Grinding Stone, Biface, Projectile Point	Basalt, Chert, Jasper, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite	1,560 Lithic; 0 Ceramic	EW	E-14
44MA56	Limited Activity Area	Mountain Basin	Flake, Spokeshave, Scraper, Biface, Projectile Point	Chert, Quartz, Quartzite	92 Lithic; 0 Ceramic	MA, LA, EW, LW	E-14
44MA59	Small Base Camp	Mountain Basin/Mafic Fen	Flake, Shatter, Core, Spokeshave, Scraper, Drill, Cobble Tool, Chipped Stone Axe, Stone Bowl, Incised Stone, Biface, Projectile Point	Chert, Jasper, Metabasalt, Quartz, Quartzite, Rhyolite, Slate, Steatite	4,629 Lithic; 0 Ceramic	MA, LA, EW, MW	E-14
44MA60	Small Basecamp	Mountain Basin/Mafic Fen	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Cobble Tool, Hammerstone, Biface, Projectile Point	Basalt, Chalcedony, Chert, Diabase, Hornfels, Jasper, Metabasalt, Mylonite, Oolitic Quartzite, Phyllite, Quartz, Quartzite, Rhyolite	542 Lithic; 0 Ceramic	MA, LA	E-14

44MA86	Limited Activity Camp	Mountain Basin	Flake, Shatter, Core, Graver, Scraper	Chalcedony, Chert, Quartz, Quartzite	22 Lithic; 0 Ceramic	Unknown	E-14
44MA94	Indeterminate	Mountain Basin	Flake	Quartzite	9 Lithic; 0 Ceramic	Unknown	E-14
44MA102	Small Base Camp	Mountain Basin	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Cobble Tool, Hammerstone, Biface, Projectile Point, Ceramic	Basalt, Chalcedony, Chert, Diabase, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite	1750 Lithic; 17 Ceramic	MA, LA, EW, MW, LW	E-14
44MA196	Limited Activity Camp	Mountain Basin/Springhead	Flake, Shatter, Core, Scraper, Hammerstone, Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	52 Lithic; 0 Ceramic	MA, LA, EW	E-14
44MA197	Small Base Camp	Mountain Basin	Flake, Shatter, Core, Graver, Scraper, Drill, Cobble Tool, Hammerstone, Biface, Triangular Preform, Projectile Point	Chert, Hematite, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite, Rhyolite	345 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-14
44MA198	Limited Activity Camp	Mountain Basin	Flake, Shatter, Scraper, Biface	Chalcedony, Quartz, Quartzite	15 Lithic; 0 Ceramic	Unknown	E-11
TOTAL					9,026 Lithic; 17 Ceramic		

Table 4. Corbin Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA52	Indeterminate	Bench	Flake	Quartzite	29 Lithic; 0 Ceramic	Unknown	E-03
44MA53	Limited Activity Camp	Sideslope	Flake, Projectile Point	Metabasalt, Quartz, Quartzite, Rhyolite	20 Lithic; 0 Ceramic	MA	E-03
44MA54	Limited Activity Camp	Saddle	Biface, Projectile Point	Quartz, Quartzite	15 Lithic; 0 Ceramic	EA, MA, LA, EW	E-03
44MA128	Limited Activity Camp	Saddle	Flake, Drill, Pestle, Projectile Point	Metabasalt, Quartzite	8 Lithic; 0 Ceramic	LW	E-14
44MA149	Limited Activity Camp	Sideslope	Flake, Core, Cobble Tool, Projectile Point	Quartz, Quartzite, Greywacke	12 Lithic; 0 Ceramic	EW	E-14
TOTAL					84 Lithic; 0 Ceramic		

Table 5. Fishers Gap Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA35	Indeterminate	Sideslope	Flake	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA87	Limited Activity Camp	Wind Gap	Flake	Quartzite	7 Lithic; 1 Ceramic	MW, LW	E-14
44MA90	Indeterminate	Wind Gap	Flake	Quartzite	24 Lithic; 0 Ceramic	Unknown	E-14
44MA91	Indeterminate	Wind Gap	Flake	Quartzite	5 Lithic; 0 Ceramic	Unknown	E-14
44MA93	Indeterminate	Wind Gap	Flake	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
TOTAL					52 Lithic; 1 Ceramic		E-14

Table 6. Hawksbill Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA80	Limited Activity Camp	Wind Gap	Flake, Projectile Point	Quartzite	8 Lithic; 0 Ceramic	EW	E-14
44MA81	Indeterminate	Wind Gap	Flake	Quartzite	9 Lithic; 0 Ceramic	Unknown	E-14
44MA82	Indeterminate	Wind Gap	Flake	Quartzite	7 Lithic; 0 Ceramic	Unknown	E-14
44MA96	Limited Activity Camp	Wind Gap	Flake	Chalcedony, Chert, Jasper, Quartz, Quartzite	67 Lithic; 0 Ceramic	Unknown	E-14
44MA97	Limited Activity Camp	Wind Gap	Flake	Quartz, Quartzite	17 Lithic; 0 Ceramic	Unknown	E-14
44MA159	Indeterminate	Ridge	Flake	Chert, Quartzite	9 Lithic; 0 Ceramic	Unknown	E-14
TOTAL					117 Lithic; 0 Ceramic		

Table 7. Laurels Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA154	Indeterminate	Ridge	No Data	No Data	No Data	Unknown	E-11
44MA155	Small Base Camp	Interior Stream Terrace	Flake, Graver, Scraper, Hammerstone, Biface, Projectile Point, Ceramic	Basalt, Chert, Jasper, Metabasalt, Metabasalt Breccia, Quartz, Quartzite	559 Lithic; 2 Ceramic	MA, LA, EW, MW, LW	E-11
TOTAL					559 Lithic; 2 Ceramic		

Table 8. Limberlost Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA29	Indeterminate	Bench	Biface	Chert, Quartz	3 Lithic; 0 Ceramic	Unknown	E-14
44MA30	Indeterminate	Sideslope	Flake, Biface	Quartz, Quartzite	2 Lithic; 0 Ceramic	Unknown	E-14
44MA38	Indeterminate	Bench	Flake	Quartzite	4 Lithic; 0 Ceramic	Unknown	E-14
44MA61	Small Basecamp	Ridge	Flake, Shatter, Core, Graver, Scraper, Drill, Hammerstone, Biface, Projectile Point	Chalcedony, Chert, Jasper, Metabasalt, Quartz, Quartzite, Rhyolite	417 Lithic; 0 Ceramic	MA, LA, EW	E-14
44MA112	Limited Activity Camp	Ridge	Flake, Scraper, Biface, Projectile Point	Chert, Jasper, Metabasalt, Quartz, Quartzite	110 Lithic; 0 Ceramic	LW	E-14
44MA113	Small Base Camp	Ridge	Flake, Biface, Projectile Point	Chalcedony, Chert, Jasper, Metabasalt, Quart, Quartzite, Rhyolite	427 Lithic; 0 Ceramic	LW	E-14
TOTAL					963 Lithic; 0 Ceramic		

Table 9. Milam Gap Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA92	Large Base Camp	Wind Gap	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Wedge, Grinding Stone, Hammerstone, Stone Bowl, Biface, Projectile Point	Basalt, Chalcedony, Chert, Jasper, Metabasalt, Quartz, Quartzite, Rhyolite, Steatite	1,853 Lithic; 0 Ceramic	MA, LA, EW, MW, LW	E-11
44MA99	Indeterminate	Wind Gap	Flake, Biface	Quartz	3 Lithic; 0 Ceramic	Unknown	E-11
TOTAL					1,856 Lithic; 0 Ceramic		

Table 10. Nethers Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Clark	Small Base Camp	Floodplain T-1	Chipped Stone Axe, Grooved Stone Axe, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	33 Lithic; 0 Ceramic	MA, LA, LW	E-03
44MA150	Small Base Camp	Fan	Flake, Shatter, Core, Graver, Scraper, Cobble Tool, Chipped Stone Axe, Grooved Axe, Grinding Stone, Hammerstone, Stone Bowl, Biface, Projectile Point	Basalt, Chalcedony, Chert, Greywacke, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Steatite	429 Lithic; 5 Ceramic	EA, MA, LA, EW, MW, LW	E-03
TOTAL					462 Lithic; 5 Ceramic		

Table 11. Nicholson Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA20	Limited Activity Camp	Interior Stream Terrace	Flake, Projectile Point	Chert, Jasper, Quartz, Quartzite	8 Lithic; 0 Ceramic	MA, LA, EW, MW, LW	E-03
44MA21	Indeterminate	Bench	Flake, Core	Jasper, Quartzite	5 Lithic; 0 Ceramic	Unknown	E-03
44MA24	Indeterminate	Sideslope	Flake	Quartz, Quartzite	11 Lithic; 0 Ceramic	Unknown	E-03
44MA25	Indeterminate	Interior Stream Terrace	Flake	Quartz, Quartzite	60 Lithic; 0 Ceramic	Unknown	E-03
44MA39	Indeterminate	Ridge	Flake, Biface	Quartz, Quartzite	19 Lithic; 0 Ceramic	Unknown	E-03
44MA40	Indeterminate	Ridge	Flake	Quartzite	1 Lithic; 0 Ceramic	Unknown	E-03
44MA41	Indeterminate	Interior Stream Terrace	Flake	Quartz	3 Lithic; 0 Ceramic	Unknown	E-03

44MA42	Indeterminate	Ridge	Flake	Chert, Quartz	2 Lithic; 0 Ceramic	Unknown	E-03
44MA43	Indeterminate	Interior Stream Terrace	Flake, Biface	Quartz, Quartzite	2 Lithic; 0 Ceramic	Unknown	E-03
44MA44	Indeterminate	Ridge	Flake	Quartz, Quartzite	5 Lithic; 0 Ceramic	Unknown	E-03
44MA45	Limited Activity Camp	Bench	Flake, Grinding Stone	Metabasalt, Quartzite	4 Lithic; 0 Ceramic	Unknown	E-03
44MA48	Indeterminate	Interior Stream Terrace	Flake	Metabasalt, Quartz, Quartzite	23 Lithic; 0 Ceramic	Unknown	E-03
44MA49	Indeterminate	Interior Stream Terrace	Flake, Biface	Chert, Quartz, Quartzite	17 Lithic; 0 Ceramic	Unknown	E-03
44MA130	Indeterminate	Hollow	Flake	Quartz, Quartzite	16 Lithic; 0 Ceramic	Unknown	E-03
44MA131	Limited Activity Camp	Hollow	Flake, Scraper	Quartz, Quartzite	27 Lithic; 0 Ceramic	Unknown	E-03
44MA192	Indeterminate	Interior Stream Terrace	Flake	Quartzite	11 Lithic; 0 Ceramic	Unknown	E-03
TOTAL					214 Lithic; 0 Ceramic		

Table 12. Pinnacles Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA19	Indeterminate	Sideslope	Biface	Quartz	1 Lithic; 0 Ceramic	Unknown	E-03
44MA100	Indeterminate	Saddle	Flake	Quartz, Quartzite, Rhyolite	4 Lithic; 0 Ceramic	Unknown	E-03
44MA101	Indeterminate	Saddle	Flake, Shatter	Quartz, Quartzite	2 Lithic; 0 Ceramic	Unknown	E-03
TOTAL					7 Lithic; 0 Ceramic		

Table 13. Rose River Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA27	Small Base Camp	Bench	Flake, Shatter, Core, Scraper, Drill, Cobble Tool, Triangular Preform, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	5,371 Lithic; 25 Ceramic	MA, MW, LW	E-14
44MA33	Limited Activity Camp	Ridge	Flake, Triangular Preform	Mylonite, Quartz	39 Lithic; 0 Ceramic	LW	E-14
44MA34	Limited Activity Camp	Ridge Spur	Flake	Chert, Quartzite	51 Lithic; 0 Ceramic	Unknown	E-14
44MA62	Limited Activity Camp	Interior Stream Terrace	Flake	Quartz, Quartzite	56 Lithic; 0 Ceramic	Unknown	E-14
44MA189	Small Base Camp	Bench	Flake, Shatter, Core, Graver, Scraper, Biface, Projectile Point	Chert, Jasper, Quartz, Quartzite	132 Lithic; 0 Ceramic	LA, EW	E-14
TOTAL					5,649 Lithic; 25 Ceramic		

Table 14. Spitler Hill Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA31	Indeterminate	Saddle	Biface	Chert, Quartz, Quartzite	3 Lithic; 0 Ceramic	Unknown	E-14
44MA32	Indeterminate	Saddle	Flake, Biface	Quartz, Quartzite	3 Lithic; 0 Ceramic	Unknown	E-14
44MA83	Indeterminate	Ridge	Flake	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA84	Indeterminate	Saddle	Flake, Graver	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
TOTAL					22 Lithic; 0 Ceramic		

Table 15. Upper Rapidan Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA7	Small Base Camp	Floodplain T-1	Flake, Cobble Tool, Chipped Stone Axe, Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	88 Lithic; 0 Ceramic	MA, LA, EW	E-11
44MA153	Small Base Camp	Interior Stream Terrace	Flake, Celt, Grinding Stone, Hammerstone, Projectile Point	Greywacke, Metbasalt, Quartz, Quartzite, Rhyolite	35 Lithic; 1 Ceramic	EA, MA, LA, EW, MW, LW	E-11
44MA201	Limited Activity Camp	Interior Stream Terrace	Flake, Scraper, Projectile Point	Chert, Quartz, Quartzite	16 Lithic; 0 Ceramic	LW	E-11
TOTAL					139 Lithic; 1 Ceramic		

Table 16. Weakley Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA2	Small Base Camp	Interior Stream Terrace	Flake, Scraper, Biface, Projectile Point	Chert, Quartz, Quartzite, Rhyolite	9 Lithic; 2 Ceramic	MA, LA, EW, MW	E-03
44MA46	Indeterminate	Saddle	Shatter	Chert, Quartz	2 Lithic; 0 Ceramic	Unknown	E-03
44MA161	Indeterminate	Ridge	No Data	No Data	No Data	Unknown	E-03
44MA163	Indeterminate	Ridge	No Data	No Data	No Data	Unknown	E-03
44MA165	Indeterminate	Ridge	No Data	No Data	No Data	Unknown	E-03
44MA166	Indeterminate	Ridge	No Data	No Data	No Data	Unknown	E-03
TOTAL					11 Lithic; 2 Ceramic		

Table 17. Blue Ridge Isolated Site Individual Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA17	Rockshelter	Sideslope	No Data	No Data	No Data	Uknown	E-14
44MA18	Indeterminate	Sideslope	Biface	Quartz	2 Lithic; 0 Ceramic	Unknown	E-03
44MA50	Indeterminate	Interior Stream Terrace	Flake	Quartz, Quartzite	9 Lithic; 0 Ceramic	Unknown	E-03
44MA51	Limited Activity Camp	Bench	Flake, Chipped Stone Axe	Metabasalt, Quartz, Quartzite	14 Lithic; 0 Ceramic	Unknown	E-03
44MA57	Indeterminate	Mountain Basin	Flake	Quartz	1 Lithic; 0 Ceramic	Unknown	E-11
44MA58	Indeterminate	Mountain Basin	Flake	Quartz, Quartzite	4 Lithic; 0 Ceramic	Unknown	E-14
44MA75	Limited Activity Camp	Ridge	Flake, Biface, Projectile Point	Quartz, Quartzite	17 Lithic; 0 Ceramic	EW	E-14
44MA76	Indeterminate	Ridge	Flake	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA77	Indeterminate	Ridge	Flake	Quartzite	7 Lithic; 0 Ceramic	Unknown	E-14
44MA78	Indeterminate	Ridge	Flake, Scraper	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA85	Indeterminate	Ridge	Flake	Quartzite	9 Lithic; 0 Ceramic	Unknown	E-14
44MA88	Indeterminate	Ridge	Flake	Quartzite	6 Lithic; 0 Ceramic	Unknown	E-14
44MA89	Indeterminate	Knob	Flake	Quartzite	8 Lithic; 0 Ceramic	Unknown	E-14
44MA148	Limited Activity Camp	Sideslope	Flake, Biface, Projectile Point	Chert, Quartz, Quartzite	13 Lithic; 0 Ceramic	MA, LA	E-03
44MA157	Indeterminate	Wind Gap	No Data	No Data	No Data	Unknown	E-11

44MA181	Indeterminate	Hollow	Flake	Quartzite	9 Lithic; 0 Ceramic	Unknown	E-03
J. W. Jenkins	Small Base Camp	Hillslope	Chipped Stone Axe, Celt, Biface, Projectile Point	Metabasalt, Quartz, Rhyolite	42 Lithic; 0 Ceramic	EA, MA, LA, EW	E-03
Quartzite Alley	Lithic Workshop	Fan	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Blade Flake, Biface, Projectile Point	Chalcedony, Chert, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	79 Lithic; 0 Ceramic	LA, EW	E-11
TOTAL					236 Lithic; 0 Ceramic		

Table 18. Banks Mountain Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Blue Heron	Limited Activity Camp	Hillslope	Flake, Cobble Tool, Projectile Point	Jasper, Quartz, Quartzite	59 Lithic; 0 Ceramic	LA	E-11
Strode B	Hamlet	Floodplain T-1	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Pestle, Chipped Stone Axe, Grooved Axe, Celt, Wedge, Grinding Stone, Hoe, Hammerstone, Stone Bowl, Biface, Triangular Preform, Projectile Point	Argillicious Shale, Basalt, Chalcedony, Chert, Diabase, Hornfels, Jasper, Metabasalt, Mylonite, Oolitic Quartzite, Phyllite, Quartz, Quartzite, Rhyolite, Steatite	1,118 Lithic; 586 Ceramic	PI, EA, MA, LA, EW, MW, LW	E-11
44MA121	Limited Activity Camp	Floodplain T-1	Flake, Biface, Ceramic	Chalcedony, Mylonite, Quartz, Quartzite	18 Lithic; 1 Ceramic	MW, LW	E-11
TOTAL					1,195 Lithic; 587 Ceramic		

Table 19. Dark Run Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Girl Scout	Indeterminate	Hilltop	Flake, Projectile Point	Chert, Quartz	6 Lithic; 0 Ceramic	LA	E-15
Strode K	Limited Activity Camp	Interior Stream Terrace	Biface, Triangular Preform, Projectile Point	Quartz, Quartzite	31 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Strode L	Limited Activity Camp	Interior Stream Terrace	Scraper, Projectile Point	Chert, Jasper, Mylonite, Quartz, Quartzite	22 Lithic; 4 Ceramic	LA, EW, MW, LW	E-15
Strode O	Limited Activity Camp	Low Elevation Hollow	Scraper, Biface, Projectile Point	Chert, Mylonite, Quartz, Quartzite	17 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-15
Strode V	Limited Activity Camp	Hillslope	Flake, Biface, Triangular Preform, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	10 Lithic; 0 Ceramic	LA, EW, LW	E-15
TOTAL					86 Lithic/ 4 Ceramic		

Table 20. Demarest Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Burke	Small Base Camp	Interior Stream Terrace	Biface, Projectile Point	Quartz	26 Lithic; 0 Ceramic	EA, MA, LA, EW	E-15
Demarest Desert	Small Base Camp	Ridge	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Cobble Tool, Chipped Stone Axe, Grooved Axe, Hammerstone, Biface, Triangular Preform, Projectile Point	Chert, Chlorite, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	244 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Demarest Pottery	Limited Activity Camp	Interior Stream Terrace	Flake, Shatter, Graver	Quartz	45 Lithic; 17 Ceramic	MW, LW	E-15
TOTAL					315 Lithic; 17 Ceramic		

Table 21. Elk Run Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
J. B. Estes	Isolated Point Find	Saddle	Projectile Point	Chert	1 Lithic; 0 Ceramic	PI	E-12
Strode D	Small Base Camp	Interior Stream Terrace	Flake, Scraper, Cobble Tool, Chipped Stone Axe, Grooved Axe, Biface, Triangular Preform, Projectile Point	Chert, Metabasalt, Mylonite, Quartz, Quartzite	211 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-12
Strode F	Limited Activity Camp	Hilltop	Flake, Blade Flake, Chipped Stone Axe, Biface, Projectile Point	Chert, Metabasalt, Mylonite, Quartz, Quartzite	28 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-12
Strode J	Limited Activity Camp	Hillslope	Biface, Projectile Point	Quartz, Quartzite	18 Lithic; 5 Ceramic	EA, LA, EW, MW, LW	E-12
Strode Y	Small Base Camp	Interior Stream Terrace	Flake, Core, Graver, Scraper, Drill, Blade Flake, Chipped Stone Axe, Grooved Axe, Hammerstone, Biface, Triangular Preform, Projectile Point	Basalt, Chert, Diabase, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	194 Lithic; 13 Ceramic	EA, MA, LA, EW, MW, LW	E-12
TOTAL					452 Lithic; 18 Ceramic		

Table 22. Graves Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA8	Small Base Camp	Ridge Finger	Flake, Blade Flake, Cobble Tool, Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite, Rhyolite	197 Lithic; 0 Ceramic	MA, EW, LW	E-14
44MA9	Rockshelter	Ridge Toe	Flake, Shatter, Graver, Scraper, Drill, Cobble Tool, Pestle, Chipped Stone Axe, Grooved Axe, Celt, Stone Bowl Fragment, Stone Pipe Fragment, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Chalcedony, Chert, Jasper, Metabasalt, Metasiltstone, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite, Steatite	8,701 Lithic; 815 Ceramic	EA, MA, LA, EW, MW, LW	E-14
44MA16	Small Base Camp	Fan	Triangular Preform, Projectile Point	Chert, Quartz, Quartzite	103 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Graves Around Hill	Small Base Camp	Floodplain T-1	Flake, Core, Spokeshave, Graver, Scraper, Drill, Biface, Triangular Preform, Projectile Point, Ceramic	Chalcedony, Chert, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Mylonite, Quartz, Quartzite, Rhyolite	85 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Graves Catherine	Large Base Camp	Hilltop	Flake, Shatter, Core, Graver, Scraper, Drill, Cobble Tool, Chipped Stone Axe, Celt, Grinding Stone, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Chalcedony, Chert, Diabase, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite	157 Lithic; 15 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Graves Hay Berry	Limited Activity Camp	Floodplain T-1	Flake, Biface, Projectile Point	Quartz, Mylonite	10 Lithic; 0 Ceramic	EA, EW	E-14

Graves Hay Guy Anderson	Small Base Camp	Interior Stream Terrace	Core, Graver, Scraper, Pestle, Grooved Axe, Biface, Projectile Point	Metabasalt, Quartz, Quartzite, Sandstone	23 Lithic; 0 Ceramic	MA, LA, EW	E-14
Graves Hay Lodge	Limited Activity Camp	Fan	Projectile Point, Ceramic	Chert, Quartz, Quartzite	9 Lithic; 5 Ceramic	MA, LA, EW, MW, LW	E-14
Graves Hay Sis Aylor	Limited Activity Camp	Fan	Flake, Shatter, Biface, Triangular Preform, Projectile Point, Ceramic	Chert, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite	26 Lithic; 2 Ceramic	MA, EW, MW, LW	E-14
Graves Hay Weakley	Limited Activity Camp	Floodplain T-1	Flake, Scraper, Cobble Tool, Biface, Projectile Point	Argillicious Shale, Chalcedony, Chert, Metabasalt, Mylonite, Quartz, Quartzite	19 Lithic; 0 Ceramic	MA, LW	E-14
Graves Hay Jack Jasper	Limited Activity Camp	Interior Stream Terrace	Flake, Spokeshave, Biface, Projectile Point	Mylonite, Quartz	10 Lithic; 0 Ceramic	LA, EW, LW	E-14
Graves Margaret	Large Base Camp	Fan	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Chipped Stone Axe, Stone Bowl Fragment, Biface, Triangular Preform, Projectile Point	Basalt, Chalcedony, Chert, Hornfels, Jasper, Metabasalt, Metabasalt Breccia, Mylonite,, Oolitic Quartzite, Quartz, Quartzite, Rhyolite, Steatite	497 Lithic; 26 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Graves Peach Orchard	Limited Activity Camp	Ridge Finger	Flake, Scraper, Biface, Projectile Point	Mylonite, Quartz, Quartzite	15 Lithic; 0 Ceramic	MA, LA, EW	E-14
Graves Stony Brook	Limited Activity Camp	Ridge Finger	Flake, Scraper, Biface, Projectile Point	Quartz, Quartzite, Rhyolite	15 Lithics; 0 Ceramic	MA, LA, EW	E-14
TOTAL					9,867 Lithic; 863 Ceramic		

Table 23. Graves Mill Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA5	Limited Activity Camp	Floodplain T-1	Flake, Biface, Projectile Point	Metabasalt Quartz, Quartzite	9 Lithic; 0 Ceramic	EW	E-11
44MA6	Limited Activity Camp	Floodplain T-1	Flake, Core, Biface, Projectile Point	Metabasalt, Quartz, Quartzite, Rhyolite	14 Lithic; 0 Ceramic	MA	E-11
Dejarnette Whitlock	Small Base Camp	Interior Stream Terrace	Flake, Scraper, Chipped Stone Axe, Biface, Projectile Point, Ceramic	Metabasalt, Quartz, Quartzite, Rhyolite	27 Lithic; 1 Ceramic	EA, MA, LA, EW	E-11
Wagoner	Limited Activity Camp	Ridge Finger	Chipped Stone Axe, Projectile Point	Metabasalt, Mylonite, Quartz, Quartzite	30 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-11
TOTAL					80 Lithic; 1 Ceramic		E-11

Table 24. Haywood Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Coates Cache	Lithic Cache	Low Elevation Hollow	Biface	Quartzite	25 Lithic; 0 Ceramic	Unknown; Presumed MW	E-14
Coates Garden	Small Base Camp	Hilltop	Flake, Chipped Stone Axe, Grooved Stone Axe, Biface, Projectile Point	Chert, Metabasalt, Metasiltstone, Quartz, Quartzite	76 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Martens Mounds	Burial Mound	Hillslope	Flake	Quartz, Quartzite	19 Lithic; 0 Ceramic	Unknown; Presumed MW	E-14
Strode U	Small Base Camp	Floodplain	Flake, Chipped Stone Axe, Celt, Biface, Triangular Preform, Projectile Point	Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	33 Lithic; 0 Ceramic	EA, LA, EW, MW, LW	E-14
TOTAL					153 Lithic; 0 Ceramic		

Table 25. Hebron Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydro-logic Unit
Crigler	Small Base Camp	Interior Stream Terrace	Flake, Chipped Stone Axe, Grooved Axe, Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	71 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14
G. Duck Farm	Collecting Area	Floodplain T-2	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Pestle, Chipped Stone Axe, Celt, Hammerstone, Cobble Tool, Stone Bowl, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Chaldedony, Chert, Diabase, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Mylonite, Quartz, Quartzite, Rhyolite, Steatite	738 Lithic; 8 Ceramic	EA, MA, LA, EW, MW, LW	E-15
G. Duck Farm Barn	Small Base Camp	Fan	Scraper, Biface, Triangular Preform, Projectile Point, Ceramic	Chalcedony, Chert, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite, Rhyolite	50 Lithic; 8 Ceramic	EA, MA, LA, EW, MW, LW	E-15
G. Duck Farm Chicken House	Small Base Camp	Floodplain T-1	Flake, Shatter, Core, Graver, Scraper, Drill, Pestle, Celt, Stone Bowl, Biface, Triangular Preform, Projectile Point, Ceramic	Basalt, Chalcedony, Chert, Diabase, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite, Steatite	108 Lithic; 15 Ceramic	MA, LA, EW, MW, LW	E-15
G. Duck Farm Frankie John	Small Base Camp	Floodplain T-1	Flake, Core, Graver, Scraper, Blade Flake, Cobble Tool, Biface, Triangular Preform, Projectile Point	Argillicious Shale, Chert, Hornfels, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Mylonite, Oolitic Quartzite, Quartz, Quartzite,	200 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-14

Duck Farm Jesse B	Small Base Camp	Floodplain T-1	Flake, Core, Graver, Scraper, Biface, Projectile Point	Chert, Quartz, Quartzite	14 Lithic; 0 Ceramic	MA, LA, EW	E-14
G. Duck Farm Roy Crigler	Hamlet	Floodplain T-1	Flake, Shatter, Core, Graver, Scraper, Drill, Pestle, Celt, Grinding Stone, Hammerstone, Effigy, Gorget, Bannerstone, Disc, Biface, Triangular Preform, Projectile Point, Ceramic	Chlorite, Chert, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Mylonite, Oolitic Quartzite, Quartz, Quartzite, Rhyolite, Sandstone, Slate, Steatite	182 Lithic; 7 Ceramic	EA, MA, LA, EW, MW, LW	E-14
G. Duck Farm Trees	Small Base Camp	Floodplain T-1	Flake, Scraper, Biface, Projectile Point, Ceramic	Chert, Jasper, Metabasalt, Metasiltstone, Quartz, Quartzite	18 Lithic; 2 Ceramic	MA, LA, EW, MW, LW	E-14
G. Duck Farm Welch	Limited Activity Camp	Floodplain T-2	Flake, Shatter, Drill, Biface, Projectile Point, Ceramic	Chert, Jasper, Mylonite, Quartz, Quartzite, Rhyolite	15 Lithic; 1 Ceramic	MA, LA, EW, MW, LW	E-14
McClain	Small Base Camp	Hilltop	Flake, Graver, Cobble Tool, Chipped Stone Axe, Grooved Axe, Celt, Stone Bowl, Biface, Projectile Point	Basalt, Chert, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Quartz, Quartzite, Steatite	55 Lithic; 0 Ceramic	EA, MA, LA, EW	E-14
Rees	Small Base Camp	Floodplain T-1	Biface, Projectile Point	Metabasalt, Quartz, Quartzite	46 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-14
Strode A	Hamlet	Floodplain T-2	Flake, Shatter, Core, Spokeshave, Scraper, Drill, Blade Flake, Cobble Tool, Pestle, Chipped Stone Axe, Celt, Wedge, Hoe, Stone Pipe, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Basalt, Chalcedony, Chert, Chlorite, Chrysoprase, Hornfels, Jasper, Metabasalt, Metabasalt Breccia, Metasiltstone, Mylonite, Phyllite, Quartz, Quartzite, Rhyolite	628 Lithic; 83 Ceramic	PI, EA, MA, LA, EW, MW, LW	E-14
TOTAL					2,125 Lithic; 124 Ceramic		

Table 26. Henshaw Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA1	Rockshelter	Hillslope	Flake, Drill, Cobble Tool, Celt, Stone Bowl Fragment, Pebble Pendant, Triangular Preform, Projectile Point, Ceramic	Chert, Quartz, Quartzite, Metabasalt, Steatite	575 Lithic; 604 Ceramic	MA, LA, EW, MW, LW	E-14
Martens	Small Base Camp	Floodplain T-1	Flake, Core, Stone Bowl, Projectile Point, Ceramic	Chert, Greywacke, Jasper, Metabasalt, Metasiltstone, Quartz, Quartzite, Steatite	21 Lithic; 6 Ceramic	MA, LA, EW, MW, LW	E-14
Strode M	Small Base Camp	Floodplain	Flake, Cobble Tool, Chipped Stone Axe, Biface, Triangular Preform, Projectile Point	Chert, Jasper, Metabasalt, Mylonite, Quartz, Quartzite	72 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-14
Strode N	Limited Activity Camp	Floodplain	Projectile Point	Argillicious Shale, Quartz	5 Lithic; 0 Ceramic	MA, LA, EW	E-14
TOTAL					1185 Lithic; 610 Ceramic		

Table 27. Lambs Bottom Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA12	Limited Activity	Hilltop	Flake, Stone Bowl, Biface	Chert, Metasiltstone, Quartz, Quartzite, Steatite	11 Lithic; 0 Ceramic	LA	E-12
44MA13	Limited Activity	Floodplain T-1	Flake, Biface, Projectile Point	Chalcedony, Chert, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	75 Lithic; 0 Ceramic	EA, MA, LA, EW	E-12
44MA73	Indeterminate	Floodplain T-1	Flake	Quartz	12 Lithic; 0 Ceramic	Unknown	E-12
Hawley-Zimmer	Hamlet	Floodplain T-1	Flake, Shatter, Scraper, Celt, Stone Bowl, Biface, Projectile Point, Ceramic	Chert, Chlorite, Jasper, Mylonite, Quartz, Quartzite, Rhyolite, Steatite	107 Lithic; 10 Ceramic	MA, LA, EW, MW, LW	E-12
Strode E	Hamlet	Floodplain T-1	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Chipped Stone Axe, Grooved Axe, Celt, Wedge, Hoe, Hammerstone, Stone Bowl, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Basalt, Chalcedony, Chert, Greywacke, Hematite, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Phyllite, Quartz, Quartzite, Rhyolite, Steatite	1,052 Lithic; 74 Ceramic	PI, EA, MA, LA, EW, MW, LW	E-12
TOTAL					1,257 Lithic; 84 Ceramic		

Table 28. Lost Mountain Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA103	Indeterminate	Hilltop	Flake, Shatter	Quartz	10 Lithic; 0 Ceramic	Unknown	E-15
44MA104	Indeterminate	Hilltop	Flake, Shatter	Quartz	15 Lithic; 0 Ceramic	Unknown	E-15
44MA105	Indeterminate	Saddle	Flake, Shatter	Quartz	11 Lithic; 0 Ceramic	Unknown	E-15
44MA109	Indeterminate	Low Elevation Hollow	Biface, Projectile Point	Quartz	4 Lithic; 0 Ceramic	MA	E-15
44MA110	Limited Activity Camp	Hilltop	Flake, Core, Scraper, Biface	Quartz	20 Lithic; 0 Ceramic	Unknown	E-15
44MA111	Indeterminate	Hilltop	Flake	Quartz	9 Lithic; 0 Ceramic	Unknown	E-15
44MA193	Limited Activity Camp	Hilltop	Flake, Scraper, Biface	Quartz	11 Lithic; 0 Ceramic	Unknown	E-15
Jenkins Mountain Field	Small Base Camp	Fan	Grooved Axe, Biface, Projectile Point	Chert, Metabasalt, Quartz	90 Lithic; 0 Ceramic	EA, MA, LA, EW	E-15
TOTAL					170 Lithic; 0 Ceramic		

Table 29. Mallory Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Shirley Estes	Indeterminate	Hill Toe	Flake, Projectile Point	Quartz	6 Lithic; 0 Ceramic	LA	E-15
Strode 4	Small Base Camp	Hilltop	Flake, Core, Scraper, Drill, Blade Flake, Biface, Projectile Point, Ceramic	Chalcedony, Chert, Jasper, Metabasalt Breccia, Mylonite, Quartz, Quartzite	87 Lithic; 2 Ceramic	MA, LA, EW, MW, LW	E-15
Strode G	Small Base Camp	Interior Stream Terrace	Flake, Core, Scraper, Drill, Cobble Tool, Chipped Stone Axe, Biface, Triangular Preform, Projectile Point, Ceramic	Chalcedony, Chert, Chrysoprase, Jasper, Metabasalt Breccia, Mylonite, Quartz, Quartzite, Rhyolite	246 Lithic; 2 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Strode R	Limited Activity Camp	Interior Stream Terrace	Chipped Stone Axe, Stone Bowl, Biface, Projectile Point	Chalcedony, Greywacke, Metabasalt, Mylonite, Quartz, Rhyolite	19 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-15
Strode S	Small Base Camp	Interior Stream Terrace	Flake, Drill, Chipped Stone Axe, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Chert, Metabasalt, Mylonite, Phyllite, Quartz, Quartzite	83 Lithic; 2 Ceramic	MA, LA, EW, MW, LW	E-15
TOTAL					441 Lithic; 6 Ceramic		

Table 30. Middle River Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Crowe	Limited Activity Camp	Floodplain T-2	Flake, Shatter, Core, Biface	Quartz	47 Lithic; 0 Ceramic	Unknown	E-11
Hawkins	Small Basecamp	Hilltop	Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite	33 Lithic; 0 Ceramic	MA, LA, EW	E-11
Strode C	Hamlet	Floodplain T-1	Flake, Core, Scraper, Drill, Cobble Tool, Chipped Stone Axe, Celt, Wedge, Biface, Triangular Preform, Projectile Point	Chert, Hornfels, Jasper, Metabasalt, Metabasalt Breccia, Mylonite, Quartz, Quartzite, Rhyolite	540 Lithic; 50 Ceramic	EA, MA, LA, EW, MW, LW	E-11
TOTAL					620 Lithic; 50 Ceramic		

Table 31. Neal Mountain Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA11	Limited Activity Camp	Hilltop	Flake, Core, Biface, Projectile Point	Quartz, Quartzite	30 Lithic; 0 Ceramic	EA, MA, LW	E-12
Devil Fence	Lithic Workshop	Hilltop	Flake, Shatter, Core, Biface	Mylonite, Quartz	573 Lithic; 0 Ceramic	Unknown	E-12
Dewey	Small Base Camp	Hilltop	Flake, Shatter, Core, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Grooved Axe, Hammerstone, Biface, Projectile Point	Basalt, Chert, Greywacke, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	682 Lithic; 0 Ceramic	EA, MA, LA, EW, MW, LW	E-12
TOTAL					1,285 Lithic; 0 Ceramic		

Table 32. Peola Mills Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Backfield Farm	Small Base Camp	Hilltop	Flake, Scraper, Cobble Tool, Chipped Stone Axe, Stone Bowl, Biface, Projectile Point	Chert, Metabasalt, Quartz, Quartzite, Steatite	32 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-03
Barbara Yowell	Large Base Camp	Floodplain T-2	Drill, Chipped Stone Axe, Grooved Axe, Biface, Projectile Point	Argillicious Shale, Chalcedony, Chert, Jasper, Metabasalt, Quartz, Quartzite, Rhyolite	65 Lithic; 0 Ceramic	PI, EA, MA, LA, EW, MW	E-03
Graves Beehive	Small Base Camp	Fan	Flake, Scraper, Abrader, Biface, Triangular Preform, Projectile Point	Chert, Metabasalt, Quartz, Quartzite, Sandstone	24 Lithic; 2 Ceramic	LA, EW, MW, LW	E-03
Graves Coates	Limited Activity Camp	Fan	Flake, Shatter, Scraper, Drill, Biface, Projectile Point	Metabasalt, Quartz, Quartzite	18 Lithic; 0 Ceramic	MA, LA, EW, LW	E-03
TOTAL					139 Lithic; 2 Ceramic		

Table 33. Thorofare Mountain Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
Janet Sisk	Small Base Camp	Saddle	Flake, Chipped Stone Axe, Celt, Hammerstone, Biface, Projectile Point	Metabasalt, Quartz	44 Lithic; 0 Ceramic	EA, MA, LA, EW	E-15
Mary Sisk	Limited Activity Camp	Hilltop	Flake, Biface, Projectile Point	Quartz	12 Lithic; 0 Ceramic	MA, LA, EW	E-15
TOTAL					56 Lithic; 0 Ceramic		

Table 34. Uno Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA14	Limited Activity Camp	Interior Stream Terrace	Flake, Biface	Quartz, Quartzite	11 Lithic; 0 Ceramics	Unknown	E-13
44MA15	Limited Activity Camp	Hill Toe	Flake, Core, Biface	Quartz	14 Lithic; 0 Ceramics	Unknown	E-13
TOTAL					25 Lithic; 0 Ceramics		

Table 35. White Oak Run Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydro-logic Unit
44MA10	Small Base Camp	Inner Stream Terrace	Flake, Shatter, Core, Wedge, Biface, Projectile Point, Ceramic	Chert, Hornfels, Jasper, Metabasalt, Metasiltstone, Quartz, Quartzite, Rhyolite	325 Lithic; 22 Ceramic	EA, MA, LA, EW, MW, LW	E-14
44MA127	Hamlet	Fan/ Floodplain T-1	Flake, Shatter, Core, Spokeshave, Graver, Scraper, Drill, Blade Flake, Cobble Tool, Pestle, Mortar, Chipped Stone Axe, Grooved Axe, Celt, Wedge, Hoe, Hammerstone, Stone Bowl, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Basalt, Chalcedony, Chert, Dia-base, Greywacke, Hornfels, Jasper, Metabasalt, Meta-basalt Breccia, Meta-siltstone, Mylonite, Oolitic Quartzite, Phyllite, Quartz, Quartzite, Rhyolite, Steatite	3,268 Lithic; 446 Ceramic	PI, EA, MA, LA, EW, MW, LW	E-14
44MA199	Small Base Camp	Floodplain T-1	Flake, Shatter, Spokeshave, Graver, Scraper, Drill, Cobble Tool, Hammer-stone, Biface, Projectile Point, Ceramic	Chert, Greywacke, Jasper, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	967 Lithic; 2 Ceramic	EA, MW, LW	E-14

Strode 2	Small Base Camp	Low Elevation Hollow	Flake, Scraper, Chipped Stone Axe, Hoe, Biface, Projectile Point, Ceramic	Chert, Hornfels, Metabasalt, Quartz, Quartzite	77 Lithic; 2 Ceramic	EA, MA, LA, EW, MW, LW	E-14
Strode 3	Small Base Camp	Hilltop	Flake, Drill, Biface, Projectile Point, Ceramic	Quartz, Quartzite	33 Lithic; 16 Ceramic	PI, MA, EW, MW	E-14
TOTAL					4,670 Lithic; 488 Ceramic		

Table 36. Isolated Inner Piedmont Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA118	Lithic Workshop	Hilltop	Flake, Shatter, Core, Scraper, Biface	Chert, Jasper, Mylonite, Quartz, Quartzite	143 Lithic; 0 Ceramic	Unknown	E-13
Dixon	Limited Activity Camp	Ridge Toe	Flake, Shatter, Core, Graver, Scraper, Cobble Tool, Biface, Projectile Point	Metabasalt, Oolitic Quartzite, Quartz, Quartzite	39 Lithic; 0 Ceramic	MA, LA	E-14
Jane Aylor	Large Base Camp	Interior Stream Terrace	Chipped Stone Axe, Hammerstone, Biface, Projectile Point	Chalcedony, Chert, Greywacke, Metabasalt, Oolitic Quartzite, Quartz, Quartzite, Rhyolite	109 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-14
Mayer	Small Base Camp	Sideslope	Biface, Projectile Point	Chalcedony, Quartz, Quartzite	28 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-14
Penn	Small Base Camp	Hilltop	Scraper, Chipped Stone Axe, Hammerstone, Projectile Point	Chalcedony, Chert, Metabasalt, Quartz	14 Lithic; 0 Ceramic	EA, MA, LA, EW	E-15
Strode H	Small Base Camp	Hilltop	Drill, Cobble Tool, Chipped Stone Axe, Biface, Triangular Preform, Projectile Point	Chalcedony, Chert, Hornfels, Metabasalt, Mylonite, Quartz, Quartzite	55 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-13
Strode W	Small Base Camp	Interior Stream Terrace	Flake, Scraper, Drill, Pestle, Chipped Stone Axe, Grooved Axe, Biface, Triangular Preform, Ceramic	Chalcedony, Chert, Chrysoprase, Hornfels, Jasper, Metabasalt, Mylonite, Phyllite, Quartz, Quartzite, Rhyolite	250 Lithic; 47 Ceramic	EA, MA, LA, EW, MW, LW	E-13
TOTAL					638 lithic; 47 Ceramic		

Table 37. Beaverdam Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA114	Limited Activity Camp	Levee	Flake, Core, Biface	Quartz	7 Lithic; 0 Ceramic	Unknown	E-15
44MA115	Indeterminate	Floodplain	Cobble Tool	Metabasalt, Quartz	2 Lithic; 0 Ceramic	Unknown	E-15
44MA116	Indeterminate	Floodplain T-1	Flake	Quartz	4 Lithic; 0 Ceramic	Unknown	E-15
Dejarnette Johnston	Small Base Camp	Hilltop	Grooved Axe, Celt, Projectile Point, Ceramic	Chert, Metabasalt, Quartz, Quartzite	24 Lithic; 6 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Strode I	Hamlet	Floodplain T-2	Flake, Core, Graver, Scraper, Drill, Cobble Tool, Pestle, Chipped Stone Axe, Grooved Axe, Celt, Chunkey Stone, Biface, Triangular Preform, Projectile Point, Ceramic	Basalt, Chalcedony, Chert, Chrysoprase, Greywacke, Hornfels, Jasper, Metabasalt, Mylonite, Oolitic Quartzite, Phyllite, Quartz, Quartzite, Rhyolite	419 Lithic; 73 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Strode Q	Small Base Camp	Floodplain T-1	Flake, Scraper, Biface, Triangular Preform, Projectile Point, Ceramic	Metabasalt, Mylonite, Quartz, Quartzite	40 Lithic; 4 Ceramic	EA, MA, LA, EW, MW, LW	E-15
Strode Z	Limited Activity Camp	Hillslope	Flake, Drill, Biface, Projectile Point	Mylonite, Quartz, Quartzite	30 Lithic; 0 Ceramic	EA, MA, LA, EW, MW	E-15
TOTAL					526 Lithic; 83 Ceramic		

Table 38. Madison Mills Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA106	Limited Activity Camp	Knoll	Flake, Shatter, Projectile Point	Quartz	20 Lithic; 0 Ceramic	EA, MA	E-13
44MA107	Limited Activity Camp	Knoll	Flake, Scraper, Cobble Tool, Biface, Projectile Point	Basalt, Mylonite, Quartz, Quartzite	32 Lithic; 0 Ceramic	EW	E-13
44MA108	Limited Activity Camp	Hilltop	Flake, Shatter, Projectile Point	Quartz	16 Lithic; 0 Ceramic	MA, EW	E-13
44MA122	Indeterminate	Floodplain T-1	Flake, Biface	Quartz, Quartzite	9 Lithic; 0 Ceramic	Unknown	E-13
44MA123	Indeterminate	Floodplain T-1	Flake, Biface	Quartz	11 Lithic; 0 Ceramic	Unknown	E-13
44MA124	Limited Activity Camp	Hilltop	Flake, Biface, Projectile Point	Chert, Quartz	27 Lithic; 0 Ceramic	MA	E-13
44MA125	Limited Activity Camp	Hillslope	Flake, Biface, Projectile Point	Quartz, Quartzite, Rhyolite	13 Lithic; 0 Ceramic	LA, EW, LW	E-13
44MA126	Indeterminate	Floodplain T-1	Flake, Biface	Metabasalt, Quartz	9 Lithic; 0 Ceramic	Unknown	E-13
TOTAL					137 Lithic; 0 Ceramic		

Table 39. Sanford Cluster Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA63	Hamlet	Floodplain T-2	Flake, Shatter, Core, Spokeshave, Scraper, Blade Flake, Cobble Tool, Stone Pipe, Biface, Projectile Point, Ceramic	Argillicous Shale, Basalt, Chalcedony, Chert, Greywacke, Jasper, Metabasalt, Mylonite, Oolitic Quartzite, Phyllite, Quartz, Quartzite, Rhyolite	557 Lithic; 198 Ceramic	EA, MA, LA, EW, MW, LW	E-13
44MA64	Small Base Camp	Floodplain T-1	Flake, Shatter, Grooved Axe, Pestle, Biface, Projectile Point	Argillicious Shale, Chalcedony, Chert, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	118 Lithic; 0 Ceramic	EA, MA, EW	E-13
44MA65	Small Base Camp	Floodplain T-1	Flake, Shatter, Core, Blade Flake, Cobble Tool, Biface, Projectile Point	Argillicious Shale, Chalcedony, Chert, Metabasalt, Mylonite, Quartz, Quartzite, Rhyolite	183 Lithic; 0 Ceramic	EW, MW	E-13
44MA66	Small Base Camp	Hilltop	Flake, Shatter, Biface, Projectile Point	Chalcedony, Chert, Mylonite, Quartz, Quartzite	87 Lithic; 0 Ceramic	MW	E-13
44MA67	Small Base Camp	Bluff	Flake, Shatter, Core, Chipped Stone Axe, Biface, Projectile Point	Chalcedony, Chert, Metabasalt, Mylonite, Oolitic Quartzite, Quartz, Quartzite	121 Lithic; 0 Ceramic	MA, EW, LW	E-15
44MA68	Limited Activity Camp	Bluff	Flake, Shatter, Biface, Projectile Point	Chalcedony, Oolitic Quartzite, Quartz, Quartzite	7 Lithic; 0 Ceramic	MA, LA, EW	E-15
44MA69	Limited Activity Camp	Bluff	Flake, Core, Biface, Projectile Point	Quartz, Quartzite, Rhyolite	4 Lithic; 0 Ceramic	LA	E-15
44MA70	Indeterminate	Floodplain T-1	Flake, Core	Chalcedony, Quartz	3 Lithic; 0 Ceramic	Unknown	E-13

44MA71	Indeterminate	Floodplain T-1	Flake, Biface	Argillicious Shale, Quartz, Quartzite	4 Lithic; 0 Ceramic	Unknown	E-13
44MA72	Large Base Camp	Bluff	Flake, Core, Scraper, Blade Flake, Cobble Tool, Biface, Triangular Preform, Projectile Point, Ceramic	Argillicious Shale, Chalcedony, Chert, Jasper, Metabasalt, Phyllite, Quartz, Quartzite, Rhyolite	198 Lithic; 9 Ceramic	MA, EW, MW, LW	E-13
44MA119	Limited Activity Camp	Hilltop	Flake, Shatter, Biface, Point	Quartz	9 Lithic; 0 Ceramic	MA, EW	E-13
TOTAL					1,291 Lithic; 207 Ceramic		E-13

Table 40. Isolated Mesozoic Basin Individual Site Information.

Site	Function	Landform	Artifact Types	Lithic Raw Materials	Number of Artifacts	Cultural Sub-Periods	Hydrologic Unit
44MA4	Quarry	Hillslope	Stone Bowl	Steatite	1 Lithic; 0 Ceramic	LA	E-15
44MA120	Indeterminate	Low Elevation Hollow	Biface, Projectile Point	Quartz	3 Lithic; 0 Ceramic	LA	E-15
44MA190	Indeterminate	Hillslope	Flake, Shatter	Quartz	4 Lithic; 0 Ceramic	Unknown	E-15
Nash Garden	Limited Activity Camp	Low Elevation Hollow	Flake, Shatter, Core, Graver, Cobble Tool, Biface, Projectile Point	Metabasalt, Quartz	68 Lithic; 0 Ceramic	MA, EW	E-13
Strode T	Small Base Camp	Interior Stream Terrace	Flake, Scraper, Biface, Projectile Point	Metabasalt Breccia, Mylonite, Quartz, Quartzite, Rhyolite	60 Lithic; 0 Ceramic	EA, MA, LA, EW, LW	E-15
TOTAL					136 Lithic; 0 Ceramic		

Appendix IV

Artifact Catalog

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
1	Henshaw Rockshelter	Brewerton SN	Chert	4	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	celt	Metabasalt	1	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	cobble tool	Metabasalt	1	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	drill	Quartz	3	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	flake	Chert	19	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	flake	Metabasalt	40	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	flake	Quartz	266	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	flake	Quartzite	8	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Guilford	Quartz	3	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Halifax	Quartz	4	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Holmes	Quartz	5	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Holmes	Quartzite	2	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Jack's Reef Pentagonal	Chert	1	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Levanna/Yadkin	Chert	19	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Levanna/Yadkin	Quartz	53	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Levanna/Yadkin	Quartzite	21	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Pendant	Unknown	1	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Potts	Quartz	2	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Savannah River	Quartzite	2	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	stone bowl fragment	Steatite	2	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Teardrop	Quartz	6	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Triang. Preforms	Chert	2	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Triang. Preforms	Quartz	4	RS	Henshaw	E14	IP
1	Henshaw Rockshelter	Triang. Preforms	Quartzite	8	RS	Henshaw	E14	IP
2	Weakley Hollow	biface com	Quartzite	1	LAC	Weakley	E03	BR
2	Weakley Hollow	flake	Quartz	1	LAC	Weakley	E03	BR
2	Weakley Hollow	flake	Chert	1	LAC	Weakley	E03	BR
2	Weakley Hollow	flake	Quartzite	1	LAC	Weakley	E03	BR
2	Weakley Hollow	Guilford	Quartzite	1	LAC	Weakley	E03	BR
2	Weakley Hollow	Lamoka	Chert	1	LAC	Weakley	E03	BR
2	Weakley Hollow	Morrow Mountain II	Quartz	1	LAC	Weakley	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
2	Weakley Hollow	scraper	Quartz	1	LAC	Weakley	E03	BR
2	Weakley Hollow	Selby Bay	Rhyolite	1	LAC	Weakley	E03	BR
3	Saddle Trail	flake	Quartz	3	IND	Berry	E14	BR
3	Saddle Trail	flake	Chert	1	IND	Berry	E14	BR
4	Achsah Soapstone Quarry	stone bowl fragment	Steatite	1	QUA	Isolated	E15	MB
5	MD148	biface com	Quartz	2	LAC	Graves Mill	E11	IP
5	MD148	biface com	Quartzite	1	LAC	Graves Mill	E11	IP
5	MD148	Calvert	Quartz	1	LAC	Graves Mill	E11	IP
5	MD148	flake	Quartz	3	LAC	Graves Mill	E11	IP
5	MD148	flake	Metabasalt	2	LAC	Graves Mill	E11	IP
6	MD149	biface com	Quartz	4	LAC	Graves Mill	E11	IP
6	MD149	biface com	Rhyolite	1	LAC	Graves Mill	E11	IP
6	MD149	core	Metabasalt	1	LAC	Graves Mill	E11	IP
6	MD149	flake	Quartz	4	LAC	Graves Mill	E11	IP
6	MD149	flake	Quartzite	2	LAC	Graves Mill	E11	IP
6	MD149	flake	Metabasalt	1	LAC	Graves Mill	E11	IP
6	MD149	Holmes	Quartz	1	LAC	Graves Mill	E11	IP
7	MD109	biface com	Quartz	3	SBC	Upper Rapidan	E11	BR
7	MD109	biface frag mid	Chert	1	SBC	Upper Rapidan	E11	BR
7	MD109	Bilobate	Quartzite	1	SBC	Upper Rapidan	E11	BR
7	MD109	Calvert	Chert	1	SBC	Upper Rapidan	E11	BR
7	MD109	chipped stone axe	Metabasalt	4	SBC	Upper Rapidan	E11	BR
7	MD109	cobble tool	Metabasalt	1	SBC	Upper Rapidan	E11	BR
7	MD109	flake	Quartz	30	SBC	Upper Rapidan	E11	BR
7	MD109	flake	Chert	2	SBC	Upper Rapidan	E11	BR
7	MD109	flake	Metabasalt	29	SBC	Upper Rapidan	E11	BR
7	MD109	flake	Quartzite	13	SBC	Upper Rapidan	E11	BR
7	MD109	Savannah River	Metabasalt	3	SBC	Upper Rapidan	E11	BR
8	MD108	biface com	Quartz	4	SBC	Graves	E14	IP
8	MD108	biface frag mid	Quartzite	3	SBC	Graves	E14	IP
8	MD108	blade flake	Rhyolite	1	SBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
8	MD108	Calvert	Quartz	2	SBC	Graves	E14	IP
8	MD108	cobble tool	Metabasalt	1	SBC	Graves	E14	IP
8	MD108	flake	Chert	8	SBC	Graves	E14	IP
8	MD108	flake	Metabasalt	7	SBC	Graves	E14	IP
8	MD108	flake	Quartz	142	SBC	Graves	E14	IP
8	MD108	flake	Quartzite	25	SBC	Graves	E14	IP
8	MD108	Halifax	Quartz	2	SBC	Graves	E14	IP
8	MD108	Levanna/Yadkin	Quartz	2	SBC	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Chert	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Oolitic Qtzite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Quartz	18	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface com	Quartzite	9	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag dist	Chert	6	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag dist	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag dist	Metabasalt	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag dist	Quartz	31	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag dist	Quartzite	17	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag mid	Chert	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag mid	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag mid	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag mid	Quartz	43	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	biface frag mid	Quartzite	20	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Big Sandy	Chalcedony	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Big Sandy	Metasiltstone	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Big Sandy	Quartzite	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Brewerton SN	Chert	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Brewerton SN	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Calvert	Quartzite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	celt	Metabasalt	13	RS	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
9	Elvin Graves Rockshelter	chipped stone axe	Metabasalt	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	cobble tool	Metabasalt	5	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	cobble tool	Quartz	14	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Chert	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Metabasalt	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Quartz	5	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	drill	Quartzite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Chert	217	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Jasper	9	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Metabasalt	2387	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Quartz	5033	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Rhyolite	7	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	flake	Quartzite	613	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	graver	Chert	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	graver	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	graver	Quartz	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	grooved axe	Metabasalt	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Guilford	Quartz	4	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Halifax	Chert	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Halifax	Metabasalt	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Halifax	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Halifax	Quartz	4	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Halifax	Quartzite	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Holmes	Metabasalt	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Holmes	Quartz	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Jack's Reef Pentagonal	Chert	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Kirk Stemmed	Quartzite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Levanna/Yadkin	Chert	20	RS	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
9	Elvin Graves Rockshelter	Levanna/Yadkin	Jasper	4	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Levanna/Yadkin	Quartz	42	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Levanna/Yadkin	Quartzite	36	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Levanna/Yakdin	Mylonite	4	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	MacPherson	Arg. Shale	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Madison	Chert	6	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Madison	Jasper	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Madison	Mylonite	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Madison	Quartz	27	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Madison	Quartzite	6	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	pestle	Metabasalt	4	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Piscataway	Quartz	10	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Potts	Quartz	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Savannah River	Quartzite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	scraper	Chert	5	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	scraper	Quartz	9	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	scraper	Quartzite	6	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	shatter	Quartz	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	stone bowl fragment	Steatite	2	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	stone pipe fragment	Steatite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Triang. Preforms	Mylonite	1	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Triang. Preforms	Quartz	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Triang. Preforms	Quartzite	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Vernon	Quartz	3	RS	Graves	E14	IP
9	Elvin Graves Rockshelter	Vernon	Rhyolite	1	RS	Graves	E14	IP
10	Lohr	Bare Island	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	biface com	Chert	1	SBC	White Oak	E14	IP
10	Lohr	biface com	Metabasalt	4	SBC	White Oak	E14	IP
10	Lohr	biface com	Mylonite	2	SBC	White Oak	E14	IP
10	Lohr	biface com	Quartz	27	SBC	White Oak	E14	IP
10	Lohr	biface com	Quartzite	11	SBC	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
10	Lohr	biface frag dist	Quartz	30	SBC	White Oak	E14	IP
10	Lohr	Bilobate	Quartz	10	SBC	White Oak	E14	IP
10	Lohr	Bilobate	Quartzite	4	SBC	White Oak	E14	IP
10	Lohr	Brewerton SN	Mylonite	1	SBC	White Oak	E14	IP
10	Lohr	Brewerton SN	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	Brewerton SN	Quartzite	3	SBC	White Oak	E14	IP
10	Lohr	Brewerton SN	Rhyolite	1	SBC	White Oak	E14	IP
10	Lohr	Calvert	Chert	1	SBC	White Oak	E14	IP
10	Lohr	Calvert	Hornfels	1	SBC	White Oak	E14	IP
10	Lohr	Calvert	Jasper	1	SBC	White Oak	E14	IP
10	Lohr	Calvert	Quartz	2	SBC	White Oak	E14	IP
10	Lohr	Calvert	Quartzite	1	SBC	White Oak	E14	IP
10	Lohr	core	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	flake	Quartz	79	SBC	White Oak	E14	IP
10	Lohr	flake	Chert	3	SBC	White Oak	E14	IP
10	Lohr	flake	Jasper	4	SBC	White Oak	E14	IP
10	Lohr	flake	Metabasalt	24	SBC	White Oak	E14	IP
10	Lohr	flake	Metasiltstone	1	SBC	White Oak	E14	IP
10	Lohr	flake	Quartzite	41	SBC	White Oak	E14	IP
10	Lohr	flake	Rhyolite	1	SBC	White Oak	E14	IP
10	Lohr	Guilford	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	Halifax	Mylonite	1	SBC	White Oak	E14	IP
10	Lohr	Halifax	Quartz	14	SBC	White Oak	E14	IP
10	Lohr	Halifax	Quartzite	3	SBC	White Oak	E14	IP
10	Lohr	Holmes	Metabasalt	3	SBC	White Oak	E14	IP
10	Lohr	Holmes	Quartz	3	SBC	White Oak	E14	IP
10	Lohr	Holmes	Quartzite	3	SBC	White Oak	E14	IP
10	Lohr	Kirk Stemmed	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	Kirk Stemmed	Quartzite	3	SBC	White Oak	E14	IP
10	Lohr	LeCroy	Chert	1	SBC	White Oak	E14	IP
10	Lohr	LeCroy	Quartz	3	SBC	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
10	Lohr	Levanna/Yadkin	Chert	4	SBC	White Oak	E14	IP
10	Lohr	Levanna/Yadkin	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	Levanna/Yadkin	Quartzite	2	SBC	White Oak	E14	IP
10	Lohr	Madison	Chert	1	SBC	White Oak	E14	IP
10	Lohr	Madison	Quartz	2	SBC	White Oak	E14	IP
10	Lohr	Morrow Mountain II	Quartz	2	SBC	White Oak	E14	IP
10	Lohr	Morrow Mountain II	Quartzite	2	SBC	White Oak	E14	IP
10	Lohr	Piscataway	Chert	1	SBC	White Oak	E14	IP
10	Lohr	Piscataway	Metabasalt	1	SBC	White Oak	E14	IP
10	Lohr	Piscataway	Mylonite	1	SBC	White Oak	E14	IP
10	Lohr	Piscataway	Quartz	5	SBC	White Oak	E14	IP
10	Lohr	Savannah River	Quartzite	6	SBC	White Oak	E14	IP
10	Lohr	shatter	Chert	1	SBC	White Oak	E14	IP
10	Lohr	St. Albans	Chert	1	SBC	White Oak	E14	IP
10	Lohr	St. Albans	Quartz	1	SBC	White Oak	E14	IP
10	Lohr	St. Albans	Quartzite	1	SBC	White Oak	E14	IP
10	Lohr	wedge	Metabasalt	1	SBC	White Oak	E14	IP
11	Trent Graves	biface frag dist	Quartz	4	LAC	Neal Mountain	E12	IP
11	Trent Graves	core	Quartz	2	LAC	Neal Mountain	E12	IP
11	Trent Graves	flake	Quartz	12	LAC	Neal Mountain	E12	IP
11	Trent Graves	flake	Quartzite	9	LAC	Neal Mountain	E12	IP
11	Trent Graves	Kirk Stemmed	Quartzite	1	LAC	Neal Mountain	E12	IP
11	Trent Graves	Levanna/Yadkin	Quartz	1	LAC	Neal Mountain	E12	IP
11	Trent Graves	Morrow Mountain II	Quartzite	1	LAC	Neal Mountain	E12	IP
12	Gentry X	biface com	Chert	1	LAC	Lambs Bottom	E12	IP
12	Gentry X	biface com	Metasiltstone	1	LAC	Lambs Bottom	E12	IP
12	Gentry X	biface com	Quartz	1	LAC	Lambs Bottom	E12	IP
12	Gentry X	flake	Quartz	6	LAC	Lambs Bottom	E12	IP
12	Gentry X	flake	Quartzite	1	LAC	Lambs Bottom	E12	IP
12	Gentry X	stone bowl fragment	Steatite	1	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface com	Mylonite	1	LAC	Lambs Bottom	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
13	Gentry Y	biface com	Quartz	6	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface com	Quartzite	2	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface frag mid	Chalcedony	1	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface frag mid	Chert	1	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface frag mid	Metabasalt	3	LAC	Lambs Bottom	E12	IP
13	Gentry Y	biface frag mid	Quartz	3	LAC	Lambs Bottom	E12	IP
13	Gentry Y	Calvert	Quartz	4	LAC	Lambs Bottom	E12	IP
13	Gentry Y	flake	Quartz	27	LAC	Lambs Bottom	E12	IP
13	Gentry Y	flake	Mylonite	5	LAC	Lambs Bottom	E12	IP
13	Gentry Y	flake	Quartzite	15	LAC	Lambs Bottom	E12	IP
13	Gentry Y	flake	Rhyolite	2	LAC	Lambs Bottom	E12	IP
13	Gentry Y	Halifax	Quartz	2	LAC	Lambs Bottom	E12	IP
13	Gentry Y	Holmes	Quartz	1	LAC	Lambs Bottom	E12	IP
13	Gentry Y	Kirk CN	Mylonite	1	LAC	Lambs Bottom	E12	IP
13	Gentry Y	Savannah River	Quartzite	1	LAC	Lambs Bottom	E12	IP
14	W. A. Aylor 1	biface com	Quartz	4	LAC	Uno	E13	IP
14	W. A. Aylor 1	flake	Quartz	6	LAC	Uno	E13	IP
14	W. A. Aylor 1	flake	Quartzite	1	LAC	Uno	E13	IP
15	W. A. Aylor 2	biface com	Quartz	3	LAC	Uno	E13	IP
15	W. A. Aylor 2	core	Quartz	3	LAC	Uno	E13	IP
15	W. A. Aylor 2	flake	Quartz	8	LAC	Uno	E13	IP
16	Graves	Halifax	Chert	1	SBC	Graves	E14	IP
16	Graves	Halifax	Quartz	19	SBC	Graves	E14	IP
16	Graves	Halifax	Quartzite	2	SBC	Graves	E14	IP
16	Graves	Holmes	Quartz	3	SBC	Graves	E14	IP
16	Graves	Holmes	Quartzite	8	SBC	Graves	E14	IP
16	Graves	Kirk CN	Quartzite	1	SBC	Graves	E14	IP
16	Graves	Lehigh/Koens-Crispin	Chert	3	SBC	Graves	E14	IP
16	Graves	Levanna/Yadkin	Chert	4	SBC	Graves	E14	IP
16	Graves	Levanna/Yadkin	Quartz	3	SBC	Graves	E14	IP
16	Graves	Levanna/Yadkin	Quartzite	18	SBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
16	Graves	Morrow Mountain II	Quartz	8	SBC	Graves	E14	IP
16	Graves	Morrow Mountain II	Quartzite	1	SBC	Graves	E14	IP
16	Graves	Palmer	Chert	3	SBC	Graves	E14	IP
16	Graves	Palmer	Quartz	2	SBC	Graves	E14	IP
16	Graves	Potts	Quartzite	1	SBC	Graves	E14	IP
16	Graves	Savannah River	Quartzite	1	SBC	Graves	E14	IP
16	Graves	Teardrop	Quartz	4	SBC	Graves	E14	IP
16	Graves	Teardrop	Quartzite	1	SBC	Graves	E14	IP
16	Graves	Triang. Preforms	Quartz	2	SBC	Graves	E14	IP
16	Graves	Triang. Preforms	Chert	2	SBC	Graves	E14	IP
16	Graves	Triang. Preforms	Quartzite	16	SBC	Graves	E14	IP
17	Robinson River Rockshelter				RS	Isolated	E14	BR
18	MD115	biface com	Quartz	2	IND	Isolated	E03	BR
19	MD114	biface com	Quartz	1	IND	Pinnacles	E03	BR
20	MD125	flake	Jasper	1	LAC	Nicholson	E03	BR
20	MD125	Guilford	Quartz	1	LAC	Nicholson	E03	BR
20	MD125	Jack's Reef Pentagonal	Jasper	1	LAC	Nicholson	E03	BR
20	MD125	Lamoka	Chert	1	LAC	Nicholson	E03	BR
20	MD125	Levanna/Yadkin	Quartzite	2	LAC	Nicholson	E03	BR
20	MD125	Savannah River	Quartzite	1	LAC	Nicholson	E03	BR
20	MD125	Vernon	Quartz	1	LAC	Nicholson	E03	BR
21	MD126	core	Quartzite	1	LAC	Nicholson	E03	BR
21	MD126	flake	Quartzite	3	LAC	Nicholson	E03	BR
21	MD126	flake	Jasper	1	LAC	Nicholson	E03	BR
23	MD146	Calvert	Quartz	2	SBC	Berry	E14	BR
23	MD146	core	Chert	2	SBC	Berry	E14	BR
23	MD146	core	Metabasalt	1	SBC	Berry	E14	BR
23	MD146	core	Quartz	23	SBC	Berry	E14	BR
23	MD146	core	Quartzite	1	SBC	Berry	E14	BR
23	MD146	flake	Quartz	428	SBC	Berry	E14	BR
23	MD146	flake	Chert	55	SBC	Berry	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
23	MD146	flake	Metabasalt	30	SBC	Berry	E14	BR
23	MD146	flake	Quartzite	429	SBC	Berry	E14	BR
23	MD146	Halifax	Quartz	1	SBC	Berry	E14	BR
23	MD146	Savannah River	Quartzite	2	SBC	Berry	E14	BR
23	MD146	shatter	Chert	1	SBC	Berry	E14	BR
23	MD146	shatter	Quartz	130	SBC	Berry	E14	BR
23	MD146	shatter	Quartzite	12	SBC	Berry	E14	BR
23	MD146	St. Albans	Quartz	1	SBC	Berry	E14	BR
23	MD146	stone bowl fragment	Steatite	1	SBC	Berry	E14	BR
24	MD134	flake	Quartz	5	IND	Nicholson	E03	BR
24	MD134	flake	Quartzite	6	IND	Nicholson	E03	BR
25	MD135	flake	Quartz	21	IND	Nicholson	E03	BR
25	MD135	flake	Quartzite	39	IND	Nicholson	E03	BR
27	Gentle	cobble tool	Metabasalt	1	SBC	Rose River	E14	BR
27	Gentle	core	Chert	6	SBC	Rose River	E14	BR
27	Gentle	core	Quartz	13	SBC	Rose River	E14	BR
27	Gentle	core	Quartzite	19	SBC	Rose River	E14	BR
27	Gentle	drill	Quartzite	1	SBC	Rose River	E14	BR
27	Gentle	flake	Quartz	578	SBC	Rose River	E14	BR
27	Gentle	flake	Chert	614	SBC	Rose River	E14	BR
27	Gentle	flake	Metabasalt	39	SBC	Rose River	E14	BR
27	Gentle	flake	Quartzite	3953	SBC	Rose River	E14	BR
27	Gentle	Levanna/Yadkin	Quartzite	18	SBC	Rose River	E14	BR
27	Gentle	Madison	Quartz	1	SBC	Rose River	E14	BR
27	Gentle	scraper	Quartzite	3	SBC	Rose River	E14	BR
27	Gentle	shatter	Chert	38	SBC	Rose River	E14	BR
27	Gentle	shatter	Quartz	67	SBC	Rose River	E14	BR
27	Gentle	shatter	Quartzite	12	SBC	Rose River	E14	BR
27	Gentle	Stanly	Quartzite	1	SBC	Rose River	E14	BR
27	Gentle	Triang. Preforms	Quartzite	7	SBC	Rose River	E14	BR
29	MD116	biface com	Quartz	2	IND	Limberlost	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
29	MD116	biface com	Chert	1	IND	Limberlost	E14	BR
30	MD117	biface com	Quartzite	1	IND	Limberlost	E14	BR
30	MD117	flake	Quartz	1	IND	Limberlost	E14	BR
31	MD118	biface com	Quartz	1	IND	Spitler Hill	E14	BR
31	MD118	biface com	Quartzite	1	IND	Spitler Hill	E14	BR
31	MD118	biface frag mid	Chert	1	IND	Spitler Hill	E14	BR
32	MD119	biface com	Quartz	1	LAC	Spitler Hill	E14	BR
32	MD119	biface com	Quartzite	1	LAC	Spitler Hill	E14	BR
32	MD119	flake	Quartzite	1	LAC	Spitler Hill	E14	BR
33	MD121	flake	Quartzite	38	LAC	Rose River	E14	BR
33	MD121	Triang. Preforms	Mylonite	1	LAC	Rose River	E14	BR
34	MD128	flake	Quartzite	44	LAC	Rose River	E14	BR
34	MD128	flake	Chert	7	LAC	Rose River	E14	BR
35	MD127	flake	Quartzite	8	IND	Fishers Gap	E14	BR
36	MD139	flake	Quartzite	2	IND	Big Meadows	E14	BR
37	MD140	biface com	Quartzite	1	LAC	Big Meadows	E14	BR
37	MD140	biface frag mid	Chert	2	LAC	Big Meadows	E14	BR
37	MD140	core	Quartzite	1	LAC	Big Meadows	E14	BR
37	MD140	flake	Quartzite	4	LAC	Big Meadows	E14	BR
38	MD151	flake	Quartzite	4	IND	Limberlost	E14	BR
39	MD122	biface com	Quartzite	1	LAC	Nicholson	E03	BR
39	MD122	flake	Quartz	3	LAC	Nicholson	E03	BR
39	MD122	flake	Quartzite	15	LAC	Nicholson	E03	BR
40	MD124	flake	Quartzite	1	IND	Nicholson	E03	BR
41	MD129	flake	Quartz	3	IND	Nicholson	E03	BR
42	MD130	flake	Quartz	1	IND	Nicholson	E03	BR
42	MD130	flake	Chert	1	IND	Nicholson	E03	BR
43	MD131	biface frag dist	Quartz	1	IND	Nicholson	E03	BR
43	MD131	flake	Quartzite	1	IND	Nicholson	E03	BR
44	MD132	flake	Quartz	1	IND	Nicholson	E03	BR
44	MD132	flake	Quartzite	4	IND	Nicholson	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
45	MD133	flake	Quartzite	3	LAC	Nicholson	E03	BR
45	MD133	grinding stone	Metabasalt	1	LAC	Nicholson	E03	BR
46	MD145	shatter	Quartz	1	IND	Weakley	E03	BR
46	MD145	shatter	Chert	1	IND	Weakley	E03	BR
47	MD147				IND	Berry	E14	BR
48	MD159	flake	Quartz	9	LAC	Nicholson	E03	BR
48	MD159	flake	Metabasalt	2	LAC	Nicholson	E03	BR
48	MD159	flake	Quartzite	12	LAC	Nicholson	E03	BR
49	MD160	biface frag mid	Quartz	1	LAC	Nicholson	E03	BR
49	MD160	flake	Quartz	6	LAC	Nicholson	E03	BR
49	MD160	flake	Chert	1	LAC	Nicholson	E03	BR
49	MD160	flake	Quartzite	9	LAC	Nicholson	E03	BR
50	MD164	flake	Quartz	3	IND	Isolated	E03	BR
50	MD164	flake	Quartzite	6	IND	Isolated	E03	BR
51	MD165	chipped stone axe	Metabasalt	1	LAC	Isolated	E03	BR
51	MD165	flake	Quartz	5	LAC	Isolated	E03	BR
51	MD165	flake	Quartzite	8	LAC	Isolated	E03	BR
52	MD166	flake	Quartzite	29	LAC	Corbin	E03	BR
53	MD170	flake	Quartz	6	LAC	Corbin	E03	BR
53	MD170	flake	Quartzite	10	LAC	Corbin	E03	BR
53	MD170	flake	Rhyolite	3	LAC	Corbin	E03	BR
53	MD170	Morrow Mountain II	Metabasalt	1	LAC	Corbin	E03	BR
54	Robertson Mountain	biface com	Quartzite	2	LAC	Corbin	E03	BR
54	Robertson Mountain	Calvert	Quartz	3	LAC	Corbin	E03	BR
54	Robertson Mountain	Halifax	Quartz	2	LAC	Corbin	E03	BR
54	Robertson Mountain	Kirk Stemmed	Quartzite	1	LAC	Corbin	E03	BR
54	Robertson Mountain	Morrow Mountain II	Quartzite	1	LAC	Corbin	E03	BR
54	Robertson Mountain	Savannah River	Quartzite	1	LAC	Corbin	E03	BR
54	Robertson Mountain	St. Albans	Quartz	1	LAC	Corbin	E03	BR
54	Robertson Mountain	Vernon	Quartzite	2	LAC	Corbin	E03	BR
54	Robertson Mountain	Vernon	Quartz	2	LAC	Corbin	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
55	MD137	biface frag mid	Chalcedony	1	SBC	Big Meadows	E14	BR
55	MD137	biface frag mid	Chert	4	SBC	Big Meadows	E14	BR
55	MD137	biface frag mid	Jasper	1	SBC	Big Meadows	E14	BR
55	MD137	biface frag mid	Metabasalt	1	SBC	Big Meadows	E14	BR
55	MD137	biface frag mid	Quartz	3	SBC	Big Meadows	E14	BR
55	MD137	biface frag mid	Quartzite	5	SBC	Big Meadows	E14	BR
55	MD137	Calvert	Quartz	1	SBC	Big Meadows	E14	BR
55	MD137	core	Chert	4	SBC	Big Meadows	E14	BR
55	MD137	core	Jasper	1	SBC	Big Meadows	E14	BR
55	MD137	core	Metabasalt	4	SBC	Big Meadows	E14	BR
55	MD137	core	Metabasalt Breccia	2	SBC	Big Meadows	E14	BR
55	MD137	core	Quartz	5	SBC	Big Meadows	E14	BR
55	MD137	core	Quartzite	1	SBC	Big Meadows	E14	BR
55	MD137	drill	Chert	1	SBC	Big Meadows	E14	BR
55	MD137	flake	Quartz	130	SBC	Big Meadows	E14	BR
55	MD137	flake	Basalt	1	SBC	Big Meadows	E14	BR
55	MD137	flake	Chalcedony	4	SBC	Big Meadows	E14	BR
55	MD137	flake	Chert	56	SBC	Big Meadows	E14	BR
55	MD137	flake	Jasper	19	SBC	Big Meadows	E14	BR
55	MD137	flake	Metabasalt	106	SBC	Big Meadows	E14	BR
55	MD137	flake	Metabasalt Breccia	29	SBC	Big Meadows	E14	BR
55	MD137	flake	Mylonite	2	SBC	Big Meadows	E14	BR
55	MD137	flake	Quartzite	1004	SBC	Big Meadows	E14	BR
55	MD137	graver	Chert	1	SBC	Big Meadows	E14	BR
55	MD137	graver	Jasper	3	SBC	Big Meadows	E14	BR
55	MD137	graver	Metabasalt	1	SBC	Big Meadows	E14	BR
55	MD137	graver	Quartz	2	SBC	Big Meadows	E14	BR
55	MD137	graver	Quartzite	19	SBC	Big Meadows	E14	BR
55	MD137	grinding stone	Metabasalt	1	SBC	Big Meadows	E14	BR
55	MD137	hammerstone	Metabasalt	1	SBC	Big Meadows	E14	BR
55	MD137	Piscataway	Quartz	1	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
55	MD137	scraper	Chalcedony	1	SBC	Big Meadows	E14	BR
55	MD137	scraper	Chert	5	SBC	Big Meadows	E14	BR
55	MD137	scraper	Jasper	6	SBC	Big Meadows	E14	BR
55	MD137	scraper	Metabasalt	3	SBC	Big Meadows	E14	BR
55	MD137	scraper	Quartz	14	SBC	Big Meadows	E14	BR
55	MD137	scraper	Quartzite	51	SBC	Big Meadows	E14	BR
55	MD137	scraper	Hornfels	1	SBC	Big Meadows	E14	BR
55	MD137	shatter	Chert	6	SBC	Big Meadows	E14	BR
55	MD137	shatter	Metabasalt	10	SBC	Big Meadows	E14	BR
55	MD137	shatter	Metabasalt Breccia	6	SBC	Big Meadows	E14	BR
55	MD137	shatter	Quartz	9	SBC	Big Meadows	E14	BR
55	MD137	shatter	Quartzite	4	SBC	Big Meadows	E14	BR
55	MD137	shatter	Jasper	12	SBC	Big Meadows	E14	BR
55	MD137	spokeshave	Chalcedony	1	SBC	Big Meadows	E14	BR
55	MD137	spokeshave	Chert	1	SBC	Big Meadows	E14	BR
55	MD137	spokeshave	Metabasalt Breccia	1	SBC	Big Meadows	E14	BR
55	MD137	spokeshave	Quartzite	12	SBC	Big Meadows	E14	BR
55	MD137	Unidentifiable Point	Chert	1	SBC	Big Meadows	E14	BR
55	MD137	Vernon	Quartz	2	SBC	Big Meadows	E14	BR
56	Cliff Kill	biface com	Quartzite	2	LAC	Big Meadows	E14	BR
56	Cliff Kill	flake	Quartz	26	LAC	Big Meadows	E14	BR
56	Cliff Kill	flake	Chert	18	LAC	Big Meadows	E14	BR
56	Cliff Kill	flake	Quartzite	39	LAC	Big Meadows	E14	BR
56	Cliff Kill	Guilford	Quartzite	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	Levanna/Yadkin	Quartzite	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	Morrow Mountain II	Quartz	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	Savannah River	Quartz	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	scraper	Quartzite	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	spokeshave	Quartzite	1	LAC	Big Meadows	E14	BR
56	Cliff Kill	Vernon	Quartzite	1	LAC	Big Meadows	E14	BR
57	MD141	flake	Quartz	1	IND	Isolated	E11	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
58	MD142	flake	Quartz	1	IND	Isolated	E14	BR
58	MD142	flake	Quartzite	3	IND	Isolated	E14	BR
59	Miller	biface com	Chert	3	SBC	Big Meadows	E14	BR
59	Miller	biface com	Quartz	3	SBC	Big Meadows	E14	BR
59	Miller	biface frag dist	Quartz	2	SBC	Big Meadows	E14	BR
59	Miller	biface frag mid	Quartzite	2	SBC	Big Meadows	E14	BR
59	Miller	Brewerton SN	Quartz	2	SBC	Big Meadows	E14	BR
59	Miller	Brewerton SN	Quartzite	1	SBC	Big Meadows	E14	BR
59	Miller	chipped stone axe	Metabasalt	5	SBC	Big Meadows	E14	BR
59	Miller	cobble tool	Metabasalt	4	SBC	Big Meadows	E14	BR
59	Miller	core	Chert	3	SBC	Big Meadows	E14	BR
59	Miller	core	Metabasalt	7	SBC	Big Meadows	E14	BR
59	Miller	core	Quartz	8	SBC	Big Meadows	E14	BR
59	Miller	core	Quartzite	1	SBC	Big Meadows	E14	BR
59	Miller	drill	Quartzite	4	SBC	Big Meadows	E14	BR
59	Miller	flake	Quartz	232	SBC	Big Meadows	E14	BR
59	Miller	flake	Chert	17	SBC	Big Meadows	E14	BR
59	Miller	flake	Jasper	8	SBC	Big Meadows	E14	BR
59	Miller	flake	Metabasalt	15	SBC	Big Meadows	E14	BR
59	Miller	flake	Quartzite	4142	SBC	Big Meadows	E14	BR
59	Miller	flake	Rhyolite	3	SBC	Big Meadows	E14	BR
59	Miller	Halifax	Quartz	2	SBC	Big Meadows	E14	BR
59	Miller	Holmes	Quartzite	1	SBC	Big Meadows	E14	BR
59	Miller	incised stone frag	Slate	1	SBC	Big Meadows	E14	BR
59	Miller	Jack's Reef CN	Chert	1	SBC	Big Meadows	E14	BR
59	Miller	Jack's Reef CN	Quartzite	1	SBC	Big Meadows	E14	BR
59	Miller	Morrow Mountain II	Quartzite	2	SBC	Big Meadows	E14	BR
59	Miller	Perkiomen	Jasper	1	SBC	Big Meadows	E14	BR
59	Miller	Savannah River	Quartz	1	SBC	Big Meadows	E14	BR
59	Miller	Savannah River	Quartzite	5	SBC	Big Meadows	E14	BR
59	Miller	scraper	Chert	1	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
59	Miller	scraper	Quartz	8	SBC	Big Meadows	E14	BR
59	Miller	scraper	Quartzite	73	SBC	Big Meadows	E14	BR
59	Miller	shatter	Quartz	2	SBC	Big Meadows	E14	BR
59	Miller	spokeshave	Quartz	4	SBC	Big Meadows	E14	BR
59	Miller	spokeshave	Quartzite	10	SBC	Big Meadows	E14	BR
59	Miller	stone bowl fragment	Steatite	12	SBC	Big Meadows	E14	BR
59	Miller	biface com	Quartzite	38	SBC	Big Meadows	E14	BR
59	Miller	biface frag dist	Quartzite	2	SBC	Big Meadows	E14	BR
59	Miller	spokeshave	Chert	2	SBC	Big Meadows	E14	BR
60	MD144	biface com	Jasper	1	SBC	Big Meadows	E14	BR
60	MD144	biface com	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	biface frag dist	Chert	2	SBC	Big Meadows	E14	BR
60	MD144	biface frag dist	Quartz	1	SBC	Big Meadows	E14	BR
60	MD144	biface frag dist	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	biface frag mid	Quartz	1	SBC	Big Meadows	E14	BR
60	MD144	Brewerton SN	Chert	1	SBC	Big Meadows	E14	BR
60	MD144	cobble tool	Diabase	1	SBC	Big Meadows	E14	BR
60	MD144	core	Chert	2	SBC	Big Meadows	E14	BR
60	MD144	core	Metabasalt	2	SBC	Big Meadows	E14	BR
60	MD144	core	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	drill	Metabasalt	1	SBC	Big Meadows	E14	BR
60	MD144	drill	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Quartz	55	SBC	Big Meadows	E14	BR
60	MD144	flake	Basalt	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Chalcedony	5	SBC	Big Meadows	E14	BR
60	MD144	flake	Chert	45	SBC	Big Meadows	E14	BR
60	MD144	flake	Hornfels	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Jasper	4	SBC	Big Meadows	E14	BR
60	MD144	flake	Mylonite	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Oolitic Qtzite	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Phyllite	2	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
60	MD144	flake	Quartzite	328	SBC	Big Meadows	E14	BR
60	MD144	flake	Rhyolite	1	SBC	Big Meadows	E14	BR
60	MD144	flake	Metabasalt	4	SBC	Big Meadows	E14	BR
60	MD144	graver	Jasper	1	SBC	Big Meadows	E14	BR
60	MD144	graver	Quartz	3	SBC	Big Meadows	E14	BR
60	MD144	graver	Quartzite	5	SBC	Big Meadows	E14	BR
60	MD144	hammerstone	Metabasalt	1	SBC	Big Meadows	E14	BR
60	MD144	Morrow Mountain II	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	scraper	Chalcedony	1	SBC	Big Meadows	E14	BR
60	MD144	scraper	Jasper	1	SBC	Big Meadows	E14	BR
60	MD144	scraper	Quartz	5	SBC	Big Meadows	E14	BR
60	MD144	scraper	Quartzite	10	SBC	Big Meadows	E14	BR
60	MD144	shatter	Chert	7	SBC	Big Meadows	E14	BR
60	MD144	shatter	Jasper	2	SBC	Big Meadows	E14	BR
60	MD144	shatter	Quartz	24	SBC	Big Meadows	E14	BR
60	MD144	shatter	Quartzite	15	SBC	Big Meadows	E14	BR
60	MD144	spokeshave	Quartzite	1	SBC	Big Meadows	E14	BR
60	MD144	Susquehanna BS	Rhyolite	1	SBC	Big Meadows	E14	BR
61	Limberlost I	biface com	Quartz	3	SBC	Limberlost	E14	BR
61	Limberlost I	biface frag dist	Chert	2	SBC	Limberlost	E14	BR
61	Limberlost I	biface frag dist	Quartz	1	SBC	Limberlost	E14	BR
61	Limberlost I	biface frag mid	Chert	1	SBC	Limberlost	E14	BR
61	Limberlost I	biface frag mid	Quartz	1	SBC	Limberlost	E14	BR
61	Limberlost I	biface frag mid	Quartzite	1	SBC	Limberlost	E14	BR
61	Limberlost I	Calvert	Quartzite	1	SBC	Limberlost	E14	BR
61	Limberlost I	core	Chert	1	SBC	Limberlost	E14	BR
61	Limberlost I	core	Quartz	3	SBC	Limberlost	E14	BR
61	Limberlost I	core	Quartzite	2	SBC	Limberlost	E14	BR
61	Limberlost I	drill	Chert	1	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Quartz	71	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Chalcedony	1	SBC	Limberlost	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
61	Limberlost I	flake	Chert	14	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Jasper	5	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Metabasalt	1	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Quartzite	270	SBC	Limberlost	E14	BR
61	Limberlost I	flake	Rhyolite	4	SBC	Limberlost	E14	BR
61	Limberlost I	graver	Quartzite	1	SBC	Limberlost	E14	BR
61	Limberlost I	hammerstone	Metabasalt	2	SBC	Limberlost	E14	BR
61	Limberlost I	Holmes	Quartzite	1	SBC	Limberlost	E14	BR
61	Limberlost I	Savannah River	Quartzite	1	SBC	Limberlost	E14	BR
61	Limberlost I	scraper	Metabasalt	1	SBC	Limberlost	E14	BR
61	Limberlost I	scraper	Quartz	1	SBC	Limberlost	E14	BR
61	Limberlost I	scraper	Quartzite	2	SBC	Limberlost	E14	BR
61	Limberlost I	shatter	Chert	2	SBC	Limberlost	E14	BR
61	Limberlost I	shatter	Quartz	15	SBC	Limberlost	E14	BR
61	Limberlost I	shatter	Quartzite	5	SBC	Limberlost	E14	BR
61	Limberlost I	shatter	Jasper	1	SBC	Limberlost	E14	BR
61	Limberlost I	St. Albans	Quartz	1	SBC	Limberlost	E14	BR
61	Limberlost I	Unidentifiable Point	Quartzite	1	SBC	Limberlost	E14	BR
62		flake	Quartz	24	LAC	Rose River	E14	BR
62		flake	Quartzite	32	LAC	Rose River	E14	BR
63	Speiden MD6A	Bare Island	Quartz	1	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Arg. Shale	1	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Greywacke	1	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Jasper	2	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Metabasalt	3	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Quartz	40	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Quartzite	19	HAM	Sanford	E13	MB
63	Speiden MD6A	biface com	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	biface frag dist	Chert	1	HAM	Sanford	E13	MB
63	Speiden MD6A	biface frag dist	Jasper	2	HAM	Sanford	E13	MB
63	Speiden MD6A	biface frag dist	Mylonite	1	HAM	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
63	Speiden MD6A	biface frag dist	Quartz	15	HAM	Sanford	E13	MB
63	Speiden MD6A	biface frag mid	Chert	2	HAM	Sanford	E13	MB
63	Speiden MD6A	biface frag mid	Quartz	27	HAM	Sanford	E13	MB
63	Speiden MD6A	Bilobate	Quartz	4	HAM	Sanford	E13	MB
63	Speiden MD6A	blade flake	Quartz	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Basalt	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Chert	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Mylonite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Quartz	14	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Calvert	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	cobble tool	Jasper	4	HAM	Sanford	E13	MB
63	Speiden MD6A	cobble tool	Metabasalt	1	HAM	Sanford	E13	MB
63	Speiden MD6A	cobble tool	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	core	Mylonite	4	HAM	Sanford	E13	MB
63	Speiden MD6A	core	Quartz	9	HAM	Sanford	E13	MB
63	Speiden MD6A	core	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Quartz	35	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Arg. Shale	1	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Chalcedony	3	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Chert	34	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Jasper	21	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Metabasalt	12	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Mylonite	44	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Oolitic Qtzite	2	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Phyllite	6	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Quartzite	119	HAM	Sanford	E13	MB
63	Speiden MD6A	flake	Rhyolite	10	HAM	Sanford	E13	MB
63	Speiden MD6A	Halifax	Quartz	9	HAM	Sanford	E13	MB
63	Speiden MD6A	Halifax	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Holmes	Quartz	1	HAM	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
63	Speiden MD6A	Holmes	Quartzite	3	HAM	Sanford	E13	MB
63	Speiden MD6A	Kirk Stemmed	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	LeCroy	Chert	1	HAM	Sanford	E13	MB
63	Speiden MD6A	LeCroy	Quartz	4	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Chert	2	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Jasper	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Mylonite	3	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Oolitic Qtzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Quartz	33	HAM	Sanford	E13	MB
63	Speiden MD6A	Levanna/Yadkin	Quartzite	3	HAM	Sanford	E13	MB
63	Speiden MD6A	Madison	Quartz	3	HAM	Sanford	E13	MB
63	Speiden MD6A	Morrow Mountain II	Quartz	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Morrow Mountain II	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Palmer	Mylonite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Piscataway	Quartz	8	HAM	Sanford	E13	MB
63	Speiden MD6A	Potts	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Savannah River	Quartz	2	HAM	Sanford	E13	MB
63	Speiden MD6A	Savannah River	Quartzite	3	HAM	Sanford	E13	MB
63	Speiden MD6A	scraper	Oolitic Qtzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	scraper	Quartz	5	HAM	Sanford	E13	MB
63	Speiden MD6A	scraper	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	scraper	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	shatter	Chert	3	HAM	Sanford	E13	MB
63	Speiden MD6A	shatter	Jasper	1	HAM	Sanford	E13	MB
63	Speiden MD6A	shatter	Quartz	3	HAM	Sanford	E13	MB
63	Speiden MD6A	shatter	Quartzite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	spokeshave	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	stone pipe fragment	Arg. Shale	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Susquehanna BS	Rhyolite	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Unidentifiable Point	Quartz	1	HAM	Sanford	E13	MB
63	Speiden MD6A	Vernon	Quartz	4	HAM	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
63	Speiden MD6A	Vernon	Quartzite	3	HAM	Sanford	E13	MB
64	Speiden MD6B	biface com	Metabasalt	1	SBC	Sanford	E13	MB
64	Speiden MD6B	biface com	Quartz	18	SBC	Sanford	E13	MB
64	Speiden MD6B	biface com	Quartzite	1	SBC	Sanford	E13	MB
64	Speiden MD6B	biface frag mid	Quartz	4	SBC	Sanford	E13	MB
64	Speiden MD6B	Bilobate	Quartz	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Bilobate	Quartzite	1	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Quartz	55	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Arg. Shale	1	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Chalcedony	1	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Chert	2	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Mylonite	1	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Quartzite	7	SBC	Sanford	E13	MB
64	Speiden MD6B	flake	Rhyolite	14	SBC	Sanford	E13	MB
64	Speiden MD6B	grooved axe	Metabasalt	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Guilford	Quartz	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Halifax	Quartz	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Halifax	Quartzite	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Holmes	Quartz	2	SBC	Sanford	E13	MB
64	Speiden MD6B	Morrow Mountain II	Quartz	1	SBC	Sanford	E13	MB
64	Speiden MD6B	pestle	Metabasalt	1	SBC	Sanford	E13	MB
64	Speiden MD6B	shatter	Chert	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Susquehanna BS	Rhyolite	1	SBC	Sanford	E13	MB
64	Speiden MD6B	Vernon	Quartz	1	SBC	Sanford	E13	MB
65	Speiden MD6C	biface com	Chalcedony	1	SBC	Sanford	E13	MB
65	Speiden MD6C	biface com	Chert	2	SBC	Sanford	E13	MB
65	Speiden MD6C	biface com	Quartz	9	SBC	Sanford	E13	MB
65	Speiden MD6C	biface frag mid	Quartz	31	SBC	Sanford	E13	MB
65	Speiden MD6C	biface frag mid	Quartzite	2	SBC	Sanford	E13	MB
65	Speiden MD6C	biface frag mid	Rhyolite	2	SBC	Sanford	E13	MB
65	Speiden MD6C	blade flake	Chert	1	SBC	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
65	Speiden MD6C	Calvert	Quartz	1	SBC	Sanford	E13	MB
65	Speiden MD6C	cobble tool	Mylonite	2	SBC	Sanford	E13	MB
65	Speiden MD6C	core	Quartz	7	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Quartz	33	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Arg. Shale	3	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Basalt	2	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Chalcedony	8	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Chert	4	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Metabasalt	3	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Mylonite	3	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Quartzite	22	SBC	Sanford	E13	MB
65	Speiden MD6C	flake	Rhyolite	35	SBC	Sanford	E13	MB
65	Speiden MD6C	Piscataway	Quartz	1	SBC	Sanford	E13	MB
65	Speiden MD6C	Potts	Mylonite	1	SBC	Sanford	E13	MB
65	Speiden MD6C	Potts	Quartz	1	SBC	Sanford	E13	MB
65	Speiden MD6C	shatter	Mylonite	1	SBC	Sanford	E13	MB
65	Speiden MD6C	shatter	Quartz	3	SBC	Sanford	E13	MB
65	Speiden MD6C	Vernon	Quartz	5	SBC	Sanford	E13	MB
66	Speiden MD6D	biface com	Mylonite	1	SBC	Sanford	E13	MB
66	Speiden MD6D	biface com	Quartz	15	SBC	Sanford	E13	MB
66	Speiden MD6D	biface com	Quartzite	3	SBC	Sanford	E13	MB
66	Speiden MD6D	Calvert	Mylonite	1	SBC	Sanford	E13	MB
66	Speiden MD6D	flake	Quartz	33	SBC	Sanford	E13	MB
66	Speiden MD6D	flake	Chalcedony	1	SBC	Sanford	E13	MB
66	Speiden MD6D	flake	Chert	1	SBC	Sanford	E13	MB
66	Speiden MD6D	flake	Quartzite	14	SBC	Sanford	E13	MB
66	Speiden MD6D	Halifax	Quartz	1	SBC	Sanford	E13	MB
66	Speiden MD6D	Holmes	Quartz	1	SBC	Sanford	E13	MB
66	Speiden MD6D	shatter	Mylonite	1	SBC	Sanford	E13	MB
66	Speiden MD6D	shatter	Quartz	12	SBC	Sanford	E13	MB
66	Speiden MD6D	Teardrop	Quartz	1	SBC	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
66	Speiden MD6D	Vernon	Quartz	2	SBC	Sanford	E13	MB
67	Speiden MD6E	biface frag mid	Quartz	11	SBC	Sanford	E15	MB
67	Speiden MD6E	biface frag mid	Quartzite	3	SBC	Sanford	E15	MB
67	Speiden MD6E	chipped stone axe	Metabasalt	1	SBC	Sanford	E15	MB
67	Speiden MD6E	core	Quartz	2	SBC	Sanford	E15	MB
67	Speiden MD6E	flake	Quartz	22	SBC	Sanford	E15	MB
67	Speiden MD6E	flake	Metabasalt	2	SBC	Sanford	E15	MB
67	Speiden MD6E	flake	Mylonite	5	SBC	Sanford	E15	MB
67	Speiden MD6E	flake	Oolitic Qtzite	1	SBC	Sanford	E15	MB
67	Speiden MD6E	flake	Quartzite	60	SBC	Sanford	E15	MB
67	Speiden MD6E	Halifax	Quartz	1	SBC	Sanford	E15	MB
67	Speiden MD6E	Levanna/Yadkin	Chert	1	SBC	Sanford	E15	MB
67	Speiden MD6E	shatter	Chalcedony	1	SBC	Sanford	E15	MB
67	Speiden MD6E	shatter	Quartz	10	SBC	Sanford	E15	MB
67	Speiden MD6E	Vernon	Quartz	1	SBC	Sanford	E15	MB
68	Speiden MD6F	biface frag mid	Quartzite	1	LAC	Sanford	E15	MB
68	Speiden MD6F	flake	Quartzite	1	LAC	Sanford	E15	MB
68	Speiden MD6F	flake	Chalcedony	1	LAC	Sanford	E15	MB
68	Speiden MD6F	Holmes	Quartz	1	LAC	Sanford	E15	MB
68	Speiden MD6F	Morrow Mountain II	Quartz	1	LAC	Sanford	E15	MB
68	Speiden MD6F	Piscataway	Oolitic Qtzite	1	LAC	Sanford	E15	MB
68	Speiden MD6F	shatter	Quartzite	1	LAC	Sanford	E15	MB
69	Speiden MD6G	biface com	Quartz	1	LAC	Sanford	E15	MB
69	Speiden MD6G	core	Quartz	1	LAC	Sanford	E15	MB
69	Speiden MD6G	flake	Quartzite	1	LAC	Sanford	E15	MB
69	Speiden MD6G	Susquehanna BS	Rhyolite	1	LAC	Sanford	E15	MB
70	Speiden MD6H	core	Quartz	1	IND	Sanford	E13	MB
70	Speiden MD6H	flake	Quartz	1	IND	Sanford	E13	MB
70	Speiden MD6H	flake	Chalcedony	1	IND	Sanford	E13	MB
71	Speiden MD6I	biface com	Arg. Shale	1	IND	Sanford	E13	MB
71	Speiden MD6I	biface com	Quartzite	1	IND	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
71	Speiden MD6I	flake	Quartz	1	IND	Sanford	E13	MB
71	Speiden MD6I	flake	Quartzite	1	IND	Sanford	E13	MB
72	Speiden MD6J	biface com	Quartz	9	LBC	Sanford	E13	MB
72	Speiden MD6J	biface com	Quartzite	4	LBC	Sanford	E13	MB
72	Speiden MD6J	biface com	Rhyolite	1	LBC	Sanford	E13	MB
72	Speiden MD6J	biface frag dist	Chalcedony	1	LBC	Sanford	E13	MB
72	Speiden MD6J	biface frag dist	Quartz	6	LBC	Sanford	E13	MB
72	Speiden MD6J	biface frag mid	Chert	3	LBC	Sanford	E13	MB
72	Speiden MD6J	biface frag mid	Quartz	7	LBC	Sanford	E13	MB
72	Speiden MD6J	biface frag mid	Quartzite	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Bilobate	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	blade flake	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Calvert	Rhyolite	1	LBC	Sanford	E13	MB
72	Speiden MD6J	cobble tool	Metabasalt	1	LBC	Sanford	E13	MB
72	Speiden MD6J	core	Quartz	11	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Quartz	102	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Arg. Shale	1	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Chalcedony	1	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Chert	15	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Jasper	11	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Metabasalt	2	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Phyllite	2	LBC	Sanford	E13	MB
72	Speiden MD6J	flake	Quartzite	8	LBC	Sanford	E13	MB
72	Speiden MD6J	Halifax	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	LeCroy	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Levanna/Yadkin	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Levanna/Yadkin	Quartzite	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Madison	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	scraper	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Triang. Preforms	Quartz	1	LBC	Sanford	E13	MB
72	Speiden MD6J	Triang. Preforms	Quartzite	1	LBC	Sanford	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
72	Speiden MD6J	Vernon	Quartz	1	LBC	Sanford	E13	MB
73	Speiden MD3A	flake	Quartz	12	IND	Lambs Bottom	E12	IP
74	Speiden MD3B	biface com	Mylonite	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	biface frag dist	Quartz	4	SBC	Elk Run	E12	IP
74	Speiden MD3B	biface frag mid	Mylonite	6	SBC	Elk Run	E12	IP
74	Speiden MD3B	core	Mylonite	3	SBC	Elk Run	E12	IP
74	Speiden MD3B	core	Quartz	3	SBC	Elk Run	E12	IP
74	Speiden MD3B	flake	Quartz	31	SBC	Elk Run	E12	IP
74	Speiden MD3B	flake	Mylonite	62	SBC	Elk Run	E12	IP
74	Speiden MD3B	graver	Mylonite	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	graver	Quartz	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	Holmes	Quartz	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	Levanna/Yadkin	Quartz	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	Morrow Mountain II	Quartz	1	SBC	Elk Run	E12	IP
74	Speiden MD3B	scraper	Mylonite	4	SBC	Elk Run	E12	IP
74	Speiden MD3B	scraper	Quartz	2	SBC	Elk Run	E12	IP
74	Speiden MD3B	shatter	Basalt	4	SBC	Elk Run	E12	IP
74	Speiden MD3B	shatter	Mylonite	5	SBC	Elk Run	E12	IP
74	Speiden MD3B	shatter	Quartz	3	SBC	Elk Run	E12	IP
74	Speiden MD3B	spokeshave	Mylonite	2	SBC	Elk Run	E12	IP
75	North Skyland	biface frag mid	Quartzite	2	LAC	Isolated	E14	BR
75	North Skyland	flake	Quartz	1	LAC	Isolated	E14	BR
75	North Skyland	flake	Quartzite	13	LAC	Isolated	E14	BR
75	North Skyland	Vernon	Quartzite	1	LAC	Isolated	E14	BR
76	White Oak FP	flake	Quartzite	8	LAC	Isolated	E14	BR
77		flake	Quartzite	7	IND	Isolated	E14	BR
78		flake	Quartzite	7	IND	Isolated	E14	BR
78		scraper	Quartzite	1	IND	Isolated	E14	BR
80		flake	Quartzite	7	LAC	Hawksbill	E14	BR
80		Vernon	Quartzite	1	LAC	Hawksbill	E14	BR
81		flake	Quartzite	9	IND	Hawksbill	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
82		flake	Quartzite	7	IND	Hawksbill	E14	BR
83		flake	Quartzite	8	IND	Spitler Hill	E14	BR
84	Old Rag View	flake	Quartzite	7	IND	Spitler Hill	E14	BR
84	Old Rag View	graver	Quartzite	1	IND	Spitler Hill	E14	BR
85		flake	Quartzite	9	IND	Isolated	E14	BR
86	Rapidan Road	core	Chalcedony	1	LAC	Big Meadows	E14	BR
86	Rapidan Road	core	Quartz	1	LAC	Big Meadows	E14	BR
86	Rapidan Road	flake	Quartz	5	LAC	Big Meadows	E14	BR
86	Rapidan Road	flake	Quartzite	2	LAC	Big Meadows	E14	BR
86	Rapidan Road	graver	Chert	1	LAC	Big Meadows	E14	BR
86	Rapidan Road	scraper	Quartz	1	LAC	Big Meadows	E14	BR
86	Rapidan Road	shatter	Quartz	11	LAC	Big Meadows	E14	BR
87	North Fishers Gap I	flake	Quartzite	7	LAC	Fishers Gap	E14	BR
88		flake	Quartzite	6	IND	Isolated	E14	BR
89		flake	Quartzite	8	IND	Isolated	E14	BR
90	Fishers Gap Fire Road	flake	Quartzite	24	LAC	Fishers Gap	E14	BR
91	South Fishers Gap	flake	Quartzite	5	IND	Fishers Gap	E14	BR
92	Milam Gap	Bare Island	Quartz	1	LBC	Milam Gap	E11	BR
92	Milam Gap	Bare Island	Quartzite	1	LBC	Milam Gap	E11	BR
92	Milam Gap	biface com	Chert	6	LBC	Milam Gap	E11	BR
92	Milam Gap	biface com	Jasper	1	LBC	Milam Gap	E11	BR
92	Milam Gap	biface com	Metabasalt	5	LBC	Milam Gap	E11	BR
92	Milam Gap	biface com	Quartz	27	LBC	Milam Gap	E11	BR
92	Milam Gap	biface com	Quartzite	5	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag dist	Chert	1	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag dist	Quartz	3	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag dist	Quartzite	2	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag mid	Chert	5	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag mid	Jasper	2	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag mid	Quartz	29	LBC	Milam Gap	E11	BR
92	Milam Gap	biface frag mid	Quartzite	2	LBC	Milam Gap	E11	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
92	Milam Gap	blade flake	Quartzite	1	LBC	Milam Gap	E11	BR
92	Milam Gap	Calvert	Quartz	2	LBC	Milam Gap	E11	BR
92	Milam Gap	cobble tool	Metabasalt	5	LBC	Milam Gap	E11	BR
92	Milam Gap	cobble tool	Quartz	6	LBC	Milam Gap	E11	BR
92	Milam Gap	cobble tool	Quartzite	1	LBC	Milam Gap	E11	BR
92	Milam Gap	core	Quartz	23	LBC	Milam Gap	E11	BR
92	Milam Gap	core	Quartzite	2	LBC	Milam Gap	E11	BR
92	Milam Gap	drill	Quartz	8	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Quartz	789	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Chalcedony	5	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Chert	82	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Jasper	24	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Metabasalt	15	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Quartzite	228	LBC	Milam Gap	E11	BR
92	Milam Gap	flake	Rhyolite	21	LBC	Milam Gap	E11	BR
92	Milam Gap	graver	Chert	1	LBC	Milam Gap	E11	BR
92	Milam Gap	graver	Quartz	29	LBC	Milam Gap	E11	BR
92	Milam Gap	graver	Quartzite	1	LBC	Milam Gap	E11	BR
92	Milam Gap	grinding stone	Metabasalt	1	LBC	Milam Gap	E11	BR
92	Milam Gap	hammerstone	Basalt	1	LBC	Milam Gap	E11	BR
92	Milam Gap	Holmes	Quartzite	1	LBC	Milam Gap	E11	BR
92	Milam Gap	MacPherson	Chert	1	LBC	Milam Gap	E11	BR
92	Milam Gap	Piscataway	Quartzite	2	LBC	Milam Gap	E11	BR
92	Milam Gap	Savannah River	Quartzite	2	LBC	Milam Gap	E11	BR
92	Milam Gap	scraper	Chert	2	LBC	Milam Gap	E11	BR
92	Milam Gap	scraper	Quartz	37	LBC	Milam Gap	E11	BR
92	Milam Gap	scraper	Quartzite	3	LBC	Milam Gap	E11	BR
92	Milam Gap	shatter	Chert	16	LBC	Milam Gap	E11	BR
92	Milam Gap	shatter	Quartz	365	LBC	Milam Gap	E11	BR
92	Milam Gap	shatter	Quartzite	75	LBC	Milam Gap	E11	BR
92	Milam Gap	spokeshave	Quartzite	1	LBC	Milam Gap	E11	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
92	Milam Gap	St. Albans	Quartz	1	LBC	Milam Gap	E11	BR
92	Milam Gap	Stanly	Chert	1	LBC	Milam Gap	E11	BR
92	Milam Gap	stone bowl fragment	Steatite	6	LBC	Milam Gap	E11	BR
92	Milam Gap	Vernon	Quartz	1	LBC	Milam Gap	E11	BR
92	Milam Gap	wedge	Quartz	4	LBC	Milam Gap	E11	BR
93	North Fishers Gap II	flake	Quartzite	8	IND	Fishers Gap	E14	BR
94	Big Meadows WS	flake	Quartzite	9	IND	Big Meadows	E14	BR
96	Hawksbill Outlier I	flake	Quartz	14	LAC	Hawksbill	E14	BR
96	Hawksbill Outlier I	flake	Chalcedony	8	LAC	Hawksbill	E14	BR
96	Hawksbill Outlier I	flake	Chert	8	LAC	Hawksbill	E14	BR
96	Hawksbill Outlier I	flake	Jasper	3	LAC	Hawksbill	E14	BR
96	Hawksbill Outlier I	flake	Quartzite	34	LAC	Hawksbill	E14	BR
97	White Oak Trail Road	flake	Quartz	8	LAC	Hawksbill	E14	BR
97	White Oak Trail Road	flake	Quartzite	9	LAC	Hawksbill	E14	BR
99	North Milam Gap	biface frag mid	Quartz	2	IND	Milam Gap	E11	BR
99	North Milam Gap	flake	Quartz	1	IND	Milam Gap	E11	BR
100	Jewell Hollow	flake	Quartzite	2	IND	Pinnacles	E03	BR
100	Jewell Hollow	flake	Rhyolite	1	IND	Pinnacles	E03	BR
100	Jewell Hollow	flake	Quartz	1	IND	Pinnacles	E03	BR
101	Pinnacles MP	flake	Quartzite	1	IND	Pinnacles	E03	BR
101	Pinnacles MP	shatter	Quartz	1	IND	Pinnacles	E03	BR
102	June Weakley	Archaic Triangle	Jasper	1	SBC	Big Meadows	E14	BR
102	June Weakley	biface com	Mylonite	1	SBC	Big Meadows	E14	BR
102	June Weakley	biface com	Quartzite	4	SBC	Big Meadows	E14	BR
102	June Weakley	biface frag mid	Chert	2	SBC	Big Meadows	E14	BR
102	June Weakley	biface frag mid	Jasper	4	SBC	Big Meadows	E14	BR
102	June Weakley	biface frag mid	Quartz	8	SBC	Big Meadows	E14	BR
102	June Weakley	biface frag mid	Quartzite	9	SBC	Big Meadows	E14	BR
102	June Weakley	Bilobate	Quartzite	1	SBC	Big Meadows	E14	BR
102	June Weakley	Calvert	Quartzite	1	SBC	Big Meadows	E14	BR
102	June Weakley	Calvert	Quartz	2	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
102	June Weakley	cobble tool	Diabase	1	SBC	Big Meadows	E14	BR
102	June Weakley	cobble tool	Jasper	1	SBC	Big Meadows	E14	BR
102	June Weakley	core	Jasper	1	SBC	Big Meadows	E14	BR
102	June Weakley	core	Quartz	6	SBC	Big Meadows	E14	BR
102	June Weakley	drill	Mylonite	1	SBC	Big Meadows	E14	BR
102	June Weakley	drill	Quartzite	1	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Quartz	220	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Basalt	2	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Chalcedony	2	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Chert	94	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Jasper	7	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Metabasalt	24	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Metabasalt Breccia	9	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Mylonite	6	SBC	Big Meadows	E14	BR
102	June Weakley	flake	Quartzite	1233	SBC	Big Meadows	E14	BR
102	June Weakley	graver	Jasper	1	SBC	Big Meadows	E14	BR
102	June Weakley	graver	Quartz	2	SBC	Big Meadows	E14	BR
102	June Weakley	graver	Quartzite	8	SBC	Big Meadows	E14	BR
102	June Weakley	Halifax	Quartz	1	SBC	Big Meadows	E14	BR
102	June Weakley	hammerstone	Metabasalt	2	SBC	Big Meadows	E14	BR
102	June Weakley	Holmes	Quartz	1	SBC	Big Meadows	E14	BR
102	June Weakley	Morrow Mountain II	Quartzite	1	SBC	Big Meadows	E14	BR
102	June Weakley	Orient Fishtail	Basalt	1	SBC	Big Meadows	E14	BR
102	June Weakley	Piscataway	Quartz	1	SBC	Big Meadows	E14	BR
102	June Weakley	Piscataway	Quartzite	1	SBC	Big Meadows	E14	BR
102	June Weakley	scraper	Chert	4	SBC	Big Meadows	E14	BR
102	June Weakley	scraper	Metabasalt	1	SBC	Big Meadows	E14	BR
102	June Weakley	scraper	Quartz	8	SBC	Big Meadows	E14	BR
102	June Weakley	scraper	Quartzite	26	SBC	Big Meadows	E14	BR
102	June Weakley	shatter	Chert	9	SBC	Big Meadows	E14	BR
102	June Weakley	shatter	Quartz	30	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
102	June Weakley	shatter	Quartzite	11	SBC	Big Meadows	E14	BR
102	June Weakley	spokeshave	Quartzite	1	SBC	Big Meadows	E14	BR
103	607-1	flake	Quartz	8	LAC	Lost Mountain	E15	IP
103	607-1	shatter	Quartz	2	LAC	Lost Mountain	E15	IP
104	607-2	flake	Quartz	10	LAC	Lost Mountain	E15	IP
104	607-2	shatter	Quartz	5	LAC	Lost Mountain	E15	IP
105	607-3	flake	Quartz	1	LAC	Lost Mountain	E15	IP
105	607-3	shatter	Quartz	10	LAC	Lost Mountain	E15	IP
106	Quietzsch 1	flake	Quartz	4	LAC	Madison Mills	E13	MB
106	Quietzsch 1	Kirk Stemmed	Quartz	1	LAC	Madison Mills	E13	MB
106	Quietzsch 1	LeCroy	Quartz	1	LAC	Madison Mills	E13	MB
106	Quietzsch 1	shatter	Quartz	13	LAC	Madison Mills	E13	MB
106	Quietzsch 1	Unidentifiable Point	Quartz	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	biface com	Quartz	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	biface frag mid	Quartz	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	cobble tool	Mylonite	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	cobble tool	Quartz	4	LAC	Madison Mills	E13	MB
107	Quietzsch 2	flake	Quartz	13	LAC	Madison Mills	E13	MB
107	Quietzsch 2	flake	Basalt	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	flake	Mylonite	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	flake	Quartzite	4	LAC	Madison Mills	E13	MB
107	Quietzsch 2	Piscataway	Quartz	1	LAC	Madison Mills	E13	MB
107	Quietzsch 2	scraper	Quartz	4	LAC	Madison Mills	E13	MB
107	Quietzsch 2	scraper	Quartzite	1	LAC	Madison Mills	E13	MB
108	Woodberry Forest 3	Calvert	Quartz	1	LAC	Madison Mills	E13	MB
108	Woodberry Forest 3	flake	Quartz	8	LAC	Madison Mills	E13	MB
108	Woodberry Forest 3	shatter	Quartz	6	LAC	Madison Mills	E13	MB
108	Woodberry Forest 3	St. Albans	Quartz	1	LAC	Madison Mills	E13	MB
109	607 Site 1	biface com	Quartz	2	LAC	Lost Mountain	E15	IP
109	607 Site 1	biface frag mid	Quartz	1	LAC	Lost Mountain	E15	IP
109	607 Site 1	Morrow Mountain II	Quartz	1	LAC	Lost Mountain	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
110	607 Site 2	biface com	Quartz	1	LAC	Lost Mountain	E15	IP
110	607 Site 2	core	Quartz	1	LAC	Lost Mountain	E15	IP
110	607 Site 2	flake	Quartz	17	LAC	Lost Mountain	E15	IP
110	607 Site 2	scraper	Quartz	1	LAC	Lost Mountain	E15	IP
111	607 Site 3	flake	Quartz	9	IND	Lost Mountain	E15	IP
112	Limberlost II	biface frag dist	Quartz	1	SBC	Limberlost	E14	BR
112	Limberlost II	biface frag mid	Quartz	1	SBC	Limberlost	E14	BR
112	Limberlost II	flake	Quartz	14	SBC	Limberlost	E14	BR
112	Limberlost II	flake	Chert	9	SBC	Limberlost	E14	BR
112	Limberlost II	flake	Metabasalt	13	SBC	Limberlost	E14	BR
112	Limberlost II	flake	Quartzite	69	SBC	Limberlost	E14	BR
112	Limberlost II	Levanna/Yadkin	Quartzite	1	SBC	Limberlost	E14	BR
112	Limberlost II	Madison	Jasper	1	SBC	Limberlost	E14	BR
112	Limberlost II	scraper	Quartz	1	SBC	Limberlost	E14	BR
113	Limberlost III	biface com	Quartz	1	SBC	Limberlost	E14	BR
113	Limberlost III	biface com	Quartzite	2	SBC	Limberlost	E14	BR
113	Limberlost III	biface frag dist	Quartz	2	SBC	Limberlost	E14	BR
113	Limberlost III	biface frag mid	Quartz	2	SBC	Limberlost	E14	BR
113	Limberlost III	biface frag mid	Quartzite	3	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Quartz	97	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Chalcedony	2	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Chert	53	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Jasper	53	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Metabasalt	2	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Quartzite	201	SBC	Limberlost	E14	BR
113	Limberlost III	flake	Rhyolite	7	SBC	Limberlost	E14	BR
113	Limberlost III	Levanna/Yadkin	Quartzite	1	SBC	Limberlost	E14	BR
113	Limberlost III	Madison	Jasper	1	SBC	Limberlost	E14	BR
114	Robinson River Bridge 1	biface com	Quartz	1	LAC	Beaverdam	E15	MB
114	Robinson River Bridge 1	biface frag mid	Quartz	1	LAC	Beaverdam	E15	MB
114	Robinson River Bridge 1	core	Quartz	1	LAC	Beaverdam	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
114	Robinson River Bridge 1	flake	Quartz	4	LAC	Beaverdam	E15	MB
115	Robinson River Bridge 2	cobble tool	Quartz	1	LAC	Beaverdam	E15	MB
115	Robinson River Bridge 2	cobble tool	Metabasalt	1	LAC	Beaverdam	E15	MB
116	Robinson River Bridge 3	flake	Quartz	4	LAC	Beaverdam	E15	MB
118	Speiden MD4A	biface frag dist	Quartz	4	LAC	Isolated	E13	IP
118	Speiden MD4A	biface frag mid	Quartz	9	LAC	Isolated	E13	IP
118	Speiden MD4A	core	Quartz	1	LAC	Isolated	E13	IP
118	Speiden MD4A	flake	Quartz	98	LAC	Isolated	E13	IP
118	Speiden MD4A	flake	Chert	2	LAC	Isolated	E13	IP
118	Speiden MD4A	flake	Jasper	1	LAC	Isolated	E13	IP
118	Speiden MD4A	flake	Mylonite	5	LAC	Isolated	E13	IP
118	Speiden MD4A	flake	Quartzite	8	LAC	Isolated	E13	IP
118	Speiden MD4A	scraper	Quartz	3	LAC	Isolated	E13	IP
118	Speiden MD4A	shatter	Quartz	12	LAC	Isolated	E13	IP
119	Speiden MD6K	biface com	Quartz	4	LAC	Sanford	E13	MB
119	Speiden MD6K	flake	Quartz	2	LAC	Sanford	E13	MB
119	Speiden MD6K	Piscataway	Quartz	1	LAC	Sanford	E13	MB
119	Speiden MD6K	shatter	Quartz	1	LAC	Sanford	E13	MB
119	Speiden MD6K	St. Albans	Quartz	1	LAC	Sanford	E13	MB
120	Speiden Madison Mills A	biface frag mid	Quartz	2	IND	Isolated	E13	MB
120	Speiden Madison Mills A	Lamoka	Quartz	1	IND	Isolated	E13	MB
121	Speiden Rochelle A	biface frag mid	Mylonite	1	LAC	Banks Mountain	E11	IP
121	Speiden Rochelle A	biface frag mid	Quartz	4	LAC	Banks Mountain	E11	IP
121	Speiden Rochelle A	flake	Quartz	3	LAC	Banks Mountain	E11	IP
121	Speiden Rochelle A	flake	Chalcedony	1	LAC	Banks Mountain	E11	IP
121	Speiden Rochelle A	flake	Mylonite	1	LAC	Banks Mountain	E11	IP
121	Speiden Rochelle A	flake	Quartzite	8	LAC	Banks Mountain	E11	IP
122	Speiden MD7B	biface frag mid	Quartz	2	LAC	Madison Mills	E13	MB
122	Speiden MD7B	flake	Quartz	6	LAC	Madison Mills	E13	MB
122	Speiden MD7B	flake	Quartzite	1	LAC	Madison Mills	E13	MB
123	Speiden MD7C	biface frag mid	Quartz	1	LAC	Madison Mills	E13	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
123	Speiden MD7C	flake	Quartz	10	LAC	Madison Mills	E13	MB
124	Speiden MD7D	biface frag mid	Quartz	2	LAC	Madison Mills	E13	MB
124	Speiden MD7D	flake	Quartz	23	LAC	Madison Mills	E13	MB
124	Speiden MD7D	flake	Chert	1	LAC	Madison Mills	E13	MB
124	Speiden MD7D	LeCroy	Quartz	1	LAC	Madison Mills	E13	MB
125	Speiden MD7E	biface frag mid	Quartz	4	LAC	Madison Mills	E13	MB
125	Speiden MD7E	flake	Quartzite	2	LAC	Madison Mills	E13	MB
125	Speiden MD7E	flake	Rhyolite	2	LAC	Madison Mills	E13	MB
125	Speiden MD7E	Holmes	Quartz	1	LAC	Madison Mills	E13	MB
125	Speiden MD7E	Levanna/Yadkin	Quartz	1	LAC	Madison Mills	E13	MB
125	Speiden MD7E	Vernon	Quartz	3	LAC	Madison Mills	E13	MB
126	Speiden MD5	biface frag mid	Quartz	3	LAC	Madison Mills	E13	MB
126	Speiden MD5	flake	Quartz	5	LAC	Madison Mills	E13	MB
126	Speiden MD5	flake	Metabasalt	1	LAC	Madison Mills	E13	MB
127	Roadhouse, Strode P	Bare Island	Arg. Shale	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bare Island	Chert	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bare Island	Hornfels	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bare Island	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bare Island	Quartz	47	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bare Island	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Arg. Shale	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Basalt	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Chalcedony	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Chert	20	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Jasper	11	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Metabasalt	20	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Metabasalt Breccia	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Mylonite	24	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Oolitic Qtzite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Phyllite	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Quartz	300	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	biface com	Quartzite	51	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface com	Rhyolite	7	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Arg. Shale	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Chert	19	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Jasper	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Metabasalt	13	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Quartz	280	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Quartzite	104	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag dist	Rhyolite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Chert	9	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Metabasalt	23	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Metabasalt Breccia	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Metasiltstone	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Mylonite	12	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Oolitic Qtzite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Quartz	348	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Quartzite	115	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	biface frag mid	Rhyolite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Big Sandy	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Big Sandy	Quartz	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bilobate	Chalcedony	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bilobate	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bilobate	Phyllite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bilobate	Quartz	48	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Bilobate	Quartzite	25	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	blade flake	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	blade flake	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	blade flake	Quartz	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Brewerton CN	Chert	1	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	Brewerton SN	Chalcedony	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Brewerton SN	Chert	9	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Brewerton SN	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Brewerton SN	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Arg. Shale	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Chalcedony	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Chert	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Hornfels	7	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Metabasalt	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Metasiltstone	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Mylonite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Phyllite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Quartz	92	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Quartzite	62	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Calvert	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	celt	Metabasalt	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	chipped stone axe	Metabasalt	20	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	cobble tool	Metabasalt	8	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	cobble tool	Quartz	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Basalt	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Chert	16	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Metabasalt Breccia	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Quartz	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	core	Quartzite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Chert	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Hornfels	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Metasiltstone	2	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	drill	Oolitic Qtzite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Quartz	27	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Quartzite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	drill	Rhyolite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Quartz	19	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Arg. Shale	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Basalt	10	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Chalcedony	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Chert	70	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Jasper	24	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Metabasalt	31	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Metabasalt Breccia	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Mylonite	16	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Phyllite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Quartzite	53	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	flake	Rhyolite	12	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	graver	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	graver	Quartz	68	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	grooved axe	Metabasalt	15	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Guilford	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Guilford	Quartz	18	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Guilford	Quartzite	7	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Halifax	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Halifax	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Halifax	Quartz	56	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Halifax	Quartzite	9	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	hammerstone	Diabase	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	hammerstone	Greywacke	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	hammerstone	Metabasalt	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	hoe	Metabasalt	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Holmes	Metabasalt	16	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	Holmes	Mylonite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Holmes	Quartz	74	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Holmes	Quartzite	22	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Jack's Reef CN	Jasper	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Jack's Reef Pentagonal	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Jack's Reef Pentagonal	Quartzite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk CN	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk CN	Mylonite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk CN	Quartz	14	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk CN	Quartzite	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk CN	Rhyolite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk Stemmed	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk Stemmed	Quartz	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk Stemmed	Quartzite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Kirk Stemmed	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Lamoka	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Lamoka	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Late Paleo Lanceolate	Chert	6	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Late Paleo Lanceolate	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Late Paleo Lanceolate	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	LeCroy	Chert	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	LeCroy	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	LeCroy	Quartz	15	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	LeCroy	Quartzite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Lehigh/Koens-Crispin	Chert	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Levanna/Yadkin	Chert	10	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Levanna/Yadkin	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Levanna/Yadkin	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Levanna/Yadkin	Quartz	35	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Levanna/Yadkin	Quartzite	12	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Madison	Chert	6	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	Madison	Mylonite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Madison	Quartz	10	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Madison	Quartzite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Madison	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Chert	5	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Quartz	29	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Quartzite	21	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Morrow Mountain II	Rhyolite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	mortar	Basalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	mortar	Greywacke	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Orient Fishtail	Quartz	14	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Orient Fishtail	Quartzite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Palmer	Chert	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Palmer	Quartz	15	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Palmer	Quartzite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Palmer	Chalcedony	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Perkiomen	Arg. Shale	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Perkiomen	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Perkiomen	Jasper	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Perkiomen	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	pestle	Greywacke	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Piscataway	Metabasalt	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Piscataway	Quartz	32	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Piscataway	Quartzite	11	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Potts	Quartz	22	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Potts	Quartzite	10	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Savannah River	Metabasalt	21	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Savannah River	Oolitic Qtzite	1	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	Savannah River	Quartz	18	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Savannah River	Quartzite	64	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Chert	21	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Jasper	8	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Mylonite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Quartz	112	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Quartzite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	scraper	Rhyolite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Selby Bay	Rhyolite	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	shatter	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	spokeshave	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	spokeshave	Quartz	9	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	spokeshave	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	St. Albans	Quartz	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Stanly	Arg. Shale	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Stanly	Quartz	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Stanly	Quartzite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	stone bowl fragment	Steatite	18	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Susquehanna BS	Arg. Shale	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Susquehanna BS	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Teardrop	Quartz	16	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Teardrop	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Triang. Preforms	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Triang. Preforms	Mylonite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Triang. Preforms	Quartzite	4	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Unidentifiable Point	Chert	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Unidentifiable Point	Quartzite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Basalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Chert	12	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Hornfels	1	HAM	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
127	Roadhouse, Strode P	Vernon	Jasper	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Metabasalt	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Mylonite	2	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Quartz	158	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Quartzite	26	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	Vernon	Rhyolite	1	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	wedge	Metabasalt	3	HAM	White Oak	E14	IP
127	Roadhouse, Strode P	wedge	Quartzite	1	HAM	White Oak	E14	IP
128	SNP-OR-1	drill	Quartzite	1	LAC	Corbin	E14	BR
128	SNP-OR-1	flake	Quartzite	5	LAC	Corbin	E14	BR
128	SNP-OR-1	Levanna/Yadkin	Quartzite	1	LAC	Corbin	E14	BR
128	SNP-OR-1	pestle	Metabasalt	1	LAC	Corbin	E14	BR
130	SNP-OR-3	flake	Quartz	7	LAC	Nicholson	E03	BR
130	SNP-OR-3	flake	Quartzite	9	LAC	Nicholson	E03	BR
131	SNP-OR-4	flake	Quartz	9	LAC	Nicholson	E03	BR
131	SNP-OR-4	flake	Quartzite	17	LAC	Nicholson	E03	BR
131	SNP-OR-4	scraper	Quartzite	1	LAC	Nicholson	E03	BR
148	SNP-OR-58	biface com	Chert	1	LAC	Isolated	E03	BR
148	SNP-OR-58	flake	Quartz	6	LAC	Isolated	E03	BR
148	SNP-OR-58	flake	Quartzite	4	LAC	Isolated	E03	BR
148	SNP-OR-58	Morrow Mountain II	Quartzite	1	LAC	Isolated	E03	BR
148	SNP-OR-58	Savannah River	Quartzite	1	LAC	Isolated	E03	BR
149	SNP-OR-59	cobble tool	Greywacke	1	IND	Corbin	E14	BR
149	SNP-OR-59	core	Quartz	1	IND	Corbin	E14	BR
149	SNP-OR-59	flake	Quartz	4	IND	Corbin	E14	BR
149	SNP-OR-59	flake	Quartzite	5	IND	Corbin	E14	BR
149	SNP-OR-59	Vernon	Quartzite	1	IND	Corbin	E14	BR
150	Old Rag Access	biface com	Quartz	4	SBC	Nethers	E03	BR
150	Old Rag Access	biface com	Quartzite	1	SBC	Nethers	E03	BR
150	Old Rag Access	biface frag dist	Jasper	1	SBC	Nethers	E03	BR
150	Old Rag Access	biface frag dist	Quartz	2	SBC	Nethers	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
150	Old Rag Access	biface frag mid	Quartz	6	SBC	Nethers	E03	BR
150	Old Rag Access	biface frag mid	Quartzite	2	SBC	Nethers	E03	BR
150	Old Rag Access	Bilobate	Quartz	1	SBC	Nethers	E03	BR
150	Old Rag Access	Calvert	Quartz	1	SBC	Nethers	E03	BR
150	Old Rag Access	chipped stone axe	Metabasalt	1	SBC	Nethers	E03	BR
150	Old Rag Access	cobble tool	Metabasalt	1	SBC	Nethers	E03	BR
150	Old Rag Access	core	Mylonite	1	SBC	Nethers	E03	BR
150	Old Rag Access	core	Quartz	6	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Quartz	176	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Basalt	2	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Chalcedony	3	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Chert	3	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Jasper	3	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Mylonite	39	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Quartzite	85	SBC	Nethers	E03	BR
150	Old Rag Access	flake	Metabasalt	11	SBC	Nethers	E03	BR
150	Old Rag Access	graver	Metabasalt	1	SBC	Nethers	E03	BR
150	Old Rag Access	graver	Quartz	4	SBC	Nethers	E03	BR
150	Old Rag Access	graver	Quartzite	1	SBC	Nethers	E03	BR
150	Old Rag Access	grinding stone	Greywacke	1	SBC	Nethers	E03	BR
150	Old Rag Access	grooved axe	Metabasalt	1	SBC	Nethers	E03	BR
150	Old Rag Access	hammerstone	Greywacke	2	SBC	Nethers	E03	BR
150	Old Rag Access	hammerstone	Metabasalt	4	SBC	Nethers	E03	BR
150	Old Rag Access	Palmer	Quartz	1	SBC	Nethers	E03	BR
150	Old Rag Access	scraper	Metabasalt	1	SBC	Nethers	E03	BR
150	Old Rag Access	scraper	Quartz	11	SBC	Nethers	E03	BR
150	Old Rag Access	scraper	Quartzite	1	SBC	Nethers	E03	BR
150	Old Rag Access	scraper	Mylonite	6	SBC	Nethers	E03	BR
150	Old Rag Access	shatter	Chert	1	SBC	Nethers	E03	BR
150	Old Rag Access	shatter	Mylonite	6	SBC	Nethers	E03	BR
150	Old Rag Access	shatter	Quartz	37	SBC	Nethers	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
150	Old Rag Access	stone bowl fragment	Steatite	1	SBC	Nethers	E03	BR
150	Old Rag Access	Vernon	Quartz	1	SBC	Nethers	E03	BR
153	SNP-FL-1	Calvert	Quartz	3	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	celt	Metabasalt	1	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	flake	Quartzite	24	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	grinding stone	Greywacke	1	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	Halifax	Quartz	1	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	hammerstone	Metabasalt	1	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	Kirk Stemmed	Quartzite	2	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	Levanna/Yadkin	Quartz	1	SBC	Upper Rapidan	E11	BR
153	SNP-FL-1	Susquehanna BS	Rhyolite	1	SBC	Upper Rapidan	E11	BR
154	SNP-FL-2				IND	Laurels	E11	BR
155	SNP-FL-3	biface com	Chert	1	SBC	Laurels	E11	BR
155	SNP-FL-3	biface com	Metabasalt	2	SBC	Laurels	E11	BR
155	SNP-FL-3	biface com	Quartz	3	SBC	Laurels	E11	BR
155	SNP-FL-3	biface com	Quartzite	2	SBC	Laurels	E11	BR
155	SNP-FL-3	biface frag dist	Quartz	1	SBC	Laurels	E11	BR
155	SNP-FL-3	biface frag dist	Quartzite	1	SBC	Laurels	E11	BR
155	SNP-FL-3	biface frag mid	Quartz	5	SBC	Laurels	E11	BR
155	SNP-FL-3	biface frag mid	Quartzite	2	SBC	Laurels	E11	BR
155	SNP-FL-3	Brewerton CN	Chert	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Brewerton SN	Jasper	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Calvert	Quartz	1	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Quartz	193	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Basalt	11	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Chert	10	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Jasper	11	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Metabasalt	2	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Mylonite	24	SBC	Laurels	E11	BR
155	SNP-FL-3	flake	Quartzite	277	SBC	Laurels	E11	BR
155	SNP-FL-3	graver	Quartzite	1	SBC	Laurels	E11	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
155	SNP-FL-3	hammerstone	Quartzite	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Jack's Reef Pentagonal	Quartz	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Levanna/Yadkin	Basalt	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Levanna/Yadkin	Quartz	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Levanna/Yadkin	Quartzite	3	SBC	Laurels	E11	BR
155	SNP-FL-3	scraper	Quartzite	1	SBC	Laurels	E11	BR
155	SNP-FL-3	Selby Bay	Metabasalt Breccia	1	SBC	Laurels	E11	BR
155	SNP-FL-3	St. Albans	Quartz	1	SBC	Laurels	E11	BR
157	SNP-FL-7				IND	Isolated	E11	BR
159	SNP-BM-10	flake	Quartzite	8	IND	Hawksbill	E14	BR
159	SNP-BM-10	flake	Chert	1	IND	Hawksbill	E14	BR
161	G Weakley I				IND	Weakley	E03	BR
163	E Dyer				IND	Weakley	E03	BR
165	Highlands				IND	Weakley	E03	BR
166	H Berry				IND	Weakley	E03	BR
181	A Long	flake	Quartzite	9	IND	Isolated	E03	BR
189	Bleckinger	biface com	Quartzite	1	SBC	Rose River	E14	BR
189	Bleckinger	biface frag mid	Quartzite	3	SBC	Rose River	E14	BR
189	Bleckinger	core	Jasper	1	SBC	Rose River	E14	BR
189	Bleckinger	core	Quartzite	1	SBC	Rose River	E14	BR
189	Bleckinger	flake	Quartz	9	SBC	Rose River	E14	BR
189	Bleckinger	flake	Chert	1	SBC	Rose River	E14	BR
189	Bleckinger	flake	Quartzite	105	SBC	Rose River	E14	BR
189	Bleckinger	graver	Quartzite	1	SBC	Rose River	E14	BR
189	Bleckinger	Lamoka	Chert	1	SBC	Rose River	E14	BR
189	Bleckinger	Orient Fishtail	Quartz	1	SBC	Rose River	E14	BR
189	Bleckinger	scraper	Quartzite	7	SBC	Rose River	E14	BR
189	Bleckinger	shatter	Quartzite	1	SBC	Rose River	E14	BR
190		flake	Quartz	1	IND	Isolated	E15	MB
190		shatter	Quartz	3	IND	Isolated	E15	MB
192	A Nicholson	flake	Quartzite	11	IND	Nicholson	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
193	Radiant	biface com	Quartz	1	IND	Nicholson	E15	BR
193	Radiant	flake	Quartz	9	LAC	Lost Mountain	E15	IP
193	Radiant	scraper	Quartz	1	LAC	Lost Mountain	E15	IP
196	Liaison Building	biface com	Quartzite	1	LAC	Big Meadows	E14	BR
196	Liaison Building	biface frag mid	Quartz	2	LAC	Big Meadows	E14	BR
196	Liaison Building	biface frag mid	Quartzite	1	LAC	Big Meadows	E14	BR
196	Liaison Building	core	Quartz	1	LAC	Big Meadows	E14	BR
196	Liaison Building	flake	Quartz	18	LAC	Big Meadows	E14	BR
196	Liaison Building	flake	Chert	1	LAC	Big Meadows	E14	BR
196	Liaison Building	flake	Quartzite	19	LAC	Big Meadows	E14	BR
196	Liaison Building	Halifax	Quartz	1	LAC	Big Meadows	E14	BR
196	Liaison Building	hammerstone	Metabasalt	1	LAC	Big Meadows	E14	BR
196	Liaison Building	Holmes	Quartzite	1	LAC	Big Meadows	E14	BR
196	Liaison Building	Piscataway	Quartz	1	LAC	Big Meadows	E14	BR
196	Liaison Building	scraper	Quartzite	1	LAC	Big Meadows	E14	BR
196	Liaison Building	shatter	Chert	1	LAC	Big Meadows	E14	BR
196	Liaison Building	shatter	Quartz	3	LAC	Big Meadows	E14	BR
197	Frank Emma Weakley	Bare Island	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface com	Chert	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface com	Jasper	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface com	Quartz	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface frag dist	Chert	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface frag dist	Quartzite	2	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface frag mid	Chert	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface frag mid	Quartz	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	biface frag mid	Quartzite	2	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Big Sandy	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Calvert	Quartz	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Calvert	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	cobble tool	Hematite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	core	Chert	3	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
197	Frank Emma Weakley	core	Jasper	2	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	core	Metabasalt	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	core	Quartz	2	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	drill	Metabasalt	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Quartz	56	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Basalt	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Chert	20	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Metabasalt	9	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Metabasalt Breccia	7	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Mylonite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Quartzite	170	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Rhyolite	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	flake	Jasper	8	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	graver	Chert	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	graver	Quartz	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Halifax	Quartz	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	hammerstone	Metabasalt	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Jack's Reef Pentagonal	Jasper	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Morrow Mountain II	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Orient Fishtail	Quartz	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Piscataway	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	Savannah River	Quartzite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	scraper	Chert	3	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	scraper	Quartz	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	scraper	Quartzite	7	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Chert	5	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Jasper	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Metabasalt Breccia	2	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Mylonite	1	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Quartz	5	SBC	Big Meadows	E14	BR
197	Frank Emma Weakley	shatter	Quartzite	3	SBC	Big Meadows	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
197	Frank Emma Weakley	Triang. Preforms	Quartzite	1	SBC	Big Meadows	E14	BR
198	Rapidan Meadow	biface com	Quartzite	1	LAC	Big Meadows	E11	BR
198	Rapidan Meadow	flake	Quartz	3	LAC	Big Meadows	E11	BR
198	Rapidan Meadow	flake	Quartzite	9	LAC	Big Meadows	E11	BR
198	Rapidan Meadow	scraper	Chalcedony	1	LAC	Big Meadows	E11	BR
198	Rapidan Meadow	shatter	Quartz	1	LAC	Big Meadows	E11	BR
199	Berry Field	biface com	Quartz	46	SBC	White Oak	E14	IP
199	Berry Field	cobble tool	Greywacke	1	SBC	White Oak	E14	IP
199	Berry Field	cobble tool	Metabasalt	1	SBC	White Oak	E14	IP
199	Berry Field	cobble tool	Quartz	1	SBC	White Oak	E14	IP
199	Berry Field	cobble tool	Quartzite	1	SBC	White Oak	E14	IP
199	Berry Field	drill	Quartz	7	SBC	White Oak	E14	IP
199	Berry Field	flake	Quartz	591	SBC	White Oak	E14	IP
199	Berry Field	flake	Chert	3	SBC	White Oak	E14	IP
199	Berry Field	flake	Jasper	2	SBC	White Oak	E14	IP
199	Berry Field	flake	Metabasalt	11	SBC	White Oak	E14	IP
199	Berry Field	flake	Mylonite	2	SBC	White Oak	E14	IP
199	Berry Field	flake	Quartzite	31	SBC	White Oak	E14	IP
199	Berry Field	flake	Rhyolite	1	SBC	White Oak	E14	IP
199	Berry Field	graver	Quartz	52	SBC	White Oak	E14	IP
199	Berry Field	graver	Quartzite	1	SBC	White Oak	E14	IP
199	Berry Field	hammerstone	Quartz	1	SBC	White Oak	E14	IP
199	Berry Field	Levanna/Yadkin	Quartzite	1	SBC	White Oak	E14	IP
199	Berry Field	Madison	Quartz	1	SBC	White Oak	E14	IP
199	Berry Field	Palmer	Quartz	1	SBC	White Oak	E14	IP
199	Berry Field	scraper	Mylonite	3	SBC	White Oak	E14	IP
199	Berry Field	scraper	Quartz	104	SBC	White Oak	E14	IP
199	Berry Field	scraper	Quartzite	3	SBC	White Oak	E14	IP
199	Berry Field	shatter	Quartz	95	SBC	White Oak	E14	IP
199	Berry Field	spokeshave	Quartz	6	SBC	White Oak	E14	IP
199	Berry Field	spokeshave	Quartzite	1	SBC	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
200	OR00060	flake	Quartzite	7	RS	Berry	E14	BR
201	SNP-FL-13	flake	Quartz	5	LAC	Upper Rapidan	E11	BR
201	SNP-FL-13	flake	Quartzite	9	LAC	Upper Rapidan	E11	BR
201	SNP-FL-13	Levanna/Yadkin	Quartz	1	LAC	Upper Rapidan	E11	BR
201	SNP-Fl-13	scraper	Chert	1	LAC	Upper Rapidan	E11	BR
	Arrowhead Patch	Bare Island	Mylonite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface com	Basalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface com	Chalcedony	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface com	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface com	Metabasalt	4	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface com	Rhyolite	3	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag dist	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag dist	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag dist	Metabasalt	6	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag dist	Quartz	9	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag dist	Rhyolite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Basalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Oolitic Qtzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	biface frag mid	Quartz	6	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Big Sandy	Mylonite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Big Sandy	Oolitic Qtzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Big Sandy	Quartz	6	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Bilobate	Quartz	11	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Bilobate	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Calvert	Oolitic Qtzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	celt	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	chipped stone axe	Metabasalt	26	LBC	Arrowhead	E14	BR
	Arrowhead Patch	cobble tool	Metabasalt	5	LBC	Arrowhead	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Arrowhead Patch	core	Quartz	4	LBC	Arrowhead	E14	BR
	Arrowhead Patch	drill	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Quartz	12	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Chalcedony	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Chert	6	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Jasper	5	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Metabasalt	9	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Mylonite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	flake	Rhyolite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	graver	Quartz	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	grooved axe	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Halifax	Quartz	5	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Halifax	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Holmes	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Holmes	Quartz	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Holmes	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Jack's Reef Pentagonal	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Kirk Stemmed	Chert	3	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Kirk Stemmed	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Kirk Stemmed	Quartz	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Kirk Stemmed	Rhyolite	6	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Lamoka	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	LeCroy	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	LeCroy	Quartz	3	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Levanna/Yadkin	Quartzite	3	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Madison	Quartz	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Madison	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Morrow Mountain II	Quartz	11	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Palmer	Quartz	4	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Palmer	Quartzite	1	LBC	Arrowhead	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Arrowhead Patch	Piscataway	Quartz	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Potts	Quartz	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Savannah River	Quartzite	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	scraper	Chert	7	LBC	Arrowhead	E14	BR
	Arrowhead Patch	scraper	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	scraper	Mylonite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	scraper	Quartz	5	LBC	Arrowhead	E14	BR
	Arrowhead Patch	scraper	Quartzite	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	shatter	Chert	5	LBC	Arrowhead	E14	BR
	Arrowhead Patch	shatter	Jasper	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	shatter	Quartz	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	shatter	Metabasalt	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	spokeshave	Mylonite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	spokeshave	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	St. Albans	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Stanly	Chert	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Stanly	Quartz	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Stanly	Quartzite	1	LBC	Arrowhead	E14	BR
	Arrowhead Patch	stone bowl fragment	Steatite	5	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Teardrop	Quartz	2	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Vernon	Quartz	4	LBC	Arrowhead	E14	BR
	Arrowhead Patch	Vernon	Rhyolite	1	LBC	Arrowhead	E14	BR
	Backfield Farm	biface com	Metabasalt	1	SBC	Peola Mills	E03	IP
	Backfield Farm	biface com	Quartz	5	SBC	Peola Mills	E03	IP
	Backfield Farm	biface com	Quartzite	1	SBC	Peola Mills	E03	IP
	Backfield Farm	Calvert	Quartzite	1	SBC	Peola Mills	E03	IP
	Backfield Farm	chipped stone axe	Metabasalt	1	SBC	Peola Mills	E03	IP
	Backfield Farm	cobble tool	Metabasalt	1	SBC	Peola Mills	E03	IP
	Backfield Farm	flake	Quartzite	2	SBC	Peola Mills	E03	IP
	Backfield Farm	flake	Metabasalt	11	SBC	Peola Mills	E03	IP
	Backfield Farm	Halifax	Quartz	2	SBC	Peola Mills	E03	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Backfield Farm	Kirk Stemmed	Jasper	1	SBC	Peola Mills	E03	IP
	Backfield Farm	Levanna/Yadkin	Jasper	1	SBC	Peola Mills	E03	IP
	Backfield Farm	Orient Fishtail	Quartzite	1	SBC	Peola Mills	E03	IP
	Backfield Farm	Piscataway	Quartz	1	SBC	Peola Mills	E03	IP
	Backfield Farm	Savannah River	Quartzite	1	SBC	Peola Mills	E03	IP
	Backfield Farm	scraper	Chert	1	SBC	Peola Mills	E03	IP
	Backfield Farm	stone bowl fragment	Steatite	1	SBC	Peola Mills	E03	IP
	Barbara Yowell	biface com	Rhyolite	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Bilobate	Chalcedony	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Brewerton SN	Chalcedony	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Brewerton SN	Chert	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Calvert	Quartz	12	LBC	Peola Mills	E03	IP
	Barbara Yowell	chipped stone axe	Metabasalt	5	LBC	Peola Mills	E03	IP
	Barbara Yowell	drill	Jasper	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	grooved axe	Metabasalt	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Kirk CN	Quartzite	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Kirk Stemmed	Arg. Shale	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Kirk Stemmed	Quartzite	2	LBC	Peola Mills	E03	IP
	Barbara Yowell	LeCroy	Quartzite	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Mid-Paleo	Chert	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Morrow Mountain II	Chert	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Morrow Mountain II	Jasper	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Orient Fishtail	Arg. Shale	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Palmer	Chert	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Potts	Quartzite	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Savannah River	Quartzite	20	LBC	Peola Mills	E03	IP
	Barbara Yowell	Vernon	Jasper	1	LBC	Peola Mills	E03	IP
	Barbara Yowell	Vernon	Quartz	10	LBC	Peola Mills	E03	IP
	Blue Heron	cobble tool	Jasper	1	LAC	Banks Mountain	E11	IP
	Blue Heron	flake	Quartz	32	LAC	Banks Mountain	E11	IP
	Blue Heron	flake	Quartzite	25	LAC	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Blue Heron	Holmes	Quartzite	1	LAC	Banks Mountain	E11	IP
	Burke	biface com	Quartz	2	SBC	Demarest	E15	IP
	Burke	biface frag mid	Quartz	1	SBC	Demarest	E15	IP
	Burke	Bilobate	Quartz	2	SBC	Demarest	E15	IP
	Burke	Calvert	Quartz	2	SBC	Demarest	E15	IP
	Burke	Halifax	Quartz	6	SBC	Demarest	E15	IP
	Burke	Holmes	Quartz	1	SBC	Demarest	E15	IP
	Burke	LeCroy	Quartz	1	SBC	Demarest	E15	IP
	Burke	Orient Fishtail	Quartz	5	SBC	Demarest	E15	IP
	Burke	Palmer	Quartz	1	SBC	Demarest	E15	IP
	Burke	Piscataway	Quartz	1	SBC	Demarest	E15	IP
	Burke	St. Albans	Quartz	1	SBC	Demarest	E15	IP
	Burke	Vernon	Quartz	3	SBC	Demarest	E15	IP
	Clark	chipped stone axe	Metabasalt	3	SBC	Nethers	E03	BR
	Clark	grooved axe	Metabasalt	2	SBC	Nethers	E03	BR
	Clark	Halifax	Quartz	4	SBC	Nethers	E03	BR
	Clark	Holmes	Quartz	6	SBC	Nethers	E03	BR
	Clark	Holmes	Quartzite	2	SBC	Nethers	E03	BR
	Clark	Levanna/Yadkin	Chert	2	SBC	Nethers	E03	BR
	Clark	Savannah River	Metabasalt	4	SBC	Nethers	E03	BR
	Clark	Savannah River	Quartzite	10	SBC	Nethers	E03	BR
	Coates Cache	biface com	Quartz	23	LC	Haywood	E14	IP
	Coates Cache	biface frag mid	Quartz	2	LC	Haywood	E14	IP
	Coates Garden	biface com	Metabasalt	1	SBC	Haywood	E14	IP
	Coates Garden	biface com	Quartz	3	SBC	Haywood	E14	IP
	Coates Garden	biface com	Quartzite	1	SBC	Haywood	E14	IP
	Coates Garden	biface frag mid	Quartz	11	SBC	Haywood	E14	IP
	Coates Garden	Big Sandy	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Bilobate	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Calvert	Quartz	8	SBC	Haywood	E14	IP
	Coates Garden	Calvert	Quartzite	1	SBC	Haywood	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Coates Garden	chipped stone axe	Metabasalt	7	SBC	Haywood	E14	IP
	Coates Garden	flake	Quartzite	2	SBC	Haywood	E14	IP
	Coates Garden	flake	Quartz	4	SBC	Haywood	E14	IP
	Coates Garden	grooved axe	Metabasalt	4	SBC	Haywood	E14	IP
	Coates Garden	Halifax	Quartz	9	SBC	Haywood	E14	IP
	Coates Garden	Holmes	Quartz	5	SBC	Haywood	E14	IP
	Coates Garden	Holmes	Quartzite	2	SBC	Haywood	E14	IP
	Coates Garden	Jack's Reef CN	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Kirk Stemmed	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Kirk Stemmed	Quartzite	1	SBC	Haywood	E14	IP
	Coates Garden	LeCroy	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Levanna/Yadkin	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Morrow Mountain II	Chert	1	SBC	Haywood	E14	IP
	Coates Garden	Morrow Mountain II	Quartz	2	SBC	Haywood	E14	IP
	Coates Garden	Orient Fishtail	Quartz	2	SBC	Haywood	E14	IP
	Coates Garden	Palmer	Metasiltstone	1	SBC	Haywood	E14	IP
	Coates Garden	Savannah River	Quartz	1	SBC	Haywood	E14	IP
	Coates Garden	Vernon	Quartz	3	SBC	Haywood	E14	IP
	Coates Garden	Vernon	Quartzite	1	SBC	Haywood	E14	IP
	Crigler	biface frag dist	Quartzite	2	SBC	Hebron	E14	IP
	Crigler	biface frag mid	Quartz	12	SBC	Hebron	E14	IP
	Crigler	chipped stone axe	Metabasalt	3	SBC	Hebron	E14	IP
	Crigler	flake	Quartz	9	SBC	Hebron	E14	IP
	Crigler	grooved axe	Metabasalt	3	SBC	Hebron	E14	IP
	Crigler	Halifax	Quartz	15	SBC	Hebron	E14	IP
	Crigler	hoe	Metabasalt	1	SBC	Hebron	E14	IP
	Crigler	Holmes	Quartz	12	SBC	Hebron	E14	IP
	Crigler	Holmes	Quartzite	2	SBC	Hebron	E14	IP
	Crigler	LeCroy	Quartz	3	SBC	Hebron	E14	IP
	Crigler	Levanna/Yadkin	Quartz	1	SBC	Hebron	E14	IP
	Crigler	Morrow Mountain II	Chert	1	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Crigler	Morrow Mountain II	Quartz	3	SBC	Hebron	E14	IP
	Crigler	Palmer	Quartz	1	SBC	Hebron	E14	IP
	Crigler	Piscataway	Quartz	2	SBC	Hebron	E14	IP
	Crigler	Potts	Quartz	1	SBC	Hebron	E14	IP
	Crowe	biface com	Quartz	1	LAC	Middle River	E11	IP
	Crowe	biface frag mid	Quartz	2	LAC	Middle River	E11	IP
	Crowe	core	Quartz	2	LAC	Middle River	E11	IP
	Crowe	flake	Quartz	30	LAC	Middle River	E11	IP
	Crowe	shatter	Quartz	12	LAC	Middle River	E11	IP
	Dejarnette Johnston	celt	Metabasalt	2	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	grooved axe	Metabasalt	1	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Halifax	Quartz	12	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Holmes	Quartzite	3	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Madison	Chert	2	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Madison	Quartz	2	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Palmer	Chert	1	SBC	Beaverdam	E15	MB
	Dejarnette Johnston	Piscataway	Quartz	1	SBC	Beaverdam	E15	MB
	Dejarnette Whitlock	biface com	Metabasalt	5	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	biface com	Quartzite	7	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	chipped stone axe	Metabasalt	3	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	flake	Quartzite	6	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	Halifax	Quartz	1	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	Holmes	Metabasalt	1	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	Kirk CN	Rhyolite	1	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	scraper	Quartzite	2	SBC	Graves Mill	E11	IP
	Dejarnette Whitlock	Vernon	Rhyolite	1	SBC	Graves Mill	E11	IP
	Demarest Desert	biface com	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	biface com	Quartzite	2	SBC	Demarest	E15	IP
	Demarest Desert	biface frag dist	Jasper	1	SBC	Demarest	E15	IP
	Demarest Desert	biface frag dist	Quartz	12	SBC	Demarest	E15	IP
	Demarest Desert	biface frag dist	Quartzite	2	SBC	Demarest	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Demarest Desert	biface frag mid	Quartz	3	SBC	Demarest	E15	IP
	Demarest Desert	Big Sandy	Quartzite	2	SBC	Demarest	E15	IP
	Demarest Desert	Bilobate	Quartz	2	SBC	Demarest	E15	IP
	Demarest Desert	Bilobate	Quartzite	1	SBC	Demarest	E15	IP
	Demarest Desert	Brewerton SN	Chert	1	SBC	Demarest	E15	IP
	Demarest Desert	Brewerton SN	Quartzite	1	SBC	Demarest	E15	IP
	Demarest Desert	Calvert	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	Calvert	Quartz	5	SBC	Demarest	E15	IP
	Demarest Desert	Calvert	Quartzite	2	SBC	Demarest	E15	IP
	Demarest Desert	Calvert	Rhyolite	1	SBC	Demarest	E15	IP
	Demarest Desert	chipped stone axe	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	cobble tool	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	core	Quartz	2	SBC	Demarest	E15	IP
	Demarest Desert	drill	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	drill	Quartzite	1	SBC	Demarest	E15	IP
	Demarest Desert	flake	Quartz	125	SBC	Demarest	E15	IP
	Demarest Desert	flake	Chlorite	1	SBC	Demarest	E15	IP
	Demarest Desert	flake	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	flake	Rhyolite	1	SBC	Demarest	E15	IP
	Demarest Desert	graver	Quartz	5	SBC	Demarest	E15	IP
	Demarest Desert	grooved axe	Metabasalt	1	SBC	Demarest	E15	IP
	Demarest Desert	Halifax	Quartz	5	SBC	Demarest	E15	IP
	Demarest Desert	hammerstone	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Holmes	Metabasalt	2	SBC	Demarest	E15	IP
	Demarest Desert	Holmes	Quartz	6	SBC	Demarest	E15	IP
	Demarest Desert	Holmes	Quartzite	2	SBC	Demarest	E15	IP
	Demarest Desert	Jack's Reef Pentagonal	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Kirk Stemmed	Jasper	1	SBC	Demarest	E15	IP
	Demarest Desert	Kirk Stemmed	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Lamoka	Chert	1	SBC	Demarest	E15	IP
	Demarest Desert	Levanna/Yadkin	Quartz	1	SBC	Demarest	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Demarest Desert	Madison	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Morrow Mountain II	Quartz	2	SBC	Demarest	E15	IP
	Demarest Desert	Orient Fishtail	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Palmer	Mylonite	1	SBC	Demarest	E15	IP
	Demarest Desert	Palmer	Rhyolite	1	SBC	Demarest	E15	IP
	Demarest Desert	Piscataway	Quartz	2	SBC	Demarest	E15	IP
	Demarest Desert	Potts	Quartz	2	SBC	Demarest	E15	IP
	Demarest Desert	Potts	Quartzite	1	SBC	Demarest	E15	IP
	Demarest Desert	Savannah River	Metabasalt	3	SBC	Demarest	E15	IP
	Demarest Desert	Savannah River	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	scraper	Quartz	5	SBC	Demarest	E15	IP
	Demarest Desert	shatter	Quartz	20	SBC	Demarest	E15	IP
	Demarest Desert	spokeshave	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Stanly	Quartz	1	SBC	Demarest	E15	IP
	Demarest Desert	Triang. Preforms	Quartz	3	SBC	Demarest	E15	IP
	Demarest Desert	Vernon	Quartz	1	SBC	Demarest	E15	IP
	Demarest Pottery	flake	Quartz	41	LAC	Demarest	E15	IP
	Demarest Pottery	graver	Quartz	1	LAC	Demarest	E15	IP
	Demarest Pottery	shatter	Quartz	3	LAC	Demarest	E15	IP
	Devil Fence	biface frag dist	Quartz	33	LW	Neal Mountain	E12	IP
	Devil Fence	biface frag mid	Quartz	27	LW	Neal Mountain	E12	IP
	Devil Fence	core	Quartz	69	LW	Neal Mountain	E12	IP
	Devil Fence	flake	Quartz	359	LW	Neal Mountain	E12	IP
	Devil Fence	flake	Mylonite	35	LW	Neal Mountain	E12	IP
	Devil Fence	shatter	Quartz	50	LW	Neal Mountain	E12	IP
	Dewey	biface com	Mylonite	1	SBC	Neal Mountain	E12	IP
	Dewey	biface frag dist	Quartz	5	SBC	Neal Mountain	E12	IP
	Dewey	biface frag dist	Quartzite	2	SBC	Neal Mountain	E12	IP
	Dewey	biface frag mid	Quartz	7	SBC	Neal Mountain	E12	IP
	Dewey	Big Sandy	Quartzite	2	SBC	Neal Mountain	E12	IP
	Dewey	Bilobate	Quartz	10	SBC	Neal Mountain	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Dewey	blade flake	Chert	1	SBC	Neal Mountain	E12	IP
	Dewey	blade flake	Jasper	1	SBC	Neal Mountain	E12	IP
	Dewey	Brewerton SN	Rhyolite	1	SBC	Neal Mountain	E12	IP
	Dewey	Calvert	Chert	1	SBC	Neal Mountain	E12	IP
	Dewey	Calvert	Quartz	18	SBC	Neal Mountain	E12	IP
	Dewey	Calvert	Quartzite	2	SBC	Neal Mountain	E12	IP
	Dewey	cobble tool	Metabasalt	1	SBC	Neal Mountain	E12	IP
	Dewey	core	Quartz	36	SBC	Neal Mountain	E12	IP
	Dewey	drill	Chert	1	SBC	Neal Mountain	E12	IP
	Dewey	drill	Jasper	1	SBC	Neal Mountain	E12	IP
	Dewey	drill	Quartz	1	SBC	Neal Mountain	E12	IP
	Dewey	drill	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	flake	Quartz	256	SBC	Neal Mountain	E12	IP
	Dewey	flake	Basalt	1	SBC	Neal Mountain	E12	IP
	Dewey	graver	Quartz	24	SBC	Neal Mountain	E12	IP
	Dewey	grooved axe	Metabasalt	1	SBC	Neal Mountain	E12	IP
	Dewey	Halifax	Quartz	18	SBC	Neal Mountain	E12	IP
	Dewey	hammerstone	Greywacke	1	SBC	Neal Mountain	E12	IP
	Dewey	Holmes	Quartz	6	SBC	Neal Mountain	E12	IP
	Dewey	Holmes	Quartzite	4	SBC	Neal Mountain	E12	IP
	Dewey	Jack's Reef CN	Chert	1	SBC	Neal Mountain	E12	IP
	Dewey	Kirk CN	Chert	3	SBC	Neal Mountain	E12	IP
	Dewey	Kirk Stemmed	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	LeCroy	Quartz	3	SBC	Neal Mountain	E12	IP
	Dewey	LeCroy	Rhyolite	1	SBC	Neal Mountain	E12	IP
	Dewey	Levanna/Yadkin	Quartz	4	SBC	Neal Mountain	E12	IP
	Dewey	Levanna/Yadkin	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	Orient Fishtail	Quartz	1	SBC	Neal Mountain	E12	IP
	Dewey	Orient Fishtail	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	Orient Fishtail	Rhyolite	1	SBC	Neal Mountain	E12	IP
	Dewey	Palmer	Chert	1	SBC	Neal Mountain	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Dewey	Palmer	Jasper	1	SBC	Neal Mountain	E12	IP
	Dewey	Palmer	Mylonite	1	SBC	Neal Mountain	E12	IP
	Dewey	Palmer	Quartz	2	SBC	Neal Mountain	E12	IP
	Dewey	Palmer	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	Piscataway	Quartz	7	SBC	Neal Mountain	E12	IP
	Dewey	Piscataway	Quartzite	4	SBC	Neal Mountain	E12	IP
	Dewey	Savannah River	Quartzite	4	SBC	Neal Mountain	E12	IP
	Dewey	scraper	Quartz	54	SBC	Neal Mountain	E12	IP
	Dewey	Selby Bay	Rhyolite	1	SBC	Neal Mountain	E12	IP
	Dewey	shatter	Chert	3	SBC	Neal Mountain	E12	IP
	Dewey	shatter	Quartz	178	SBC	Neal Mountain	E12	IP
	Dewey	Stanly	Quartzite	1	SBC	Neal Mountain	E12	IP
	Dewey	Teardrop	Jasper	1	SBC	Neal Mountain	E12	IP
	Dewey	Vernon	Quartz	3	SBC	Neal Mountain	E12	IP
	Dixon	Bare Island	Quartz	1	LAC	Isolated	E14	BR
	Dixon	biface frag mid	Quartz	6	LAC	Isolated	E14	BR
	Dixon	cobble tool	Metabasalt	2	LAC	Isolated	E14	BR
	Dixon	core	Quartz	2	LAC	Isolated	E14	BR
	Dixon	flake	Quartz	17	LAC	Isolated	E14	BR
	Dixon	flake	Metabasalt	1	LAC	Isolated	E14	BR
	Dixon	flake	Oolitic Qtzite	1	LAC	Isolated	E14	BR
	Dixon	graver	Quartz	4	LAC	Isolated	E14	BR
	Dixon	Kirk Stemmed	Quartz	1	LAC	Isolated	E14	BR
	Dixon	LeCroy	Quartz	1	LAC	Isolated	E14	BR
	Dixon	scraper	Quartz	1	LAC	Isolated	E14	BR
	Dixon	scraper	Quartzite	1	LAC	Isolated	E14	BR
	Dixon	shatter	Quartz	1	LAC	Isolated	E14	BR
	Foster	biface com	Basalt	1	SBC	Arrowhead	E14	BR
	Foster	biface com	Chert	6	SBC	Arrowhead	E14	BR
	Foster	biface com	Quartz	6	SBC	Arrowhead	E14	BR
	Foster	biface com	Quartzite	2	SBC	Arrowhead	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Foster	biface frag dist	Oolitic Qtzite	1	SBC	Arrowhead	E14	BR
	Foster	biface frag dist	Quartz	17	SBC	Arrowhead	E14	BR
	Foster	biface frag mid	Mylonite	1	SBC	Arrowhead	E14	BR
	Foster	biface frag mid	Quartz	8	SBC	Arrowhead	E14	BR
	Foster	biface frag mid	Quartzite	12	SBC	Arrowhead	E14	BR
	Foster	biface frag mid	Rhyolite	1	SBC	Arrowhead	E14	BR
	Foster	Big Sandy	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	Bilobate	Quartz	8	SBC	Arrowhead	E14	BR
	Foster	blade flake	Chert	1	SBC	Arrowhead	E14	BR
	Foster	Brewerton SN	Chert	1	SBC	Arrowhead	E14	BR
	Foster	Calvert	Quartz	5	SBC	Arrowhead	E14	BR
	Foster	core	Chert	1	SBC	Arrowhead	E14	BR
	Foster	core	Jasper	1	SBC	Arrowhead	E14	BR
	Foster	core	Mylonite	1	SBC	Arrowhead	E14	BR
	Foster	core	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	drill	Mylonite	3	SBC	Arrowhead	E14	BR
	Foster	flake	Quartz	7	SBC	Arrowhead	E14	BR
	Foster	flake	Jasper	1	SBC	Arrowhead	E14	BR
	Foster	flake	Mylonite	1	SBC	Arrowhead	E14	BR
	Foster	flake	Quartzite	1	SBC	Arrowhead	E14	BR
	Foster	Halifax	Quartz	16	SBC	Arrowhead	E14	BR
	Foster	Holmes	Quartz	6	SBC	Arrowhead	E14	BR
	Foster	Holmes	Quartzite	1	SBC	Arrowhead	E14	BR
	Foster	Kirk Stemmed	Chert	1	SBC	Arrowhead	E14	BR
	Foster	Kirk Stemmed	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	Kirk Stemmed	Quartzite	1	SBC	Arrowhead	E14	BR
	Foster	Kirk Stemmed	Rhyolite	1	SBC	Arrowhead	E14	BR
	Foster	LeCroy	Chert	1	SBC	Arrowhead	E14	BR
	Foster	LeCroy	Quartz	9	SBC	Arrowhead	E14	BR
	Foster	MacPherson	Quartz	6	SBC	Arrowhead	E14	BR
	Foster	Morrow Mountain II	Quartz	2	SBC	Arrowhead	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Foster	Palmer	Chert	1	SBC	Arrowhead	E14	BR
	Foster	Palmer	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	Piscataway	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	Potts	Quartzite	1	SBC	Arrowhead	E14	BR
	Foster	scraper	Chert	2	SBC	Arrowhead	E14	BR
	Foster	scraper	Mylonite	1	SBC	Arrowhead	E14	BR
	Foster	scraper	Quartz	3	SBC	Arrowhead	E14	BR
	Foster	scraper	Quartzite	1	SBC	Arrowhead	E14	BR
	Foster	shatter	Chert	1	SBC	Arrowhead	E14	BR
	Foster	shatter	Quartz	1	SBC	Arrowhead	E14	BR
	Foster	Unidentifiable Point	Quartz	5	SBC	Arrowhead	E14	BR
	Foster	Vernon	Quartz	3	SBC	Arrowhead	E14	BR
	Foster	Vernon	Rhyolite	1	SBC	Arrowhead	E14	BR
	Foster Rockshelter				RS	Arrowhead	E14	BR
	Girl Scout	Bare Island	Chert	1	LAC	Dark Run	E15	IP
	Girl Scout	flake	Quartz	5	LAC	Dark Run	E15	IP
	Graves Around Hill	biface com	Quartzite	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag dist	Metabasalt	2	SBC	Graves	E14	IP
	Graves Around Hill	biface frag dist	Mylonite	3	SBC	Graves	E14	IP
	Graves Around Hill	biface frag dist	Quartz	2	SBC	Graves	E14	IP
	Graves Around Hill	biface frag dist	Quartzite	8	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Chalcedony	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Chert	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Jasper	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Metabasalt Breccia	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Metasiltstone	1	SBC	Graves	E14	IP
	Graves Around Hill	biface frag mid	Quartzite	8	SBC	Graves	E14	IP
	Graves Around Hill	Bilobate	Quartz	1	SBC	Graves	E14	IP
	Graves Around Hill	Calvert	Chert	1	SBC	Graves	E14	IP
	Graves Around Hill	Calvert	Jasper	2	SBC	Graves	E14	IP
	Graves Around Hill	Calvert	Metasiltstone	1	SBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Around Hill	Calvert	Quartzite	1	SBC	Graves	E14	IP
	Graves Around Hill	core	Metabasalt	1	SBC	Graves	E14	IP
	Graves Around Hill	drill	Metabasalt Breccia	1	SBC	Graves	E14	IP
	Graves Around Hill	drill	Quartzite	1	SBC	Graves	E14	IP
	Graves Around Hill	flake	Quartzite	2	SBC	Graves	E14	IP
	Graves Around Hill	flake	Mylonite	1	SBC	Graves	E14	IP
	Graves Around Hill	flake	Rhyolite	1	SBC	Graves	E14	IP
	Graves Around Hill	graver	Jasper	1	SBC	Graves	E14	IP
	Graves Around Hill	Holmes	Metabasalt	1	SBC	Graves	E14	IP
	Graves Around Hill	Kirk Stemmed	Metasiltstone	1	SBC	Graves	E14	IP
	Graves Around Hill	Kirk Stemmed	Rhyolite	1	SBC	Graves	E14	IP
	Graves Around Hill	LeCroy	Rhyolite	1	SBC	Graves	E14	IP
	Graves Around Hill	Levanna/Yadkin	Chert	1	SBC	Graves	E14	IP
	Graves Around Hill	Levanna/Yadkin	Quartzite	4	SBC	Graves	E14	IP
	Graves Around Hill	Morrow Mountain II	Quartzite	2	SBC	Graves	E14	IP
	Graves Around Hill	Perkiomen	Rhyolite	1	SBC	Graves	E14	IP
	Graves Around Hill	Potts	Quartzite	2	SBC	Graves	E14	IP
	Graves Around Hill	Savannah River	Quartzite	1	SBC	Graves	E14	IP
	Graves Around Hill	scraper	Chert	1	SBC	Graves	E14	IP
	Graves Around Hill	scraper	Mylonite	2	SBC	Graves	E14	IP
	Graves Around Hill	scraper	Quartz	3	SBC	Graves	E14	IP
	Graves Around Hill	scraper	Quartzite	12	SBC	Graves	E14	IP
	Graves Around Hill	Selby Bay	Metabasalt Breccia	1	SBC	Graves	E14	IP
	Graves Around Hill	spokeshave	Mylonite	1	SBC	Graves	E14	IP
	Graves Around Hill	spokeshave	Quartz	5	SBC	Graves	E14	IP
	Graves Around Hill	Triang. Preforms	Quartzite	1	SBC	Graves	E14	IP
	Graves Around Hill	Vernon	Quartz	1	SBC	Graves	E14	IP
	Graves Bee Hive	abrader	Sandstone	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Bare Island	Quartz	2	SBC	Peola Mills	E03	IP
	Graves Bee Hive	biface com	Chert	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	biface com	Quartzite	1	SBC	Peola Mills	E03	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Bee Hive	biface frag dist	Quartz	3	SBC	Peola Mills	E03	IP
	Graves Bee Hive	biface frag mid	Quartz	2	SBC	Peola Mills	E03	IP
	Graves Bee Hive	biface frag mid	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Brewerton SN	Chert	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Calvert	Metabasalt	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Calvert	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	flake	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	flake	Chert	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Holmes	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Jack's Reef Pentagonal	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Levanna/Yadkin	Quartz	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Levanna/Yadkin	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	scraper	Quartz	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	scraper	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Triang. Preforms	Quartz	1	SBC	Peola Mills	E03	IP
	Graves Bee Hive	Triang. Preforms	Quartzite	1	SBC	Peola Mills	E03	IP
	Graves Catherine	Bare Island	Quartz	3	LBC	Graves	E14	IP
	Graves Catherine	biface com	Metabasalt	2	LBC	Graves	E14	IP
	Graves Catherine	biface com	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Catherine	biface com	Mylonite	3	LBC	Graves	E14	IP
	Graves Catherine	biface com	Quartz	9	LBC	Graves	E14	IP
	Graves Catherine	biface com	Quartzite	9	LBC	Graves	E14	IP
	Graves Catherine	biface frag dist	Arg. Shale	1	LBC	Graves	E14	IP
	Graves Catherine	biface frag dist	Quartz	20	LBC	Graves	E14	IP
	Graves Catherine	biface frag dist	Quartzite	4	LBC	Graves	E14	IP
	Graves Catherine	biface frag dist	Rhyolite	1	LBC	Graves	E14	IP
	Graves Catherine	biface frag mid	Quartz	15	LBC	Graves	E14	IP
	Graves Catherine	biface frag mid	Quartzite	3	LBC	Graves	E14	IP
	Graves Catherine	Bilobate	Quartz	1	LBC	Graves	E14	IP
	Graves Catherine	Brewerton SN	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Catherine	Calvert	Chert	1	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Catherine	Calvert	Jasper	1	LBC	Graves	E14	IP
	Graves Catherine	Calvert	Quartz	1	LBC	Graves	E14	IP
	Graves Catherine	celt	Metabasalt	1	LBC	Graves	E14	IP
	Graves Catherine	chipped stone axe	Metabasalt	1	LBC	Graves	E14	IP
	Graves Catherine	cobble tool	Metabasalt	2	LBC	Graves	E14	IP
	Graves Catherine	core	Chert	1	LBC	Graves	E14	IP
	Graves Catherine	core	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	core	Jasper	1	LBC	Graves	E14	IP
	Graves Catherine	drill	Chert	1	LBC	Graves	E14	IP
	Graves Catherine	flake	Quartz	13	LBC	Graves	E14	IP
	Graves Catherine	flake	Chert	3	LBC	Graves	E14	IP
	Graves Catherine	flake	Jasper	2	LBC	Graves	E14	IP
	Graves Catherine	flake	Mylonite	1	LBC	Graves	E14	IP
	Graves Catherine	flake	Quartzite	9	LBC	Graves	E14	IP
	Graves Catherine	flake	Rhyolite	2	LBC	Graves	E14	IP
	Graves Catherine	graver	Jasper	1	LBC	Graves	E14	IP
	Graves Catherine	grinding stone	Sandstone	1	LBC	Graves	E14	IP
	Graves Catherine	Halifax	Quartz	3	LBC	Graves	E14	IP
	Graves Catherine	Kirk CN	Quartz	2	LBC	Graves	E14	IP
	Graves Catherine	Kirk CN	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	Kirk Stemmed	Rhyolite	1	LBC	Graves	E14	IP
	Graves Catherine	Lehigh/Koens-Crispin	Rhyolite	1	LBC	Graves	E14	IP
	Graves Catherine	Orient Fishtail	Quartz	1	LBC	Graves	E14	IP
	Graves Catherine	Piscataway	Quartz	4	LBC	Graves	E14	IP
	Graves Catherine	Potts	Quartz	1	LBC	Graves	E14	IP
	Graves Catherine	Potts	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	Savannah River	Metabasalt	2	LBC	Graves	E14	IP
	Graves Catherine	Savannah River	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	scraper	Diabase	1	LBC	Graves	E14	IP
	Graves Catherine	scraper	Jasper	1	LBC	Graves	E14	IP
	Graves Catherine	scraper	Metabasalt	1	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Catherine	scraper	Oolitic Qtzite	1	LBC	Graves	E14	IP
	Graves Catherine	scraper	Quartz	4	LBC	Graves	E14	IP
	Graves Catherine	scraper	Quartzite	2	LBC	Graves	E14	IP
	Graves Catherine	shatter	Chalcedony	1	LBC	Graves	E14	IP
	Graves Catherine	shatter	Chert	1	LBC	Graves	E14	IP
	Graves Catherine	shatter	Quartz	3	LBC	Graves	E14	IP
	Graves Catherine	shatter	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	Teardrop	Quartzite	1	LBC	Graves	E14	IP
	Graves Catherine	Triang. Preforms	Quartz	1	LBC	Graves	E14	IP
	Graves Catherine	Vernon	Quartz	4	LBC	Graves	E14	IP
	Graves Catherine	Vernon	Rhyolite	1	LBC	Graves	E14	IP
	Graves Coates	biface com	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Coates	biface frag dist	Quartz	4	LAC	Peola Mills	E03	IP
	Graves Coates	biface frag mid	Quartzite	1	LAC	Peola Mills	E03	IP
	Graves Coates	drill	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Coates	flake	Quartz	3	LAC	Peola Mills	E03	IP
	Graves Coates	flake	Quartzite	1	LAC	Peola Mills	E03	IP
	Graves Coates	Halifax	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Coates	Levanna/Yadkin	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Coates	Piscataway	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Coates	Savannah River	Metabasalt	1	LAC	Peola Mills	E03	IP
	Graves Coates	scraper	Quartz	2	LAC	Peola Mills	E03	IP
	Graves Coates	shatter	Quartz	1	LAC	Peola Mills	E03	IP
	Graves Duck Farm	Vernon	Arg. Shale	1	CA	Hebron	E15	IP
	Graves Duck Farm	Bare Island	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	Bare Island	Metabasalt	2	CA	Hebron	E15	IP
	Graves Duck Farm	Bare Island	Quartz	11	CA	Hebron	E15	IP
	Graves Duck Farm	biface com	Basalt	3	CA	Hebron	E15	IP
	Graves Duck Farm	biface com	Jasper	1	CA	Hebron	E15	IP
	Graves Duck Farm	biface com	Metabasalt	4	CA	Hebron	E15	IP
	Graves Duck Farm	biface com	Mylonite	32	CA	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm	biface com	Quartz	35	CA	Hebron	E15	IP
	Graves Duck Farm	biface com	Quartzite	12	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Chert	11	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Jasper	4	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Metabasalt	4	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Mylonite	11	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Quartz	71	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag dist	Quartzite	22	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Chalcedony	1	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Chert	7	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Jasper	1	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Metasiltstone	1	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Quartz	84	CA	Hebron	E15	IP
	Graves Duck Farm	biface frag mid	Quartzite	17	CA	Hebron	E15	IP
	Graves Duck Farm	Big Sandy	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Big Sandy	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Bilobate	Quartz	4	CA	Hebron	E15	IP
	Graves Duck Farm	Bilobate	Quartzite	2	CA	Hebron	E15	IP
	Graves Duck Farm	blade flake	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Brewerton SN	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	Calvert	Mylonite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Calvert	Quartzite	6	CA	Hebron	E15	IP
	Graves Duck Farm	celt	Diabase	2	CA	Hebron	E15	IP
	Graves Duck Farm	celt	Metabasalt	8	CA	Hebron	E15	IP
	Graves Duck Farm	chipped stone axe	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	cobble tool	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	core	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	core	Jasper	2	CA	Hebron	E15	IP
	Graves Duck Farm	core	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	core	Quartz	4	CA	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm	core	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	drill	Chert	3	CA	Hebron	E15	IP
	Graves Duck Farm	drill	Metabasalt Breccia	1	CA	Hebron	E15	IP
	Graves Duck Farm	drill	Mylonite	1	CA	Hebron	E15	IP
	Graves Duck Farm	drill	Quartz	9	CA	Hebron	E15	IP
	Graves Duck Farm	drill	Quartzite	2	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Quartz	12	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Arg. Shale	1	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Chalcedony	1	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Chert	7	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Jasper	10	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Metabasalt	2	CA	Hebron	E15	IP
	Graves Duck Farm	flake	Mylonite	9	CA	Hebron	E15	IP
	Graves Duck Farm	graver	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	graver	Jasper	2	CA	Hebron	E15	IP
	Graves Duck Farm	graver	Quartz	5	CA	Hebron	E15	IP
	Graves Duck Farm	Guilford	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Guilford	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	Halifax	Quartz	13	CA	Hebron	E15	IP
	Graves Duck Farm	hammerstone	Diabase	1	CA	Hebron	E15	IP
	Graves Duck Farm	hammerstone	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Holmes	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Holmes	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Holmes	Quartzite	6	CA	Hebron	E15	IP
	Graves Duck Farm	Kirk CN	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	Kirk Stemmed	Arg. Shale	1	CA	Hebron	E15	IP
	Graves Duck Farm	Kirk Stemmed	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Kirk Stemmed	Quartzite	2	CA	Hebron	E15	IP
	Graves Duck Farm	Lamoka	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	LeCroy	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	LeCroy	Quartz	3	CA	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm	Levanna/Yadkin	Chert	8	CA	Hebron	E15	IP
	Graves Duck Farm	Levanna/Yadkin	Jasper	1	CA	Hebron	E15	IP
	Graves Duck Farm	Levanna/Yadkin	Mylonite	4	CA	Hebron	E15	IP
	Graves Duck Farm	Levanna/Yadkin	Quartz	19	CA	Hebron	E15	IP
	Graves Duck Farm	Levanna/Yadkin	Quartzite	26	CA	Hebron	E15	IP
	Graves Duck Farm	Madison	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	Madison	Mylonite	2	CA	Hebron	E15	IP
	Graves Duck Farm	Madison	Quartz	16	CA	Hebron	E15	IP
	Graves Duck Farm	Madison	Quartzite	3	CA	Hebron	E15	IP
	Graves Duck Farm	Morrow Mountain II	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Morrow Mountain II	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Orient Fishtail	Quartz	7	CA	Hebron	E15	IP
	Graves Duck Farm	Palmer	Jasper	1	CA	Hebron	E15	IP
	Graves Duck Farm	Palmer	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	pestle	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Piscataway	Quartz	12	CA	Hebron	E15	IP
	Graves Duck Farm	Piscataway	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Potts	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Potts	Quartzite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Savannah River	Basalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Savannah River	Metabasalt	1	CA	Hebron	E15	IP
	Graves Duck Farm	Savannah River	Quartzite	2	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Chert	6	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Jasper	4	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Metabasalt	2	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Mylonite	2	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Quartz	52	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Quartzite	7	CA	Hebron	E15	IP
	Graves Duck Farm	scraper	Rhyolite	1	CA	Hebron	E15	IP
	Graves Duck Farm	shatter	Chert	2	CA	Hebron	E15	IP
	Graves Duck Farm	shatter	Jasper	3	CA	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm	shatter	Quartz	4	CA	Hebron	E15	IP
	Graves Duck Farm	spokeshave	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Stanly	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	Stanly	Rhyolite	1	CA	Hebron	E15	IP
	Graves Duck Farm	stone bowl fragment	Steatite	1	CA	Hebron	E15	IP
	Graves Duck Farm	Teardrop	Quartz	2	CA	Hebron	E15	IP
	Graves Duck Farm	Triang. Preforms	Chert	5	CA	Hebron	E15	IP
	Graves Duck Farm	Triang. Preforms	Jasper	1	CA	Hebron	E15	IP
	Graves Duck Farm	Triang. Preforms	Mylonite	4	CA	Hebron	E15	IP
	Graves Duck Farm	Triang. Preforms	Quartz	11	CA	Hebron	E15	IP
	Graves Duck Farm	Triang. Preforms	Quartzite	7	CA	Hebron	E15	IP
	Graves Duck Farm	Unidentifiable Point	Quartz	1	CA	Hebron	E15	IP
	Graves Duck Farm	Vernon	Chert	1	CA	Hebron	E15	IP
	Graves Duck Farm	Vernon	Mylonite	2	CA	Hebron	E15	IP
	Graves Duck Farm	Vernon	Quartz	17	CA	Hebron	E15	IP
	Graves Duck Farm	Vernon	Quartzite	7	CA	Hebron	E15	IP
	Graves Duck Farm Barn	Bare Island	Jasper	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Bare Island	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	biface com	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	biface com	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	biface frag dist	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Bilobate	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Brewerton SN	Chert	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Calvert	Quartz	4	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Calvert	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Guilford	Metabasalt	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Guilford	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Guilford	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Halifax	Mylonite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Halifax	Quartz	3	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Kirk CN	Quartz	2	SBC	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Barn	Kirk CN	Quartzite	2	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Kirk Stemmed	Chalcedony	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Levanna/Yadkin	Jasper	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Levanna/Yadkin	Mylonite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Levanna/Yadkin	Quartz	3	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Levanna/Yadkin	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	MacPherson	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Morrow Mountain II	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Palmer	Chert	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Palmer	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Palmer	Rhyolite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Piscataway	Quartz	5	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Piscataway	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Potts	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Savannah River	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	scraper	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Stanly	Metabasalt Breccia	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Stanly	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Triang. Preforms	Quartz	3	SBC	Hebron	E15	IP
	Graves Duck Farm Barn	Vernon	Chert	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Bare Island	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface com	Metabasalt	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface com	Quartz	4	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface com	Quartzite	2	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface frag dist	Quartz	5	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface frag dist	Quartzite	2	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface frag dist	Rhyolite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	biface frag mid	Quartz	4	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Bilobate	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Brewerton SN	Chert	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	celt	Diabase	1	SBC	Hebron	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Chicken H	core	Jasper	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	core	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	drill	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	flake	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	flake	Chalcedony	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	flake	Jasper	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	graver	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Halifax	Quartz	4	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Halifax	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	LeCroy	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Levanna/Yadkin	Chert	2	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Levanna/Yadkin	Mylonite	2	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Levanna/Yadkin	Quartz	10	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Levanna/Yadkin	Quartzite	8	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Madison	Chert	6	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Madison	Mylonite	4	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Madison	Quartz	18	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Madison	Quartzite	2	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Orient Fishtail	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Orient Fishtail	Quartzite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	pestle	Basalt	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Piscataway	Quartz	7	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	scraper	Mylonite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	scraper	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	shatter	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	stone bowl fragment	Steatite	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Triang. Preforms	Jasper	1	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Triang. Preforms	Quartz	4	SBC	Hebron	E15	IP
	Graves Duck Farm Chicken H	Vernon	Quartz	1	SBC	Hebron	E15	IP
	Graves Duck Farm Frankie Jo	biface com	Chert	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	biface com	Jasper	1	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Frankie Jc	biface com	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface com	Metasiltstone	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface com	Mylonite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface com	Quartz	8	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface com	Quartzite	5	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag dist	Arg. Shale	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag dist	Mylonite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag dist	Quartz	6	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag dist	Quartzite	4	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag mid	Quartz	9	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	biface frag mid	Quartzite	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Big Sandy	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Big Sandy	Quartzite	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Bilobate	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Bilobate	Quartz	23	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Bilobate	Quartzite	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	blade flake	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Brewerton SN	Chert	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Calvert	Quartz	9	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	cobble tool	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	core	Mylonite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	core	Oolitic Qtzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	core	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	core	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	flake	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	graver	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Guilford	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Halifax	Quartz	14	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Halifax	Quartzite	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Holmes	Quartz	4	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jc	Holmes	Quartzite	4	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Frankie Jo	Kirk CN	Mylonite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Kirk CN	Quartz	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Kirk CN	Quartzite	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Kirk Stemmed	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Kirk Stemmed	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Kirk Stemmed	Quartzite	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	LeCroy	Mylonite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Levanna/Yadkin	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Madison	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Morrow Mountain II	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Morrow Mountain II	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Orient Fishtail	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Palmer	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Palmer	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Piscataway	Quartz	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Potts	Hornfels	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Savannah River	Metabasalt	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Savannah River	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Savannah River	Quartzite	2	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	scraper	Chert	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	scraper	Mylonite	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	scraper	Quartz	7	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	scraper	Quartzite	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Selby Bay	Rhyolite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	St. Albans	Quartz	3	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Triang. Preforms	Quartzite	4	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Unidentifiable Point	Quartz	5	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Vernon	Metabasalt Breccia	1	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Vernon	Quartz	21	SBC	Hebron	E14	IP
	Graves Duck Farm Frankie Jo	Vernon	Quartzite	3	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	biface frag dist	Quartz	2	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Jesse B	biface frag dist	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	Brewerton SN	Chert	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	core	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	flake	Quartz	3	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	flake	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	graver	Quartz		SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	Halifax	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	Morrow Mountain II	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	Piscataway	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Jesse B	scraper	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	bannerstone	Metasiltstone	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface com	Metabasalt	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface com	Mylonite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface com	Quartz	27	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface frag dist	Quartz	14	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface frag dist	Quartzite	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface frag mid	Quartz	4	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	biface frag mid	Quartzite	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Bilobate	Quartz	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Bilobate	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Calvert	Metabasalt Breccia	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Calvert	Quartz	9	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Calvert	Quartzite	6	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	celt	Metabasalt	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	core	Quartz	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	discs	Steatite	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	drill	Chert	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	drill	Rhyolite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	effigy	Chlorite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	flake	Quartz	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	flake	Mylonite	2	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Roy Crigle	flake	Oolitic Qtzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	flake	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	gorget	Slate	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	graver	Jasper	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	grinding stone	Sandstone	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Halifax	Quartz	6	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	hammerstone	Sandstone	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Holmes	Quartz	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Holmes	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Kirk CN	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Kirk Stemmed	Quartz	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Levanna/Yadkin	Chert	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Levanna/Yadkin	Mylonite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Levanna/Yadkin	Quartz	8	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Levanna/Yadkin	Quartzite	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Madison	Chert	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Madison	Mylonite	4	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Madison	Quartz	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Madison	Quartzite	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Orient Fishtail	Quartz	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	pestle	Metabasalt	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Piscataway	Quartz	16	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Potts	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Savannah River	Metabasalt	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Savannah River	Quartz	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Savannah River	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	scraper	Quartz	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Selby Bay	Rhyolite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	shatter	Quartzite	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Triang. Preforms	Chert	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Triang. Preforms	Jasper	1	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Duck Farm Roy Crigle	Triang. Preforms	Mylonite	2	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Triang. Preforms	Quartz	1	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Triang. Preforms	Quartzite	3	HAM	Hebron	E14	IP
	Graves Duck Farm Roy Crigle	Vernon	Quartz	13	HAM	Hebron	E14	IP
	Graves Duck Farm Trees	biface com	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	biface com	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	biface frag dist	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	biface frag mid	Metasiltstone	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Bilobate	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Brewerton SN	Chert	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	flake	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	flake	Chert	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	flake	Jasper	3	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Guilford	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Guilford	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Levanna/Yadkin	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Levanna/Yadkin	Quartzite	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	MacPherson	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	Piscataway	Quartz	1	SBC	Hebron	E14	IP
	Graves Duck Farm Trees	scraper	Metabasalt	1	SBC	Hebron	E14	IP
	Graves Hay Berry	biface frag dist	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Berry	biface frag mid	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Berry	flake	Quartz	4	LAC	Graves	E14	IP
	Graves Hay Berry	flake	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Berry	Kirk CN	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Berry	MacPherson	Quartz	2	LAC	Graves	E14	IP
	Graves Hay Guy Anderson	biface com	Metabasalt	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	biface frag dist	Quartz	3	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	biface frag dist	Quartzite	3	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	Bilobate	Quartz	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	core	Quartz	1	SBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Hay Guy Anderson	graver	Quartz	2	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	graver	Quartzite	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	grooved axe	Metabasalt	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	Holmes	Metabasalt	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	pestle	Sandstone	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	Piscataway	Quartz	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	Piscataway	Quartzite	1	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	scraper	Quartz	4	SBC	Graves	E14	IP
	Graves Hay Guy Anderson	Vernon	Quartz	2	SBC	Graves	E14	IP
	Graves Hay Lodge	Bilobate	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Brewerton CN	Chert	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Calvert	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Holmes	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Madison	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Morrow Mountain II	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Lodge	Piscataway	Quartz	2	LAC	Graves	E14	IP
	Graves Hay Lodge	Unidentifiable Point	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface com	Metabasalt	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface com	Mylonite	2	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface com	Quartz	5	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface frag dist	Quartz	2	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface frag dist	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	biface frag mid	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Calvert	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	flake	Quartz	3	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	flake	Metabasalt	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	flake	Metabasalt Breccia	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Halifax	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Levanna/Yadkin	Chert	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Levanna/Yadkin	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Piscataway	Quartz	1	LAC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Hay Sis Aylor	shatter	Chert	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Triang. Preforms	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Sis Aylor	Vernon	Quartz	2	LAC	Graves	E14	IP
	Graves Hay Weakley	biface com	Chalcedony	1	LAC	Graves	E14	IP
	Graves Hay Weakley	biface com	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	biface com	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	biface frag dist	Arg. Shale	1	LAC	Graves	E14	IP
	Graves Hay Weakley	biface frag dist	Quartz	3	LAC	Graves	E14	IP
	Graves Hay Weakley	biface frag dist	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	biface frag mid	Quartz	2	LAC	Graves	E14	IP
	Graves Hay Weakley	biface frag mid	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	cobble tool	Metabasalt	1	LAC	Graves	E14	IP
	Graves Hay Weakley	flake	Quartz	1	LAC	Graves	E14	IP
	Graves Hay Weakley	flake	Metabasalt	1	LAC	Graves	E14	IP
	Graves Hay Weakley	flake	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	Madison	Quartzite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	Morrow Mountain II	Mylonite	1	LAC	Graves	E14	IP
	Graves Hay Weakley	scraper	Chert	1	LAC	Graves	E14	IP
	Graves Hay Weakley	Unidentifiable Point	Quartzite	1	LAC	Graves	E14	IP
	Graves Jack Jasper	biface frag dist	Quartz	2	LAC	Graves	E14	IP
	Graves Jack Jasper	Calvert	Quartz	2	LAC	Graves	E14	IP
	Graves Jack Jasper	flake	Mylonite	1	LAC	Graves	E14	IP
	Graves Jack Jasper	Holmes	Quartz	1	LAC	Graves	E14	IP
	Graves Jack Jasper	Levanna/Yadkin	Quartz	1	LAC	Graves	E14	IP
	Graves Jack Jasper	Piscataway	Quartz	1	LAC	Graves	E14	IP
	Graves Jack Jasper	spokeshave	Quartz	1	LAC	Graves	E14	IP
	Graves Jack Jasper	Vernon	Quartz	1	LAC	Graves	E14	IP
	Graves Margaret	Bare Island	Metabasalt	1	LBC	Graves	E14	IP
	Graves Margaret	Bare Island	Quartz	6	LBC	Graves	E14	IP
	Graves Margaret	Bare Island	Quartzite	2	LBC	Graves	E14	IP
	Graves Margaret	Bare Island	Rhyolite	2	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Margaret	biface com	Basalt	1	LBC	Graves	E14	IP
	Graves Margaret	biface com	Hornfels	1	LBC	Graves	E14	IP
	Graves Margaret	biface com	Metabasalt	2	LBC	Graves	E14	IP
	Graves Margaret	biface com	Mylonite	3	LBC	Graves	E14	IP
	Graves Margaret	biface com	Oolitic Qtzite	1	LBC	Graves	E14	IP
	Graves Margaret	biface com	Quartz	16	LBC	Graves	E14	IP
	Graves Margaret	biface com	Quartzite	8	LBC	Graves	E14	IP
	Graves Margaret	biface com	Rhyolite	1	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Basalt	2	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Chert	3	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Metabasalt	1	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Mylonite	7	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Quartz	54	LBC	Graves	E14	IP
	Graves Margaret	biface frag dist	Quartzite	34	LBC	Graves	E14	IP
	Graves Margaret	biface frag mid	Chert	2	LBC	Graves	E14	IP
	Graves Margaret	biface frag mid	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Margaret	biface frag mid	Mylonite	2	LBC	Graves	E14	IP
	Graves Margaret	biface frag mid	Quartz	37	LBC	Graves	E14	IP
	Graves Margaret	biface frag mid	Quartzite	14	LBC	Graves	E14	IP
	Graves Margaret	Big Sandy	Quartz	1	LBC	Graves	E14	IP
	Graves Margaret	Bilobate	Quartz	4	LBC	Graves	E14	IP
	Graves Margaret	Bilobate	Quartzite	2	LBC	Graves	E14	IP
	Graves Margaret	blade flake	Jasper	1	LBC	Graves	E14	IP
	Graves Margaret	Brewerton CN	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	Brewerton CN	Rhyolite	1	LBC	Graves	E14	IP
	Graves Margaret	Brewerton SN	Chert	4	LBC	Graves	E14	IP
	Graves Margaret	Calvert	Metabasalt	1	LBC	Graves	E14	IP
	Graves Margaret	Calvert	Metasiltstone	1	LBC	Graves	E14	IP
	Graves Margaret	Calvert	Quartz	16	LBC	Graves	E14	IP
	Graves Margaret	Calvert	Quartzite	3	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Margaret	Calvert	Rhyolite	1	LBC	Graves	E14	IP
	Graves Margaret	chipped stone axe	Metabasalt	1	LBC	Graves	E14	IP
	Graves Margaret	core	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	core	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	drill	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	drill	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	drill	Quartz	7	LBC	Graves	E14	IP
	Graves Margaret	drill	Quartzite	2	LBC	Graves	E14	IP
	Graves Margaret	flake	Quartz	14	LBC	Graves	E14	IP
	Graves Margaret	flake	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	flake	Jasper	2	LBC	Graves	E14	IP
	Graves Margaret	flake	Mylonite	2	LBC	Graves	E14	IP
	Graves Margaret	flake	Quartzite	11	LBC	Graves	E14	IP
	Graves Margaret	graver	Quartz	1	LBC	Graves	E14	IP
	Graves Margaret	graver	Quartzite	1	LBC	Graves	E14	IP
	Graves Margaret	Halifax	Quartz	11	LBC	Graves	E14	IP
	Graves Margaret	Halifax	Quartzite	1	LBC	Graves	E14	IP
	Graves Margaret	Holmes	Metabasalt	6	LBC	Graves	E14	IP
	Graves Margaret	Holmes	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	Holmes	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	Holmes	Quartzite	11	LBC	Graves	E14	IP
	Graves Margaret	Jack's Reef CN	Jasper	1	LBC	Graves	E14	IP
	Graves Margaret	Kirk CN	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	Kirk CN	Rhyolite	1	LBC	Graves	E14	IP
	Graves Margaret	Kirk Stemmed	Quartzite	1	LBC	Graves	E14	IP
	Graves Margaret	Kirk Stemmed	Rhyolite	2	LBC	Graves	E14	IP
	Graves Margaret	Lamoka	Chert	2	LBC	Graves	E14	IP
	Graves Margaret	LeCroy	Quartz	1	LBC	Graves	E14	IP
	Graves Margaret	Levanna/Yadkin	Chert	3	LBC	Graves	E14	IP
	Graves Margaret	Levanna/Yadkin	Jasper	1	LBC	Graves	E14	IP
	Graves Margaret	Levanna/Yadkin	Metabasalt Breccia	1	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Margaret	Levanna/Yadkin	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	Levanna/Yadkin	Quartz	7	LBC	Graves	E14	IP
	Graves Margaret	Levanna/Yadkin	Quartzite	25	LBC	Graves	E14	IP
	Graves Margaret	Madison	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	Madison	Quartzite	4	LBC	Graves	E14	IP
	Graves Margaret	Morrow Mountain II	Arg. Shale	1	LBC	Graves	E14	IP
	Graves Margaret	Morrow Mountain II	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Margaret	Morrow Mountain II	Quartz	3	LBC	Graves	E14	IP
	Graves Margaret	Morrow Mountain II	Quartzite	1	LBC	Graves	E14	IP
	Graves Margaret	Orient Fishtail	Quartz	4	LBC	Graves	E14	IP
	Graves Margaret	Palmer	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	Piscataway	Quartz	7	LBC	Graves	E14	IP
	Graves Margaret	Piscataway	Quartzite	2	LBC	Graves	E14	IP
	Graves Margaret	Potts	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	Potts	Quartzite	2	LBC	Graves	E14	IP
	Graves Margaret	Savannah River	Metabasalt	5	LBC	Graves	E14	IP
	Graves Margaret	Savannah River	Metabasalt Breccia	1	LBC	Graves	E14	IP
	Graves Margaret	Savannah River	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	Savannah River	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	Savannah River	Quartzite	6	LBC	Graves	E14	IP
	Graves Margaret	scraper	Chalcedony	1	LBC	Graves	E14	IP
	Graves Margaret	scraper	Jasper	1	LBC	Graves	E14	IP
	Graves Margaret	scraper	Mylonite	2	LBC	Graves	E14	IP
	Graves Margaret	scraper	Quartz	18	LBC	Graves	E14	IP
	Graves Margaret	scraper	Quartzite	8	LBC	Graves	E14	IP
	Graves Margaret	scraper	Rhyolite	1	LBC	Graves	E14	IP
	Graves Margaret	shatter	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	shatter	Jasper	1	LBC	Graves	E14	IP
	Graves Margaret	shatter	Mylonite	1	LBC	Graves	E14	IP
	Graves Margaret	shatter	Quartz	1	LBC	Graves	E14	IP
	Graves Margaret	spokeshave	Mylonite	1	LBC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Margaret	spokeshave	Quartz	2	LBC	Graves	E14	IP
	Graves Margaret	stone bowl fragment	Steatite	2	LBC	Graves	E14	IP
	Graves Margaret	Teardrop	Quartz	6	LBC	Graves	E14	IP
	Graves Margaret	Triang. Preforms	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	Triang. Preforms	Mylonite	4	LBC	Graves	E14	IP
	Graves Margaret	Triang. Preforms	Quartz	3	LBC	Graves	E14	IP
	Graves Margaret	Triang. Preforms	Quartzite	10	LBC	Graves	E14	IP
	Graves Margaret	Vernon	Chert	1	LBC	Graves	E14	IP
	Graves Margaret	Vernon	Metabasalt	1	LBC	Graves	E14	IP
	Graves Margaret	Vernon	Quartz	17	LBC	Graves	E14	IP
	Graves Margaret	Vernon	Quartzite	5	LBC	Graves	E14	IP
	Graves Peach Orchard	Bare Island	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	biface frag dist	Quartz	2	LAC	Graves	E14	IP
	Graves Peach Orchard	biface frag dist	Quartzite	2	LAC	Graves	E14	IP
	Graves Peach Orchard	biface frag mid	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Bilobate	Mylonite	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Bilobate	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Calvert	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Calvert	Quartzite	1	LAC	Graves	E14	IP
	Graves Peach Orchard	flake	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Halifax	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	Piscataway	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	scraper	Quartz	1	LAC	Graves	E14	IP
	Graves Peach Orchard	scraper	Quartzite	1	LAC	Graves	E14	IP
	Graves Stony Brook	biface com	Quartz	1	LAC	Graves	E14	IP
	Graves Stony Brook	biface frag dist	Quartz	3	LAC	Graves	E14	IP
	Graves Stony Brook	Bilobate	Quartz	1	LAC	Graves	E14	IP
	Graves Stony Brook	Calvert	Quartz	1	LAC	Graves	E14	IP
	Graves Stony Brook	Calvert	Quartzite	1	LAC	Graves	E14	IP
	Graves Stony Brook	flake	Quartzite	1	LAC	Graves	E14	IP
	Graves Stony Brook	Halifax	Quartz	1	LAC	Graves	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Graves Stony Brook	Lehigh/Koens-Crispin	Rhyolite	1	LAC	Graves	E14	IP
	Graves Stony Brook	Savannah River	Quartzite	2	LAC	Graves	E14	IP
	Graves Stony Brook	scraper	Quartzite	1	LAC	Graves	E14	IP
	Graves Stony Brook	Vernon	Quartz	2	LAC	Graves	E14	IP
	Graves Welch	biface com	Quartz	1	LAC	Hebron	E14	IP
	Graves Welch	biface frag dist	Quartz	1	LAC	Hebron	E14	IP
	Graves Welch	biface frag dist	Rhyolite	1	LAC	Hebron	E14	IP
	Graves Welch	drill	Chert	2	LAC	Hebron	E14	IP
	Graves Welch	drill	Quartz	1	LAC	Hebron	E14	IP
	Graves Welch	flake	Mylonite	1	LAC	Hebron	E14	IP
	Graves Welch	Halifax	Quartz	1	LAC	Hebron	E14	IP
	Graves Welch	Holmes	Quartzite	1	LAC	Hebron	E14	IP
	Graves Welch	Levanna/Yadkin	Quartz	1	LAC	Hebron	E14	IP
	Graves Welch	Levanna/Yadkin	Quartzite	2	LAC	Hebron	E14	IP
	Graves Welch	shatter	Jasper	2	LAC	Hebron	E14	IP
	Graves Welch	Unidentifiable Point	Quartzite	1	LAC	Hebron	E14	IP
	Hawkins	Bare Island	Metabasalt	1	SBC	Middle River	E11	IP
	Hawkins	Bare Island	Quartz	3	SBC	Middle River	E11	IP
	Hawkins	Bare Island	Quartzite	1	SBC	Middle River	E11	IP
	Hawkins	biface com	Quartzite	5	SBC	Middle River	E11	IP
	Hawkins	Calvert	Quartz	3	SBC	Middle River	E11	IP
	Hawkins	Guilford	Quartz	1	SBC	Middle River	E11	IP
	Hawkins	Halifax	Quartz	1	SBC	Middle River	E11	IP
	Hawkins	Holmes	Metabasalt	1	SBC	Middle River	E11	IP
	Hawkins	Holmes	Quartz	2	SBC	Middle River	E11	IP
	Hawkins	Holmes	Quartzite	5	SBC	Middle River	E11	IP
	Hawkins	LeCroy	Quartz	1	SBC	Middle River	E11	IP
	Hawkins	Orient Fishtail	Quartz	1	SBC	Middle River	E11	IP
	Hawkins	Savannah River	Quartzite	6	SBC	Middle River	E11	IP
	Hawkins	Vernon	Chert	1	SBC	Middle River	E11	IP
	Hawkins	Vernon	Quartz	1	SBC	Middle River	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Hawley-Zimmer	Bare Island	Quartz	6	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface com	Jasper	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface com	Quartz	9	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface frag dist	Chert	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface frag mid	Metabasalt	3	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface frag mid	Mylonite	6	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	biface frag mid	Quartz	30	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Bilobate	Quartz	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Brewerton SN	Quartz	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	celt	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	flake	Quartz	24	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	flake	Mylonite	5	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	flake	Quartzite	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Halifax	Quartz	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Holmes	Quartzite	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Levanna/Yadkin	Chert	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Levanna/Yadkin	Mylonite	2	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Levanna/Yadkin	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Madison	Quartz	2	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	Perkiomen	Rhyolite	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	scraper	Quartz	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	scraper	Quartzite	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	shatter	Mylonite	4	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	stone bowl fragment	Chlorite	1	HAM	Lambs Bottom	E12	IP
	Hawley-Zimmer	stone bowl fragment	Steatite	1	HAM	Lambs Bottom	E12	IP
	J. B. Estes	Mid-Paleo	Chert	1	ted Point	Elk Run	E12	IP
	J.W. Jenkins	biface frag dist	Quartz	8	SBC	Isolated	E03	BR
	J.W. Jenkins	celt	Metabasalt	1	SBC	Isolated	E03	BR
	J.W. Jenkins	chipped stone axe	Metabasalt	7	SBC	Isolated	E03	BR
	J.W. Jenkins	Halifax	Quartz	6	SBC	Isolated	E03	BR
	J.W. Jenkins	Holmes	Metabasalt	6	SBC	Isolated	E03	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	J.W. Jenkins	Holmes	Quartz	4	SBC	Isolated	E03	BR
	J.W. Jenkins	Kirk Stemmed	Rhyolite	1	SBC	Isolated	E03	BR
	J.W. Jenkins	Orient Fishtail	Rhyolite	2	SBC	Isolated	E03	BR
	J.W. Jenkins	Palmer	Quartz	4	SBC	Isolated	E03	BR
	J.W. Jenkins	Savannah River	Metabasalt	3	SBC	Isolated	E03	BR
	Jane Aylor	biface com	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	biface frag dist	Rhyolite	1	LBC	Isolated	E14	IP
	Jane Aylor	Big Sandy	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Bilobate	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Brewerton SN	Chert	3	LBC	Isolated	E14	IP
	Jane Aylor	Calvert	Chert	1	LBC	Isolated	E14	IP
	Jane Aylor	Calvert	Metabasalt	4	LBC	Isolated	E14	IP
	Jane Aylor	Calvert	Quartz	4	LBC	Isolated	E14	IP
	Jane Aylor	Calvert	Quartzite	2	LBC	Isolated	E14	IP
	Jane Aylor	chipped stone axe	Metabasalt	11	LBC	Isolated	E14	IP
	Jane Aylor	Halifax	Quartz	11	LBC	Isolated	E14	IP
	Jane Aylor	hammerstone	Greywacke	2	LBC	Isolated	E14	IP
	Jane Aylor	Holmes	Metabasalt	1	LBC	Isolated	E14	IP
	Jane Aylor	Holmes	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Holmes	Quartzite	10	LBC	Isolated	E14	IP
	Jane Aylor	Kirk CN	Oolitic Qtzite	1	LBC	Isolated	E14	IP
	Jane Aylor	Kirk Stemmed	Jasper	1	LBC	Isolated	E14	IP
	Jane Aylor	Kirk Stemmed	Oolitic Qtzite	2	LBC	Isolated	E14	IP
	Jane Aylor	Kirk Stemmed	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Kirk Stemmed	Quartzite	1	LBC	Isolated	E14	IP
	Jane Aylor	LeCroy	Quartz	7	LBC	Isolated	E14	IP
	Jane Aylor	Levanna/Yadkin	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Piscataway	Quartz	2	LBC	Isolated	E14	IP
	Jane Aylor	Savannah River	Metabasalt	1	LBC	Isolated	E14	IP
	Jane Aylor	Savannah River	Quartz	6	LBC	Isolated	E14	IP
	Jane Aylor	Savannah River	Quartzite	3	LBC	Isolated	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Jane Aylor	Susquehanna BS	Rhyolite	1	LBC	Isolated	E14	IP
	Jane Aylor	Vernon	Chalcedony	1	LBC	Isolated	E14	IP
	Jane Aylor	Vernon	Chert	7	LBC	Isolated	E14	IP
	Jane Aylor	Vernon	Quartz	7	LBC	Isolated	E14	IP
	Jane Aylor	Vernon	Quartzite	7	LBC	Isolated	E14	IP
	Janet Sisk	biface com	Metabasalt	3	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	biface com	Quartz	16	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Bilobate	Quartz	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Calvert	Quartz	6	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	celt	Metabasalt	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	chipped stone axe	Metabasalt	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	flake	Quartz	2	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Halifax	Quartz	2	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	hammerstone	Metabasalt	3	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Holmes	Quartz	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Kirk Stemmed	Quartz	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	LeCroy	Quartz	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Piscataway	Quartz	2	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Savannah River	Metabasalt	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Vernon	Metabasalt	1	SBC	Thorofare Mountain	E15	IP
	Janet Sisk	Vernon	Quartz	2	SBC	Thorofare Mountain	E15	IP
	Jenkins Mountain Field	Bare Island	Chert	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	biface com	Quartz	14	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Big Sandy	Quartz	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Bilobate	Quartz	10	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Calvert	Quartz	9	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	grooved axe	Metabasalt	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Halifax	Quartz	11	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Holmes	Quartz	17	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Kirk CN	Quartz	2	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Kirk Stemmed	Quartz	2	SBC	Lost Mountain	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Jenkins Mountain Field	LeCroy	Quartz	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Levanna/Yadkin	Quartz	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Orient Fishtail	Quartz	3	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Piscataway	Quartz	4	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Potts	Quartz	1	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Savannah River	Quartz	7	SBC	Lost Mountain	E15	IP
	Jenkins Mountain Field	Vernon	Quartz	5	SBC	Lost Mountain	E15	IP
	Martens	biface frag dist	Metasiltstone	1	SBC	Henshaw	E14	IP
	Martens	biface frag dist	Quartz	2	SBC	Henshaw	E14	IP
	Martens	biface frag dist	Quartzite	1	SBC	Henshaw	E14	IP
	Martens	biface frag mid	Chert	1	SBC	Henshaw	E14	IP
	Martens	biface frag mid	Quartzite	2	SBC	Henshaw	E14	IP
	Martens	core	Quartz	1	SBC	Henshaw	E14	IP
	Martens	flake	Quartz	1	SBC	Henshaw	E14	IP
	Martens	flake	Chert	3	SBC	Henshaw	E14	IP
	Martens	flake	Greywacke	1	SBC	Henshaw	E14	IP
	Martens	flake	Jasper	2	SBC	Henshaw	E14	IP
	Martens	flake	Metabasalt	1	SBC	Henshaw	E14	IP
	Martens	flake	Quartzite	2	SBC	Henshaw	E14	IP
	Martens	Halifax	Quartz	1	SBC	Henshaw	E14	IP
	Martens	Madison	Chert	1	SBC	Henshaw	E14	IP
	Martens	stone bowl fragment	Steatite	1	SBC	Henshaw	E14	IP
	Martens Mounds	flake	Quartz	7	SBM	Haywood	E14	IP
	Martens Mounds	flake	Quartzite	12	SBM	Haywood	E14	IP
	Mary Sisk	biface com	Quartz	2	LAC	Thorofare Mountain	E15	IP
	Mary Sisk	Bilobate	Quartz	1	LAC	Thorofare Mountain	E15	IP
	Mary Sisk	flake	Quartz	2	LAC	Thorofare Mountain	E15	IP
	Mary Sisk	Holmes	Quartz	1	LAC	Thorofare Mountain	E15	IP
	Mary Sisk	Piscataway	Quartz	3	LAC	Thorofare Mountain	E15	IP
	Mary Sisk	Vernon	Quartz	3	LAC	Thorofare Mountain	E15	IP
	Mayer	biface com	Quartz	1	LAC	Isolated	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Mayer	biface frag dist	Quartz	2	LAC	Isolated	E14	IP
	Mayer	Brewerton SN	Chalcedony	1	LAC	Isolated	E14	IP
	Mayer	Brewerton SN	Quartz	2	LAC	Isolated	E14	IP
	Mayer	Brewerton SN	Quartzite	1	LAC	Isolated	E14	IP
	Mayer	Calvert	Quartz	2	LAC	Isolated	E14	IP
	Mayer	Halifax	Quartz	3	LAC	Isolated	E14	IP
	Mayer	Holmes	Quartzite	1	LAC	Isolated	E14	IP
	Mayer	Kirk Stemmed	Quartzite	1	LAC	Isolated	E14	IP
	Mayer	LeCroy	Quartz	3	LAC	Isolated	E14	IP
	Mayer	Levanna/Yadkin	Quartz	2	LAC	Isolated	E14	IP
	Mayer	Palmer	Quartzite	1	LAC	Isolated	E14	IP
	Mayer	Piscataway	Quartz	3	LAC	Isolated	E14	IP
	McClain	biface com	Chert	1	SBC	Hebron	E14	IP
	McClain	biface com	Quartzite	8	SBC	Hebron	E14	IP
	McClain	biface frag dist	Chert	1	SBC	Hebron	E14	IP
	McClain	Calvert	Chert	1	SBC	Hebron	E14	IP
	McClain	Calvert	Metasiltstone	1	SBC	Hebron	E14	IP
	McClain	Calvert	Quartz	2	SBC	Hebron	E14	IP
	McClain	celt	Chert	1	SBC	Hebron	E14	IP
	McClain	chipped stone axe	Metabasalt	7	SBC	Hebron	E14	IP
	McClain	cobble tool	Basalt	1	SBC	Hebron	E14	IP
	McClain	cobble tool	Metabasalt	2	SBC	Hebron	E14	IP
	McClain	flake	Chert	1	SBC	Hebron	E14	IP
	McClain	graver	Chert	1	SBC	Hebron	E14	IP
	McClain	grooved axe	Metabasalt	1	SBC	Hebron	E14	IP
	McClain	Halifax	Quartz	12	SBC	Hebron	E14	IP
	McClain	Holmes	Quartzite	2	SBC	Hebron	E14	IP
	McClain	Kirk Stemmed	Jasper	1	SBC	Hebron	E14	IP
	McClain	Kirk Stemmed	Quartz	1	SBC	Hebron	E14	IP
	McClain	Kirk Stemmed	Quartzite	1	SBC	Hebron	E14	IP
	McClain	LeCroy	Quartz	4	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	McClain	LeCroy	Quartzite	1	SBC	Hebron	E14	IP
	McClain	Morrow Mountain II	Metabasalt Breccia	1	SBC	Hebron	E14	IP
	McClain	Piscataway	Quartz	1	SBC	Hebron	E14	IP
	McClain	Savannah River	Quartzite	2	SBC	Hebron	E14	IP
	McClain	stone bowl fragment	Steatite	1	SBC	Hebron	E14	IP
	Nash Garden	biface frag mid	Quartz	5	LAC	Isolated	E13	MB
	Nash Garden	cobble tool	Metabasalt	2	LAC	Isolated	E13	MB
	Nash Garden	core	Quartz	11	LAC	Isolated	E13	MB
	Nash Garden	flake	Quartz	40	LAC	Isolated	E13	MB
	Nash Garden	graver	Quartz	1	LAC	Isolated	E13	MB
	Nash Garden	Halifax	Quartz	1	LAC	Isolated	E13	MB
	Nash Garden	shatter	Quartz	7	LAC	Isolated	E13	MB
	Nash Garden	Vernon	Quartz	1	LAC	Isolated	E13	MB
	Penn	Bare Island	Chert	1	SBC	Isolated	E15	IP
	Penn	Bare Island	Quartz	2	SBC	Isolated	E15	IP
	Penn	Calvert	Quartz	1	SBC	Isolated	E15	IP
	Penn	chipped stone axe	Metabasalt	1	SBC	Isolated	E15	IP
	Penn	hammerstone	Quartz	1	SBC	Isolated	E15	IP
	Penn	Kirk Stemmed	Chalcedony	2	SBC	Isolated	E15	IP
	Penn	Palmer	Quartz	1	SBC	Isolated	E15	IP
	Penn	Savannah River	Quartz	1	SBC	Isolated	E15	IP
	Penn	scraper	Quartz	1	SBC	Isolated	E15	IP
	Penn	St. Albans	Quartz	2	SBC	Isolated	E15	IP
	Penn	Vernon	Quartz	1	SBC	Isolated	E15	IP
	Quartzite Alley	biface com	Mylonite	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	biface frag dist	Quartz	2	LW	Upper Rapidan	E11	BR
	Quartzite Alley	biface frag dist	Quartzite	2	LW	Upper Rapidan	E11	BR
	Quartzite Alley	biface frag mid	Chalcedony	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	biface frag mid	Quartz	3	LW	Upper Rapidan	E11	BR
	Quartzite Alley	biface frag mid	Rhyolite	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	blade flake	Mylonite	1	LW	Upper Rapidan	E11	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Quartzite Alley	core	Mylonite	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	core	Quartz	6	LW	Upper Rapidan	E11	BR
	Quartzite Alley	flake	Quartz	8	LW	Upper Rapidan	E11	BR
	Quartzite Alley	flake	Chert	3	LW	Upper Rapidan	E11	BR
	Quartzite Alley	flake	Metabasalt	3	LW	Upper Rapidan	E11	BR
	Quartzite Alley	flake	Mylonite	3	LW	Upper Rapidan	E11	BR
	Quartzite Alley	flake	Quartzite	15	LW	Upper Rapidan	E11	BR
	Quartzite Alley	graver	Quartz	4	LW	Upper Rapidan	E11	BR
	Quartzite Alley	graver	Quartzite	2	LW	Upper Rapidan	E11	BR
	Quartzite Alley	Holmes	Quartz	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	Orient Fishtail	Quartz	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	Savannah River	Quartz	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	scraper	Quartz	5	LW	Upper Rapidan	E11	BR
	Quartzite Alley	scraper	Quartzite	2	LW	Upper Rapidan	E11	BR
	Quartzite Alley	shatter	Quartz	6	LW	Upper Rapidan	E11	BR
	Quartzite Alley	shatter	Quartzite	3	LW	Upper Rapidan	E11	BR
	Quartzite Alley	spokeshave	Quartz	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	spokeshave	Quartzite	1	LW	Upper Rapidan	E11	BR
	Quartzite Alley	Vernon	Quartz	2	LW	Upper Rapidan	E11	BR
	Rees	Bare Island	Quartzite	1	SBC	Hebron	E14	IP
	Rees	biface com	Quartz	1	SBC	Hebron	E14	IP
	Rees	Bilobate	Quartz	2	SBC	Hebron	E14	IP
	Rees	Bilobate	Quartzite	1	SBC	Hebron	E14	IP
	Rees	Calvert	Quartz	4	SBC	Hebron	E14	IP
	Rees	Halifax	Quartz	5	SBC	Hebron	E14	IP
	Rees	Halifax	Quartzite	1	SBC	Hebron	E14	IP
	Rees	Holmes	Metabasalt	3	SBC	Hebron	E14	IP
	Rees	Holmes	Quartzite	3	SBC	Hebron	E14	IP
	Rees	Kirk CN	Quartzite	2	SBC	Hebron	E14	IP
	Rees	Kirk Stemmed	Quartz	2	SBC	Hebron	E14	IP
	Rees	Kirk Stemmed	Quartzite	1	SBC	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Rees	LeCroy	Quartz	2	SBC	Hebron	E14	IP
	Rees	Piscataway	Quartz	1	SBC	Hebron	E14	IP
	Rees	Piscataway	Quartzite	1	SBC	Hebron	E14	IP
	Rees	Potts	Quartz	1	SBC	Hebron	E14	IP
	Rees	Savannah River	Metabasalt	1	SBC	Hebron	E14	IP
	Rees	Savannah River	Quartzite	2	SBC	Hebron	E14	IP
	Rees	Unidentifiable Point	Quartz	5	SBC	Hebron	E14	IP
	Rees	Vernon	Metabasalt	1	SBC	Hebron	E14	IP
	Rees	Vernon	Quartz	2	SBC	Hebron	E14	IP
	Rees	Vernon	Quartzite	4	SBC	Hebron	E14	IP
	Shirley Estes	flake	Quartz	5	LAC	Mallory	E15	IP
	Shirley Estes	Savannah River	Quartz	1	LAC	Mallory	E15	IP
	Strode 2	Bare Island	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	Bare Island	Quartzite	1	SBC	White Oak	E14	IP
	Strode 2	biface com	Hornfels	2	SBC	White Oak	E14	IP
	Strode 2	biface com	Metabasalt	1	SBC	White Oak	E14	IP
	Strode 2	biface com	Quartz	6	SBC	White Oak	E14	IP
	Strode 2	biface frag dist	Quartz	2	SBC	White Oak	E14	IP
	Strode 2	biface frag dist	Quartzite	2	SBC	White Oak	E14	IP
	Strode 2	biface frag mid	Metabasalt	2	SBC	White Oak	E14	IP
	Strode 2	biface frag mid	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	biface frag mid	Quartzite	1	SBC	White Oak	E14	IP
	Strode 2	Bilobate	Quartz	6	SBC	White Oak	E14	IP
	Strode 2	Calvert	Quartz	14	SBC	White Oak	E14	IP
	Strode 2	chipped stone axe	Metabasalt	2	SBC	White Oak	E14	IP
	Strode 2	flake	Quartz	7	SBC	White Oak	E14	IP
	Strode 2	flake	Metabasalt	1	SBC	White Oak	E14	IP
	Strode 2	flake	Quartzite	1	SBC	White Oak	E14	IP
	Strode 2	hoe	Metabasalt	1	SBC	White Oak	E14	IP
	Strode 2	Holmes	Quartz	2	SBC	White Oak	E14	IP
	Strode 2	Kirk CN	Quartzite	1	SBC	White Oak	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode 2	LeCroy	Quartz	2	SBC	White Oak	E14	IP
	Strode 2	Morrow Mountain II	Metabasalt	1	SBC	White Oak	E14	IP
	Strode 2	Morrow Mountain II	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	Orient Fishtail	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	Piscataway	Quartz	2	SBC	White Oak	E14	IP
	Strode 2	Savannah River	Metabasalt	2	SBC	White Oak	E14	IP
	Strode 2	Savannah River	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	Savannah River	Quartzite	5	SBC	White Oak	E14	IP
	Strode 2	scraper	Chert	1	SBC	White Oak	E14	IP
	Strode 2	Unidentifiable Point	Quartz	1	SBC	White Oak	E14	IP
	Strode 2	Vernon	Quartz	5	SBC	White Oak	E14	IP
	Strode 2	Vernon	Quartzite	1	SBC	White Oak	E14	IP
	Strode 3	biface com	Quartz	3	SBC	White Oak	E14	IP
	Strode 3	biface frag dist	Quartz	7	SBC	White Oak	E14	IP
	Strode 3	biface frag dist	Quartzite	1	SBC	White Oak	E14	IP
	Strode 3	biface frag mid	Quartz	10	SBC	White Oak	E14	IP
	Strode 3	biface frag mid	Quartzite	1	SBC	White Oak	E14	IP
	Strode 3	Bilobate	Quartzite	1	SBC	White Oak	E14	IP
	Strode 3	Calvert	Quartz	1	SBC	White Oak	E14	IP
	Strode 3	drill	Quartz	1	SBC	White Oak	E14	IP
	Strode 3	flake	Quartz	4	SBC	White Oak	E14	IP
	Strode 3	Late Paleo Single Flute	Quartz	1	SBC	White Oak	E14	IP
	Strode 3	Potts	Quartz	2	SBC	White Oak	E14	IP
	Strode 3	Teardrop	Quartz	1	SBC	White Oak	E14	IP
	Strode 4	Bare Island	Quartz	2	SBC	Mallory	E15	IP
	Strode 4	biface com	Chert	1	SBC	Mallory	E15	IP
	Strode 4	biface com	Metabasalt Breccia	1	SBC	Mallory	E15	IP
	Strode 4	biface com	Quartz	12	SBC	Mallory	E15	IP
	Strode 4	biface frag dist	Chert	1	SBC	Mallory	E15	IP
	Strode 4	biface frag dist	Quartz	15	SBC	Mallory	E15	IP
	Strode 4	biface frag mid	Chert	1	SBC	Mallory	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode 4	biface frag mid	Quartz	8	SBC	Mallory	E15	IP
	Strode 4	biface frag mid	Quartzite	2	SBC	Mallory	E15	IP
	Strode 4	blade flake	Jasper	1	SBC	Mallory	E15	IP
	Strode 4	Calvert	Quartz	1	SBC	Mallory	E15	IP
	Strode 4	core	Chert	2	SBC	Mallory	E15	IP
	Strode 4	drill	Quartz	2	SBC	Mallory	E15	IP
	Strode 4	flake	Quartz	4	SBC	Mallory	E15	IP
	Strode 4	flake	Chalcedony	1	SBC	Mallory	E15	IP
	Strode 4	flake	Chert	1	SBC	Mallory	E15	IP
	Strode 4	flake	Jasper	3	SBC	Mallory	E15	IP
	Strode 4	flake	Metabasalt	1	SBC	Mallory	E15	IP
	Strode 4	flake	Mylonite	1	SBC	Mallory	E15	IP
	Strode 4	Halifax	Quartz	1	SBC	Mallory	E15	IP
	Strode 4	Levanna/Yadkin	Chert	1	SBC	Mallory	E15	IP
	Strode 4	Levanna/Yadkin	Mylonite	1	SBC	Mallory	E15	IP
	Strode 4	Levanna/Yadkin	Quartz	10	SBC	Mallory	E15	IP
	Strode 4	Madison	Chert	1	SBC	Mallory	E15	IP
	Strode 4	Madison	Quartz	1	SBC	Mallory	E15	IP
	Strode 4	Morrow Mountain II	Quartz	1	SBC	Mallory	E15	IP
	Strode 4	Savannah River	Quartz	2	SBC	Mallory	E15	IP
	Strode 4	Savannah River	Quartzite	1	SBC	Mallory	E15	IP
	Strode 4	scraper	Jasper	1	SBC	Mallory	E15	IP
	Strode 4	Teardrop	Chert	1	SBC	Mallory	E15	IP
	Strode 4	Teardrop	Quartz	3	SBC	Mallory	E15	IP
	Strode 4	Vernon	Quartz	2	SBC	Mallory	E15	IP
	Strode 4	Vernon	Quartzite	1	SBC	Mallory	E15	IP
	Strode A	Bare Island	Mylonite	1	HAM	Hebron	E14	IP
	Strode A	Bare Island	Quartz	14	HAM	Hebron	E14	IP
	Strode A	Bare Island	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	biface com	Chert	1	HAM	Hebron	E14	IP
	Strode A	biface com	Metabasalt	3	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode A	biface com	Metasiltstone	1	HAM	Hebron	E14	IP
	Strode A	biface com	Quartz	53	HAM	Hebron	E14	IP
	Strode A	biface com	Quartzite	22	HAM	Hebron	E14	IP
	Strode A	biface com	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	biface frag dist	Metabasalt	2	HAM	Hebron	E14	IP
	Strode A	biface frag dist	Mylonite	1	HAM	Hebron	E14	IP
	Strode A	biface frag dist	Quartz	26	HAM	Hebron	E14	IP
	Strode A	biface frag dist	Quartzite	18	HAM	Hebron	E14	IP
	Strode A	biface frag dist	Rhyolite	2	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Chert	1	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Metabasalt Breccia	1	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Mylonite	2	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Quartz	50	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Quartzite	9	HAM	Hebron	E14	IP
	Strode A	biface frag mid	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Big Sandy	Quartz	1	HAM	Hebron	E14	IP
	Strode A	Big Sandy	Quartzite	1	HAM	Hebron	E14	IP
	Strode A	Bilobate	Quartz	25	HAM	Hebron	E14	IP
	Strode A	Bilobate	Quartzite	4	HAM	Hebron	E14	IP
	Strode A	blade flake	Jasper	1	HAM	Hebron	E14	IP
	Strode A	blade flake	Rhyolite	3	HAM	Hebron	E14	IP
	Strode A	Brewerton CN	Chert	2	HAM	Hebron	E14	IP
	Strode A	Brewerton CN	Jasper	2	HAM	Hebron	E14	IP
	Strode A	Brewerton CN	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Brewerton SN	Chert	3	HAM	Hebron	E14	IP
	Strode A	Brewerton SN	Quartz	2	HAM	Hebron	E14	IP
	Strode A	Brewerton SN	Quartzite	1	HAM	Hebron	E14	IP
	Strode A	Calvert	Arg. Shale	1	HAM	Hebron	E14	IP
	Strode A	Calvert	Basalt	1	HAM	Hebron	E14	IP
	Strode A	Calvert	Chert	6	HAM	Hebron	E14	IP
	Strode A	Calvert	Hornfels	3	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode A	Calvert	Metabasalt	10	HAM	Hebron	E14	IP
	Strode A	Calvert	Mylonite	2	HAM	Hebron	E14	IP
	Strode A	Calvert	Phyllite	2	HAM	Hebron	E14	IP
	Strode A	Calvert	Quartz	13	HAM	Hebron	E14	IP
	Strode A	Calvert	Quartzite	11	HAM	Hebron	E14	IP
	Strode A	celt	Metabasalt	1	HAM	Hebron	E14	IP
	Strode A	chipped stone axe	Metabasalt	1	HAM	Hebron	E14	IP
	Strode A	cobble tool	Metabasalt	6	HAM	Hebron	E14	IP
	Strode A	core	Chalcedony	8	HAM	Hebron	E14	IP
	Strode A	drill	Quartz	2	HAM	Hebron	E14	IP
	Strode A	drill	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	flake	Quartz	16	HAM	Hebron	E14	IP
	Strode A	flake	Arg. Shale	1	HAM	Hebron	E14	IP
	Strode A	flake	Basalt	1	HAM	Hebron	E14	IP
	Strode A	flake	Chalcedony	5	HAM	Hebron	E14	IP
	Strode A	flake	Chert	4	HAM	Hebron	E14	IP
	Strode A	flake	Chrysoprase	1	HAM	Hebron	E14	IP
	Strode A	flake	Hornfels	1	HAM	Hebron	E14	IP
	Strode A	flake	Jasper	3	HAM	Hebron	E14	IP
	Strode A	flake	Metabasalt	12	HAM	Hebron	E14	IP
	Strode A	flake	Quartzite	6	HAM	Hebron	E14	IP
	Strode A	flake	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Guilford	Quartz	1	HAM	Hebron	E14	IP
	Strode A	Halifax	Chert	1	HAM	Hebron	E14	IP
	Strode A	Halifax	Quartz	12	HAM	Hebron	E14	IP
	Strode A	hoe	Metabasalt	2	HAM	Hebron	E14	IP
	Strode A	Holmes	Metabasalt	4	HAM	Hebron	E14	IP
	Strode A	Holmes	Quartz	9	HAM	Hebron	E14	IP
	Strode A	Holmes	Quartzite	6	HAM	Hebron	E14	IP
	Strode A	Jack's Reef CN	Quartz	2	HAM	Hebron	E14	IP
	Strode A	Kirk CN	Quartz	3	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode A	Kirk CN	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Kirk Stemmed	Quartz	3	HAM	Hebron	E14	IP
	Strode A	Kirk Stemmed	Quartzite	1	HAM	Hebron	E14	IP
	Strode A	Late Paleo Single Flute	Chert	2	HAM	Hebron	E14	IP
	Strode A	LeCroy	Chert	1	HAM	Hebron	E14	IP
	Strode A	LeCroy	Mylonite	1	HAM	Hebron	E14	IP
	Strode A	LeCroy	Quartz	6	HAM	Hebron	E14	IP
	Strode A	Lehigh/Koens-Crispin	Chert	1	HAM	Hebron	E14	IP
	Strode A	Lehigh/Koens-Crispin	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Levanna/Yadkin	Arg. Shale	1	HAM	Hebron	E14	IP
	Strode A	Levanna/Yadkin	Chert	8	HAM	Hebron	E14	IP
	Strode A	Levanna/Yadkin	Mylonite	2	HAM	Hebron	E14	IP
	Strode A	Levanna/Yadkin	Quartz	20	HAM	Hebron	E14	IP
	Strode A	Levanna/Yadkin	Quartzite	15	HAM	Hebron	E14	IP
	Strode A	MacPherson	Metabasalt	1	HAM	Hebron	E14	IP
	Strode A	Madison	Chert	2	HAM	Hebron	E14	IP
	Strode A	Madison	Quartz	5	HAM	Hebron	E14	IP
	Strode A	Madison	Quartzite	4	HAM	Hebron	E14	IP
	Strode A	Morrow Mountain II	Arg. Shale	1	HAM	Hebron	E14	IP
	Strode A	Morrow Mountain II	Chert	1	HAM	Hebron	E14	IP
	Strode A	Morrow Mountain II	Quartz	3	HAM	Hebron	E14	IP
	Strode A	Morrow Mountain II	Quartzite	1	HAM	Hebron	E14	IP
	Strode A	Morrow Mountain II	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	Orient Fishtail	Chert	1	HAM	Hebron	E14	IP
	Strode A	Orient Fishtail	Quartz	2	HAM	Hebron	E14	IP
	Strode A	Palmer	Chert	2	HAM	Hebron	E14	IP
	Strode A	Palmer	Quartz	4	HAM	Hebron	E14	IP
	Strode A	Palmer	Quartzite	3	HAM	Hebron	E14	IP
	Strode A	Perkiomen	Rhyolite	1	HAM	Hebron	E14	IP
	Strode A	pestle	Metabasalt	2	HAM	Hebron	E14	IP
	Strode A	Piscataway	Quartz	6	HAM	Hebron	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode A	Piscataway	Quartzite	2	HAM	Hebron	E14	IP
	Strode A	Potts	Quartz	4	HAM	Hebron	E14	IP
	Strode A	Potts	Quartzite	7	HAM	Hebron	E14	IP
	Strode A	Savannah River	Basalt	1	HAM	Hebron	E14	IP
	Strode A	Savannah River	Metabasalt	5	HAM	Hebron	E14	IP
	Strode A	Savannah River	Metabasalt Breccia	1	HAM	Hebron	E14	IP
	Strode A	Savannah River	Quartz	7	HAM	Hebron	E14	IP
	Strode A	Savannah River	Quartzite	17	HAM	Hebron	E14	IP
	Strode A	scraper	Chert	2	HAM	Hebron	E14	IP
	Strode A	scraper	Chrysoprase	1	HAM	Hebron	E14	IP
	Strode A	scraper	Mylonite	1	HAM	Hebron	E14	IP
	Strode A	scraper	Quartz	2	HAM	Hebron	E14	IP
	Strode A	shatter	Chalcedony	6	HAM	Hebron	E14	IP
	Strode A	spokeshave	Metabasalt	1	HAM	Hebron	E14	IP
	Strode A	St. Albans	Quartz	1	HAM	Hebron	E14	IP
	Strode A	stone pipe fragment	Chlorite	1	HAM	Hebron	E14	IP
	Strode A	Triang. Preforms	Quartz	3	HAM	Hebron	E14	IP
	Strode A	Triang. Preforms	Quartzite	5	HAM	Hebron	E14	IP
	Strode A	Unidentifiable Point	Chert	1	HAM	Hebron	E14	IP
	Strode A	Unidentifiable Point	Quartzite	1	HAM	Hebron	E14	IP
	Strode A	Vernon	Chalcedony	1	HAM	Hebron	E14	IP
	Strode A	Vernon	Chert	2	HAM	Hebron	E14	IP
	Strode A	Vernon	Mylonite	1	HAM	Hebron	E14	IP
	Strode A	Vernon	Quartz	28	HAM	Hebron	E14	IP
	Strode A	Vernon	Quartzite	8	HAM	Hebron	E14	IP
	Strode A	wedge	Metabasalt	1	HAM	Hebron	E14	IP
	Strode B	Bare Island	Metabasalt	3	HAM	Banks Mountain	E11	IP
	Strode B	Bare Island	Quartz	5	HAM	Banks Mountain	E11	IP
	Strode B	Bare Island	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Chert	4	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Jasper	4	HAM	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode B	biface com	Metabasalt	3	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Mylonite	2	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Quartz	50	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	biface com	Rhyolite	1	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Basalt	1	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Chert	7	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Jasper	3	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Metabasalt	16	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Mylonite	1	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Oolitic Qtzite	4	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Quartz	82	HAM	Banks Mountain	E11	IP
	Strode B	biface frag dist	Quartzite	89	HAM	Banks Mountain	E11	IP
	Strode B	biface frag mid	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	biface frag mid	Jasper	1	HAM	Banks Mountain	E11	IP
	Strode B	biface frag mid	Metabasalt	5	HAM	Banks Mountain	E11	IP
	Strode B	biface frag mid	Quartz	65	HAM	Banks Mountain	E11	IP
	Strode B	biface frag mid	Quartzite	65	HAM	Banks Mountain	E11	IP
	Strode B	Big Sandy	Quartzite	5	HAM	Banks Mountain	E11	IP
	Strode B	Big Sandy	Rhyolite	1	HAM	Banks Mountain	E11	IP
	Strode B	Bilobate	Chert	4	HAM	Banks Mountain	E11	IP
	Strode B	Bilobate	Mylonite	1	HAM	Banks Mountain	E11	IP
	Strode B	Bilobate	Quartz	22	HAM	Banks Mountain	E11	IP
	Strode B	Bilobate	Quartzite	9	HAM	Banks Mountain	E11	IP
	Strode B	blade flake	Jasper	1	HAM	Banks Mountain	E11	IP
	Strode B	blade flake	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	blade flake	Quartzite	1	HAM	Banks Mountain	E11	IP
	Strode B	Brewerton CN	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	Brewerton SN	Quartz	5	HAM	Banks Mountain	E11	IP
	Strode B	Brewerton SN	Quartzite	4	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Arg. Shale	1	HAM	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode B	Calvert	Basalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Jasper	2	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Metabasalt	3	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Phyllite	1	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Quartz	31	HAM	Banks Mountain	E11	IP
	Strode B	Calvert	Quartzite	15	HAM	Banks Mountain	E11	IP
	Strode B	celt	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	chipped stone axe	Metabasalt	8	HAM	Banks Mountain	E11	IP
	Strode B	cobble tool	Metabasalt	5	HAM	Banks Mountain	E11	IP
	Strode B	core	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	drill	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	drill	Quartz	2	HAM	Banks Mountain	E11	IP
	Strode B	drill	Quartzite	2	HAM	Banks Mountain	E11	IP
	Strode B	flake	Quartz	54	HAM	Banks Mountain	E11	IP
	Strode B	flake	Basalt	1	HAM	Banks Mountain	E11	IP
	Strode B	flake	Chert	8	HAM	Banks Mountain	E11	IP
	Strode B	flake	Jasper	9	HAM	Banks Mountain	E11	IP
	Strode B	flake	Metabasalt	27	HAM	Banks Mountain	E11	IP
	Strode B	flake	Mylonite	2	HAM	Banks Mountain	E11	IP
	Strode B	flake	Quartzite	39	HAM	Banks Mountain	E11	IP
	Strode B	graver	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	graver	Quartzite	1	HAM	Banks Mountain	E11	IP
	Strode B	grinding stone	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	grooved axe	Metabasalt	6	HAM	Banks Mountain	E11	IP
	Strode B	Guilford	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	Guilford	Quartzite	4	HAM	Banks Mountain	E11	IP
	Strode B	Halifax	Chert	1	HAM	Banks Mountain	E11	IP
	Strode B	Halifax	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Halifax	Quartz	22	HAM	Banks Mountain	E11	IP
	Strode B	Halifax	Quartzite	2	HAM	Banks Mountain	E11	IP
	Strode B	hammerstone	Metabasalt	2	HAM	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode B	hoe	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Holmes	Basalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Holmes	Diabase	1	HAM	Banks Mountain	E11	IP
	Strode B	Holmes	Metabasalt	5	HAM	Banks Mountain	E11	IP
	Strode B	Holmes	Quartz	15	HAM	Banks Mountain	E11	IP
	Strode B	Holmes	Quartzite	7	HAM	Banks Mountain	E11	IP
	Strode B	Kirk CN	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk CN	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	Kirk CN	Rhyolite	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Hornfels	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Jasper	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Mylonite	2	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Phyllite	1	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Quartz	9	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Quartzite	6	HAM	Banks Mountain	E11	IP
	Strode B	Kirk Stemmed	Rhyolite	1	HAM	Banks Mountain	E11	IP
	Strode B	Lamoka	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	Lamoka	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	Late Paleo Lanceolate	Jasper	3	HAM	Banks Mountain	E11	IP
	Strode B	Late Paleo Lanceolate	Quartz	2	HAM	Banks Mountain	E11	IP
	Strode B	LeCroy	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	LeCroy	Mylonite	1	HAM	Banks Mountain	E11	IP
	Strode B	LeCroy	Quartz	16	HAM	Banks Mountain	E11	IP
	Strode B	LeCroy	Quartzite	5	HAM	Banks Mountain	E11	IP
	Strode B	Lehigh/Koens-Crispin	Chert	1	HAM	Banks Mountain	E11	IP
	Strode B	Levanna/Yadkin	Jasper	3	HAM	Banks Mountain	E11	IP
	Strode B	Levanna/Yadkin	Quartz	56	HAM	Banks Mountain	E11	IP
	Strode B	Levanna/Yadkin	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	MacPherson	Mylonite	1	HAM	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode B	MacPherson	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	Madison	Chert	1	HAM	Banks Mountain	E11	IP
	Strode B	Madison	Jasper	1	HAM	Banks Mountain	E11	IP
	Strode B	Madison	Mylonite	1	HAM	Banks Mountain	E11	IP
	Strode B	Madison	Quartz	4	HAM	Banks Mountain	E11	IP
	Strode B	Madison	Quartzite	2	HAM	Banks Mountain	E11	IP
	Strode B	Morrow Mountain II	Hornfels	1	HAM	Banks Mountain	E11	IP
	Strode B	Morrow Mountain II	Quartz	17	HAM	Banks Mountain	E11	IP
	Strode B	Morrow Mountain II	Quartzite	5	HAM	Banks Mountain	E11	IP
	Strode B	Orient Fishtail	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Orient Fishtail	Quartz	5	HAM	Banks Mountain	E11	IP
	Strode B	Orient Fishtail	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	Palmer	Chert	3	HAM	Banks Mountain	E11	IP
	Strode B	Palmer	Jasper	3	HAM	Banks Mountain	E11	IP
	Strode B	Palmer	Oolitic Qtzite	2	HAM	Banks Mountain	E11	IP
	Strode B	Palmer	Quartz	5	HAM	Banks Mountain	E11	IP
	Strode B	pestle	Metabasalt	2	HAM	Banks Mountain	E11	IP
	Strode B	Piscataway	Quartz	16	HAM	Banks Mountain	E11	IP
	Strode B	Piscataway	Quartzite	4	HAM	Banks Mountain	E11	IP
	Strode B	Potts	Quartzite	3	HAM	Banks Mountain	E11	IP
	Strode B	Savannah River	Metabasalt	13	HAM	Banks Mountain	E11	IP
	Strode B	Savannah River	Phyllite	1	HAM	Banks Mountain	E11	IP
	Strode B	Savannah River	Quartzite	19	HAM	Banks Mountain	E11	IP
	Strode B	scraper	Chert	6	HAM	Banks Mountain	E11	IP
	Strode B	scraper	Jasper	4	HAM	Banks Mountain	E11	IP
	Strode B	scraper	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	scraper	Mylonite	3	HAM	Banks Mountain	E11	IP
	Strode B	scraper	Quartz	7	HAM	Banks Mountain	E11	IP
	Strode B	shatter	Chert	3	HAM	Banks Mountain	E11	IP
	Strode B	spokeshave	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	Stanly	Mylonite	1	HAM	Banks Mountain	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode B	Stanly	Quartz	1	HAM	Banks Mountain	E11	IP
	Strode B	Stanly	Quartzite	2	HAM	Banks Mountain	E11	IP
	Strode B	Susquehanna BS	Rhyolite	1	HAM	Banks Mountain	E11	IP
	Strode B	Teardrop	Quartzite	1	HAM	Banks Mountain	E11	IP
	Strode B	Triang. Preforms	Quartz	14	HAM	Banks Mountain	E11	IP
	Strode B	Triang. Preforms	Quartzite	1	HAM	Banks Mountain	E11	IP
	Strode B	Unidentifiable Point	Chert	4	HAM	Banks Mountain	E11	IP
	Strode B	Unidentifiable Point	Quartz	2	HAM	Banks Mountain	E11	IP
	Strode B	Unidentifiable Point	Quartzite	2	HAM	Banks Mountain	E11	IP
	Strode B	Vernon	Chert	2	HAM	Banks Mountain	E11	IP
	Strode B	Vernon	Metabasalt	1	HAM	Banks Mountain	E11	IP
	Strode B	Vernon	Quartz	42	HAM	Banks Mountain	E11	IP
	Strode B	Vernon	Quartzite	14	HAM	Banks Mountain	E11	IP
	Strode B	wedge	Metabasalt	3	HAM	Banks Mountain	E11	IP
	Strode C	Bare Island	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	Bare Island	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Bare Island	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	biface com	Chert	3	HAM	Middle River	E11	IP
	Strode C	biface com	Metabasalt	4	HAM	Middle River	E11	IP
	Strode C	biface com	Metabasalt Breccia	2	HAM	Middle River	E11	IP
	Strode C	biface com	Mylonite	4	HAM	Middle River	E11	IP
	Strode C	biface com	Quartz	42	HAM	Middle River	E11	IP
	Strode C	biface com	Quartzite	9	HAM	Middle River	E11	IP
	Strode C	biface com	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	biface frag dist	Metabasalt	1	HAM	Middle River	E11	IP
	Strode C	biface frag dist	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	biface frag dist	Quartz	42	HAM	Middle River	E11	IP
	Strode C	biface frag dist	Quartzite	13	HAM	Middle River	E11	IP
	Strode C	biface frag dist	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	biface frag mid	Jasper	1	HAM	Middle River	E11	IP
	Strode C	biface frag mid	Mylonite	1	HAM	Middle River	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode C	biface frag mid	Quartz	66	HAM	Middle River	E11	IP
	Strode C	biface frag mid	Quartzite	19	HAM	Middle River	E11	IP
	Strode C	biface frag mid	Rhyolite	4	HAM	Middle River	E11	IP
	Strode C	Big Sandy	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Bilobate	Quartz	7	HAM	Middle River	E11	IP
	Strode C	Bilobate	Quartzite	1	HAM	Middle River	E11	IP
	Strode C	Brewerton SN	Chert	1	HAM	Middle River	E11	IP
	Strode C	Brewerton SN	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Brewerton SN	Quartzite	3	HAM	Middle River	E11	IP
	Strode C	Calvert	Basalt	1	HAM	Middle River	E11	IP
	Strode C	Calvert	Mylonite	2	HAM	Middle River	E11	IP
	Strode C	Calvert	Quartz	27	HAM	Middle River	E11	IP
	Strode C	Calvert	Quartzite	11	HAM	Middle River	E11	IP
	Strode C	Calvert	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	celt	Metabasalt	7	HAM	Middle River	E11	IP
	Strode C	chipped stone axe	Metabasalt	8	HAM	Middle River	E11	IP
	Strode C	cobble tool	Metabasalt	1	HAM	Middle River	E11	IP
	Strode C	core	Quartzite	1	HAM	Middle River	E11	IP
	Strode C	drill	Chert	1	HAM	Middle River	E11	IP
	Strode C	drill	Quartz	3	HAM	Middle River	E11	IP
	Strode C	drill	Quartzite	1	HAM	Middle River	E11	IP
	Strode C	flake	Quartz	23	HAM	Middle River	E11	IP
	Strode C	flake	Chert	7	HAM	Middle River	E11	IP
	Strode C	flake	Metabasalt	18	HAM	Middle River	E11	IP
	Strode C	flake	Mylonite	2	HAM	Middle River	E11	IP
	Strode C	flake	Quartzite	13	HAM	Middle River	E11	IP
	Strode C	Guilford	Quartzite	2	HAM	Middle River	E11	IP
	Strode C	Halifax	Mylonite	2	HAM	Middle River	E11	IP
	Strode C	Halifax	Quartz	17	HAM	Middle River	E11	IP
	Strode C	Halifax	Quartzite	2	HAM	Middle River	E11	IP
	Strode C	Holmes	Metabasalt	1	HAM	Middle River	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode C	Holmes	Quartz	4	HAM	Middle River	E11	IP
	Strode C	Holmes	Quartzite	11	HAM	Middle River	E11	IP
	Strode C	Jack's Reef CN	Chert	1	HAM	Middle River	E11	IP
	Strode C	Jack's Reef CN	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	Kirk CN	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	Kirk CN	Quartzite	2	HAM	Middle River	E11	IP
	Strode C	Kirk Stemmed	Metabasalt	1	HAM	Middle River	E11	IP
	Strode C	Kirk Stemmed	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	Kirk Stemmed	Quartz	3	HAM	Middle River	E11	IP
	Strode C	Kirk Stemmed	Quartzite	4	HAM	Middle River	E11	IP
	Strode C	Kirk Stemmed	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	LeCroy	Hornfels	1	HAM	Middle River	E11	IP
	Strode C	LeCroy	Quartz	4	HAM	Middle River	E11	IP
	Strode C	Levanna/Yadkin	Chert	2	HAM	Middle River	E11	IP
	Strode C	Levanna/Yadkin	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	Levanna/Yadkin	Quartz	4	HAM	Middle River	E11	IP
	Strode C	Levanna/Yadkin	Quartzite	3	HAM	Middle River	E11	IP
	Strode C	MacPherson	Quartz	2	HAM	Middle River	E11	IP
	Strode C	Madison	Quartz	5	HAM	Middle River	E11	IP
	Strode C	Morrow Mountain II	Chert	3	HAM	Middle River	E11	IP
	Strode C	Morrow Mountain II	Quartz	9	HAM	Middle River	E11	IP
	Strode C	Morrow Mountain II	Quartzite	3	HAM	Middle River	E11	IP
	Strode C	Orient Fishtail	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Palmer	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Piscataway	Quartz	12	HAM	Middle River	E11	IP
	Strode C	Piscataway	Quartzite	1	HAM	Middle River	E11	IP
	Strode C	Potts	Quartz	2	HAM	Middle River	E11	IP
	Strode C	Savannah River	Metabasalt	1	HAM	Middle River	E11	IP
	Strode C	Savannah River	Quartz	6	HAM	Middle River	E11	IP
	Strode C	Savannah River	Quartzite	22	HAM	Middle River	E11	IP
	Strode C	scraper	Chalcedony	1	HAM	Middle River	E11	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode C	scraper	Quartz	4	HAM	Middle River	E11	IP
	Strode C	scraper	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	Stanly	Quartz	1	HAM	Middle River	E11	IP
	Strode C	Triang. Preforms	Mylonite	1	HAM	Middle River	E11	IP
	Strode C	Triang. Preforms	Quartz	5	HAM	Middle River	E11	IP
	Strode C	Unidentifiable Point	Quartz	4	HAM	Middle River	E11	IP
	Strode C	Vernon	Metabasalt Breccia	1	HAM	Middle River	E11	IP
	Strode C	Vernon	Quartz	19	HAM	Middle River	E11	IP
	Strode C	Vernon	Quartzite	5	HAM	Middle River	E11	IP
	Strode C	Vernon	Rhyolite	1	HAM	Middle River	E11	IP
	Strode C	wedge	Metabasalt	2	HAM	Middle River	E11	IP
	Strode D	Bare Island	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Bare Island	Quartz	9	SBC	Elk Run	E12	IP
	Strode D	Bare Island	Quartzite	3	SBC	Elk Run	E12	IP
	Strode D	biface com	Chert	1	SBC	Elk Run	E12	IP
	Strode D	biface com	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode D	biface com	Mylonite	2	SBC	Elk Run	E12	IP
	Strode D	biface com	Quartz	36	SBC	Elk Run	E12	IP
	Strode D	biface com	Quartzite	4	SBC	Elk Run	E12	IP
	Strode D	biface frag dist	Chert	1	SBC	Elk Run	E12	IP
	Strode D	biface frag dist	Mylonite	1	SBC	Elk Run	E12	IP
	Strode D	biface frag dist	Quartz	14	SBC	Elk Run	E12	IP
	Strode D	biface frag dist	Quartzite	6	SBC	Elk Run	E12	IP
	Strode D	biface frag mid	Chert	2	SBC	Elk Run	E12	IP
	Strode D	biface frag mid	Quartz	10	SBC	Elk Run	E12	IP
	Strode D	biface frag mid	Quartzite	7	SBC	Elk Run	E12	IP
	Strode D	Bilobate	Quartz	5	SBC	Elk Run	E12	IP
	Strode D	Bilobate	Quartzite	2	SBC	Elk Run	E12	IP
	Strode D	Brewerton SN	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Calvert	Quartz	10	SBC	Elk Run	E12	IP
	Strode D	Calvert	Quartzite	6	SBC	Elk Run	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode D	chipped stone axe	Metabasalt	2	SBC	Elk Run	E12	IP
	Strode D	cobble tool	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode D	flake	Quartz	7	SBC	Elk Run	E12	IP
	Strode D	flake	Chert	1	SBC	Elk Run	E12	IP
	Strode D	flake	Metabasalt	3	SBC	Elk Run	E12	IP
	Strode D	flake	Quartzite	5	SBC	Elk Run	E12	IP
	Strode D	grooved axe	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode D	Guilford	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Halifax	Quartz	8	SBC	Elk Run	E12	IP
	Strode D	Holmes	Metabasalt	3	SBC	Elk Run	E12	IP
	Strode D	Holmes	Quartz	3	SBC	Elk Run	E12	IP
	Strode D	Holmes	Quartzite	3	SBC	Elk Run	E12	IP
	Strode D	Kirk CN	Mylonite	1	SBC	Elk Run	E12	IP
	Strode D	Kirk CN	Quartz	2	SBC	Elk Run	E12	IP
	Strode D	Kirk CN	Quartzite	1	SBC	Elk Run	E12	IP
	Strode D	LeCroy	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Levanna/Yadkin	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Madison	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Madison	Quartz	3	SBC	Elk Run	E12	IP
	Strode D	Morrow Mountain II	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Morrow Mountain II	Quartz	3	SBC	Elk Run	E12	IP
	Strode D	Morrow Mountain II	Quartzite	1	SBC	Elk Run	E12	IP
	Strode D	Orient Fishtail	Quartz	2	SBC	Elk Run	E12	IP
	Strode D	Palmer	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Palmer	Quartzite	1	SBC	Elk Run	E12	IP
	Strode D	Piscataway	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Savannah River	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode D	Savannah River	Quartz	2	SBC	Elk Run	E12	IP
	Strode D	Savannah River	Quartzite	9	SBC	Elk Run	E12	IP
	Strode D	scraper	Mylonite	1	SBC	Elk Run	E12	IP
	Strode D	scraper	Quartz	2	SBC	Elk Run	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode D	Stanly	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Stanly	Quartzite	1	SBC	Elk Run	E12	IP
	Strode D	Teardrop	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Triang. Preforms	Quartz	1	SBC	Elk Run	E12	IP
	Strode D	Unidentifiable Point	Quartz	3	SBC	Elk Run	E12	IP
	Strode D	Unidentifiable Point	Quartzite	1	SBC	Elk Run	E12	IP
	Strode D	Vernon	Chert	1	SBC	Elk Run	E12	IP
	Strode D	Vernon	Quartz	4	SBC	Elk Run	E12	IP
	Strode D	Vernon	Quartzite	3	SBC	Elk Run	E12	IP
	Strode E	Bare Island	Mylonite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Bare Island	Quartz	13	HAM	Lambs Bottom	E12	IP
	Strode E	Bare Island	Quartzite	16	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Basalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Chalcedony	1	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Chert	2	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Jasper	2	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Metabasalt	3	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Mylonite	4	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Phyllite	1	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Quartz	58	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Quartzite	15	HAM	Lambs Bottom	E12	IP
	Strode E	biface com	Rhyolite	2	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag dist	Jasper	3	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag dist	Metabasalt	3	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag dist	Mylonite	3	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag dist	Quartz	87	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag dist	Quartzite	24	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag mid	Chert	4	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag mid	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag mid	Metabasalt	5	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag mid	Mylonite	11	HAM	Lambs Bottom	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode E	biface frag mid	Quartz	151	HAM	Lambs Bottom	E12	IP
	Strode E	biface frag mid	Quartzite	28	HAM	Lambs Bottom	E12	IP
	Strode E	Big Sandy	Chert	1	HAM	Lambs Bottom	E12	IP
	Strode E	Big Sandy	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Bilobate	Quartz	28	HAM	Lambs Bottom	E12	IP
	Strode E	Bilobate	Quartzite	4	HAM	Lambs Bottom	E12	IP
	Strode E	blade flake	Quartz	1	HAM	Lambs Bottom	E12	IP
	Strode E	Brewerton CN	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	Brewerton SN	Chert	1	HAM	Lambs Bottom	E12	IP
	Strode E	Brewerton SN	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	Brewerton SN	Quartz	11	HAM	Lambs Bottom	E12	IP
	Strode E	Brewerton SN	Quartzite	3	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Chert	3	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Mylonite	5	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Phyllite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Quartz	70	HAM	Lambs Bottom	E12	IP
	Strode E	Calvert	Quartzite	14	HAM	Lambs Bottom	E12	IP
	Strode E	celt	Metabasalt	5	HAM	Lambs Bottom	E12	IP
	Strode E	chipped stone axe	Metabasalt	3	HAM	Lambs Bottom	E12	IP
	Strode E	cobble tool	Hematite	1	HAM	Lambs Bottom	E12	IP
	Strode E	core	Jasper	2	HAM	Lambs Bottom	E12	IP
	Strode E	core	Metabasalt Breccia	1	HAM	Lambs Bottom	E12	IP
	Strode E	core	Quartz	1	HAM	Lambs Bottom	E12	IP
	Strode E	drill	Quartz	10	HAM	Lambs Bottom	E12	IP
	Strode E	drill	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Quartz	18	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Chalcedony	2	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Chert	5	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Jasper	2	HAM	Lambs Bottom	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode E	flake	Metabasalt	12	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Metabasalt Breccia	3	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Mylonite	20	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Quartzite	12	HAM	Lambs Bottom	E12	IP
	Strode E	flake	Rhyolite	1	HAM	Lambs Bottom	E12	IP
	Strode E	graver	Quartz	8	HAM	Lambs Bottom	E12	IP
	Strode E	grooved axe	Metabasalt	4	HAM	Lambs Bottom	E12	IP
	Strode E	Guilford	Quartz	2	HAM	Lambs Bottom	E12	IP
	Strode E	Halifax	Quartz	20	HAM	Lambs Bottom	E12	IP
	Strode E	Halifax	Quartzite	4	HAM	Lambs Bottom	E12	IP
	Strode E	hammerstone	Basalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	hammerstone	Greywacke	1	HAM	Lambs Bottom	E12	IP
	Strode E	hoe	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	Holmes	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	Holmes	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Holmes	Quartz	12	HAM	Lambs Bottom	E12	IP
	Strode E	Holmes	Quartzite	7	HAM	Lambs Bottom	E12	IP
	Strode E	Jack's Reef CN	Chert	3	HAM	Lambs Bottom	E12	IP
	Strode E	Jack's Reef CN	Quartzite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Kirk CN	Chert	1	HAM	Lambs Bottom	E12	IP
	Strode E	Kirk CN	Quartz	6	HAM	Lambs Bottom	E12	IP
	Strode E	Kirk CN	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Kirk Stemmed	Quartzite	3	HAM	Lambs Bottom	E12	IP
	Strode E	Late Paleo Single Flute	Chalcedony	2	HAM	Lambs Bottom	E12	IP
	Strode E	LeCroy	Quartz	9	HAM	Lambs Bottom	E12	IP
	Strode E	Levanna/Yadkin	Chert	1	HAM	Lambs Bottom	E12	IP
	Strode E	Levanna/Yadkin	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	Levanna/Yadkin	Mylonite	4	HAM	Lambs Bottom	E12	IP
	Strode E	Levanna/Yadkin	Quartz	29	HAM	Lambs Bottom	E12	IP
	Strode E	Levanna/Yadkin	Quartzite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Madison	Mylonite	2	HAM	Lambs Bottom	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode E	Madison	Quartz	12	HAM	Lambs Bottom	E12	IP
	Strode E	Morrow Mountain II	Arg. Shale	1	HAM	Lambs Bottom	E12	IP
	Strode E	Morrow Mountain II	Chert	2	HAM	Lambs Bottom	E12	IP
	Strode E	Morrow Mountain II	Quartz	9	HAM	Lambs Bottom	E12	IP
	Strode E	Morrow Mountain II	Quartzite	7	HAM	Lambs Bottom	E12	IP
	Strode E	Orient Fishtail	Quartz	21	HAM	Lambs Bottom	E12	IP
	Strode E	Palmer	Chert	3	HAM	Lambs Bottom	E12	IP
	Strode E	Palmer	Jasper	2	HAM	Lambs Bottom	E12	IP
	Strode E	Palmer	Mylonite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Palmer	Quartz	2	HAM	Lambs Bottom	E12	IP
	Strode E	Palmer	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Piscataway	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Piscataway	Quartz	28	HAM	Lambs Bottom	E12	IP
	Strode E	Piscataway	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Potts	Quartz	3	HAM	Lambs Bottom	E12	IP
	Strode E	Potts	Quartzite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Savannah River	Metabasalt	7	HAM	Lambs Bottom	E12	IP
	Strode E	Savannah River	Quartz	5	HAM	Lambs Bottom	E12	IP
	Strode E	Savannah River	Quartzite	12	HAM	Lambs Bottom	E12	IP
	Strode E	scraper	Chert	1	HAM	Lambs Bottom	E12	IP
	Strode E	scraper	Jasper	2	HAM	Lambs Bottom	E12	IP
	Strode E	scraper	Mylonite	7	HAM	Lambs Bottom	E12	IP
	Strode E	scraper	Quartz	4	HAM	Lambs Bottom	E12	IP
	Strode E	shatter	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	shatter	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	shatter	Quartz	1	HAM	Lambs Bottom	E12	IP
	Strode E	spokeshave	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	St. Albans	Chert	2	HAM	Lambs Bottom	E12	IP
	Strode E	Stanly	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	stone bowl fragment	Steatite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Teardrop	Quartz	10	HAM	Lambs Bottom	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode E	Triang. Preforms	Mylonite	5	HAM	Lambs Bottom	E12	IP
	Strode E	Triang. Preforms	Quartz	4	HAM	Lambs Bottom	E12	IP
	Strode E	Unidentifiable Point	Metabasalt	1	HAM	Lambs Bottom	E12	IP
	Strode E	Unidentifiable Point	Mylonite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Chert	3	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Jasper	1	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Mylonite	2	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Phyllite	1	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Quartz	49	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Quartzite	12	HAM	Lambs Bottom	E12	IP
	Strode E	Vernon	Rhyolite	1	HAM	Lambs Bottom	E12	IP
	Strode E	wedge	Greywacke	1	HAM	Lambs Bottom	E12	IP
	Strode F	Bare Island	Quartz	1	LAC	Elk Run	E12	IP
	Strode F	biface com	Mylonite	1	LAC	Elk Run	E12	IP
	Strode F	biface frag mid	Quartz	1	LAC	Elk Run	E12	IP
	Strode F	Bilobate	Quartz	2	LAC	Elk Run	E12	IP
	Strode F	blade flake	Quartzite	1	LAC	Elk Run	E12	IP
	Strode F	Calvert	Quartzite	1	LAC	Elk Run	E12	IP
	Strode F	chipped stone axe	Metabasalt	2	LAC	Elk Run	E12	IP
	Strode F	flake	Quartz	1	LAC	Elk Run	E12	IP
	Strode F	Halifax	Quartz	2	LAC	Elk Run	E12	IP
	Strode F	Holmes	Quartz	1	LAC	Elk Run	E12	IP
	Strode F	Kirk CN	Chert	1	LAC	Elk Run	E12	IP
	Strode F	Kirk CN	Mylonite	1	LAC	Elk Run	E12	IP
	Strode F	Piscataway	Quartz	1	LAC	Elk Run	E12	IP
	Strode F	Potts	Quartzite	1	LAC	Elk Run	E12	IP
	Strode F	Vernon	Mylonite	1	LAC	Elk Run	E12	IP
	Strode F	Vernon	Quartz	8	LAC	Elk Run	E12	IP
	Strode F	Vernon	Quartzite	2	LAC	Elk Run	E12	IP
	Strode G	Bare Island	Quartz	5	SBC	Mallory	E15	IP
	Strode G	Bare Island	Quartzite	2	SBC	Mallory	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode G	biface com	Chert	1	SBC	Mallory	E15	IP
	Strode G	biface com	Metabasalt Breccia	1	SBC	Mallory	E15	IP
	Strode G	biface com	Mylonite	4	SBC	Mallory	E15	IP
	Strode G	biface com	Quartz	29	SBC	Mallory	E15	IP
	Strode G	biface com	Quartzite	3	SBC	Mallory	E15	IP
	Strode G	biface com	Rhyolite	1	SBC	Mallory	E15	IP
	Strode G	biface frag dist	Quartz	9	SBC	Mallory	E15	IP
	Strode G	biface frag dist	Quartzite	4	SBC	Mallory	E15	IP
	Strode G	biface frag mid	Metabasalt	1	SBC	Mallory	E15	IP
	Strode G	biface frag mid	Quartz	30	SBC	Mallory	E15	IP
	Strode G	biface frag mid	Quartzite	2	SBC	Mallory	E15	IP
	Strode G	Big Sandy	Quartz	1	SBC	Mallory	E15	IP
	Strode G	Bilobate	Quartz	6	SBC	Mallory	E15	IP
	Strode G	Bilobate	Quartzite	1	SBC	Mallory	E15	IP
	Strode G	Brewerton CN	Chert	1	SBC	Mallory	E15	IP
	Strode G	Brewerton SN	Chert	2	SBC	Mallory	E15	IP
	Strode G	Brewerton SN	Quartz	1	SBC	Mallory	E15	IP
	Strode G	Calvert	Chert	3	SBC	Mallory	E15	IP
	Strode G	Calvert	Quartz	8	SBC	Mallory	E15	IP
	Strode G	Calvert	Quartzite	2	SBC	Mallory	E15	IP
	Strode G	chipped stone axe	Metabasalt	2	SBC	Mallory	E15	IP
	Strode G	cobble tool	Metabasalt	2	SBC	Mallory	E15	IP
	Strode G	core	Chert	1	SBC	Mallory	E15	IP
	Strode G	drill	Quartz	6	SBC	Mallory	E15	IP
	Strode G	flake	Quartz	10	SBC	Mallory	E15	IP
	Strode G	flake	Chert	1	SBC	Mallory	E15	IP
	Strode G	flake	Mylonite	1	SBC	Mallory	E15	IP
	Strode G	flake	Quartzite	6	SBC	Mallory	E15	IP
	Strode G	Halifax	Chert	1	SBC	Mallory	E15	IP
	Strode G	Halifax	Quartz	6	SBC	Mallory	E15	IP
	Strode G	Halifax	Quartzite	1	SBC	Mallory	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode G	Holmes	Quartz	4	SBC	Mallory	E15	IP
	Strode G	Holmes	Quartzite	2	SBC	Mallory	E15	IP
	Strode G	Kirk CN	Jasper	1	SBC	Mallory	E15	IP
	Strode G	Kirk CN	Quartz	2	SBC	Mallory	E15	IP
	Strode G	Kirk Stemmed	Quartz	2	SBC	Mallory	E15	IP
	Strode G	Kirk Stemmed	Quartzite	1	SBC	Mallory	E15	IP
	Strode G	LeCroy	Quartz	2	SBC	Mallory	E15	IP
	Strode G	Levanna/Yadkin	Mylonite	1	SBC	Mallory	E15	IP
	Strode G	Levanna/Yadkin	Quartz	12	SBC	Mallory	E15	IP
	Strode G	Levanna/Yadkin	Quartzite	3	SBC	Mallory	E15	IP
	Strode G	Morrow Mountain II	Chrysoprase	2	SBC	Mallory	E15	IP
	Strode G	Morrow Mountain II	Quartz	5	SBC	Mallory	E15	IP
	Strode G	Morrow Mountain II	Quartzite	2	SBC	Mallory	E15	IP
	Strode G	Orient Fishtail	Quartz	4	SBC	Mallory	E15	IP
	Strode G	Palmer	Chert	1	SBC	Mallory	E15	IP
	Strode G	Palmer	Quartz	1	SBC	Mallory	E15	IP
	Strode G	Piscataway	Quartz	3	SBC	Mallory	E15	IP
	Strode G	Potts	Quartz	4	SBC	Mallory	E15	IP
	Strode G	Potts	Quartzite	1	SBC	Mallory	E15	IP
	Strode G	Savannah River	Quartz	2	SBC	Mallory	E15	IP
	Strode G	Savannah River	Quartzite	6	SBC	Mallory	E15	IP
	Strode G	scraper	Quartz	4	SBC	Mallory	E15	IP
	Strode G	Teardrop	Chert	1	SBC	Mallory	E15	IP
	Strode G	Triang. Preforms	Chert	1	SBC	Mallory	E15	IP
	Strode G	Triang. Preforms	Metabasalt	3	SBC	Mallory	E15	IP
	Strode G	Triang. Preforms	Quartz	1	SBC	Mallory	E15	IP
	Strode G	Vernon	Chert	2	SBC	Mallory	E15	IP
	Strode G	Vernon	Mylonite	1	SBC	Mallory	E15	IP
	Strode G	Vernon	Quartz	15	SBC	Mallory	E15	IP
	Strode G	Vernon	Quartzite	2	SBC	Mallory	E15	IP
	Strode G	Vernon	Rhyolite	1	SBC	Mallory	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode H	biface com	Chert	1	LAC	Isolated	E13	IP
	Strode H	biface frag mid	Quartz	4	LAC	Isolated	E13	IP
	Strode H	biface frag mid	Quartzite	1	LAC	Isolated	E13	IP
	Strode H	Bilobate	Quartzite	1	LAC	Isolated	E13	IP
	Strode H	Brewerton SN	Chert	1	LAC	Isolated	E13	IP
	Strode H	Brewerton SN	Quartzite	1	LAC	Isolated	E13	IP
	Strode H	Calvert	Quartz	3	LAC	Isolated	E13	IP
	Strode H	chipped stone axe	Metabasalt	1	LAC	Isolated	E13	IP
	Strode H	cobble tool	Metabasalt	1	LAC	Isolated	E13	IP
	Strode H	drill	Mylonite	1	LAC	Isolated	E13	IP
	Strode H	drill	Metabasalt	1	LAC	Isolated	E13	IP
	Strode H	Halifax	Chert	1	LAC	Isolated	E13	IP
	Strode H	Halifax	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Holmes	Metabasalt	2	LAC	Isolated	E13	IP
	Strode H	Holmes	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Kirk CN	Chalcedony	2	LAC	Isolated	E13	IP
	Strode H	LeCroy	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Levanna/Yadkin	Chert	1	LAC	Isolated	E13	IP
	Strode H	Levanna/Yadkin	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Madison	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Orient Fishtail	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Orient Fishtail	Quartzite	2	LAC	Isolated	E13	IP
	Strode H	Palmer	Mylonite	1	LAC	Isolated	E13	IP
	Strode H	Palmer	Quartz	1	LAC	Isolated	E13	IP
	Strode H	Piscataway	Quartz	4	LAC	Isolated	E13	IP
	Strode H	Savannah River	Metabasalt	1	LAC	Isolated	E13	IP
	Strode H	Savannah River	Quartz	2	LAC	Isolated	E13	IP
	Strode H	Savannah River	Quartzite	2	LAC	Isolated	E13	IP
	Strode H	Triang. Preforms	Quartz	2	LAC	Isolated	E13	IP
	Strode H	Vernon	Hornfels	1	LAC	Isolated	E13	IP
	Strode H	Vernon	Quartz	9	LAC	Isolated	E13	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode H	Vernon	Quartzite	2	LAC	Isolated	E13	IP
	Strode I	Bare Island	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	biface com	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	biface com	Quartz	17	HAM	Beaverdam	E15	MB
	Strode I	biface com	Quartzite	11	HAM	Beaverdam	E15	MB
	Strode I	biface frag dist	Quartz	37	HAM	Beaverdam	E15	MB
	Strode I	biface frag dist	Quartzite	2	HAM	Beaverdam	E15	MB
	Strode I	biface frag mid	Quartz	33	HAM	Beaverdam	E15	MB
	Strode I	biface frag mid	Quartzite	3	HAM	Beaverdam	E15	MB
	Strode I	biface frag mid	Rhyolite	1	HAM	Beaverdam	E15	MB
	Strode I	Big Sandy	Chalcedony	1	HAM	Beaverdam	E15	MB
	Strode I	Big Sandy	Quartz	4	HAM	Beaverdam	E15	MB
	Strode I	Big Sandy	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	Bilobate	Quartz	9	HAM	Beaverdam	E15	MB
	Strode I	Bilobate	Quartzite	2	HAM	Beaverdam	E15	MB
	Strode I	Brewerton SN	Chert	3	HAM	Beaverdam	E15	MB
	Strode I	Brewerton SN	Quartz	3	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Hornfels	1	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Phyllite	1	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Quartz	19	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Quartzite	5	HAM	Beaverdam	E15	MB
	Strode I	Calvert	Rhyolite	1	HAM	Beaverdam	E15	MB
	Strode I	celt	Metabasalt	2	HAM	Beaverdam	E15	MB
	Strode I	chipped stone axe	Metabasalt	2	HAM	Beaverdam	E15	MB
	Strode I	cobble tool	Greywacke	1	HAM	Beaverdam	E15	MB
	Strode I	cobble tool	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	core	Jasper	1	HAM	Beaverdam	E15	MB
	Strode I	drill	Quartz	4	HAM	Beaverdam	E15	MB
	Strode I	flake	Quartz	18	HAM	Beaverdam	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode I	flake	Chert	2	HAM	Beaverdam	E15	MB
	Strode I	flake	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	flake	Quartzite	4	HAM	Beaverdam	E15	MB
	Strode I	graver	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	grooved axe	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Guilford	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Halifax	Quartz	7	HAM	Beaverdam	E15	MB
	Strode I	Halifax	Quartzite	3	HAM	Beaverdam	E15	MB
	Strode I	Holmes	Basalt	1	HAM	Beaverdam	E15	MB
	Strode I	Holmes	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Holmes	Quartz	10	HAM	Beaverdam	E15	MB
	Strode I	Holmes	Quartzite	2	HAM	Beaverdam	E15	MB
	Strode I	Jack's Reef CN	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	Jack's Reef Pentagonal	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk CN	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk Stemmed	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk Stemmed	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk Stemmed	Oolitic Qtzite	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk Stemmed	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Kirk Stemmed	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	LeCroy	Chalcedony	2	HAM	Beaverdam	E15	MB
	Strode I	LeCroy	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	LeCroy	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	Levanna/Yadkin	Chert	10	HAM	Beaverdam	E15	MB
	Strode I	Levanna/Yadkin	Chrysoprase	1	HAM	Beaverdam	E15	MB
	Strode I	Levanna/Yadkin	Jasper	1	HAM	Beaverdam	E15	MB
	Strode I	Levanna/Yadkin	Quartz	49	HAM	Beaverdam	E15	MB
	Strode I	Levanna/Yadkin	Quartzite	9	HAM	Beaverdam	E15	MB
	Strode I	MacPherson	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	MacPherson	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	Madison	Chert	1	HAM	Beaverdam	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode I	Madison	Quartz	25	HAM	Beaverdam	E15	MB
	Strode I	Madison	Quartzite	2	HAM	Beaverdam	E15	MB
	Strode I	Morrow Mountain II	Quartz	8	HAM	Beaverdam	E15	MB
	Strode I	Morrow Mountain II	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	Orient Fishtail	Quartz	4	HAM	Beaverdam	E15	MB
	Strode I	Perkiomen	Jasper	1	HAM	Beaverdam	E15	MB
	Strode I	pestle	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Piscataway	Quartz	28	HAM	Beaverdam	E15	MB
	Strode I	Savannah River	Metabasalt	1	HAM	Beaverdam	E15	MB
	Strode I	Savannah River	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Savannah River	Quartzite	3	HAM	Beaverdam	E15	MB
	Strode I	scraper	Chert	1	HAM	Beaverdam	E15	MB
	Strode I	scraper	Quartz	3	HAM	Beaverdam	E15	MB
	Strode I	scraper	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	St. Albans	Quartz	1	HAM	Beaverdam	E15	MB
	Strode I	Triang. Preforms	Quartz	10	HAM	Beaverdam	E15	MB
	Strode I	Triang. Preforms	Quartzite	1	HAM	Beaverdam	E15	MB
	Strode I	Vernon	Mylonite	2	HAM	Beaverdam	E15	MB
	Strode I	Vernon	Quartz	14	HAM	Beaverdam	E15	MB
	Strode I	Vernon	Quartzite	5	HAM	Beaverdam	E15	MB
	Strode J	Bare Island	Quartz	3	LAC	Elk Run	E12	IP
	Strode J	biface frag dist	Quartz	1	LAC	Elk Run	E12	IP
	Strode J	Calvert	Quartz	3	LAC	Elk Run	E12	IP
	Strode J	Calvert	Quartzite	2	LAC	Elk Run	E12	IP
	Strode J	Holmes	Quartzite	1	LAC	Elk Run	E12	IP
	Strode J	Jack's Reef Pentagonal	Quartz	1	LAC	Elk Run	E12	IP
	Strode J	Kirk CN	Quartz	1	LAC	Elk Run	E12	IP
	Strode J	Potts	Quartz	1	LAC	Elk Run	E12	IP
	Strode J	Vernon	Quartz	3	LAC	Elk Run	E12	IP
	Strode J	Vernon	Quartzite	2	LAC	Elk Run	E12	IP
	Strode K	Bare Island	Quartz	4	LAC	Dark Run	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode K	biface frag dist	Quartzite	1	LAC	Dark Run	E15	IP
	Strode K	biface frag mid	Quartz	2	LAC	Dark Run	E15	IP
	Strode K	Bilobate	Quartz	4	LAC	Dark Run	E15	IP
	Strode K	Calvert	Quartz	5	LAC	Dark Run	E15	IP
	Strode K	Halifax	Quartz	1	LAC	Dark Run	E15	IP
	Strode K	Kirk CN	Quartz	3	LAC	Dark Run	E15	IP
	Strode K	Kirk Stemmed	Quartz	1	LAC	Dark Run	E15	IP
	Strode K	Levanna/Yadkin	Quartz	1	LAC	Dark Run	E15	IP
	Strode K	Potts	Quartz	1	LAC	Dark Run	E15	IP
	Strode K	Savannah River	Quartz	2	LAC	Dark Run	E15	IP
	Strode K	St. Albans	Quartz	1	LAC	Dark Run	E15	IP
	Strode K	Triang. Preforms	Quartz	2	LAC	Dark Run	E15	IP
	Strode K	Vernon	Quartz	3	LAC	Dark Run	E15	IP
	Strode K	Vernon	Quartzite	1	LAC	Dark Run	E15	IP
	Strode L	Calvert	Quartz	1	LAC	Dark Run	E15	IP
	Strode L	Calvert	Quartzite	1	LAC	Dark Run	E15	IP
	Strode L	Holmes	Quartz	3	LAC	Dark Run	E15	IP
	Strode L	Jack's Reef CN	Chert	1	LAC	Dark Run	E15	IP
	Strode L	Levanna/Yadkin	Mylonite	2	LAC	Dark Run	E15	IP
	Strode L	Levanna/Yadkin	Quartz	2	LAC	Dark Run	E15	IP
	Strode L	Madison	Quartz	7	LAC	Dark Run	E15	IP
	Strode L	scraper	Jasper	2	LAC	Dark Run	E15	IP
	Strode L	Vernon	Quartz	3	LAC	Dark Run	E15	IP
	Strode M	Bare Island	Quartz	1	SBC	Henshaw	E14	IP
	Strode M	Bare Island	Quartzite	3	SBC	Henshaw	E14	IP
	Strode M	biface com	Quartz	2	SBC	Henshaw	E14	IP
	Strode M	biface frag dist	Quartz	8	SBC	Henshaw	E14	IP
	Strode M	biface frag dist	Quartzite	1	SBC	Henshaw	E14	IP
	Strode M	biface frag mid	Metabasalt	1	SBC	Henshaw	E14	IP
	Strode M	biface frag mid	Quartz	9	SBC	Henshaw	E14	IP
	Strode M	Calvert	Quartz	2	SBC	Henshaw	E14	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode M	chipped stone axe	Metabasalt	2	SBC	Henshaw	E14	IP
	Strode M	cobble tool	Metabasalt	1	SBC	Henshaw	E14	IP
	Strode M	flake	Quartzite	1	SBC	Henshaw	E14	IP
	Strode M	flake	Jasper	2	SBC	Henshaw	E14	IP
	Strode M	flake	Mylonite	1	SBC	Henshaw	E14	IP
	Strode M	Halifax	Quartz	3	SBC	Henshaw	E14	IP
	Strode M	Holmes	Quartz	1	SBC	Henshaw	E14	IP
	Strode M	Holmes	Quartzite	1	SBC	Henshaw	E14	IP
	Strode M	Kirk CN	Quartz	3	SBC	Henshaw	E14	IP
	Strode M	Kirk Stemmed	Quartz	2	SBC	Henshaw	E14	IP
	Strode M	Levanna/Yadkin	Mylonite	2	SBC	Henshaw	E14	IP
	Strode M	Levanna/Yadkin	Quartz	3	SBC	Henshaw	E14	IP
	Strode M	Levanna/Yadkin	Quartzite	4	SBC	Henshaw	E14	IP
	Strode M	Madison	Chert	1	SBC	Henshaw	E14	IP
	Strode M	Morrow Mountain II	Quartz	1	SBC	Henshaw	E14	IP
	Strode M	Palmer	Chert	2	SBC	Henshaw	E14	IP
	Strode M	Piscataway	Quartz	5	SBC	Henshaw	E14	IP
	Strode M	Savannah River	Quartz	2	SBC	Henshaw	E14	IP
	Strode M	Savannah River	Quartzite	3	SBC	Henshaw	E14	IP
	Strode M	Triang. Preforms	Quartz	1	SBC	Henshaw	E14	IP
	Strode M	Triang. Preforms	Quartzite	1	SBC	Henshaw	E14	IP
	Strode M	Vernon	Quartz	3	SBC	Henshaw	E14	IP
	Strode N	Calvert	Arg. Shale	1	LAC	Henshaw	E14	IP
	Strode N	Calvert	Quartz	1	LAC	Henshaw	E14	IP
	Strode N	Halifax	Quartz	1	LAC	Henshaw	E14	IP
	Strode N	Holmes	Quartz	1	LAC	Henshaw	E14	IP
	Strode N	Vernon	Quartz	1	LAC	Henshaw	E14	IP
	Strode O	Bare Island	Quartz	1	LAC	Dark Run	E15	IP
	Strode O	Bare Island	Quartzite	1	LAC	Dark Run	E15	IP
	Strode O	biface com	Mylonite	1	LAC	Dark Run	E15	IP
	Strode O	biface com	Quartz	1	LAC	Dark Run	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode O	Bilobate	Quartz	2	LAC	Dark Run	E15	IP
	Strode O	Calvert	Quartz	2	LAC	Dark Run	E15	IP
	Strode O	Calvert	Quartzite	1	LAC	Dark Run	E15	IP
	Strode O	Holmes	Quartz	1	LAC	Dark Run	E15	IP
	Strode O	Holmes	Quartzite	3	LAC	Dark Run	E15	IP
	Strode O	Jack's Reef CN	Chert	1	LAC	Dark Run	E15	IP
	Strode O	Kirk CN	Quartz	1	LAC	Dark Run	E15	IP
	Strode O	Palmer	Chert	1	LAC	Dark Run	E15	IP
	Strode O	scraper	Mylonite	1	LAC	Dark Run	E15	IP
	Strode Q	Bare Island	Quartz	1	SBC	Beaverdam	E15	MB
	Strode Q	biface com	Quartz	2	SBC	Beaverdam	E15	MB
	Strode Q	biface frag dist	Quartz	3	SBC	Beaverdam	E15	MB
	Strode Q	biface frag dist	Quartzite	1	SBC	Beaverdam	E15	MB
	Strode Q	biface frag mid	Metabasalt	1	SBC	Beaverdam	E15	MB
	Strode Q	biface frag mid	Quartz	2	SBC	Beaverdam	E15	MB
	Strode Q	Bilobate	Quartz	1	SBC	Beaverdam	E15	MB
	Strode Q	Calvert	Quartz	3	SBC	Beaverdam	E15	MB
	Strode Q	flake	Quartz	3	SBC	Beaverdam	E15	MB
	Strode Q	Halifax	Quartz	2	SBC	Beaverdam	E15	MB
	Strode Q	Kirk Stemmed	Quartzite	1	SBC	Beaverdam	E15	MB
	Strode Q	LeCroy	Quartz	1	SBC	Beaverdam	E15	MB
	Strode Q	Levanna/Yadkin	Quartz	4	SBC	Beaverdam	E15	MB
	Strode Q	Levanna/Yadkin	Quartzite	1	SBC	Beaverdam	E15	MB
	Strode Q	Madison	Quartz	1	SBC	Beaverdam	E15	MB
	Strode Q	Palmer	Mylonite	1	SBC	Beaverdam	E15	MB
	Strode Q	Piscataway	Quartz	4	SBC	Beaverdam	E15	MB
	Strode Q	Savannah River	Quartzite	1	SBC	Beaverdam	E15	MB
	Strode Q	scraper	Quartz	1	SBC	Beaverdam	E15	MB
	Strode Q	Teardrop	Quartz	2	SBC	Beaverdam	E15	MB
	Strode Q	Triang. Preforms	Quartz	2	SBC	Beaverdam	E15	MB
	Strode Q	Vernon	Quartz	2	SBC	Beaverdam	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode R	Bare Island	Quartz	2	LAC	Mallory	E15	IP
	Strode R	Bare Island	Rhyolite	1	LAC	Mallory	E15	IP
	Strode R	biface com	Quartz	1	LAC	Mallory	E15	IP
	Strode R	biface frag dist	Quartz	1	LAC	Mallory	E15	IP
	Strode R	Bilobate	Quartz	2	LAC	Mallory	E15	IP
	Strode R	Calvert	Chalcedony	1	LAC	Mallory	E15	IP
	Strode R	Calvert	Metabasalt	1	LAC	Mallory	E15	IP
	Strode R	Calvert	Quartz	3	LAC	Mallory	E15	IP
	Strode R	chipped stone axe	Metabasalt	1	LAC	Mallory	E15	IP
	Strode R	Halifax	Quartz	1	LAC	Mallory	E15	IP
	Strode R	Holmes	Metabasalt	1	LAC	Mallory	E15	IP
	Strode R	LeCroy	Quartz	1	LAC	Mallory	E15	IP
	Strode R	Madison	Quartz	1	LAC	Mallory	E15	IP
	Strode R	stone bowl fragment	Greywacke	1	LAC	Mallory	E15	IP
	Strode R	Vernon	Quartz	1	LAC	Mallory	E15	IP
	Strode S	biface com	Chert	1	SBC	Mallory	E15	IP
	Strode S	biface com	Quartz	9	SBC	Mallory	E15	IP
	Strode S	biface frag dist	Quartz	9	SBC	Mallory	E15	IP
	Strode S	biface frag mid	Quartz	20	SBC	Mallory	E15	IP
	Strode S	Brewerton SN	Chert	1	SBC	Mallory	E15	IP
	Strode S	Brewerton SN	Quartz	1	SBC	Mallory	E15	IP
	Strode S	Calvert	Arg. Shale	1	SBC	Mallory	E15	IP
	Strode S	Calvert	Phyllite	1	SBC	Mallory	E15	IP
	Strode S	Calvert	Quartz	6	SBC	Mallory	E15	IP
	Strode S	chipped stone axe	Metabasalt	1	SBC	Mallory	E15	IP
	Strode S	drill	Quartzite	1	SBC	Mallory	E15	IP
	Strode S	flake	Quartz	7	SBC	Mallory	E15	IP
	Strode S	flake	Mylonite	1	SBC	Mallory	E15	IP
	Strode S	flake	Quartzite	1	SBC	Mallory	E15	IP
	Strode S	Halifax	Quartz	2	SBC	Mallory	E15	IP
	Strode S	Holmes	Quartzite	1	SBC	Mallory	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode S	LeCroy	Chert	1	SBC	Mallory	E15	IP
	Strode S	Levanna/Yadkin	Quartz	1	SBC	Mallory	E15	IP
	Strode S	Savannah River	Quartz	1	SBC	Mallory	E15	IP
	Strode S	Savannah River	Quartzite	1	SBC	Mallory	E15	IP
	Strode S	Triang. Preforms	Quartz	4	SBC	Mallory	E15	IP
	Strode S	Unidentifiable Point	Quartz	1	SBC	Mallory	E15	IP
	Strode S	Vernon	Arg. Shale	1	SBC	Mallory	E15	IP
	Strode S	Vernon	Quartz	10	SBC	Mallory	E15	IP
	Strode T	Bare Island	Rhyolite	1	SBC	Isolated	E15	MB
	Strode T	biface com	Quartz	14	SBC	Isolated	E15	MB
	Strode T	biface frag dist	Quartz	1	SBC	Isolated	E15	MB
	Strode T	biface frag dist	Quartzite	2	SBC	Isolated	E15	MB
	Strode T	Bilobate	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Bilobate	Quartzite	1	SBC	Isolated	E15	MB
	Strode T	Calvert	Metabasalt	1	SBC	Isolated	E15	MB
	Strode T	Calvert	Quartz	8	SBC	Isolated	E15	MB
	Strode T	Calvert	Quartzite	2	SBC	Isolated	E15	MB
	Strode T	flake	Quartz	1	SBC	Isolated	E15	MB
	Strode T	flake	Metabasalt Breccia	2	SBC	Isolated	E15	MB
	Strode T	Halifax	Quartz	3	SBC	Isolated	E15	MB
	Strode T	Holmes	Quartz	4	SBC	Isolated	E15	MB
	Strode T	Holmes	Quartzite	1	SBC	Isolated	E15	MB
	Strode T	Kirk Stemmed	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Levanna/Yadkin	Mylonite	1	SBC	Isolated	E15	MB
	Strode T	Levanna/Yadkin	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Palmer	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Piscataway	Quartz	2	SBC	Isolated	E15	MB
	Strode T	Savannah River	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Savannah River	Quartzite	3	SBC	Isolated	E15	MB
	Strode T	scraper	Quartz	1	SBC	Isolated	E15	MB
	Strode T	Vernon	Quartz	7	SBC	Isolated	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode U	Bare Island	Quartz	1	SBC	Isolated	E14	IP
	Strode U	biface com	Mylonite	1	SBC	Isolated	E14	IP
	Strode U	biface com	Quartz	3	SBC	Isolated	E14	IP
	Strode U	biface frag dist	Quartz	2	SBC	Isolated	E14	IP
	Strode U	biface frag mid	Quartz	1	SBC	Isolated	E14	IP
	Strode U	celt	Metabasalt	1	SBC	Isolated	E14	IP
	Strode U	chipped stone axe	Metabasalt	2	SBC	Isolated	E14	IP
	Strode U	flake	Quartz	1	SBC	Isolated	E14	IP
	Strode U	flake	Metabasalt	4	SBC	Isolated	E14	IP
	Strode U	flake	Rhyolite	1	SBC	Isolated	E14	IP
	Strode U	Holmes	Quartz	1	SBC	Isolated	E14	IP
	Strode U	Holmes	Quartzite	1	SBC	Isolated	E14	IP
	Strode U	Kirk CN	Quartzite	1	SBC	Isolated	E14	IP
	Strode U	Levanna/Yadkin	Quartz	2	SBC	Isolated	E14	IP
	Strode U	Levanna/Yadkin	Rhyolite	1	SBC	Isolated	E14	IP
	Strode U	Madison	Quartz	1	SBC	Isolated	E14	IP
	Strode U	Piscataway	Quartzite	1	SBC	Isolated	E14	IP
	Strode U	Potts	Quartz	2	SBC	Isolated	E14	IP
	Strode U	Savannah River	Quartzite	1	SBC	Isolated	E14	IP
	Strode U	Susquehanna BS	Rhyolite	1	SBC	Isolated	E14	IP
	Strode U	Triang. Preforms	Quartzite	1	SBC	Isolated	E14	IP
	Strode U	Vernon	Quartz	3	SBC	Isolated	E14	IP
	Strode V	biface com	Chert	1	LAC	Dark Run	E15	IP
	Strode V	biface com	Quartz	1	LAC	Dark Run	E15	IP
	Strode V	biface frag mid	Metabasalt	1	LAC	Dark Run	E15	IP
	Strode V	biface frag mid	Quartz	1	LAC	Dark Run	E15	IP
	Strode V	flake	Quartzite	1	LAC	Dark Run	E15	IP
	Strode V	flake	Metabasalt	1	LAC	Dark Run	E15	IP
	Strode V	Savannah River	Quartzite	1	LAC	Dark Run	E15	IP
	Strode V	Triang. Preforms	Quartzite	2	LAC	Dark Run	E15	IP
	Strode V	Vernon	Quartz	1	LAC	Dark Run	E15	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode W	Bare Island	Quartz	6	SBC	Isolated	E13	IP
	Strode W	Bare Island	Quartzite	3	SBC	Isolated	E13	IP
	Strode W	Bare Island	Rhyolite	3	SBC	Isolated	E13	IP
	Strode W	biface com	Chert	1	SBC	Isolated	E13	IP
	Strode W	biface com	Chrysoprase	1	SBC	Isolated	E13	IP
	Strode W	biface com	Metabasalt	3	SBC	Isolated	E13	IP
	Strode W	biface com	Mylonite	3	SBC	Isolated	E13	IP
	Strode W	biface com	Phyllite	1	SBC	Isolated	E13	IP
	Strode W	biface com	Quartz	23	SBC	Isolated	E13	IP
	Strode W	biface com	Quartzite	9	SBC	Isolated	E13	IP
	Strode W	biface com	Rhyolite	1	SBC	Isolated	E13	IP
	Strode W	biface frag dist	Chert	2	SBC	Isolated	E13	IP
	Strode W	biface frag dist	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	biface frag dist	Mylonite	2	SBC	Isolated	E13	IP
	Strode W	biface frag dist	Quartz	16	SBC	Isolated	E13	IP
	Strode W	biface frag dist	Quartzite	4	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Chalcedony	1	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Jasper	1	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Mylonite	2	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Quartz	10	SBC	Isolated	E13	IP
	Strode W	biface frag mid	Quartzite	3	SBC	Isolated	E13	IP
	Strode W	Bilobate	Quartz	2	SBC	Isolated	E13	IP
	Strode W	Brewerton CN	Chert	1	SBC	Isolated	E13	IP
	Strode W	Brewerton SN	Chert	1	SBC	Isolated	E13	IP
	Strode W	Brewerton SN	Quartz	5	SBC	Isolated	E13	IP
	Strode W	Brewerton SN	Quartzite	1	SBC	Isolated	E13	IP
	Strode W	Calvert	Hornfels	1	SBC	Isolated	E13	IP
	Strode W	Calvert	Mylonite	2	SBC	Isolated	E13	IP
	Strode W	Calvert	Quartz	17	SBC	Isolated	E13	IP
	Strode W	Calvert	Rhyolite	1	SBC	Isolated	E13	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode W	Calvert	Chert	3	SBC	Isolated	E13	IP
	Strode W	chipped stone axe	Metabasalt	2	SBC	Isolated	E13	IP
	Strode W	drill	Quartz	1	SBC	Isolated	E13	IP
	Strode W	flake	Quartz	10	SBC	Isolated	E13	IP
	Strode W	flake	Chert	1	SBC	Isolated	E13	IP
	Strode W	flake	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	flake	Mylonite	5	SBC	Isolated	E13	IP
	Strode W	flake	Quartzite	9	SBC	Isolated	E13	IP
	Strode W	flake	Rhyolite	1	SBC	Isolated	E13	IP
	Strode W	grooved axe	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	Halifax	Quartz	2	SBC	Isolated	E13	IP
	Strode W	Holmes	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	Holmes	Quartzite	2	SBC	Isolated	E13	IP
	Strode W	Jack's Reef Pentagonal	Chert	2	SBC	Isolated	E13	IP
	Strode W	Jack's Reef Pentagonal	Quartzite	1	SBC	Isolated	E13	IP
	Strode W	Kirk CN	Quartz	1	SBC	Isolated	E13	IP
	Strode W	Kirk Stemmed	Jasper	1	SBC	Isolated	E13	IP
	Strode W	Kirk Stemmed	Quartz	1	SBC	Isolated	E13	IP
	Strode W	LeCroy	Chert	1	SBC	Isolated	E13	IP
	Strode W	LeCroy	Quartz	2	SBC	Isolated	E13	IP
	Strode W	Levanna/Yadkin	Chert	2	SBC	Isolated	E13	IP
	Strode W	Levanna/Yadkin	Mylonite	1	SBC	Isolated	E13	IP
	Strode W	Levanna/Yadkin	Quartz	4	SBC	Isolated	E13	IP
	Strode W	Levanna/Yadkin	Quartzite	5	SBC	Isolated	E13	IP
	Strode W	Levanna/Yadkin	Rhyolite	1	SBC	Isolated	E13	IP
	Strode W	Madison	Chert	2	SBC	Isolated	E13	IP
	Strode W	Morrow Mountain II	Quartz	4	SBC	Isolated	E13	IP
	Strode W	Morrow Mountain II	Quartzite	5	SBC	Isolated	E13	IP
	Strode W	Orient Fishtail	Quartz	6	SBC	Isolated	E13	IP
	Strode W	Orient Fishtail	Quartzite	1	SBC	Isolated	E13	IP
	Strode W	Orient Fishtail	Rhyolite	1	SBC	Isolated	E13	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode W	pestle	Metabasalt	1	SBC	Isolated	E13	IP
	Strode W	Piscataway	Quartz	9	SBC	Isolated	E13	IP
	Strode W	Piscataway	Quartzite	1	SBC	Isolated	E13	IP
	Strode W	Potts	Quartz	3	SBC	Isolated	E13	IP
	Strode W	Savannah River	Metabasalt	3	SBC	Isolated	E13	IP
	Strode W	Savannah River	Quartzite	7	SBC	Isolated	E13	IP
	Strode W	scraper	Quartz	1	SBC	Isolated	E13	IP
	Strode W	Teardrop	Quartz	4	SBC	Isolated	E13	IP
	Strode W	Triang. Preforms	Chert	1	SBC	Isolated	E13	IP
	Strode W	Triang. Preforms	Quartz	3	SBC	Isolated	E13	IP
	Strode W	Triang. Preforms	Quartzite	3	SBC	Isolated	E13	IP
	Strode W	Vernon	Quartz	9	SBC	Isolated	E13	IP
	Strode W	Vernon	Mylonite	3	SBC	Isolated	E13	IP
	Strode W	Vernon	Quartzite	1	SBC	Isolated	E13	IP
	Strode W	Vernon	Rhyolite	2	SBC	Isolated	E13	IP
	Strode X	Bare Island	Mylonite	1	SBC	Arrowhead	E14	BR
	Strode X	Bare Island	Quartz	2	SBC	Arrowhead	E14	BR
	Strode X	biface com	Chert	1	SBC	Arrowhead	E14	BR
	Strode X	biface com	Quartz	5	SBC	Arrowhead	E14	BR
	Strode X	biface com	Quartzite	5	SBC	Arrowhead	E14	BR
	Strode X	biface frag dist	Metabasalt	1	SBC	Arrowhead	E14	BR
	Strode X	biface frag dist	Quartz	5	SBC	Arrowhead	E14	BR
	Strode X	biface frag dist	Quartzite	2	SBC	Arrowhead	E14	BR
	Strode X	biface frag mid	Metabasalt	1	SBC	Arrowhead	E14	BR
	Strode X	biface frag mid	Quartz	3	SBC	Arrowhead	E14	BR
	Strode X	Big Sandy	Quartz	2	SBC	Arrowhead	E14	BR
	Strode X	Bilobate	Quartz	1	SBC	Arrowhead	E14	BR
	Strode X	Calvert	Hornfels	1	SBC	Arrowhead	E14	BR
	Strode X	Calvert	Quartz	4	SBC	Arrowhead	E14	BR
	Strode X	cobble tool	Metabasalt	1	SBC	Arrowhead	E14	BR
	Strode X	drill	Quartzite	1	SBC	Arrowhead	E14	BR

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode X	flake	Quartz	1	SBC	Arrowhead	E14	BR
	Strode X	flake	Metabasalt	1	SBC	Arrowhead	E14	BR
	Strode X	flake	Quartzite	3	SBC	Arrowhead	E14	BR
	Strode X	hoe	Metabasalt	1	SBC	Arrowhead	E14	BR
	Strode X	Kirk CN	Quartz	1	SBC	Arrowhead	E14	BR
	Strode X	Kirk Stemmed	Quartzite	2	SBC	Arrowhead	E14	BR
	Strode X	LeCroy	Jasper	3	SBC	Arrowhead	E14	BR
	Strode X	Levanna/Yadkin	Quartzite	1	SBC	Arrowhead	E14	BR
	Strode X	Savannah River	Metabasalt Breccia	1	SBC	Arrowhead	E14	BR
	Strode X	Savannah River	Quartz	1	SBC	Arrowhead	E14	BR
	Strode X	scraper	Quartz	1	SBC	Arrowhead	E14	BR
	Strode X	Triang. Preforms	Jasper	2	SBC	Arrowhead	E14	BR
	Strode X	Vernon	Quartz	3	SBC	Arrowhead	E14	BR
	Strode Y	Bare Island	Basalt	1	SBC	Elk Run	E12	IP
	Strode Y	Bare Island	Quartzite	6	SBC	Elk Run	E12	IP
	Strode Y	biface com	Chert	1	SBC	Elk Run	E12	IP
	Strode Y	biface com	Jasper	1	SBC	Elk Run	E12	IP
	Strode Y	biface com	Metabasalt	3	SBC	Elk Run	E12	IP
	Strode Y	biface com	Mylonite	6	SBC	Elk Run	E12	IP
	Strode Y	biface com	Quartz	17	SBC	Elk Run	E12	IP
	Strode Y	biface com	Quartzite	8	SBC	Elk Run	E12	IP
	Strode Y	biface com	Rhyolite	1	SBC	Elk Run	E12	IP
	Strode Y	biface frag dist	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	biface frag dist	Quartz	11	SBC	Elk Run	E12	IP
	Strode Y	biface frag dist	Quartzite	3	SBC	Elk Run	E12	IP
	Strode Y	biface frag mid	Chert	1	SBC	Elk Run	E12	IP
	Strode Y	biface frag mid	Jasper	1	SBC	Elk Run	E12	IP
	Strode Y	biface frag mid	Quartz	7	SBC	Elk Run	E12	IP
	Strode Y	biface frag mid	Quartzite	2	SBC	Elk Run	E12	IP
	Strode Y	Big Sandy	Quartz	1	SBC	Elk Run	E12	IP
	Strode Y	Big Sandy	Quartzite	1	SBC	Elk Run	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode Y	Bilobate	Quartz	1	SBC	Elk Run	E12	IP
	Strode Y	blade flake	Jasper	3	SBC	Elk Run	E12	IP
	Strode Y	Brewerton SN	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode Y	Brewerton SN	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	Brewerton SN	Rhyolite	1	SBC	Elk Run	E12	IP
	Strode Y	Calvert	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode Y	Calvert	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	Calvert	Quartz	10	SBC	Elk Run	E12	IP
	Strode Y	chipped stone axe	Metabasalt	4	SBC	Elk Run	E12	IP
	Strode Y	core	Quartz	1	SBC	Elk Run	E12	IP
	Strode Y	drill	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	flake	Quartz	12	SBC	Elk Run	E12	IP
	Strode Y	flake	Chert	1	SBC	Elk Run	E12	IP
	Strode Y	flake	Jasper	3	SBC	Elk Run	E12	IP
	Strode Y	flake	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode Y	flake	Mylonite	4	SBC	Elk Run	E12	IP
	Strode Y	flake	Quartzite	4	SBC	Elk Run	E12	IP
	Strode Y	graver	Jasper	1	SBC	Elk Run	E12	IP
	Strode Y	graver	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	grooved axe	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode Y	Guilford	Quartz	3	SBC	Elk Run	E12	IP
	Strode Y	Halifax	Mylonite	2	SBC	Elk Run	E12	IP
	Strode Y	Halifax	Quartz	4	SBC	Elk Run	E12	IP
	Strode Y	Halifax	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	hammerstone	Diabase	1	SBC	Elk Run	E12	IP
	Strode Y	Holmes	Metabasalt	1	SBC	Elk Run	E12	IP
	Strode Y	Holmes	Quartz	2	SBC	Elk Run	E12	IP
	Strode Y	Holmes	Quartzite	2	SBC	Elk Run	E12	IP
	Strode Y	Kirk CN	Chert	1	SBC	Elk Run	E12	IP
	Strode Y	Kirk Stemmed	Mylonite	2	SBC	Elk Run	E12	IP
	Strode Y	Kirk Stemmed	Quartz	1	SBC	Elk Run	E12	IP

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode Y	Levanna/Yadkin	Chert	1	SBC	Elk Run	E12	IP
	Strode Y	Levanna/Yadkin	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	Levanna/Yadkin	Quartz	1	SBC	Elk Run	E12	IP
	Strode Y	Levanna/Yadkin	Quartzite	2	SBC	Elk Run	E12	IP
	Strode Y	MacPherson	Quartz	2	SBC	Elk Run	E12	IP
	Strode Y	Morrow Mountain II	Quartz	4	SBC	Elk Run	E12	IP
	Strode Y	Orient Fishtail	Quartz	1	SBC	Elk Run	E12	IP
	Strode Y	Palmer	Jasper	1	SBC	Elk Run	E12	IP
	Strode Y	Palmer	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	Palmer	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	Piscataway	Quartz	2	SBC	Elk Run	E12	IP
	Strode Y	Piscataway	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	Savannah River	Quartz	3	SBC	Elk Run	E12	IP
	Strode Y	Savannah River	Quartzite	5	SBC	Elk Run	E12	IP
	Strode Y	scraper	Jasper	1	SBC	Elk Run	E12	IP
	Strode Y	scraper	Mylonite	6	SBC	Elk Run	E12	IP
	Strode Y	scraper	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Y	St. Albans	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	Triang. Preforms	Mylonite	3	SBC	Elk Run	E12	IP
	Strode Y	Triang. Preforms	Quartzite	3	SBC	Elk Run	E12	IP
	Strode Y	Vernon	Mylonite	1	SBC	Elk Run	E12	IP
	Strode Y	Vernon	Quartz	6	SBC	Elk Run	E12	IP
	Strode Y	Vernon	Quartzite	1	SBC	Elk Run	E12	IP
	Strode Z	Bare Island	Quartz	1	LAC	Beaverdam	E15	MB
	Strode Z	biface com	Quartz	8	LAC	Beaverdam	E15	MB
	Strode Z	biface frag mid	Quartz	1	LAC	Beaverdam	E15	MB
	Strode Z	Bilobate	Quartz	1	LAC	Beaverdam	E15	MB
	Strode Z	Bilobate	Quartzite	2	LAC	Beaverdam	E15	MB
	Strode Z	Calvert	Quartz	2	LAC	Beaverdam	E15	MB
	Strode Z	Calvert	Quartzite	1	LAC	Beaverdam	E15	MB
	Strode Z	drill	Quartz	1	LAC	Beaverdam	E15	MB

Lithics Inventory

SITE #	SITE NAME	ARTIFACT TYPE	RAW MATERIAL	COUNT	SITE TYPE	SITE CLUSTER	HYDRO-LOGIC UNIT	PHYSIO-GRAPHIC PROVINCE
	Strode Z	flake	Quartz	3	LAC	Beaverdam	E15	MB
	Strode Z	Halifax	Mylonite	1	LAC	Beaverdam	E15	MB
	Strode Z	Halifax	Quartzite	1	LAC	Beaverdam	E15	MB
	Strode Z	Kirk CN	Quartzite	1	LAC	Beaverdam	E15	MB
	Strode Z	Potts	Quartzite	1	LAC	Beaverdam	E15	MB
	Strode Z	Savannah River	Quartzite	2	LAC	Beaverdam	E15	MB
	Strode Z	Stanly	Quartz	1	LAC	Beaverdam	E15	MB
	Strode Z	Teardrop	Quartzite	2	LAC	Beaverdam	E15	MB
	Strode Z	Vernon	Quartz	1	LAC	Beaverdam	E15	MB
	Wagoner	Brewerton SN	Chert	1	LAC	Graves Mill	E11	IP
	Wagoner	chipped stone axe	Metabasalt	1	LAC	Graves Mill	E11	IP
	Wagoner	Halifax	Quartz	4	LAC	Graves Mill	E11	IP
	Wagoner	Halifax	Quartzite	2	LAC	Graves Mill	E11	IP
	Wagoner	Holmes	Metabasalt	2	LAC	Graves Mill	E11	IP
	Wagoner	Holmes	Mylonite	1	LAC	Graves Mill	E11	IP
	Wagoner	Holmes	Quartz	2	LAC	Graves Mill	E11	IP
	Wagoner	Holmes	Quartzite	5	LAC	Graves Mill	E11	IP
	Wagoner	LeCroy	Quartz	2	LAC	Graves Mill	E11	IP
	Wagoner	Palmer	Quartz	1	LAC	Graves Mill	E11	IP
	Wagoner	Piscataway	Quartz	1	LAC	Graves Mill	E11	IP
	Wagoner	Potts	Quartzite	1	LAC	Graves Mill	E11	IP
	Wagoner	Savannah River	Quartzite	1	LAC	Graves Mill	E11	IP
	Wagoner	Vernon	Quartz	6	LAC	Graves Mill	E11	IP

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Arrowhead Patch	1	Indeterminate	Sand	Unknown	Rim	Early Woodland, Late Woodland
Arrowhead Patch	4	Indeterminate	Sand	Unknown	Body	Early Woodland, Late Woodland
Arrowhead Patch	5	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Arrowhead Patch	2	Cord Marked	Sand	Accokeek	Body	Early Woodland
Arrowhead Patch	4	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Arrowhead Patch	6	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Dejarnette Johnston	1	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Dejarnette Johnston	4	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Dejarnette Johnston	1	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Dejarnette Whitlock	1	Indeterminate	Grit	Unknown	Rim	Woodland
Demarest Pottery	2	Indeterminate	Grit	Unknown	Body	Woodland
Demarest Pottery	1	Cord Marked	Cr Biotite	Albemarle	Base	Middle-Late Woodland
Demarest Pottery	11	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Demarest Pottery	1	Incised	Cr Quartz	Albemarle	Rim	Late Woodland
Demarest Pottery	2	Incised	Grit	Albemarle	Rim	Late Woodland
Foster Rockshelter	1	Indeterminate	Grit	Unknown	Body	Woodland
Foster Rockshelter	1	Cord Marked	Cr Shell	Keyser	Rim	Late Woodland
Foster Rockshelter	3	Cord Marked	Cr Shell	Keyser	Body	Late Woodland
Foster Rockshelter	1	Incised	Cr Shell	Colonoware	Body	Historic
Foster Rockshelter	1	Burnished	Mica Grit	Moyaone	Rim	Late Woodland
Graves Bee Hive	1	Indeterminate	Grit	Unknown	Body	Woodland
Graves Bee Hive	1	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Catherine	4	Indeterminate	Cr Greenstone	Unknown	Body	Middle-Late Woodland
Graves Catherine	3	Indeterminate	Grit	Unknown	Body	Woodland
Graves Catherine	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Catherine	2	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Catherine	1	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Graves Catherine	1	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Catherine	1	Fabric Marked	Cr Greenstone	Albemarle	Rim	Middle-Late Woodland
Graves Catherine	2	Fabric Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm	1	Indeterminate	Grit	Unknown	Body	Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Graves Duck Farm	3	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm	1	Cord Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm	2	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Barn	2	Indeterminate	Grit	Unknown	Body	Woodland
Graves Duck Farm Barn	2	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Graves Duck Farm Barn	4	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Chicken House	1	Indeterminate	Grit	Unknown	Rim	Woodland
Graves Duck Farm Chicken House	4	Indeterminate	Grit	Unknown	Body	Woodland
Graves Duck Farm Chicken House	2	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Graves Duck Farm Chicken House	2	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Chicken House	1	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Graves Duck Farm Chicken House	2	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Chicken House	2	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Graves Duck Farm Chicken House	1	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Graves Duck Farm Roy Crigler	1	Indeterminate	Grit	Unknown	Body	Woodland
Graves Duck Farm Roy Crigler	1	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Graves Duck Farm Roy Crigler	2	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Roy Crigler	1	Cord Marked	Cr Amphibolite	Albemarle	Rim	Middle-Late Woodland
Graves Duck Farm Roy Crigler	1	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Graves Duck Farm Roy Crigler	1	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Trees	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Duck Farm Trees	1	Incised	Cr Quartz	Albemarle	Rim	Late Woodland
Graves Hay Lodge	3	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Hay Lodge	2	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Graves Hay Sis Aylor	2	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Margaret	4	Indeterminate	Grit	Unknown	Body	Woodland
Graves Margaret	1	Net Marked	Cr Greenstone	Popes Creek	Body	Middle Woodland
Graves Margaret	1	Cord Marked	Cr Greenstone	Albemarle	Rim	Middle-Late Woodland
Graves Margaret	8	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Margaret	7	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Margaret	1	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Graves Margaret	1	Fabric Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Graves Margaret	3	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Graves Welch	1	Fabric Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Hawley-Zimmer	2	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Hawley-Zimmer	1	Cord Marked	Cr Amphibolite	Albemarle	Rim	Middle-Late Woodland
Hawley-Zimmer	1	Cord Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Hawley-Zimmer	3	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Hawley-Zimmer	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Hawley-Zimmer	1	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Hawley-Zimmer	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Martens	1	Indeterminate	Grit	Unknown	Body	Woodland
Martens	1	Cord Marked	Sand	Accokeek	Rim	Early Woodland
Martens	1	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
Martens	3	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode 2	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode 2	1	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode 3	1	Indeterminate	Grit	Unknown	Body	Woodland
Strode 3	13	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode 3	2	Net Marked	Grit	Popes Creek	Rim	Middle Woodland
Strode 4	1	Cord Marked	Sand	Accokeek	Body	Early Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Strode 4	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode A		Indeterminate	Grit	Unknown	Rim	Woodland
Strode A	9	Indeterminate	Grit	Unknown	Body	Woodland
Strode A	15	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode A	2	Indeterminate	Cr Amphibolite	Unknown	Body	Middle-Late Woodland
Strode A	4	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode A	20	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode A	11	Cord Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Strode A	12	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode A	2	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode A	1	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode A	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
Strode A	3	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Strode A	1	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Strode A	1	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Strode B	12	Indeterminate	Sand	Unknown	Body	Woodland
Strode B	57	Indeterminate	Grit	Unknown	Body	Woodland
Strode B	58	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode B	14	Cord Marked	Sand	Accokeek	Body	Early Woodland
Strode B	12	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
Strode B	1	Net Marked	Grit	Popes Creek	Rim	Middle Woodland
Strode B	7	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode B	6	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Strode B	157	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode B	7	Cord Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Strode B	3	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode B	70	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode B	4	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
Strode B	84	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode B	1	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode B	45	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode B	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
Strode B	4	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Strode B	10	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Strode B	27	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Strode B	2	Punctated	Grit	Albemarle	Rim	Late Woodland
Strode B	1	Scraped/Incised	Grit	Albemarle	Rim	Late Woodland
Strode B	2	Applied Rim Strip/Incised	Cr Quartz	Potomac Creek	Rim	Late Woodland
Strode B	1	Cord Wrapped Dowel/Incised	Cr Quartz	Potomac Creek	Rim	Late Woodland
Strode C	3	Indeterminate	Grit	Unknown	Body	Woodland
Strode C	12	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode C	1	Net Marked	Grit	Popes Creek	Rim	Middle Woodland
Strode C	2	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode C	8	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode C	1	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland
Strode C	10	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode C	3	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode C	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
Strode C	2	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Strode C	1	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Strode C	5	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Strode C	1	Applied Rim Strip/Punctated	Grit	Potomac Creek	Rim	Late Woodland
Strode E	9	Indeterminate	Grit	Unknown	Body	Woodland
Strode E	14	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode E	7	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
Strode E	2	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode E	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode E	9	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode E	2	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode E	19	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode E	4	Fabric Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Strode E	1	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode E	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
Strode E		Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Strode E	2	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
Strode E	1	Simple Stamped	Grit	Gaston?	Body	Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Strode G	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode G	1	Cord Marked	Cr Greywacke	Albemarle	Body	Middle-Late Woodland
Strode I	3	Indeterminate	Grit	Unknown	Rim	Woodland
Strode I	11	Indeterminate	Grit	Unknown	Body	Woodland
Strode I	11	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode I	1	Cord Marked	Sand	Accokeek	Rim	Early Woodland
Strode I	5	Cord Marked	Sand	Accokeek	Body	Early Woodland
Strode I	3	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
Strode I	1	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode I	14	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode I	1	Cord Marked	Cr Granite	Albemarle	Body	Middle-Late Woodland
Strode I	1	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode I	5	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode I	5	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode I	1	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
Strode I	2	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode I	4	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Strode I	3	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Strode I	1	Applied Rim Strip/Incised	Cr Quartz	Potomac Creek	Rim	Late Woodland
Strode I	1	Applied Rim Strip/Cord Wrapped Dowel	Grit	Potomac Creek	Rim	Late Woodland
Strode J	1	Indeterminate	Grit	Unknown	Body	Woodland
Strode J	3	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode J	1	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode L	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode L	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode L	1	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode L	1	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
Strode Q	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode Q	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode Q	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode Q	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
Strode S	2	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
Strode W	27	Indeterminate	Grit	Unknown	Body	Woodland
Strode W	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
Strode W	1	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
Strode W	3	Net Marked	Grit	Popes Creek	Body	Middle Woodland
Strode W	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode W	9	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode W	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
Strode W	1	Incised	Grit	Albemarle	Rim	Late Woodland
Strode W	1	Punctated	Grit	Albemarle	Rim	Late Woodland
Strode Y	1	Net Marked	Cr Amphibolite	Popes Creek	Rim	Middle Woodland
Strode Y	2	Net Marked	Cr Amphibolite	Popes Creek	Body	Middle Woodland
Strode Y	1	Cord Marked	Cr Amphibolite	Albemarle	Rim	Middle-Late Woodland
Strode Y	1	Cord Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
Strode Y	1	Cord Marked	Cr Greywacke	Albemarle	Body	Middle-Late Woodland
Strode Y	6	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
Strode Y	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
44MA1	110	Indeterminate	Unknown	Unknown		Woodland
44MA1	4	Indeterminate	Grit	Unknown		Woodland
44MA1	7	Indeterminate	Cr Quartz/Cr Greenstone	Unknown		Middle-Late Woodland
44MA1	48	Cord Marked	Sand	Accokeek		Early Woodland
44MA1	2	Net Marked	Cr Quartz	Popes Creek		Middle Woodland
44MA1	221	Cord Marked	Cr Quartz/Cr Greenstone	Albemarle		Middle-Late Woodland
44MA1	7	Cord Marked	Cr Limestone	Page		Late Woodland
44MA1	5	Cord Marked	Cr Shell	Keyser		Late Woodland
44MA1	67	Fabric Marked	Cr Quartz/Cr Greenstone	Albemarle		Middle-Late Woodland
44MA1	12	Fabric Marked	Grit	Albemarle		Middle-Late Woodland
44MA1	1	Fabric Marked	Cr Limestone	Undefined		Middle Woodand?
44MA1	82	Plain	Cr Quartz/Cr Greenstone	Albemarle		Middle-Late Woodland
44MA1	17	Plain	Grit	Albemarle		Middle-Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
44MA1	8	Plain	Cr Limestone	Page		Late Woodland
44MA1	1	Plain	Cr Shell	Keyser		Late Woodland
44MA1	4	Scraped	Cr Quartz/Cr Greenstone	Albemarle		Middle-Late Woodland
44MA1	1	Combed	Cr Quartz/Cr Greenstone	Albemarle		Middle-Late Woodland
44MA1	7	Simple Stamped	Grit	Gaston?		Middle-Late Woodland
44MA2	2	Cord Marked	Sand	Accokeek	Body	Early Woodland
44MA9	37	Indeterminate	Sand	Unknown	Body	Woodland
44MA9	25	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA9	4	Indeterminate	Cr Gneiss	Unknown	Body	Middle-Late Woodland
44MA9	5	Indeterminate	Cr Chert	Unknown	Body	Middle-Late Woodland
44MA9	3	Indeterminate	Cr Limestone	Unknown	Body	Middle-Late Woodland
44MA9	4	Cord Marked	Sand	Accokeek	Rim	Early Woodland
44MA9	132	Cord Marked	Sand	Accokeek	Body	Early Woodland
44MA9	12	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
44MA9	85	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA9	1	Cord Marked	Cr Gneiss	Albemarle	Rim	Middle-Late Woodland
44MA9	12	Cord Marked	Cr Geniss	Albemarle	Body	Middle-Late Woodland
44MA9	5	Cord Marked	Cr Chert	Albemarle	Body	Middle-Late Woodland
44MA9	6	Cord Marked	Cr Limestone	Page	Body	Late Woodland
44MA9	1	Cord Marked	Cr Shell	Keyser	Rim	Late Woodland
44MA9	8	Cord Marked	Cr Shell	Keyser	Body	Late Woodland
44MA9	157	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA9	3	Fabric Marked	Cr Chert	Albemarle	Body	Middle-Late Woodland
44MA9	20	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA9	25	Fabric Marked	Cr Limestone	Undefined	Body	Middle-Late Woodland
44MA9	86	Plain	Sand	Unknown	Body	Woodland
44MA9	81	Plain	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA9	2	Plain	Cr Geniss	Albemarle	Body	Middle-Late Woodland
44MA9	30	Plain	Cr Chert	Albemarle	Body	Middle-Late Woodland
44MA9	25	Plain	Cr Limestone	Page	Body	Late Woodland
44MA9	13	Plain	Cr Shell	Keyser	Body	Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
44MA9	7	Scraped	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA9	20	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
44MA9	4	Applied Rim Strip	Cr Quartz	Potomac Creek	Rim	Late Woodland
44MA9	2	Applied Rim Strip	Grit	Potomac Creek	Rim	Late Woodland
44MA10	3	Indeterminate	Grit	Unknown	Body	Woodland
44MA10	2	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
44MA10	8	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA10	7	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA10	1	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
44MA10	1	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
44MA27	14	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA27	2	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
44MA27	1	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA27	5	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA27	1	Smoothed	Cr Quartz	Albemarle	Body	Late Woodland
44MA27	2	Cord Marked	Cr Limestone	Page	Body	Late Woodland
44MA63	42	Indeterminate	Grit	Unknown	Body	Woodland
44MA63	1	Indeterminate	Grit	Unknown	Base	Woodland
44MA63	15	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA63	2	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
44MA63	22	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA63	3	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
44MA63	43	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA63	1	Cord Marked	Grit	Albemarle	Base	Middle-Late Woodland
44MA63	2	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
44MA63	19	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA63	24	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA63	2	Incised	Grit	Albemarle	Rim	Late Woodland
44MA63	1	Incised	Grit	Albemarle	Body	Late Woodland
44MA63	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
44MA63	1	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
44MA63	4	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
44MA63	11	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
44MA63	1	Cord Wrapped Dowel	Fine Grit	Albemarle	Rim	Late Woodland
44MA63	2	Cord Wrapped Dowel	Fine Grit	Albemarle	Body	Late Woodland
44MA63	1	Cord Wrapped Dowel/Incised	Grit	Potomac Creek	Rim	Late Woodland
44MA72	2	Indeterminate	Grit	Unknown	Body	Woodland
44MA72	4	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA72	2	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA72	1	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
44MA87	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA102	2	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
44MA102	5	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA102	12	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA121	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA127	5	Indeterminate	Grit	Unknown	Rim	Woodland
44MA127	1	Indeterminate	Sand	Unknown	Rim	Early Woodland, Late Woodland
44MA127	32	Indeterminate	Sand	Unknown	Body	Early Woodland, Late Woodland
44MA127	54	Indeterminate	Grit	Unknown	Body	Early Woodland, Late Woodland
44MA127	38	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA127	2	Indeterminate	Cr Greenstone	Unknown	Body	Middle-Late Woodland
44MA127	7	Indeterminate	Cr Amphibolite	Unknown	Body	Middle-Late Woodland
44MA127	1	Cord Marked	Cr Steatite	Selden Island	Body	Early Woodland
44MA127	1	Cord Marked	Sand	Accokeek	Rim	Early Woodland
44MA127	12	Cord Marked	Sand	Accokeek	Body	Early Woodland
44MA127	8	Net Marked	Cr Quartz	Popes Creek	Rim	Middle Woodland
44MA127	22	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
44MA127	1	Net Marked	Cr Gneiss	Popes Creek	Body	Middle Woodland
44MA127	4	Net Marked	Grit	Popes Creek	Rim	Middle Woodland
44MA127	8	Net Marked	Grit	Popes Creek	Body	Middle Woodland
44MA127	2	Cord Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
44MA127	46	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA127	7	Cord Marked	Cr Greenstone	Albemarle	Body	Middle-Late Woodland

Ceramics Inventory

Site	# Sherds	Surface Treatment	Temper	Type	Rim/ Body/ Base	Cultural Affiliation
44MA127	9	Cord Marked	Cr Amphibolite Albemarl	Albemarle	Body	Middle-Late Woodland
44MA127	3	Cord Marked	Grit	Albemarle	Rim	Middle-Late Woodland
44MA127	62	Cord Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA127	6	Fabric Marked	Cr Quartz	Albemarle	Rim	Middle-Late Woodland
44MA127	35	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA127	7	Fabric Marked	Cr Amphibolite	Albemarle	Body	Middle-Late Woodland
44MA127	2	Fabric Marked	Grit	Albemarle	Rim	Middle-Late Woodland
44MA127	37	Fabric Marked	Grit	Albemarle	Body	Middle-Late Woodland
44MA127	1	Smoothed	Grit	Albemarle	Body	Late Woodland
44MA127	3	Cord Wrapped Dowel	Cr Quartz	Albemarle	Rim	Late Woodland
44MA127	7	Cord Wrapped Dowel	Cr Quartz	Albemarle	Body	Late Woodland
44MA127	5	Cord Wrapped Dowel	Grit	Albemarle	Rim	Late Woodland
44MA127	9	Cord Wrapped Dowel	Grit	Albemarle	Body	Late Woodland
44MA127	1	Applied Rim Strip/Punctated	Cr Quartz	Potomac Creek	Rim	Late Woodland
44MA127	1	Applied Rim Strip/Punctated	Grit	Potomac Creek	Rim	Late Woodland
44MA127	3	Applied Rim Strip/Cord Wrapped Dowel	Cr Quartz	Potomac Creek	Rim	Late Woodland
44MA127	1	Applied Rim Strip/Cord Wrapped Dowel	Grit	Potomac Creek	Rim	Late Woodland
44MA127	1	Linear Incised	Grit	Potomac Creek	Rim	Late Woodland
44MA127	1	Net Marked	Sand	Dan River?	Body	Late Woodland
44MA127	1	Net Marked	Sand	Dan River?	Rim	Late Woodland
44MA150	1	Net Marked	Cr Quartz	Popes Creek	Body	Middle Woodland
44MA150	4	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA153	1	Indeterminate	Cr Quartz	Unknown	Body	Middle-Late Woodland
44MA155	2	Cord Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland
44MA199	1	Indeterminate	Grit	Unknown	Body	Woodland
44MA199	1	Fabric Marked	Cr Quartz	Albemarle	Body	Middle-Late Woodland

Works Cited

Abel, T., and J. R. Stepp. 2003. A new ecosystems ecology for anthropology. *Conservation Ecology* 7(3):12, http://www.consecol.org/vol17/iss3/art12.

Adams, J. L. 2002. *Ground stone analysis: A technological approach*. Salt Lake City: University of Utah Press.

Adavasio, J. M. 2003. *The first Americans: In pursuit of archaeology's greatest mystery*. New York: Modern Library.

Allen, R. M. Jr. 1963. Geology and mineral resources of Greene and Madison Counties. Virginia Division of Mineral Resources Bulletin 78, Charlottesville, Virginia.

Andrefsky, W. Jr. 1994. The geological occcurrence of lithic material and stone tool production strategies. *Geoarchaeology* 9(5):375–91.

———. 2001. Emerging directions in debitage analysis. In *Lithic debitage: Context, form, meaning*, ed. W. Andrefsky, Jr., 2–20. Salt Lake City: University of Utah Press.

———. 2005. *Lithics: Macroscopic approaches to analysis*, 2nd ed. Cambridge, UK: Cambridge University Press.

Aporta, C. 2005. From map to horizons; From trail to journey: The challenges of documenting Inuit geographic knowledge. *Etudes Inuit Studies* 29(1&2):221–31.

Arnold, J. E. 1996. The archaeology of complex hunter-gatherers. *Journal of Archaeological Method and Theory* 3:77-126.

Aston, M. 1985. *Interpreting the landscape: Landscape archaeology and local history*. London: Routledge.

Bailey, C. M. 1999. Physiographic map of Virginia. http://web.wm.edu/geology/virginia/provinces/phys_regions.html.

———. 2006. Piedmont Province. http://web.wm.edu/geology/virginia/provinces/piedmont/piedmont.html.

Bailey, C. M., P. J. Berquist, S. M. Mager, B. D. Knight, N. L. Shotwell, and A. K. Gilmer. 2003. Bedrock geology of the Madison Quadrangle, Virginia. Virginia Division of Mineral Resources Publication 157, Charlottesville, VA.

Balée, W., and C. L. Erikson. 2006. Time, complexity, and historical ecology. In *Time and complexity in historical ecology: Studies in the neotropical lowlands*, eds. W. Balee and C. L. Erikson, 1–20. New York: Columbia University Press.

Banning, E. B. 2002. *Archaeological survey*. New York: Kluwer.

Barber, M. B. 1983. Archaeological perspective of the northern Blue Ridge. In *Upland archaeology in the East: A symposium*, eds. C. R. Geier, M. B. Barber, and G. A. Tolley, 116–29. USDA Forest Service Cultural Resources Report No. 2, Atlanta.

———. 2001. Small sites on the Appalachian Mountain slopes: Changes in altitudes, changes in attitudes. *Journal of Middle Atlantic Archaeology* 17:85–94.

———. 2005. Prehistoric rockshelter use on Virginia's Appalachian Plateau: Settlement patterns, looting, and survivability. *Archaeology of Eastern North America* 33:31–49.

———. 2008. The Keyser Farm Site (44PA1): Dual occupations, diachronic change, the deer skin trade, and current hypotheses. Paper presented at Upland Archaeology in the East Symposium X, Radford, VA.

Barber, M. B., and G. A. Tolley. 1999. Lithic utilization patterns in the Blue Ridge of Virginia. *Journal of Middle Atlantic Archaeology* 15:187–200.

Barber, M. B., G. A. Tolley, M. A. Martin, J. C. Hardison, and M. J. Madden. 2003. Archaeological investigations on the George Washington and Jefferson National Forests during fiscal years 1996–2002 with appendices for 2001 and 2002. Vol. 1. Prepared under Programmatic Agreement with the Virginia Department of Historic Resources and the Advisory Council on Historic Preservation, USDA Forest Service, Roanoke, VA.

Barfield, E. B., and M. B. Barber. 1992. Archaeological and ethnographic evidence of subsistence in Virginia during the Late Woodland period. In *Middle and Late Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 225–48. Richmond: Archeological Society of Virginia.

Barron, E. S. 2007. Maryland morels. In *Nontimber forest products as human ecological systems*, ed. M. R. Emery. Coweeta Long Term Ecological Research, University of Georgia, Athens. http://coweeta.ecology.uga.edu/ecology/web_learning/resources/feb4/Emery_4_feb.pdf.

Bearinger, D. 2005. The need for a state-wide conversation on the future of rural Virginia. Virginia Foundation for the Humanities, Charlottesville. http://www.virginiafoundation.org/grants/ruralva.doc

Bender, B. 1999. Introductory comments, dynamic landscapes and socio-political process. *Antiquity* 73:632–34.

Bender, S. J., and G. A. Wright. 1988. High altitude occupations, cultural process, and high plains prehistory: Retrospect and prospect. *American Anthropologist* 90(30):619–39.

Beniston, M. 2000. *Environmental change in mountains and uplands*. New York: Oxford University Press.

Billman, B. R. 1999. Settlement pattern research in the Americas: Past, present, and future. In *Settlement pattern studies in the Americas: Fifty years since Viru,* eds. B. R. Billman and G. M. Feinman, 1–5. Washington: Smithsonian Institution Press.

Binford, L. R. 1962. Archaeology as anthropology. *American Antiquity* 28:217–25.

———. 1980. Willow smoke and dogs' tails: Hunter-gatherer settlement systems and archaeological site formation. *American Antiquity* 45(1):4–20.

———. 1982. The archaeology of place. *Journal of Anthropological Anthropology* 1:5–31.

———. 1991. *Cultural diversity among aboriginal cultures of coastal Virginia and North Carolina.* New York: Garland.

Bintliff, J. 1991. The contribution of an annaliste/structural history approach to archaeology. In *The annales school and archaeology*, ed. J. Bintliff, 1–33. New York: New York University Press.

Blanton, D. B. 1992. Middle Woodland settlement systems in Virginia. In *Middle and Late Woodland research in Virginia: A synthesis,* eds. T. R. Reinhart and M. E. N. Hodges, 65–96. Richmond: Archeological Society of Virginia.

———. 2003. The summers mask: Putting a face on Virginia's Late Woodland people. Paper presented at the annual meeting of the Archeological Society of Virginia, Williamsburg, VA.

Blume, C. 1991. A women's nutting camp. Paper presented at the annual meeting of the Middle Atlantic Archaeological Conference, Rehoboth Beach, DE.

Botkin, D. B. 1990. *Discordant harmonies: A new ecology for the twenty-first century*. Oxford: Oxford University Press.

Botwick, B. 1995. Phase II archaeological investigation of Sites 44MA114 and 44MA115, Route 15 bridge replacement, Madison County, Virginia. Virginia Department of Transportation Project 0015-056-702, M600, on file with the Virginia Department of Historic Resources, Richmond, VA.

Boyd, C. C. 1989. Paleoindian paleoecology and subsistence in Virginia. In *Paleoindian research in Virginia: A synthesis,* eds. J. M. Wittkofski and T. R. Reinhart, 139–56. Richmond: Archeological Society of Virginia Special Publication 19.

———. 2003. Paleoindian research in Virginia and beyond. *Quarterly Bulletin of the Archeological Society of Virginia* 58(2):58–93.

Boyd, C. C. Jr. 2004. Monacans as moundbuilders? *American Antiquity* 69:361–63.

Boyd, R., and P. J. Richerson. 1985. *Culture and evolutionary Process*. Chicago: University of Chicago Press.

Boyer, W. P. Jr. 1982. Archaeological survey and site location prediction: Towards an understanding of prehistoric settlement pattern in western Virginia. PhD diss., The Catholic Univ. of America.

Boyer, W. P. Jr., and C. L. Nash. 1998. Some thoughts on micro-environmental variability, uplands archaeology, resource management, and perception. Paper presented at the annual meeting of the Middle Atlantic Archaeological Conference, Cape May, NJ.

Bradley, B., and D. Stanford. 2005. The North Atlantic ice-edge corridor: A possible Paleolithic route to the New World. *World Archaeology* 36(4):459–78.

Brady, J. E., and W. Ashmore. 1999. Mountains, caves, water: Ideational landscapes of the ancient Maya. In *Archaeologies of landscape: Contemporary perspectives,* eds. A. B. Knapp and W. Ashmore, 124–45. Oxford: Blackwell.

Braudel, F. 1972. *The Mediterranean and the Mediterranean world in the age of Phillip II,* rev. ed., trans. S. Reynolds. London: Collins.

Braun, E. L. 1950. *Deciduous forests of eastern North America.* Philadelphia: Blakiston.

Brown, H. 2000. Wildland burning by American Indians in Virginia. *Fire management today* 60(3):29-39.

Broyles, B. J. 1971. Second preliminary report: The St. Albans Site, Kanawha County, West Virginia. West Virginia Geological and Economic Survey Report of Archaeological Investigations No. 3, Morgantown, WV.

Brown, H. 2000. Wildland burning by native Americans in Virginia. *Fire Management Today* 60(3):29–39.

Brush, S. B. 1984. The anthropology of highland peoples. In Cultural adaptation to mountain environments, eds. P. Beaver and B. Purrington, 159-167. Southern Anthropological Proceedings No. 17. Athens: University of Georgia Press.

Burt, R., ed. 2004. *Soil survey laboratory methods manual. Soil Survey Investigations Report No. 42, Version 4.0.* http://soils.usda.gov/technical/lmm/.

Busby, V., and P. Pendleton. 1993. Phase I archaeological survey of a section of Route 607, Madison County, Virginia, conducted by Louis Berger & Associates for VDOT. Virginia Department of Transportation Project 0607-056-166, C502, on file with the Virginia Department of Historic Resources, Richmond, VA.

Bushnell, D. I. 1919. Native villages and village sites east of the Mississippi. Smithsonian Institution Bureau of American Ethnology Bulletin 69, Washington, DC.

———. 1930. *Five Monacan towns in Virginia, 1607*. Smithsonian Institution Miscellaneous Collections 82(12), Washington, DC.

———. 1933. Evidence of Indian occupancy in Albemarle County, Virginia. Smithsonian Miscellaneous Collections 94(8), Washington, DC.

———. 1934. Tribal migrations east of the Mississippi. Smithsonian Institution, Miscellaneous Collections 89(12), Washington, DC.

———. 1935. *The Manahoac tribes in Virginia, 1608*. Smithsonian Institution Miscellaneous Collections 94(8), Washington, DC.

———. 1940. Evidence of early Indian occupancy near the Peaks of Otter, Bedford County, Virginia. Smithsonian Miscellaneous Collections 99(1), Washington, DC.

Caldwell, J. L. 1958. Trend and tradition in the prehistory of the eastern United States. American Anthropological Association Memoir No. 88, Menasha, WI.

Cannon, A. 1999. Archaeology of North American hunters and gatherers. In *The Cambridge Encyclopedia of Hunters and Gatherers*, eds. R. B. Lee and R. Daly, 31–35. Cambridge, UK: Cambridge University Press.

Carbone, V. A. 1976. Environment and prehistory in the Shenandoah Valley. PhD diss., The Catholic Univ. of America.

Carmody, M. L., and K. S. Barile. 2005. Cultural resource survey of the Fordsville cellular tower site, Madison County Virginia. On file with the Virginia Department of Historic Resources, Richmond, VA.

Carr, K. 2008. The contribution of prehistoric archaeological sites in a plowzone context to our understanding of past cultural behavior and their eligibility to the National Register of Historic Places. In *Current approaches to the analysis and interpretation of small lithic sites in the Northeast*, ed. C. B. Rieth. New York State Museum Bulletin No. 508, New York State Education Department, Albany.

Carr, K. W., and J. Keller. 1998. *The development of prehistoric settlement pattern research priorities in Pennsylvania.* Harrisburg: Pennsylvania Historical and Museum Commission Bureau for Historic Preservation.

Carr, K. W. and J. M. Adovasio. 2002. PaleoIndians in Pennsylvania. In *Ice age peoples of Pennsylvania*, eds. Kurt Carr and James Adovasio, 1-50. Harrisburg, PA: Pennsylvania Historical and Museum Commission.

Carroll, W. D., P. R. Kapeluck, R. A. Harper, and D. H. Van Lear. 2002. Background paper: Historical overview of the southern forest landscape and associated resources. In *Southern Forest Resource Assessment*, eds. D. N. Wear and J. G. Greis, 583–605. USDA Forest Service Southern Research Station, Asheville, NC.

Catlin, M. A. 1986. Regional research designs in the study of prehistoric culture change: An analysis of Late Archaic adaptations in the Middle Atlantic Piedmont. PhD diss., Univ. of Virginia.

Chapman, J. 1975. *The Rose Island Site and the cultural and ecological position of the bifurcate point tradition in eastern North America*. University of Tennessee Department of Anthropology Report of Investigations 14, Knoxville, TN.

Childress, W., and D. B. Blanton. 1997. A radiocarbon date on a deeply buried stratum yielding a Plano-like projectile point from the Smith Mountain Site in Virginia. *Current Research in the Pleistocene* 14:12–14.

Ching, B. and G.W. Creed. 1997. *Knowing your place: Rural identity and cultural hierarchy*. New York: Routledge.

Chilton, E. S. 1996. Late Woodland archaeology in the Middle Connecticut Valley: Ceramic complexity and cultural dynamics. *Journal of Middle Atlantic Archaeology* 12:67–79.

Clarkson, C. 2008. Lithics and landscape archaeology. In *Handbook of Landscape archaeology*, eds. B. David and J. Thomas, 490-501. Walnut Creek: Left Coast Press.

Cleland, C. E. 1976. The focal-diffuse model: An evolutionary perspective on the prehistoric cultural adaptations of the eastern United States. *Mid-Continental Journal of Archaeology* 1(1):56–76.

Coe, J. 1952. The cultural sequence of the Carolina Piedmont. In *Archaeology of the eastern United States*, ed. J. B. Griffin, 301–11. Chicago: University of Chicago Press.

———. 1964. *The formative cultures of the Carolina Piedmont.* Transactions of the American Philosophical Society, n.s., 54, pt. 5, Philadelphia.

Coe, J. and E. Lewis. 1952. Dan River Series statement. In *Prehistoric pottery of the Eastern United States*, ed. J. B. Griffin. Ann Arbor: Museum of Anthropology, University of Michigan.

Collins, M. B. 2002. The Gault Site, Texas, and Clovis research. *Athena Review* 3(2):31–41.

Conolly, J. 2008. Geographical information systems and landscape archaeology. In *Handbook of Landscape archaeology*, eds. B. David and J. Thomas, 583-595. Walnut Creek: Left Coast Press.

Cook, S. R. 2000. *Monacans and miners: Native American and coal mining communities in Appalachia*. Lincoln: University of Nebraska Press.

Cornell Ornithology Laboratory. 2007. Citizen science central. http://www.birds.cornell.edu/citscitoolkit

Cowan, F. L. 1999. Making sense of flake scatters: Lithic technological strategies and mobility. *American Antiquity* 64(4):593–607.

Cronon, W. 2003. *Changes in the land: Indians, colonists, and the ecology of New England.* New York: Hill and Wang.

Cross, D. 1941. *Archaeology of New Jersey, Vol. 1*. Trenton: Archaeological Society of New Jersey and New Jersey State Museum.

Crowell, E. 2008. Public archaeology in Fairfax County. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, MD.

Crumley, C. L. 1993. Analyzing historic ecotonal shifts. *Ecological Applications* 3(3):377–84.

———, ed. 1994. *Historical ecology: Cultural knowledge and changing landscapes*. Santa Fe, NM: School of American Research Press.

———. 1995. *Heterarchy and the analysis of complex societies.* Heterarchy and the Analysis of Complex Societies: Archaeological Papers of the American Anthropological Association 6:1–5.

———. 1999. Sacred landscapes: Constructed and conceptualized. In *Archaeologies of landscape: Contemporary perspectives*, eds. W. Ashmore and A. B. Knapp, 269–76. Oxford: Blackwell.

———. 2002. Reading the land: The archaeology of settlement and land use. In *Archaeology: Original readings in method and practice,* eds. C. Ember and M. Ember, 298–316. Upper Saddle River, NJ: Prentice Hall.

Crumley, C. L., and W. H. Marquardt. 1990. Landscape: A unifying concept in regional analysis. In *Interpreting space: GIS and archaeology,* eds. K. M. Allen, S. W. Green, and E. B. W. Zubrow, 73–79. London: Taylor and Francis.

Cumming, G. S., D. H. M. Cumming, and C. L. Redman. 2006. Scale mismatches in social-ecological systems: Causes, consequences, and solutions. *Ecology and Society* 11(1):14, http://www.ecologyand society.org/vol11/iss1/art14.

Curry, D. C., and M. Kavanagh. 1991. The Middle to Late Woodland transition in Maryland. *North American Archaeologist* 12(1):3–28.

Custer, J. F. 1979. An evaluation of sampling techniques for cultural resources reconnaissance in the Middle Atlantic area of the United States. PhD diss., The Catholic Univ. of America.

———. 1986. Late Woodland cultural diversity in the Middle Atlantic: An evolutionary perspective. In *Late Woodland cultures of the Middle Atlantic region*, ed. J. F. Custer, 143–68. Newark: University of Delaware Press.

———. 1988. Lithic scatter sites of the Piedmont Zone of Pennsylvania, Maryland, and Delaware. *Pennsylvania Archaeologist* 58(1):30–42.

———. 1989. *Prehistoric cultures of the Delmarva Peninsula*. Newark: University of Delaware Press.

———. 1990. An introduction to papers on the Middle/Late Woodland transition in the Middle Atlantic regions: Part I. *North American Archaeologist* 11(3):205–07.

———. 1994. Current archaeological research in the Middle Atlantic region of the eastern United States. *Journal of Archaeological Research* 2(4):329–60.

Custer, J. F., and E. B. Wallace. 1982. Patterns of resource distribution and archaeological settlement patterns in the Piedmont Uplands of the Middle Atlantic Region. *North American Archaeologist* 3:139–72.

Darville, T. 2008. Pathways to a panoramic past: A brief history of landscape archaeology in Europe. In *Handbook of Landscape Archaeology*, eds. B. David and J. Thomas, 60-76. Walnut Creek: Left Coast Press.

David, D. and J. Thomas. 2008. Landscape archaeology: Introduction. In *Handbook of Landscape archaeology*, eds. B. David and J. Thomas, 27-43. Walnut Creek: Left Coast Press.

David, D.E. 2006. Historical significance of American chestnut to Appalachian culture and ecology. In *Restoration of American chestnut to forest lands*, ed. K.C. Steiner and J. E. Carlson, 53-60. Washington, DC: National Park Service.

Davis, M. B. 1996. Extent and location. In *Eastern old-growth forests: Prospects for rediscovery and recovery*, ed. M. B. Davis, 18–32. Washington, DC: Island Press.

Deetz, J. 1990. Landscapes as cultural statements. In *Earth patterns: Essays in landscape and archaeology*, eds. W. M. Kelso and R. Most, 1–4. Charlottesville: University Press of Virginia.

Delcourt, P. A., and H. R. Delcourt. 1985. Quaternary palynology and vegetational history of the southeastern United States. In *Pollen records of Late-Quaternary North American sediments*, eds. V. Bryant, Jr. and R. G. Holloway, 1–37. Dallas, TX: American Association of Stratigraphic Palynologists Foundation.

———. 1987. *Long-term forest dynamics of the Temperate Zone: A case study of Late-Quaternary forests in eastern North America*. New York: Springer.

———. 1998. The influence of prehistoric human-set fires on oak-chestnut forests in the southern Appalachians. *Castanea* 63:337–45.

———. 2000. Eastern deciduous forests. In *North American terrestrial vegetation,* 2nd ed., eds. M. G. Barbour and W. D. Billings, 357–95. Cambridge, UK: Cambridge University Press.

———. 2004. *Prehistoric Native Americans and ecological change*. Cambridge, UK: Cambridge University Press.

Deller, D. B. and C. J. Ellis 1984. Crowfield: A preliminary report on a probable Paleo-Indian cremation in southwestern Ontario. *Archaeology of Eastern North America* 12:41-71.

Dent, R. J. 1995. *Chesapeake prehistory: Old traditions, new directions.* New York: Plenum.

Dent, R. J., and C. A. Jirikowic. 2001. Accokeek Creek: Chronology, the Potomac Creek Complex, and Piscataway origins. *Journal of Middle Atlantic Archaeology* 17:39–58.

Dincauze, D. F. 2000. *Environmental archaeology: Principles and practice*. Cambridge, UK: Cambridge University Press.

Dunham, G. H. 1994. Common ground, contesting visions: The emergence of burial mound ritual in Late Prehistoric central Virginia. PhD diss., Univ. of Virginia.

Dunnell, R. C. 1990. The role of the Southeast in American archaeology. *Southeastern Archaeology* 9(1):11–22.

———. 1992. The Notion site. In *Space, Time, and Archaeological Landscapes*, eds. J. Rossignol and L. Wandsnider, 21–41. New York: Plenum.

Dunnell, R. C., and W. S. Dancey. 1983. The siteless survey: A regional scale data collection strategy. *Advances in Archaeological Method and Theory* 6:267–87.

Eaton, L. S. 1999. Debris flows and landscape evolution in the Upper Rapidan Basin, Blue Ridge Mountains, Virginia. PhD diss., Univ. of Virginia.

Egghart, C. 1988. Phase II archaeological investigations on 44MA107, a multiple component site complex on the Rapidan River in Madison County, Virginia. Virginia Department of Transportation Project 0015-068-104, PE 101. On file with the Virginia Department of Historic Resources, Richmond, VA.

Egghart, C., L. Boyd, and J. M. Joseph. 1994. Phase I cultural resource survey of areas to be impacted by the proposed replacement of the Route 15 bridge over the Robinson River in Madison County, Virginia. Virginia Department of Transportation Project 0015-056-702, M600, on file with the Virginia Department of Historic Resources, Richmond, VA.

Egloff, K. T., M. B. Barber, C. Reed, and T. R. Whyte. 1994. The Leggett Site (44HA23), Halifax County: A Dan River agricultural/riverine community. *Quarterly Bulletin of the Archeological Society of Virginia* 49(3):89–120.

Egloff, K. T., and M. E. N. Hodges. 1989. The Cullers Site: 44PA128, Page County, Virginia. Virginia Division of Historic Landmarks Technical Report Series 2, Richmond, VA.

Egloff, K.T. and S. R. Potter. 1982. Indian ceramics from coastal plain Virginia. *Archaeology of Eastern North America* 10:95-117.

Elder, J. H., Jr. and D. E. Pettry. 1975. Soil survey of Madison County, Virginia. USDA Soil Conservation Service, Washington, DC.

Ellen, R. 1982. *Environment, subsistence, and system: The ecology of small-scale social formations*. Cambridge, UK: Cambridge University Press.

Environmental Systems Research Institute (ESRI). 2008. What is GIS? http://www.gis.com/whatisgis/index/html

Erichsen-Brown, C. 1979. *Medicinal and other uses of North American plants: A historical survey with special reference to eastern Indian tribes*. New York: Dover.

Espenshade, C. T. 2001. Two native potters "speak" about punctates: Harding Flats data and the Clemsons Island concept. *Journal of Middle Atlantic Archaeology* 17:59–84.

Evans, C. 1955. A ceramic study of Virginia archaeology. Bureau of American Ethnology Bulletin 160, Washington, DC.

Evans, J. G. 2003. *Environmental archaeology and the social order*. London: Routledge.

Feinman, G. T. 1999. Defining a contemporary landscape approach. *Antiquity* (73):684–86.

Feld, S. 1996. Waterfalls of song: An acoustemology of place resounding in Bosavi, Papua New Guinea. In *Senses of place*, eds. S. Feld and K. H. Basso, 91–135. Santa Fe, NM: School of American Research.

Feld, S., and K. H. Basso. 1996. Introduction. In *Senses of Place*, eds. S. Feld and K. H. Basso, 3–11. Santa Fe, NM: School of American Research Press.

Fenton, W. 1978. Northern Iroquoian culture patterns. In *Handbook of North American Indians*, Volume 15, Northeast, ed. B. Trigger, 296-321. Washington, DC: Smithsonian Institution Press.

Fichter, L. S., and S. J. Baedke. 2000. The geological evolution of Virginia and the Middle Atlantic Region. http://csmres.jmu.edu/geollab/vageol/vahist/.

Fish, S. K. 1999. Conclusions: The settlement pattern concept from an Americanist perspective. In *Settlement pattern studies in the Americas: Fifty years since Viru*, eds. B. Billman and G. Feinman, 181–86. Washington, DC: Smithsonian Institution Press.

Fish, S. K., and S. A. Kowalewski. 1990. Introduction. In *The archaeology of regions: A case for full-coverage survey*, eds. S. K. Fish and S. A. Kowalewski, 1–5. Washington: Smithsonian Institution Press.

Fisher, C. T., and G. M. Feinman. 2005. Introduction to "Landscapes over time: Resilience, degradation, and contemporary lessons." *American Anthropologist* 107(1):62–69.

Fisher, C. T., and T. L. Thurston. 1999. The topography of anthropogenic environments in global perspective. *Antiquity* (73):630–32.

Fleming, G. P., P. P. Coulling, K. D. Patterson, and K. Taverna. 2006. The natural communities of Virginia: Classification of ecological community groups, second approximation, version 2.2. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. http://www.dcr.virginia.gov/natural_heritage/ncintro.shtml.

Forman, R. T. T. 1995. *Land mosaics: The ecology of landscapes and regions*. Cambridge, UK: Cambridge University Press.

Foss, R. 1977. Man and mountain: An archaeological review of the Shenandoah National Park. MA thesis, Univ. of Virginia.

Foss, R. W. 1983. Blue Ridge prehistory: A perspective from the Shenandoah National Park. In *Upland archaeology in the East: A symposium*, eds. C. R. Geier, M. B. Barber, and G. A. Tolley, 91–103. USDA Forest Service Cultural Resources Report No. 2, Atlanta.

Fowke, G. 1894. Archaeologic investigations in James and Potomac Valleys. Bureau of American Ethnology Bulletin 23, Washington, DC.

Fowler, C. S., and N. J. Turner. 1999. Ecological/cosmological knowledge and land management among hunter-gatherers. In *The Cambridge encyclopedia of hunters*

and gatherers, eds. R. B. Lee and R. Daly, 419–25. Cambridge, UK: Cambridge University Press.

Gallivan, M. D. 1997. The Leatherwood Creek Site: A Dan River phase site in the southern Virginia Piedmont. *Quarterly Bulletin of the Archeological Society of Virginia* 52:150–71.

———. 1999. The Late Prehistoric James River village: Household, community, and regional dynamics. PhD diss., Univ. of Virginia.

———. 2003. Early horticultural settlement in the James River Piedmont: Excavations at the Partridge Creek Site (44AH193), Stapleton, Virginia. Virginia Department of Historic Resources Research Report Series No. 12, Richmond, VA.

Gardner, W. M. 1974. The Flint Run Complex: Pattern and process during the Paleo-Indian to Early Archaic. In *The Flint Run Paleo-Indian Complex: A preliminary report, 1971–1973 Seasons,* ed. W. M. Gardner, 5–47. Catholic University of America Occasional Publication 1, Washington, DC.

———. 1982. Early and Middle Woodland in the Middle Atlantic: An overview. In *Practicing environmental archaeology: Methods and interpretations*, ed. R. Moeller, 53–85. Occasional Paper No. 3, American Indian Archaeological Institute, Washington, CT.

———. 1983a. What goes up must come down: Transhumance in the mountainous zones of the Middle Atlantic. In *Upland archaeology in the East: A symposium*, eds. C. R. Geier, M. B. Barber, and G. A. Tolley, 2–42. USDA Forest Service Cultural Resources Report No. 2, Atlanta.

———. 1983b. Comments on a conference on Piedmont archaeology. In *Piedmont archaeology: Recent research and results*, eds. J. M. Wittkofski and L. E. Browning, 148–60. Richmond: Archeological Society of Virginia Special Publication No. 10.

———. 1984. External cultural influences in the western Middle Atlantic: A neo-diffusionist approach or you never know what went on under a rhododendron bush until you look. In *Upland Archaeology in the East:*

Symposium Number 2, ed. M. B. Barber, 118–46. Richmond: Archeological Society of Virginia.

———. 1986. *Lost arrows and broken pottery: Traces of Indians in the Shenandoah Valley*. Manassas, VA: Thunderbird Museum Publications.

———. 1987. Comparison of ridge and valley, Blue Ridge, Piedmont and coastal plain Archaic Period site distribution: An idealized transect (preliminary model). *Journal of Middle Atlantic Archaeology* 3:49–80.

———. 1989. An examination of cultural change in the Late Pleistocene and Early Holocene (circa 9200 to 6800 B.C.). In *Paleoindian research in Virginia: A synthesis*, eds. J. M. Wittkofski and T. R. Reinhart, 5–49. Richmond: Archeological Society of Virginia.

———. 1993. Early/Middle Woodland mounds in the upper Shenandoah Valley and contiguous regions in West Virginia: Observations on the distribution and variations in internal structure. Paper presented at the annual meeting of the Middle Atlantic Archaeological Conference, Ocean City, MD.

———. 1994. Phase II archaeological investigations at 44CU93, Culpeper County, Virginia. Report submitted by Thunderbird Archeological Associates to the Rappahannock Electric Cooperative, Fredericksburg, VA.

———. 2000. Recent observations on the post-1800 B.C. Late Archaic, Early Woodland, and Middle Woodland. Paper presented at the annual meeting of the Eastern States Archaeological Federation, Solomons Island, MD.

Gardner, W. M., and W. P. Boyer, Jr. 1978. A cultural resources reconnaissance of portions of the northern segment of Massanutten Mountain in the George Washington National Forest, Page, Warren, and Shenandoah Counties, Virginia. Atlanta: USDA-Forest Service, Southern Region, Archaeological Report No. 2.

Gardner, W. M., and V. A. Carbone. n.d. Environment and prehistory in the Middle Atlantic. Unpublished manuscript on file with the Thunderbird Research Corp., Manassas, VA.

Gardner, W. M., and C. L. Nash. 1990. An Early and Middle Woodland ceramic sequence from the Shenandoah Valley. Paper presented at the annual meeting of the Middle Atlantic Archaeological Conference, Ocean City, MD.

Gardner, W. M. and R. A. Verrey. 1979. Typology and chronology of fluted points from the Flint Run area. *Pennsylvania Archaeologist* 49(1-2):13-46.

Gathright, T. M. II. 1976. Geology of the Shenandoah National Park, Virginia. Virginia Division of Mineral Resources Bulletin 86, Charlottesville, VA.

Geier, C. R., and W. P. Boyer, Jr. 1982. The Gathright Dam-Lake Moomaw cultural resource investigations: A synthesis of prehistoric data. Report submitted to U.S. Army Corps of Engineers, Norfolk District. Occasional Papers in Anthropology No. 15, James Madison University, Harrisonburg, VA.

Gleach, F. W. 1987. A compilation of radiocarbon dates with applicability to central Virginia. *Quarterly Bulletin of the Archaeological Society of Virginia* 40:180-200.

Godfrey, M. A. 1997. *Field guide to the Piedmont.* Chapel Hill: University of North Carolina Press.

Gold, D. L. 2004. *The bioarchaeology of Virginia burial mounds*. Tuscaloosa: University of Alabama Press.

Goodyear, A. C. 2005. Evidence for pre-Clovis sites in the eastern United States. In *Paleoamerican origins: Beyond Clovis*, eds. R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, 103–12. College Station: Texas A&M University Press.

Grinnan, A. G. 1895. The last Indians in Orange County, Virginia. *Virginia Historical Magazine* 3(2):189–91.

Grossman, D. H., D. Faber-Langendoen, A. S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Gooding, et al. 1998. *International classification of ecological communities: Terrestrial vegetation of the United States. Volume I: The national vegetation classification system: Development, status, and applications.* Arlington, VA: The Nature Conservancy.

Guillet, D. 1983. Toward a cultural ecology of mountains: The central Andes and the Himalayas compared. *Current Anthropology* 24(5):561–74.

Hantman, J. L. 1985. The archaeology of Albemarle County: Results of a systematic survey of proposed development areas in Albemarle County, Virginia. Archaeological Survey Monograph Series 2, University of Virginia Department of Anthropology, Charlottesville, VA.

———. 1990. Between Powhatan and Quirank: Reconstructing Monacan culture and history in the context of Jamestown. *American Anthropologist* 92:676–90.

———. 1993. Relations between Powhatan and the Piedmont Monacans. In *Powhatan foreign relations*, ed. H. C. Rountree, 94–111. Charlottesville: University Press of Virginia.

———. 2001. Monacan archaeology of the Virginia interior, A.D. 1400–1700. In *Societies in eclipse: Archaeology of the eastern woodland Indians, A.D. 1400–1700*, eds. D. S. Brose, C. W. Cowan, and R. C. Mainford, Jr., 107–24. Washington: Smithsonian Institution Press.

———. 2007. Archaeology program at the University of Virginia. Presentation for the Virginia Department of Historic Resources Academic Summit, annual meeting of the Archeological Society of Virginia, Williamsburg, VA.

———. 2008. Archaeology and Virginia Indian history. In *The Virginia Indian heritage trail*, 2nd ed., ed. K. Wood, 8–10. Charlottesville: Virginia Foundation for the Humanities.

Hantman, J. L., and G. Dunham. 1993. The enlightened archaeologist. *Archaeology* 46(3):44–49.

Hantman, J. L., G. Dunham, and D. Gold. 2003. Collective burial in Late Prehistoric Virginia: Excavation and analysis of the Rapidan Mound. *American Antiquity* 68(1):109-128.

Hantman, J. L., and M. J. Klein. 1992. Middle and Late Woodland archaeology in Piedmont Virginia. In *Middle and Late Woodland research in Virginia: A*

synthesis, eds. T. R. Reinhart and M. E. N. Hodges, 137–64. Richmond: Archeological Society of Virginia.

Hantman, J. L., K. Wood, and D. Shields. 2000. Writing collaborative history: How the Monacan Nation and archaeologists worked together to enrich our understanding of Virginia's native peoples. *Archaeology* 53(5):56–59.

Hart, J., E. A. Reber, R. G. Thompson, and R. Lusteck. 2008. Taking variation seriously: Testing the steatite mast-processing hypothesis with microbotanical data from the Hunter's Home Site, New York. *American Antiquity* 73(4):729–41.

Harvey, F. 2008. *A primer of GIS: Fundamental geographic and cartographic concepts*. New York: Guilford.

Hayden, B. P., and P. J. Michaels. 2000. Virginia's climate. University of Virginia Climatology Office Web site. http://climate.virginia.edu/description.htm.

Hayes, D. R., and G. W. Monaghan. 1998. The down and dirty approach to a variable archaeological record: A geomorphological framework for archaeological site formation, preservation, and discovery in the James and Potomac River Basins. Paper presented at the annual meeting of the Society for American Archaeology, Seattle, WA.

Hebard, F. V., M. L. Double, and W. L. MacDonald. 2007. A pathogen without rival. In *Mighty giants: An American chestnut anthology*, eds. C. Bolgiano and G. Novak, 171–77. Bennington, VT: American Chestnut Foundation.

Hinsley, C. M. 1981. *The Smithsonian and the American Indian: Making a moral anthropology in Victorian America*. Washington, DC: Smithsonian Institution Press.

Hirsch, E. 1995. Landscape: Between place and space. In *The anthropology of landscapes: Perspectives on place and space,* eds. E. Hirsch and M. O'Hanlon, 1–30. Oxford, UK: Clarendon Press.

Hirsch, E., and M. O'Hanlon. 1995. Landscape: Between space and place. In *The anthropology of landscape: Perspectives on place and space*, eds. E. Hirsch and M. O'Hanlon, 1–30. Oxford, UK: Oxford University Press.

Hoffman, M. A. 1975. Archaeological survey and test excavations in the Swift Run Gap Area of the Shenandoah National Park. Report submitted to the U.S. Department of the Interior, National Park Service, Denver Service Center, Denver, CO.

Hoffman, M. A., J. H. Cleland, T. C. Funk, and R. W. Vernon. 1975. The Shenandoah National Park as a cultural resource: An evaluation of past archaeological surveys and work in the Shenandoah National Park. U.S. Department of the Interior, National Park Service Denver Service Center, Denver, CO.

Hoffman, M. A., R. W. Foss, J. Van Atta, and R. W. Vernon. 1979. Patterns in time: Human adaptation in the Blue Ridge from 7000 B.C. to 1930 A.D. Report submitted to the U.S. Department of the Interior, National Park Service, Mid-Atlantic Regional Office, Philadelphia.

Hoffman, M. A., and R. W. Foss. 1980. Blue Ridge prehistory: A general perspective. *Quarterly Bulletin of the Archeological Society of Virginia* 34(4):185–210.

Hoffman, M. A., D. McLearen, J. Miller, C. L. Perdue, N. Martin-Perdue, R. Vernon, D. Lyne, and R. Foss. 1976. Man in the Blue Ridge: The cultural resources of the Shenandoah National Park—A multi-disciplinary approach. Report submitted to the U.S. Department of the Interior, National Park Service, Mid-Atlantic Regional Office, Philadelphia.

Holland, C. G. 1955. An analysis of projectile points and large blades. In *A Ceramic Study of Virginia Archaeology*, ed. C. Evans. Bureau of American Ethnology Bulletin 160, Washington, DC.

———. 1960. Preceramic and ceramic cultural patterns in Northwest Virginia. Bureau of American Ethnology Bulletin 173, Anthropological Papers 57, 1–129, Washington, DC.

———. 1964. The Octonia Rockshelter, Greene County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 18(4):66–75.

———. 1967. The Elvin Graves Rockshelter, Madison County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 21(4):98–112.

———. 1970. *An archaeological survey of Southwest Virginia.* Smithsonian Contributions to Anthropology 12, Smithsonian Institution, Washington, DC.

———. 1979. The ramifications of the fire hunt. *Quarterly Bulletin of the Archeological Society of Virginia* 33(4):134–40.

———. 1980. A synthesis of Virginia archaeology and ethnohistory. Unpublished manuscript on file at James Madison University Archaeological Research Center, Harrisonburg, VA.

Holland, C. G., and E. Graves (Mrs.). 1951. The Henshaw Rockshelter, Madison County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 6(1):6–10.

Holland, C. G., S. D. Speiden, and D. von Roijen. 1983. The Rapidan Mound revisited: A test excavation of a prehistoric burial mound. *Quarterly Bulletin of the Archeological Society of Virginia* 38(1):1–42.

Holmes, W. H. 1897. Stone implements of the Potomac-Chesapeake Tidewater Province. *Fifteenth Annual Report, Bureau of American Ethnology*, 1893–1894:13–152.

———. 1903. Aboriginal pottery of the eastern United States. *Twentieth Annual Report,Bureau of American Ethnology*, 1898–1899:1–201.

Horning, A. J. 1998. "Almost untouched": Recognizing, recording, and preserving the archaeological heritage of a natural park. *CRM* 1:31–33.

———. 2004. *In the shadow of Ragged Mountain: Historical archaeology in Nicholson, Corbin, and Weakley Hollows*. Luray, VA: Shenandoah National Park Association.

Inashima, P. Y. 1984. Archaeological survey report: Preliminary archaeological reconnaissance survey of 44MA87, 44MA90, 44MA91, 44MA93, and 44PA170,

Shenandoah National Park, Virginia. U.S. Department of the Interior, National Park Service, Denver Service Center, Northeast Team. Seneca, MD.

———. 1986. Archaeological survey report: Archaeological investigations at Shenandoah National Park Sites 44MA86, 44MA92, 44MA99, and 44PA171. U.S. Department of Interior, National Park Service, Denver Service Center, Eastern Team, Rockville, MD.

———.1988. Miscellaneous archaeological investigations along Skyline Drive, Shenandoah National Park, Virginia. U.S. Department of Interior, National Park Service, Denver Service Team, Rockville, MD.

———.1990a. Miscellaneous archaeological investigations within the North, Central, and South Districts of Shenandoah National Park, Virginia. U.S. Department of Interior, National Park Service, Denver Service Team, Rockville, MD.

———. 1990b. Prehistoric subsistence, settlement, and seasonality in the northern Blue Ridge. *Quarterly Bulletin of the Archeological Society of Virginia* 45(4):227–34.

———. 1992. Comparative context and the Paleo-Indian to Early Archaic occupation of the Northern Blue Ridge (Part I). *Quarterly Bulletin of the Archeological Society of Virginia* 47(3):105–22.

———. 1994. Comparative context and the Paleo-Indian to Early Archaic occupation of the northern Blue Ridge (Part II). *Quarterly Bulletin of the Archeological Society of Virginia* 49(4):191–232.

Ingold, T. 2007. *Lines: A brief history*. London: Routledge.

Institute for Water Resources. 2007. Rappahannock River Basin Commission water supply planning project. http://www.svp.iwr.usace.army.mil/resCaseRR.cfm

Israel, S. S. 1998. Archaeological investigations at the Clipper Mill Road Rockshelter (18BA32), Baltimore County, Maryland. *Maryland Archaeology* 34(1):15–32.

Israel, S. S., and J. M. Davis. 1992. The Emge Site (18BA177): Preliminary report on a quartz lithic workshop site in central Baltimore County, Maryland. *Maryland Archaeology* 28(2):27–42.

Jefferson, T. 1787 [1982]. *Notes on the state of Virginia*. New York: Norton.

Jirikowic , C. 1995. The Hughes Village Site: A Late Woodland community in the Potomac Piedmont. PhD diss., American Univ.

Jochim, M. A. 1976. *Hunter-gatherer subsistence and settlement: A predictive model*. New York: Academic.

———. 1991. Archaeology as long-term ethnography. *American Anthropologist* 93:308–21.

Johnson, G. A. 1982. Organizational structure and scalar stress. In *Theory and explanation in archaeology*, eds. C. Renfrew, M. J. Rowlands, and B. A. Segraves, 389–421. New York: Academic Press.

Johnson, M. 2007. *Ideas of landscape*. Oxford: Blackwell.

Johnson, M. F. 1986. *Prehistory of Fairfax County, Virginia.* Falls Church, VA: Heritage Resources Branch, Fairfax County Park Authority.

———. 1991. Middle and Late Woodland settlement systems in the interior fall zone of the Potomac Valley: Not a live oyster in sight. *North American Archaeologist* 12(1):29–60.

Jolley, R. 1988. An archaeological survey of a section of Route 607 in Madison County, Virginia. VDOT Project 0607-056-166, M501, on file with the Virginia Department of Historic Resources, Richmond, VA.

Kelly, R. L. 1995. *The foraging spectrum: Diversity in hunter-gatherer lifeways*. Washington: Smithsonian Institution Press.

Kimberley, R. 2001. Archaeological survey, burn area emergency rehabilitation, Shenandoah Complex Fire. Report on file with the Shenandoah National Park Archives, Luray, VA.

———. 2002. Archaeological investigations of the prehistoric component at Rapidan Camp. Report submitted to Shenandoah National Park, Luray, VA.

Kinsey, W. F. III. 1959. Recent excavations on Bare Island in Pennsylvania: The Kent-Hally site. *Pennsylvania Archaeologist* 29(3-4):109-33.

———.1972. Archaeology in the Upper Delaware Valley. Pennsylvania Historical and Museum Commission Anthropological Series No. 2, Harrisburg, PA.

Klatka, T., M. J. Klein, G. D. Dunham, and J. L. Hantman. 1986. Archaeological survey in Buckingham County, Virginia. Archaeological Survey Monograph No. 3, University of Virginia Department of Anthropology, Charlottesville, VA.

Klein, M. J. 1994. An absolute seriation approach to ceramic chronology in the Roanoke, Potomac, and James River Valleys, Virginia and Maryland. PhD diss., Univ. of Virginia.

———. 1997. The transition from soapstone bowls to Marcey Creek ceramics in the Middle Atlantic region: Vessel technology, ethnographic data, and regional exchange. *Archaeology of Eastern North America* 25:143–58.

———. 1999. Shell midden archaeology: Gender, labor, and stone artifacts. In *From the ground up: Beyond gender theory in archaeology,* eds. N. L. Wicker and B. Arnold, 143–54. BAR International Series 812. Oxford: Archaeopress.

———. 2002. Discovering sites unseen, excavating unforeseen sites: Survey, sampling, and significance in the Inter-Riverine Uplands of Virginia. *Journal of Middle Atlantic Archaeology* 18:1–16.

Klein, M. J., C. Coursey, J. Hantman, and D. Sanford. 1988. The Montpelier Periphery: An archaeological survey. Archaeological Survey Monograph No. 4, University of Virginia Department of Anthropology, Charlottesville, VA.

Klein, M. J., and J. Duncan. 2004. Analysis of ceramics from the University of Virginia Rapidan Mound (44OR3) excavations. Report submitted to the Virginia Department of Historic Resources, Richmond, VA.

Klein, M. J., T. S. Theriot, and R. A. Jones. 2002. Analysis of the artifact assemblage from the Jeffrey Rockshelter (44LD17), Loudoun County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 57(1):1–31.

Knapp, A. B., and W. Ashmore. 1999. Archaeological landscapes: Constructed, conceptualized, ideational. In *Archaeologies of landscape: Contemporary perspectives*, eds. A. B. Knapp and W. Ashmore, 1–30. Oxford: Blackwell.

Kneberg, M. 1956. Some important projectile point types found in the Tennessee area. *Tennessee Archaeologist* 12(1):17–28.

Kneller, M., and D. Peteet. 1999. Late-Glacial to Early Holocene climate changes from a central Appalachian pollen and macrofossil record. *Quaternary Research* 51:133–47.

Knepper, D. 1995. The lobate point in Northern Virginia: Comparative morphological considerations. *Quarterly Bulletin of the Archeological Society of Virginia* 50(2):35–47.

Kochel, R. C., and D. W. Simmons. 1986. Quaternary alluvial fans in central Virginia. In *The Quaternary of Virginia: A symposium,* eds. J. N. McDonald and S. O. Bird, 123–25. Virginia Division of Mineral Resources Publication 75, Charlottesville, VA.

Kottek, M., J. Grieser, C. Beck, B. Rudolf, and F. Rubel. 2006. World map of the Köppen-Geiger climate classification updated. *Meteorologische Zeitschrift* 15(5):259–63, http://koeppen-geiger.vu-wien.ac.at/.

Kowalewski , S. A. 2003. Scale and the explanation of demographic change: 3,500 years in the Valley of Oaxaca. *American Anthropologist* 105:313–25.

Kroeber, A. L. 1939. Cultural and natural areas of native North America. Vol. 38, *University of California Publications in American Archaeology and Ethnology*. Berkeley: University of California Press.

Kuhn, R. D. 1996. A comparison of Mohawk and Onondaga projectile point assemblages. *Journal of Middle Atlantic Archaeology* 12:27–34.

Kvamme, K. L. 1997. Ranter's Corner—Bringing the camps together: GIS and ED. *Archaeological Computing Newsletter* 47:1–5. http://www.cast.uark.edu/~kkvamme/ACN47.htm.

———. 2000. Landscape archaeology in western Colorado. http://www.cast.uark.edu/~kkvamme/sieber/sieber.htm.

Ladurie, E. L. 1979. *The territory of the historian.* Trans. B. and S. Reynolds. Chicago: University of Chicago Press.

Lambert, D. 1989. *The undying past of Shenandoah National Park*. Lanham, MD: Roberts Rinehart.

Lane, J. 2008. The use of ethnography in landscape archaeology. In *Handbook of landscape archaeology*, eds. B. David and J. Thomas, 237-244. Walnut Creek: Left Coast Press.

La Porta, P. 1999. Artifact analyses for the Whitehurst Freeway Project (Sites 51NW103, 51NW117, and 51NE117W). Part A: Geological catchment. Report submitted to Parsons Engineering Science, Fairfax, VA.

Lawson, J. 1709. *A new voyage to Carolina; Containing the exact description and natural history of that country: Together with the present state thereof. And a journal of a thousand miles, travel'd thro' several nations of Indians. Giving a particular account of their customs, manners, &c.* http://docsouth.unc.edu/nc/lawson/menu.html.

Lederer, J. 1672 [2005]. *The discoveries of John Lederer, in three several marches from Virginia, to the west of Carolina, and other parts of the continent: Begun in March 1669, and ended in September 1670. Together with a general map of the whole territory which he traversed.* Alexandria, VA: Alexander Street. http://www.alexanderstreet4.com/cgi-bin/asp/eena/sourceaccidx.pl?sourceid=S2603.

Lee, K. Y., and Froelich, A. J. 1989. Triassic-Jurassic stratigraphy of the Culpeper and Barboursville Basins, Virginia and Maryland. U.S. Geological Survey Professional Paper 1472:1–52.

Lee, R. B., and R. Daly. 1999. Foragers and others. In *The Cambridge encyclopedia of hunters and gatherers*, eds. R. B. Lee and R. Daly, 1–19. Cambridge, UK: Cambridge University Press.

Leeuw, S. E. van der. 2000. Land degradation as a socionatural process. In *The way the wind blows: climate, history, and human action*, eds. R. J. McIntosh, J. A. Tainter, and S. K. McIntosh, 357–83. New York: Columbia University Press.

Lewis, L. G., and S. K. Parker. 1987. From Aborigines to aristocrats: Archaeological survey in Orange County, Virginia, 1987. Report submitted to the National Trust for Historic Preservation, Montpelier Station, and the Virginia Division of Historic Landmarks, Richmond, VA.

Lewis, T. M. N. and M. K. Lewis. 1961. *Eva: An Archaic site*. Knoxville: University of Tennessee Press.

Lewis, T. R., and M. Ebeling. 1994. Archaeological resource study: Limberlost trail and Big Meadows waterline, Shenandoah National Park, Virginia. Report prepared for the U.S. Department of the Interior, National Park Service, Mid-Atlantic Region, Philadelphia, PA.

Lillard, D. B. 1999. *Land grants of Madison County, Virginia 1722–1865*. Fredericksburg, VA: Sheridan.

Litt, T., H. U. Schminke, and B. Kromer. 2003. Environmental response to climate and volcanic events in central Europe during the Weichselian Lateglacial. *Quaternary Science Reviews* 22:7–32.

Little, B. J. 2007. Archaeology and civic engagement. In *Archaeology as a tool of civic engagement*, eds. B. J. Little and P. A. Shackel, 1–22. Lanham, MD: AltaMira.

Litwin, R. J., B. Morgan, L. S. Eaton, and G. Wieczorek. 2004. Assessment of Late Pleistocene to recent climate-induced vegetation changes in and near Shenandoah National Park (Blue Ridge Province, VA). U.S. Geological Survey Open-File Report 2004-1351, Reston, VA.

Lord, William. 2007. Wildlife food: the pre-blight chestnut and the post-blight acorn. In *Mighty giants: an American chestnut anthology*, ed. C. Bolgiano, 62-63. Bennington, VT: The American Chestnut Foundation.

Low, S. M. and D. Lawrence-Zuniga. 2003. Locating culture. In *The anthropology of space and place*, eds. S. M. Low and D. Lawrence-Zuniga, 1-48. London: Blackwell.

Lozny, L. R. 2007. Place, historical ecology and cultural landscape: New Directions for Applied Archaeology. In *Landscapes under pressure: theory and practice of cultural resource heritage and preservation*, ed. L. R. Lozny, 15-25, http://www.springerlink.com/content/lp213q3720q7ll12/

Luckenbach, A. H., R. O. Allen, and C. G. Holland. 1975. Movement of prehistoric soapstone in the James River Basin. *Quarterly Bulletin of the Archeological Society of Virginia* 29(4):183–203.

Lutts, R. H. 2004. Like manna from God: the American chestnut trade in southwestern Virginia. *Environmental History* 9(3):497-525.

Lyman, R. L., M. J. O'Neill, and R. C. Dunnell (compilers). 1997a. *The rise and fall of culture history*. New York: Plenum.

———. 1997b. *Americanist culture history: Fundamentals of time, space, and form*. New York: Plenum.

MacCord, H. A. 1966. Miniature human-effigy heads in Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 20(3):66–76.

———. 1986. *The Lewis Creek mound culture in Virginia*. Private printing.

MacDonald, D. H., J. N. Tuk, M. Hyland, D. L. Cremeens, L. Frye, and B. Shreckengost. 2005. Phase I–II cultural resource survey and testing, Hardy Transmission Project. Vols. 1 and 2. FERC Docket No. CP05-144-000. Report prepared for Columbia Gas Transmission. On file with the Virginia Department of Historic Resources, Richmond, VA.

Manson, C., H. A. MacCord, and J. B. Griffin. 1944. The culture of the Keyser Farm Site. *Papers of the Michigan Academy of Science, Arts, and Letters* (1943) XXIX:375–418.

Mark, D. M., and A. G. Turk. 2003. Landscape categories in Yindjibarndi: Ontology, environment, and language. In *Spatial information theory: Foundations of geographic information science*, eds. W. Kuhn, M. Worboys, and S. Timpf, 28–45. Berlin: Springer.

Marquardt, W. H., and C. L. Crumley. 1987. Theoretical issues in the analysis of spatial patterning. In *Regional dynamics: Burgundian landscapes in historical perspective*, eds. C. L. Crumley and W. H. Marquardt, 1–18. New York: Academic.

Martin, P. S. 1984. Prehistoric overkill: The global model. In *Quaternary extinctions: A prehistoric revolution*, eds. P. S. Martin and R. G. Klein, 354–403. Tucson: University of Arizona Press.

Mayr, T. 1958. The Ruf Site: An influence from Pennsylvania. *Eastern States Archaeological Federation Bulletin* 17:15.

McAvoy, J., and L. McAvoy. 1997. Archaeological investigations of the Site 44SX202, Cactus Hill, Sussex County, Virginia. Research Report Series No. 8, Virginia Department of Historic Resources, Richmond, VA.

McCary, B. C. 1953. The Potts Site, New Kent County, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 8(1).

———.1961. Survey of Virginia fluted points, nos. 282-293. *Quarterly Bulletin of the Archeological Society of Virginia* 15(3):27-31.

McDonald, J. N., R. E. Eshleman, F. Grady, and D. A. Hubbard, Jr. 1998. Appendix VI: The Late Wisconsinan mammalian fauna of Virginia. In *The mammals of Virginia,* ed. D. W. Linzey, 331–50. Blacksburg, VA: McDonald and Woodward.

McDougal, S., and C. Funk. 2006. The watershed model, local contexts, and settlement pattern studies. Paper presented at the annual meeting of the Society for Pennsylvania Archaeology, Washington, PA.

McGimsey, C. R. III, and H. A. Davis. 2000. The old order changeth or, now that archaeology is in the deep end of the pool, let's not just tread water, In *Teaching archaeology in the twenty-first century*, eds. S. J. Bender and G. S. Smith, 5–8. Washington, DC: Society for American Archaeology.

McGlade, J. 1995. Archaeology and the ecodynamics of human-modified landscapes. *Antiquity* 69:113–32.

McKnight, J. and M. Gallivan 2007. The Virginia archaeolobotanical database project: A preliminary synthesis of Chesapeake ethnobotany. *Quarterly Bulletin of the Archeological Society of Virginia* 62(4):181-189.

McLearen, D. C. 1976. The Paine Run survey and excavations at the Blackrock Springs Site: Investigations of an Archaic occupation in the Blue Ridge. In *Man in the Blue Ridge: The cultural resources of a natural park—A multi-disciplinary approach*, eds. M. A. Hoffman, D. McLearen, J. Miller, C. L. Perdue, N. J. Martin-Perdue, R. Vernon, D. Lyne, and R. Foss, 1–173. Submitted to the National Park Service, Mid-Atlantic Regional Office, Philadelphia, PA.

———. 1991. Late Archaic and Early Woodland material culture in Virginia. In *Late Archaic and Early Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. Hughes, 89–138. Richmond: Archeological Society of Virginia.

———. 1992. Virginia's Middle Woodland period: A regional perspective. In *Middle and Late Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 39–63. Richmond: Archeological Society of Virginia.

Meltzer, D. J. 2006. Paleoamerican origins: Beyond Clovis (review). *Journal of Field Archeology* 31(4):441–43.

Mithen, S. 2000a. Introduction. In *Hunter-gatherer landscape archaeology: The Southern Hebrides Mesolithic Project 1988–1998*, ed. S. Mithen, 3–5. Cambridge, UK: McDonald Institute for Archaeological Research, University of Cambridge.

———. 2000b. Finale: The Mesolithic experience in Scotland. In *Hunter-gatherer landscape archaeology: The Southern Hebrides Mesolithic Project 1988–1998*, ed. S. Mithen, 627–33. Cambridge, UK: McDonald Institute for Archaeological Research, University of Cambridge.

Mooney, J. 1894. *The Siouan tribes of the East*. Washington: Bureau of American Ethnology.

Moore, L. E. 1994. Notes on the prehistory of Dunn Loring, Virginia. *Quarterly Bulletin of the Archeological Society of Virginia* 49(1):25-31.

Moran, E. F. 2000. *Human adaptability: An introduction to ecological anthropology,* 2nd ed. Boulder, CO: Westview.

Mouer, L. D. 1981. Powhatan and Monacan regional settlement hierarchies: A model of relationship between social and environmental structure. *Quarterly Bulletin of the Archeological Society of Virginia* 36(2):1–21.

———. 1983. A review of the archeology and ethnohistory of the Monacans. In *Piedmont archaeology: Recent research and results*, eds. J. M. Wittkofski and L. E. Browning, 21–39. Richmond: Archeological Society of Virginia Special Publication No. 10.

———. 1990. The Archaic to Woodland transition in the Piedmont and Coastal Plain sections of the James River Valley, Virginia. PhD diss., Univ. of Pittsburg.

———. 1991. The formative transition in Virginia. In *Late Archaic and Early Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. Hughes, 1-88. Richmond: Archeological Society of Virginia.

Mounier, R. A., and J. W. Martin. 1994. For crying out loud! News about teardrops. *Journal of Middle Atlantic Archaeology* 10:125–40.

The Mountain Institute. 1999. Mountains: A global resource. Special supplement to *Social Education* 63.

Muir, R. 2001. *Approaches to landscape*. Lanham, MD: Rowman and Littlefield.

Mueller, J. W. 1975. Archaeological research as cluster sampling. In *Sampling in archaeology*, ed. J. W. Mueller, 33–41. Tucson: University of Arizona Press.

Nash, C., and L. S. Eaton. 1997. Rapid mass movement events in the Virginia Blue Ridge and landscape evolution: Implications for the study of native settlement patterns in upland fan locations. Paper presented at the Third International Conference on Pedoarchaeology, Luray, VA.

Nash, C. L. 1992. "We have often wondered about an Indian presence on this land": The Madison Archaeology Project. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, MD.

———. 1993. The Indians only come when it rains: Thoughts on working with artifact collectors and land owners to develop voluntary preservation strategies. Paper presented at the annual meeting of the Archeological Society of Virginia, Staunton, VA.

———. 1994. "In the hilly countries by small rivers": Documenting the archaeology of Virginia's Northern Piedmont. Paper presented at the annual meeting of the Virginia Academy of Science, Archaeology Section, James Madison University, Harrisonburg, VA.

———. 1997a. East is east and west is west (?): New perspectives on prehistoric travel and trade in the northern Blue Ridge of Virginia. Paper presented at Upland Archaeology in the East Symposium VI, James Madison University, Harrisonburg, VA.

———. 1997b. Who lived in Madison County in 1607? Virginia Foundation for the Humanities and Public Policy "Jamestown—Preparation for 2007" Series. Paper presented for Madison Heritage Foundation, Madison, VA.

———. 1998. At the base of the Blue Ridge: PaleoIndian occupations of Madison County, Virginia. Paper presented at the annual meeting of the Archeological Society of Virginia, Winchester, VA.

———. 1999a. Mountains and molehills: Ecological anthropology and the archaeology of the Blue Ridge. Paper presented at the annual meeting of the

Virginia Academy of Science, Archaeology Section, Old Dominion University, Norfolk, VA.

———. 1999b. Of mounds and mountains: Recent investigations of Middle Woodland occupations in the Northern Virginia Inner Piedmont and Blue Ridge. Paper presented at the Middle Atlantic Archaeological Conference,Harrisburg, PA.

———. 2000a. Location, location: Testing prehistoric settlement models in Shenandoah National Park. Paper presented at the annual meeting of the Virginia Academy of Science, Archaeology Section, Radford University, Radford, VA.

———. 2000b. Middle Woodland research in Virginia: A review of post-1990 studies. Paper presented at the Virginia Prehistory Review, Council of Virginia Archaeologists Session, Upland Archaeology in the East Symposium VIII, James Madison University, Harrisonburg, VA.

———. 2001a. Paddling upstream: Models and the importance of interriverine sites. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, MD.

———. 2001b. The collecting area as a unit of analysis. Paper presented at the annual meeting of the Virginia Academy of Science, Archaeology Section, James Madison University, Harrisonburg, VA.

———. 2002. Yes, Virginia, there is a Middle Woodland: The mystery of the abandonment of the Northern Virginia Piedmont. Paper presented at the Middle Atlantic Archaeological Conference, Virginia Beach, VA.

———. 2003. The journey, not the destination: The potential of landscape archaeology in the Middle Atlantic. Paper presented at the annual meeting of the Middle Atlantic Archaeological Conference, Virginia Beach, VA.

———. 2004. Cultural resources survey, Big Meadows, 2000–2004. Paper presented at the annual meeting of the Resources Division, Shenandoah National Park, Luray, VA.

———. 2005a. Re-thinking the Catoctin: Ruminations on rocks and hunter-gatherer mobility. Paper presented at the annual meeting of the Eastern States Archaeological Federation, Williamsburg, VA.

———. 2005b. Overview of Phase II Archaeological Study of the Proposed Old Rag Parking Lot, Madison County, Virginia. Submitted to Shenandoah National Park, Luray, Virginia.

———. 2005c. Gaps in our knowledge: Hunter-gatherers and high elevation Blue Ridge settlement. In *Uplands archaeology in the East symposia VIII and IX,* eds. C. L. Nash and M. B. Barber, 89–99. Richmond: Archeological Society of Virginia Special Publication 38-7.

-- -- --. 2006a. Phase I Archaeological Survey of the Proposed Limberlost Parking Lot Extension, Madison County, Virginia. Submitted to Shenandoah National Park, Luray, Virginia.

———. 2006b. Scales of temporality and social complexity: Middle Woodland hunter-gatherer societies of the Interior Middle Atlantic. Paper presented at the annual meeting of the Society for American Archaeology, San Juan, PR.

———. 2007. "Poorly known tribes of the interior," or what happened to the Indians of the Shenandoah Valley? Paper presented at the Shenandoah Valley Regional Studies Seminar, James Madison University, Harrisonburg, VA, on file with the author.

———. 2008a. Clovis not first: Late PaleoIndian pioneer occupation of the Interior Virginia Piedmont. Paper presented at the Upland Archaeology in the East Symposium X, Radford, VA.

———. 2008b. Maudlin over modelin': Mountain basins and hunter-gatherer mobility. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, MD.

———. 2008c. Hunter-gatherers, resilience theory, and the American chestnut forest: Persistence and change in the Middle Atlantic Uplands. Paper presented at the Symposium to Honor the Work of William M. Gardner, Shepherdstown, WV.

———. 2008d. Middle Woodland. Paper presented at the Virginia State Archaeological Plan and Research Design Symposium, Archeological Society of Virginia Annual Meeting, Martinsville, VA.

National Atlas of the United States. 2008. Hydrologic units. http://www.nationalatlas.gov/articles/water/a_hydrologic.html.

Noel Hume, I. 1962. An Indian ware of the colonial period. *Quarterly Bulletin of the Archeological Society of Virginia* 17:1-16.

Odum, E. 1971. *Fundamentals of ecology,* 3rd ed. Philadelphia: Saunders.

Orlove, B. S. 1980. Ecological anthropology. *Annual Review of Anthropology* 9:235–73.

Orton, C. 2000. Sampling in archaeology. Cambridge, UK: Cambridge University Press.

Owens, D'A. and B. Hayden. 1997. Prehistoric rites of passage: A comparative study of trans-egalitarian hunter-gatherers. *Journal of Anthropological Archaeology* 16:121-161.

Parker, S. K., and M. J. Klein. 1989. Archaeological survey and the prehistory of Orange County: The view from Montpelier. *Quarterly Bulletin of the Archeological Society of Virginia* 44(3):116–46.

Patterson, W. A. III. 2006. The paleoecology of fire and oaks in eastern forests. In *Fire in eastern oak forests: Delivering science to land managers*, ed. M. B. Dickinson, 2–19. General Technical Report NRS-P-1, USDA Forest Service Northern Research Station, Newtown Square, PA.

Peebles, C. S. 1991. Annalistes, hermeneutics and positivists: Squaring circles or dissolving problems. In *The annales school and archaeology*, ed. J. Bintliff, 108–24. New York: New York University Press.

Perazio, P. A. 2005. Who will rid me of these lithic scatters? Or, the bureaucratic dilemma. In *Uplands archaeology in the East symposia VIII and IX,* eds. C. L. Nash and M. B. Barber, 305–11. Richmond: Archeological Society of Virginia Special Publication 38-7.

Peteet, D. 2000. Sensitivity and rapidity of vegetational response to abrupt climate change. *Proceedings of the National Academy of Sciences of the United States of America*, 97(4):1359–61.

Peterson, J. B., R. N. Bartone, and B. J. Cox. 2002. The late PaleoIndian period in northeastern North America: A view from Varney Farm. In *Ice age peoples of Pennsylvania*, eds. Kurt Carr and James Adovasio, 123-143. Harrisburg, PA: Pennsylvania Historical and Museum Commission.

Petraglia, M. D., D. A. Knepper, and P. Glumac. 1993. Prehistoric occupations in the Piedmont: Archaeological excavations in Fauquier, Prince William and Loudoun Counties, Virginia. Report submitted by Engineering Science to CNG Transmission Corp., Clarksburg, WV. On file with the Virginia Department of Historic Resources, Richmond, VA.

Potter, S. R. 1982. An analysis of Chicacoan settlement patterns. PhD diss., Univ. of North Carolina.

———. 1993. *Commoners, tribute, and chiefs: The development of Algonquian culture in the Potomac Valley*. Charlottesville: University Press of Virginia.

Preucel, R. W., and I. Hodder, eds. 1996a. *Theory: A reader*. Oxford: Blackwell.

Preucel, R. W., and I. Hodder. 1996b. Nature and culture. In *Contemporary Archaeology in theory: A reader*, eds. R. W. Preucel and I. Hodder, 23–38. Oxford: Blackwell.

Price, M. F., and M. Thompson. 1997. The complex life: Human land uses in mountain ecosystems. *Global Ecology and Biogeography Letters* 6:77–90.

Raber, P. A. 1993. Late Woodland period settlement patterns in the Piedmont Uplands of Pennsylvania: The evidence from 36CH161. *North American Archaeologist* 14(3):245–65.

Rader, E. K., and N. H. Evans, eds. 1993. Geologic map of Virginia, expanded explanation. Charlottesville: Virginia Division of Mineral Resources.

Rapidan-Rappahannock Regional Commission. 2001. Our region, our vision, our decision: A regional vision for the counties and towns of Culpeper, Fauquier, Madison, Orange and Rappahannock. http://www.rrregion.org/pdf/regional_vision.pdf.

Redman, C. L. 1973. Multistage fieldwork and analytical techniques. *American Antiquity* 38(1):61–79.

———. 1974. *Archaeological sampling strategies. Addison-Wesley Module in Anthropology No. 55.* Reading, MA: Addison-Wesley.

———. 1987. Surface collecting, sampling, and research design: A retrospective. *American Antiquity* 52(2):249–65.

Reynolds, M. W. 1976. *Liriodendron tulipifera*—its early uses. *Arnolda* 35(3):119–24.

Ritchie, W.A. 1969 [1980]. *The archaeology of New York State.* Revised ed. Fleischmanns, NY: Harbor Hill.

———. 1971. New York projectile points: A typology and nomenclature. New York State Museum, Albany, NY.

Ritchie, W. A., and R. E. Funk. 1973. *Aboriginal settlement patterns in the Northeast*. New York State Museum and Science Service Memoir 20, Albany, NY.

Roberts, B. K. 1996. *Landscapes of settlement: Prehistory to the present*. London: Routledge.

Rodman, M. 2003. Empowering place: Multilocality and multivocality. In *The anthropology of space and place: Locating culture*, eds. S. M. Low and D. Lawrence-Zuniga, 204–23. Oxford: Blackwell.

Rossignol, J. 1992. Concepts, methods, and theory building. In *Space, time, and archaeological landscapes*, eds. J. Rossignol and L. Wandsnider, 3–16. New York: Plenum.

Rountree, H. C. 1998. Powhatan Indian women: The people Captain John Smith barely saw. *Ethnohistory* 45(1):1–29.

Rountree, H. C., W. E. Clark, and K. Mountford. 2007. *John Smith's Chesapeake voyages*. Charlottesville: University of Virginia Press.

Rundstrom, R. A. 1995. GIS, indigenous peoples, and epistemological diversity. *Cartography and Geographic Information Systems* 22(1):45–57.

Rust, W. F. 1986. *Chronology of prehistoric habitation sites on the Potomac River in Loudoun County, Virginia, from the Countryside Planned Community to the Catoctin Creek/Potomac Confluence*. Loudoun Archaeology Center, Leesburg, Virginia.

Sara, T. 2003. Phase I archaeological survey of the proposed Radiant #3122 Cingular cell tower compound, Madison County, Virginia. On file with the Virginia Department of Historic Resources, Richmond, VA.

Sassaman, K. E. 2006. Dating and explaining soapstone vessels: A comment on Truncer. *American Antiquity* 71(1):141–56.

Schindler, W. 2004. What lies beneath: Does debitage on plowzone surfaces provide adequate representations of parent subsurface deposits? *Journal of Middle Atlantic Archaeology* 20:73–78.

Schmitt, K. 1952. An archaeological chronology of the Middle Atlantic States. In *Archaeology of the eastern United State*s, ed. J. B. Griffin, 59–70. Chicago: University of Chicago Press.

Seaber, P. R., Kapinos, F.P., and Knapp, G.L. 1987. Hydrologic unit maps. U.S. Geological Survey Water-Supply Paper 2294. http://pubs.usgs.gov/wsp/wsp2294/.

Slattery, R. G. 1946. A prehistoric Indian site on Selden Island, Montgomery County, Maryland. *Journal of the Washington Academy of Sciences* 36(8):262–66.

Slattery, R. G., W. A. Tidwell, and D. R. Woodward. 1966. The Montgomery focus. *Quarterly Bulletin of the Archeological Society of Virginia* 21(2):49–51.

Smith, J. 1986 . Generall historie of Virginia. In *The Complete Works of Captain John Smith (1583–1631),* vol. 2, ed. P. L. Barbour, 5–475. Chapel Hill: University of North Carolina Press.

Speiss, A. E., D. Wilson, and J. W. Bradley. 1998. Paleoindian occupation in the New England-Maritimes region: Beyond cultural ecology. *Archaeology of Eastern North America* 26:201-264.

Spencer, D. 2007. The association of marine shell gorgets with Siouan-speaking groups and the implications for Siouan occupation of the Kanawha Valley. Paper presented at the New River Symposium, Radford, VA.

Stahle, D. W., F. K. Fye, E. R. Cook, and R. D. Griffin. 2007. Tree-ring reconstructed megadroughts over North America since A.D. 1300. *Climate Change* 83:133–49.

Stanford, D. J. 2008. The Ice Age discovery of the Americas: Constructing an Iberian solution. Who were the first humans?: Nobel Conference XLIV, Gustavus Adolphus College, St. Peter, MN. http://gustavus.edu/events/nobelconference/2008/stanford-lecture.php

———. 2009. Personal Communication.

Steinberg, S. J., and S. L. Steinberg. 2006. *Geographic information systems for the social sciences: Investigating space and place*. Thousand Oaks, CA: Sage.

Stephenson, R. L. and A. L. L. Ferguson. 1963. The Accokeek Creek Site: A Middle Atlantic seaboard culture sequence. University of Michigan Museum of Anthropology Anthropological Papers 20, Ann Arbor, MI.

Stephenson, S. L., A. N. Ash, and D. F. Stauffer. 1993. Appalachian oak forests. In *Biodiversity of the southeastern United States: Upland terrestrial communities*, eds. W. H. Martin, S. G. Boyce, and A. C. Echternacht, 255–303. New York: Wiley.

Stevens, J. S. 1991. A story of plants, fire and people: The paleoecology and subsistence of the Late Archaic and Early Woodland in Virginia. In *Late Archaic and Early Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 185–220. Richmond: Archeological Society of Virginia.

———. 1998. Examination of Shepard and Potomac Creek wares at a Montgomery Complex site (44LD521). *Journal of Middle Atlantic Archaeology* 14:95–126.

Steward, J. H. 1955. *Theory of culture change: The methodology of multilinear evolution*. Urbana, IL: University of Illinois Press.

Stewart, R. M. 1980. Prehistoric settlement and subsistence patterns and the testing of prehistoric site location models in the Great Valley of Maryland. PhD diss., The Catholic Univ. of America.

———. 1992. Observations on the Middle Woodland period of Virginia: A Middle Atlantic Region perspective. In *Middle and Late Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 1–38. Richmond: Archeological Society of Virginia.

———. 1989. Trade and exchange in Middle Atlantic region prehistory. *Archaeology of Eastern North America* 17:47-78.

———. 1998a. Archaic triangles at the Abbott Farm national landmark: Typological implications for prehistoric studies in the Middle Atlantic region. Paper accompanying an exhibit of Archaic-Age bifaces at the annual meeting of the Middle Atlantic Archaeological Conference, Cape May, NJ.

———. 1998b. Ceramics and Delaware Valley prehistory: insights from the Abbott Farm. *Trenton Complex archaeology report 14*. Trenton: Archaeological Society of New Jersey.

———. 2005. Interpreting variability in prehistoric rockshelter assemblages: The Walters Shelter, 36MR42. In *Uplands archaeology in the East: Symposia VIII and IX,* eds. C. L. Nash and M. B. Barber, 103–119. Richmond: Archeological Society of Virginia Special Publication 38-7.

Sullivan, L. P., and S. C. Prezzano. 2001a. The concept of Appalachian archaeology. In *Archaeology of the Appalachian highlands*, eds. L. P. Sullivan and S. C. Prezzano, xix–xxxiii. Knoxville: University of Tennessee Press.

———. 2001b. A conscious Appalachian archaeology. In *Archaeology of the Appalachian Highlands*, eds. L. P. Sullivan and S. C. Prezzano, 323–31. Knoxville: University of Tennessee Press.

Swanton, J. R. 1942. Siouan tribes of the Ohio Valley. *American Anthropologist* 45:49–66.

-- -- --. 1946. Indians of the southeastern United States. Smithsonian Institution Bureau of American Ethnology Bulletin 37, Washington, DC.

———. 1952. The Indian tribes of North America. Smithsonian Institution Bureau of American Ethnology Bulletin 145, Washington, DC.

Taçon, P. S. C. 1999. Identifying ancient sacred landscapes in Australia: From physical to social. In *Archaeologies of landscape: Contemporary perspectives*, eds. W. Ashmore and A. B. Knapp, 33–57. Oxford: Blackwell.

Terwilliger, K. and J. R. Tate. 1995. A guide to threatened and endangered species in Virginia. Blacksburg, VA: McDonald and Woodward Publishing Company.

Thomas, D. H. 1998. *Archaeology*, 3rd ed. New York: Wadsworth.

Thompson, T. A., and A. Q. Cole. 1988. Phase I cultural resources survey for a bridge replacement for Route 15 over the Rapidan River, Madison and Orange Counties, Virginia. Submitted to the Virginia Department of Transportation. On file with the Virginia Department of Historic Resources, Richmond, VA.

Thomson Reuters. 2008. ISI Web of Knowledge Web site. http://isiwebofknowledge. com/

Tolley, G. A. 1983. Blue Ridge prehistory: Perspective from the George Washington National Forest. In *Upland archaeology in the East: A symposium,* eds. C. R. Geier, M. B. Barber, and G. A. Tolley, 104–15. Cultural Resources Report 2, U.S. Forest Service, Southern Region, Atlanta.

———. 1986. An archaeological reconnaissance of the Big Levels area, Virginia. Masters thesis, Catholic Univ. of America.

Tooker, E. Iroquois since 1820. In *Handbook of North American Indians*, Volume 15, Northeast, ed. B. Trigger, 449-465. Washington, DC: Smithsonian Institution Press.

Trigger, B. G. 1996. *A history of archaeological thought,* 2nd ed. Cambridge, UK: Cambridge University Press.

Trumbold, C. D. 1991. An introduction to the study of ancient New World road networks. In *Ancient road networks and settlement hierarchies in the New World,* ed. C. D. Trumbold, 1–9. Cambridge, UK: Cambridge University Press.

Tunison, E. 1936. Indian mounds. Works Progress Administration of Virginia Historical Inventory *Survey Report*, December 16, 1936. http://lvaimage.lib.va.us/VHI/html/17/0150.html_Report_Home_Page

Turner, E. R. III. 1989. Paleoindian settlement patterns and population distribution in Virginia. In *Paleoindian research in Virginia: A synthesis,* eds. J. M. Wittkofski and T. R. Reinhart, 71–94. Richmond: Archeological Society of Virginia.

Turner, M. G. 1998. Landscape ecology: Living in a mosaic. In *Ecology,* eds. S. I. Dodson et al., 77–121. Oxford, UK: Oxford University Press.

Ulke, T. 1936. Some treasures of an old Indian arrow patch near Syria, Virginia. Handwritten letter in the collection of the James Graves Family, Syria, Virginia.

U.S. Department of the Interior, National Park Service. 2005. Species list for Shenandoah National Park. http://www.nps.gov/shen/naturescience/species-lists.htm.

U.S. Forest Service, U.S. Department of Agriculture. 2005. Description of ecological sub-regions: Sections of the conterminous United States. http://www.na.fs.fed.us/sustainability/ecomap/section_descriptions.pdf.

U.S. Geological Survey. 2003. A tapestry of time and terrain: The union of two maps—geology and topography. http://tapestry.usgs.gov/physiogr/physio.html.

Virginia Department of Conservation and Recreation. 2006. Hydrologic Unit Geography. http://www.dcr.virginia.gov/soil_and_water/hu.shtml

Virginia Department of Forestry. 2005. Forestry in Madison County, Virginia. http://www.dof.virginia.gov/regCentral/mad-index.shtml

Virginia Department of Game and Inland Fisheries. 2008. Virginia Fish and Wildlife Information Service Web site. http://vafwis.org/fwis/

Virginia Department of Historic Resources. 2004. Virginia Radiocarbon Database. Maintained at the Virginia Department of Historic Resources Archives, Richmond, VA.

———. 2008a. Data sharing system. http://www.dhr.virginia.gov/archives/data_sharing_sys.htm

———. 2008b. Cultural resources management reports database. Maintained at the Virginia Department of Historic Resources Archives, Richmond, VA.

Vogel, G. 2008. Cavanaugh: A Late Prehistoric platform mound in western Arkansas. http://www.projectpast.org/gvogel/Cavanaugh/viewsheds.htm

Voigt, E. 2004. Archaeological data recovery at the Brook Run Jasper Quarry (44CU122) associated with the proposed Route 3 improvements, Culpeper County, Virginia. VDOT Project 0003-032-107, PE101/102. On file with the Virginia Department of Historic Resources, Richmond, VA.

Walker, J. M., and G. F. Miller. 1992. Life on the levee: The Late Woodland in the northern Great Valley of Virginia. In *Middle and Late Woodland research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 165–85. Richmond: Archeological Society of Virginia.

Wall, R. D. 1981. *An archaeological survey of the western Maryland coal region: The prehistoric resources*. Maryland Geological Survey Division of Archaeology, Baltimore.

———. 2000. A buried Lamoka occupation in stratified contexts, West Branch Valley of the Susquehanna River, Pennsylvania. Pennsylvania Archaeologist 70(1):1-44.

———. 2001. Late Woodland ceramics and native populations of the Upper Potomac Valley. *Journal of Middle Atlantic Archaeology* 17:59–84.

Walthall, J. A. 1998. Rockshelters and hunter-gatherer adaptation to the Pleistocene/Holocene transition. *American Antiquity* 63(2):223–38.

Wandsnider, L. 1992. Archaeological landscape studies. In *Space, time, and archaeological Landscapes*, eds. J. Rossignol and L. Wandsnider, 285–92. New York: Plenum.

———. 1998a. Regional scale processes and archaeological landscape units. In *Unit issues in archaeology*, eds. A. F. Ramenofsky and A. Steffen, 87–102. Salt Lake City: University of Utah Press.

———. 1998b. Landscape element configuration, lifespace, and occupation history: Ethnoarchaeological observations and archaeological applications. In *Surface archaeology*, ed. A. P. Sullivan, 21–39. Albuquerque: University of New Mexico Press.

Wandsnider, L. and E. Camilli. 1992. The character of surface archaeological deposits and its influence in survey accuracy. *Journal of Field Archaeology* 19: 169-188.

Ward, H. T. and R. P. S. Davis 1993. *Indian communities on the North Carolina piedmont, A.D. 1000 to 1700*. Chapel Hill: Monograph No. 2, Research Laboratories of Anthropology, University of North Carolina.

Warhus, M. 1997. *Another America: Native American maps and the history of our land*. New York: St. Martin's.

Waters, M. R. 1992. *Principles of geoarchaeology: A North American perspective*. Tucson: University of Arizona Press.

Weldon Cooper Center. 2007. *State Growth continues, but at a slower pace.* http://www3.ccps.virginia.edu/demographics/estimates/2006/0-main.html

Wheatley, D., and M. Gillings. 2002. *Spatial technology and archaeology: The archaeological application of GIS*. London: Taylor and Francis.

White, L. A. 1949. *The science of culture*. New York: Farrar, Strauss.

Whitley, T. G., and L. M. Hicks. 2003. A geographic information systems approach to understanding potential prehistoric and historic travel corridors. *Southeastern Archaeology* 22(1):77–91.

Whyte, T. R. 1990. A review of human subsistence during the Early and Middle Archaic periods in Virginia. In *Early and Middle Archaic research in Virginia: A synthesis*, eds. T. R. Reinhart and M. E. N. Hodges, 119–31. Richmond: Archeological Society of Virginia.

———. 2004. Human burial in the Charles Church Rockshelter, Valle Crucis, North Carolina. In *Uplands archaeology in the East symposia VIII and IX*, eds. C. L. Nash and M. B. Barber, 173-179. Richmond: Archeological Society of Virginia Special Publication 38-7.

———. 2007. Proto-Iroquoian divergence in the Late Archaic-Early Woodland period transition of the Appalachian Highlands. *Southeastern Archaeology* 26(1):134–44.

Wieczorek, G. F., B. A. Morgan, R. H. Campbell, R. C. Corndorff, W. C. Burton, W. S. Southworth, and J. A. Smith. 1996. Preliminary inventory of debris-flow and flooding effects of the June 27, 1995 storm in Madison County, Virginia. Open File Report 96-13, U.S. Geological Survey, U.S. Department of the Interior, Reston, VA.

Willey, G. R., and J. A. Sabloff. 1993. *A history of American archaeology*, 3rd ed. New York: W. H. Freeman.

Williams, J. W., B. N. Shuman, T. Webb III, P. J. Bartlein, and P. L. Leduc. 2004. Late-Quaternary vegetation dynamics in North America: Scaling from taxa to biomes. *Ecological Monographs* 74(2):309–34.

Wilson, I. T., and T. Tuberville. 2003. Virginia's precious heritage: A report on the status of Virginia's natural communities, plants, and animals, and a plan for preserving Virginia's natural heritage resources. Natural Heritage Technical Report 03-15. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA.

Winterhalder, B. 1981. Optimal foraging strategies and hunter-gatherer research in anthropology: Theory and models. In *Hunter-gatherer foraging strategies: Ethnographic and archeological analyses*, eds. B. Winterhalder and E. A. Smith, 13–35. Chicago: University of Chicago Press.

———. 2001. The behavioural ecology of hunter-gatherers. In *Hunter-gatherers: An interdisciplinary perspective*, eds. C. Panter-Brick, R. H. Layton, and P. Rowley-Conwy, 12–38. Cambridge, UK: Cambridge University Press.

Witthoft, J. 1953. Broad spearpoints and the Transitional Culture periods. *Pennsylvania Archaeologist* 23(1):4-31.

Wittkofski, J. M. 1986. Site survey: A valuable contribution from the avocational archaeologist. *Quarterly Bulletin of the Archeological Society of Virginia* 41(1):44–48.

Wittkofski, J. M., and L. E. Browning, eds. 1983. *Piedmont archaeology: Recent research and results*. Richmond: Archeological Society of Virginia Special Publication No. 10.

Wood, K., ed. 2008. *The Virginia Indian heritage trail*. Charlottesville: Virginia Foundation for the Humanities.

Wright, H. T. 1973. An archeological sequence in the middle Chesapeake, Maryland. Washington, D.C.:*Maryland Geological Survey Archeological Studies* No. 1.

Yamin, R., and K. Metheny. 1996. *Landscape archaeology: Reading and interpreting the American historical landscape.* Knoxville: University of Tennessee Press.

Young, J., G. Fleming, P. Townsend, and J. Foster. 2006. *Vegetation of Shenandoah National Park in relation to environmental gradients, final report, version 1.1.* USGS-NPS Vegetation Mapping Program. Prepared for U.S. Department of

the Interior, National Park Service. http://mms.nps.gov/shen/ncr/docs/SHEN_NR_VEGMAP_FinalRep_rev1.1_2006.pdf.

Yowell, C. L. 1926. *A history of Madison County, Virginia*. Strasburg, VA: Shenandoah Publishing House.

Zedeño, M. N. 2008. The archaeology of territory and territoriality. In *Handbook of Landscape archaeology*, eds. B. David and J. Thomas, 210-217. Walnut Creek: Left Coast Press.