# CONCEPTUALIZING LANDSCAPE WILDNESS AND CULTURAL HERITAGE FOR STATE CONSERVATION PLANNING: A GEORGIA CASE STUDY

by

CHRIS ERIC WATSON

(Under the Direction of Marguerite Madden)

#### ABSTRACT

This study sought to comprehend natural variation in the Georgia landscape and prioritize elements of that variation for elevated conservation attention, thus serving as a prototype for The Wilderness Society's Network of Wildlands Program. The assessment had four components. A geographic information system (GIS) model of landscape wildness was constructed and contrasted against patterns of biological diversity indicators derived from the Georgia Natural Heritage Program database. Modeling procedures isolated a wildland in middle Georgia along the Ocmulgee River that served as an exemplary case study. A history of citizen advocacy in middle Georgia has focused on expansion of the Ocmulgee National Monument and its redesignation as a National Park. Additionally, indigenous cultural heritage elements were integrated into the nature-based assessment. Recent years have witnessed a concerted reassertion of tribal interest in Georgia lands and sacred sites by the historically indigenous Muscogee (Creek) Nation, residing in Oklahoma since the era of Indian Removal. Muscogee activism culminated in the designation of a Traditional Cultural Property (TCP) near Macon, on the National Register of Historic Places in 1999. A formal survey was undertaken among Muscogee informants who have been active in aspects of the preservation of Muscogee heritage in Georgia.

Survey results record Muscogee ideas, insights, and visions for the future of the middle Georgia landscape. This study concludes that modeling and mapping of landscape wildness is highly effective in identifying regions within the state worthy of increased attention as critical elements in a comprehensive state conservation policy. The value of this wildness-centric approach is enhanced by inclusion of state Natural Heritage Program data. Modeling results: 1) bolster and validate citizen advocacy efforts on behalf of an Ocmulgee National Park and Preserve; and 2) provide justification for The Wilderness Society's conservation program in the southeast, and should be extended to include Alabama and South Carolina. The Georgia case study demonstrates that areas identified in landscape wildness models may coincide with areas of critical interest to historically indigenous people. Such instances provide unique opportunities for cultivating synergistic relationships that integrate conservation of the natural and cultural in new permutations of traditional conservation approaches.

INDEX WORDS:The Wilderness Society, Network of Wildlands, Landscape wildness,<br/>Georgia Natural Heritage Program, Middle Georgia wildland, Ocmulgee<br/>River, National Park, Indigenous cultural heritage, Muscogee (Creek)<br/>Nation, Traditional Cultural Property

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# DEDICATION

This work is dedicated to my wife, my son, and my daughter who have endured much so that this task could be accomplished.

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I would also like to convey my enormous sense of appreciation to several Muscogee (Creek) people, residing in Oklahoma, for their generous and enthusiastic contributions to this project. Sadly, University of Georgia confidentiality requirements prevent me from revealing their identities, since they were participants in a formal survey. Nonetheless, this endeavor would have remained forever partial and incomplete without their many contributions. Over the last decade, the reassertion of sovereign tribal interest in traditional Georgia lands and sacred sites by the Muscogee (Creek) Nation has been a tremendous positive development of historic significance. It is hoped that the coming years will see this engagement mature and come to fruition. Georgia will be a better place for the inclusion of a renewed and energized Muscogee tribal presence.

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## TABLE OF CONTENTS

Page
ACKNOWLEDGEMENTSv
LIST OF TABLES
LIST OF FIGURESxi
CHAPTER
I INTRODUCTION AND BACKGROUND1
<b>Project Conceptual Origins</b>
II LITERATURE REVIEW9
Measurements of Human Impact9
Approaches to the Setting of Conservation Priorities
<b>Further Comments on Biodiversity versus Wildness as</b> <b>Contrasting Means of Assessing Conservation Value</b> 16
<u>Federal Land Conservation Designations – the Significance</u> <u>of National Parks</u> 17
<b>Controversy Surrounding the Idea of Wilderness</b>
Modeling Landscape Wildness as a Course Filter Approach to Prioritizing Regional Land Conservation
III MODELING POTENTIAL CONSERVATION LANDS IN GEORGIA
Components Of The Georgia Model46
The Wildness Map85
<u>Comments Regarding Currently Existing Georgia Wilderness</u> <u>Areas, Along With Proposed Additions</u>

	Additional Supporting Evidence for the Importance of Features Identified on the Wildness Map: Florida Panther Recovery	
	<u>Pattern Representation of Biodiversity Elements: The Georgia</u> <u>Natural Heritage Program Dataset</u>	102
IV	THE MIDDLE GEORGIA WILDLAND AND THE POTENTIAL CREATION OF AN OCMULGEE NATIONAL PARK.	116
	<u>Two Approaches to the Expansion of the Ocmulgee</u> <u>National Monument</u>	131
V	THE CULTURAL IMPORTANCE OF MIDDLE GEORGIA LANDS TO CONTEMPORARY MUSCOGEE PEOPLE	147
	The Antiquity of the Human Settlement of Georgia	149
	Georgia Muscogee (Creek) Disinheritance, Removal, and Diaspo	<u>•ra</u> 155
	Muscogee Engagement in Middle Georgia in the 1990s	158
	The Muscogee Survey	173
VI	SUMMARY AND CONCLUSIONS	196
	Implications of and Future Elaboration on the Landscape Wildness Model	
	Advancing the National Park Idea for Middle Georgia	
	<u>Facilitating Muscogee Involvement in Georgia Conservation</u> <u>Decision-Making and Promoting Collaboration in the Identificat</u> <u>and Protection of Muscogee Cultural Sites</u>	<u>ion</u> 206
	Other Related Recommendations	211
REFERENC	ES	218
APPENDIC	ES	236
1	GEORGIA NATURAL HERITAGE PROGRAM ELEMENT OCCURRENCE RANKING TYPOLOGY AND MODIFICATIONS	236
2	EXAMPLES OF NATIONAL PARK UNITS THAT ALLOW HUNTING AND FISHING	241

3	OCMULGEE OLD FIELDS CHRONOLOGY	246
4	THE CULTURAL IMPORTANCE OF MIDDLE GEORGIA	
	LANDS TO CONTEMPORARY MUSCOGEE PEOPLE – A SURVEY	260

# LIST OF TABLES

Table 1: Variables Used to Assess Landscape Wildness at Several Spatial Scales
Table 2: Georgia Datasets for Assessing Landscape Wildness 48
Table 3: Statistical Profile of Human Population Density Per 2000 Census Block Group, Within
Three Zones of Core Black Bear Habitat in Georgia53
Table 4: Classification System for Georgia GAP Statewide Land Cover, 199862
Table 5: Land Cover Composition of Core Bear Habitats in Georgia
Table 6: Georgia Pollution-Related Datasets 71
Table 7: Determination of Hazard Ranks for Georgia Pollution-Related Datasets   72
Table 8: Population Estimates and Trends for American Black Bears in the Southeast
Table 9: Current Georgia Components of the U.S. Wilderness Preservation System
Table 10: Undesignated Wilderness Areas of the Chattahoochee National Forest
Table 11: Scoring Scheme Used in the Evaluation of Georgia Natural Heritage Program Element
Occurrence Records107

Page

# LIST OF FIGURES

Figure 1: The human footprint, a quantitative evaluation of human influence on the land
surface
Figure 2: Landscape wildness for the lower 48 states, U.S. (blue = high wildness, red = low
wildness)
Figure 3: Landscape wildness for the Northwoods region, U.S. – Minnesota, Wisconsin,
Michigan (dark green = high wildness, gray = low wildness)43
Figure 4: Flow chart of GIS methods used to create a grid depicting Georgia population density
(2000)
Figure 5: U.S. Bureau of the Census Georgia Block Group Boundaries (2000)51
Figure 6: Core Black Bear Habitats
Figure 7: Population Density by Census 2000 Block Group55
Figure 8: Flow chart of GIS methods used to create a grid depicting Georgia road density56
Figure 9: Road Network of Georgia
Figure 10: Road Density As A Variable in the Determination of Relative Landscape Wildness.59
Figure 11: Flow chart of GIS methods used to create a grid depicting Georgia land cover60
Figure 12: Georgia Land Cover from the U.S. Geological Survey Gap Analysis (1998
Imagery)61

Figure 13: Land Cover As A Variable in the Determination of Relative Landscape Wildness....64

Page

Figure 14: Flow chart of GIS methods used to create a grid depicting proximity to stewardship
parcels, i.e. publicly managed lands, or other lands managed for conservation in
Georgia
Figure 15: Georgia Gap Analysis Stewardship Parcels
Figure 16: Proximity to Stewardship Lands As A Variable in the Determination of Relative
Landscape Wildness
Figure 17: Flow chart of GIS methods used to create a grid depicting pollution hazards70
Figure 18: Multi-Dataset Pollution Point Locations74
Figure 19: Pollution Hazard As A Variable in the Determination of Relative Landscape
Wildness75
Figure 20: Flow chart of GIS methods used to create a grid depicting proximity to core black
bear habitat in Georgia77
Figure 21: Proximity to Core Black Bear Habitat
Figure 22: Federal and State Public Lands in Relationship to Middle Georgia Bear Habitat81
Figure 23: State Wildlife Management Areas of Georgia in Relation to Core Black Bear
Habitat
Figure 24: Flow chart of GIS methods used to assess relative wildness of the Georgia
landscape
Figure 25: Relative Wildness of the Georgia Landscape
Figure 26: Prominent Features of the Georgia Wildness Map91
Figure 27: Candidate Florida Panther Population Reestablishment Sites
Figure 28: Revised Candidate Florida Panther Population Reestablishment Sites
Figure 29: Georgia Portions of Candidate Florida Panther Population Reestablishment Sites 101

Figure 30: U.S. Geological Survey Quarter Quadrangles Containing Georgia Natural Heritage
Program Element Occurrence Records105
Figure 31: Distribution of Weighted Animal Species Element Occurrences in the Georgia
Natural Heritage Program Database (2002)108
Figure 32: Distribution of Weighted Aquatic Species Element Occurrences in the Georgia
Natural Heritage Program Database (2002)109
Figure 33: Distribution of Weighted Plant Species Element Occurrences in the Georgia Natural
Heritage Program Database (2002)110
Figure 34: Distribution of Weighted Element Occurrences for All Species in the Georgia Natural
Heritage Program Database (2002)111
Figure 35: Proposed Ocmulgee National Park and Preserve – Scenario 1 (Large)120
Figure 36: Proposed Ocmulgee National Park and Preserve – Scenario 2 (Medium)121
Figure 37: Proposed Ocmulgee National Park and Preserve – Scenario 3 (Small)122
Figure 38: Clay Mining Lands on the Ocmulgee River Flood Plain Owned by the Cherokee and
Boral Brick Companies128
Figure 39: Sites and Localities Yielding PaleoIndian Artifacts in and Near Georgia (as of
1986)
Figure 40: Ocmulgee Old Fields Traditional Cultural Property (1999)172
Figure 41: State Wildlife Management Areas of the Ocmulgee and Altamaha Rivers

## CHAPTER I

#### INTRODUCTION AND BACKGROUND

The principal theme of this study concerns the need for stronger conservation measures and some potential strategies for bringing these about, particularly in the state of Georgia. Anthropogenic pressures on the Earth's geophysical systems have never been greater and they trend upward on a daily basis. At the global level, humanity now occupies or utilizes 83 percent of the Earth's land surface (Sanderson, et. al., 2002) and appropriates greater than 40 percent of the products of terrestrial photosynthesis (Vitousek, et. al., 1986; Vitousek, et. al., 1997). Of the 17 percent of the land surface that remains in a relatively wild state, the majority constitute "rock and ice" wildlands not known for their biological diversity, e.g., far northern latitudes, deserts, or high altitude mountains and plateaus. These wildlands, even if not directly occupied or utilized by humanity, still face indirect and potentially massive impacts in the form of atmospheric and hydrospheric pollution, climate change, invasive non-native species and pathogens, the escape and proliferation of genetically modified organisms or genes, etc. In much of the populated world, and particularly in places such as the state of Georgia, very few areas remain in the landscape that would meet the strict legislative definition of Wilderness under the U.S.

Wilderness Act:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions

and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

(Public Law 88-577, 88th Congress, S. 4, September 3, 1964, cited in The Wilderness Society, 2004).

In common parlance, the concepts of wilderness and biodiversity are often assumed to be closely linked and more or less synonymous. In reality, it is important to distinguish between these two ideas because each forms the foundation for a distinct approach to the conservation of nature, both with respect to principles and methods. These distinctions will be explored in greater detail below however, in brief, a biodiversity oriented approach to conservation concerns itself with cataloging the full variety of living organisms within a given area of concern and then devising strategies for maintaining that variety in the landscape, coexistent with the range of anthropogenic impacts and influences on that same landscape. In contrast, the wilderness oriented approach to conserving the natural world pursues a principle of noninterference, seeking to minimize the human footprint on or civilizational impact to a given area of concern. Adherents to a wilderness-centric approach recognize that wildness, or the degree of independence from human influence, occurs along a spectrum or continuum. In the United States, the highest degree of wildness in a landscape has been legally codified in the Wilderness Act of 1964, cited above. On the spectrum of wildness, lesser gradations of value are recognized and considered worthy of conservation by wilderness-centric advocates. Additionally, wilderness and biodiversity approaches are not, in principle, mutually exclusive and can be intermingled, though practical impediments tend to limit such intermingling.

During the course of this study a third concept emerged as significant to the determination of conservation priorities, this being an awareness of indigenous cultural heritage and its imprint on land and landscape. In the case of Georgia, two aspects of the indigenous cultural heritage of the Muscogee Creek people proved vital in gaining a full appreciation of the context for conservation. The first of these aspects is a discernment of the sacred within the Muscogee world view, i.e., of lands or places that are viewed as having an elevated status, worthy of veneration within the framework of traditional religious sensitivities and beliefs. The second aspect concerns the convergence in middle Georgia of interest in the preservation of threatened wildlands with concern for the protection of Muscogee sacred sites and culturalhistoric areas. This convergence stems, in part, from the re-naturalization or re-wilding of certain parts of the middle Georgia landscape that were the original homelands of Muscogee peoples prior to the implementation of a policy of Indian Removal by the U.S. government, some 170 years ago. Another factor in this convergence is the reassertion, in the last decade, of tribal interests in historic Georgia lands and the evolving formulation of a national policy toward former homelands in the southeast by the Muscogee (Creek) National government in Oklahoma.

#### **Project Conceptual Origins**

The Wilderness Society (TWS) is a U.S. based non-profit, non-governmental environmental advocacy organization founded in 1935 by some of the giants of the American conservation movement, such as Bob Marshall, Aldo Leopold, Benton MacKaye, and Robert Sterling Yard (Sutter, 2002). Over the course of the 20<sup>th</sup> century, the organization's primary mission has been as a watchdog and advocate for the preservation of American wilderness and the expansion and protection of America's federal public lands system. The organization has been instrumental in the passage of some of the nation's most far reaching land protection laws including the Wilderness Act (1964), the Wild and Scenic Rivers Act (1968), the National Trails System Act (1968), the Eastern Wilderness Areas Act (1975), the National Forest Management Act (1976), the Alaska Lands Act (1980), the Tongass Timber Reform Act (1990), the California Desert Protection Act (1994), and the National Wildlife Refuge System Improvement Act (1997). In addition to wilderness protection, other major issues of concern to the organization have been the Congressional budget and appropriations process for federal land management, energy development on the public lands, the management of off road vehicle use on public lands, wildfire management and policy, roadless area protection, eastern forest conservation, and protection of the Arctic National Wildlife Refuge (see <u>www.tws.org</u>).

In the late 1990s, a small group of conservation professionals within TWS came to the conclusion that the context for late 20<sup>th</sup> Century conservation had changed to such a degree that the traditional focus limited to the protection of federal public lands could not fully serve the critical needs of the 21<sup>st</sup> century. For the American conservation movement to remain relevant and effective, a strategic shift was called for that would broaden the movement's focus beyond the public sphere to encompass a more vigorous engagement in the conservation of private lands (Perschel, 2005).

The Network of Wild Lands Program was an attempt to conceptualize and implement this broadening of the traditional TWS mission. Practical opportunities for and political support and funding of new public land acquisitions had substantially eroded since the zenith of 20<sup>th</sup> Century conservation. In recognition of this fact, a way was sought to begin to incorporate non-traditional and non-public landscape features, such as regional open space, greenways, and "working lands" into a more extensive scheme of land protection and management (<u>http://www.wilderness.org/wild/network/about\_network.htm</u>).

The idea of a Network of Wild Lands had two aspects. The first was to find a method to incorporate non-traditional conservation lands into the already existing physical network of federally preserved and protected areas. The second aspect was to create new "networks of collaboration", building conservation partnerships that included private lands and private land owners (Perschel, 2005). To facilitate or catalyze these new networks of collaboration, TWS felt that it could provide assistance, or tools, including economic assessment workshops, mapping services, and communications (<u>http://www.wilderness.org/wild/network/ eastern.htm</u>). It was thought that one eventual outcome of these new networks of collaboration might be the creation of a registry system in which private land owners could voluntarily register their lands as part of a national, state, or regional Network of Wild Lands, thus creating a means of recognizing, identifying with, and enhancing the social value of non-public conserved lands (Perschel, 2005).

Given the reality of limitations to organizational time, energy, and financial resources, it was necessary to find a way to focus the effort of the Network of Wild Lands Program to identify regions in the national landscape worthy of special attention and engage in the creation of networks of public and private land protection and networks of collaboration targeting these regions. Dr. Greg Aplet, a senior forest scientist at the TWS Four Corners States Regional Office, took up the problem of how to focus this effort through the conceptualizing and mapping of landscape wildness (Aplet, 1999; Aplet, et al., 2000). By identifying the "most wild" regions within particular landscapes, say for instance at the state level, potential pieces of a Network could be uncovered. In 2001, TWS was able to garner funding to initiate a prototype project, building on the vision behind the Network of Wild Lands Program and beginning with a state that was undergoing rapid and extensive population growth and land conversion. The state of Georgia was one of several under consideration and was eventually chosen to provide a case

study. The evaluation upon which this dissertation is based came to be known internally as the Georgia Wildlands Assessment (GWA) and is part of a broader recent trend in wildness-centric mapping.

During the course of the GWA, for reasons that are not entirely clear, TWS decided to discontinue the development of the Network of Wild Lands Program upon which the GWA was intellectually based. However, in Georgia the justification for pursuing a wildness mapping approach was soon magnified by events on the ground, as will be discussed below. Although the Network of Wild Lands Program is now defunct, recent years have seen the ideas at the heart of the Program embodied in the emergence and rapid growth of the national land trust movement (Brewer, 2004). The notion that national conservation should move beyond a traditional focus on the preservation of public lands, without ever abandoning that tradition, is an idea whose time has come.

Prioritization of landscapes for conservation can be accomplished, in part, using geographic information system (GIS) techniques and existing spatial databases that depict the status of both natural conditions (such as vegetation, land cover, and hydrology) and anthropogenic impacts (such as road networks, developed areas, and the distribution of various types of pollution). Geographic information system modeling permits the manipulation and analysis of spatial datasets for assessing, ranking, and spatially correlating multiple variables considered critical to identifying and prioritizing landscapes for increased protection.

In the U.S., the best known and most developed conservation analysis and planning endeavor has been the U.S. Geological Survey's Gap Analysis Program (Scott, et al., 1993). As discussed below, Gap is a straightforward biodiversity-centric, or biological pattern representation, approach and is the most common type of methodology used for making conservation planning decisions. In this study, the pursuit of an alternative, wildness-centric approach is intended to provide a parallel assessment of Georgia's conservation worthy assets that will hopefully complement information coming from other biodiversity-centric studies like Gap. By so doing, it is hoped that conservation values in the Georgia landscape that may be underrepresented by biodiversity-centric methodologies will be further illuminated.

This study will have four major objectives. First, within the larger tradition of wildnesscentric mapping, it will examine the degree of landscape wildness that remains in the state of Georgia for purposes of identification and prioritization of lands for potential conservation. Second, as a means of contrasting the wildness-centric approach with a more biodiversitycentered method, it will explore the visualization of biodiversity elements in the landscape as a complementary assessment of conservation value. The Georgia Natural Heritage Program database provides a data source for such a comparison. This database is part of a continent-wide system for the collection of records on the locations of rare and imperiled species.

The third and fourth objectives build on the wildness model output that a significant wildland area exists in middle Georgia. This middle Georgia wildland area corresponds to a region of cultural importance to the historically indigenous Muscogee Creek people, now residing in Oklahoma. The third objective of the study will scrutinize current arguments for the creation of a new National Park in middle Georgia near the city of Macon. These arguments stem from a proposal dating back to 1992 seeking to expand the Ocmulgee National Monument and re-designate it as a National Park. Both the Chamber of Commerce and the Tourism and Visitor's Bureau for Macon have passed resolutions in support of this idea. In 2004, the Georgia General Assembly also passed a resolution in support, though since that time no further state or federal action has taken place. Finally, the fourth objective of the study is to consider cultural

heritage values of landscapes critical to state conservation planning and assess views within the Muscogee Creek community with regard to ideas, priorities, and visions for the future of the middle Georgia landscape and the conservation of its natural and cultural resources.

This dissertation is composed of six chapters. Following the Introduction, Chapter 2 will review the literature concerning the nature and intensity of contemporary human impacts to the natural environment, along with recent efforts by scientists to devise rational and feasible prioritization methods for maximizing the conservation of nature in the coming century. It includes a discussion of the utility and flexibility of the federal system of land conservation designations for conserving a variety of resource types in the U.S. The chapter closes with a review of problems associated with recent academic critiques of the idea of wilderness.

Chapter 3 describes a GIS model that was created to identify and prioritize conservation lands in Georgia for The Wilderness Society, using an approach focusing on landscape wildness. The chapter concludes with a discussion of a complementary biodiversity-oriented prioritization scheme derived from data of the Georgia Natural Heritage Program. Chapter 4 examines a wildland of significance in middle Georgia and explores recent and ongoing debate surrounding the potential creation of a National Park along the Ocmulgee River. Chapter 5 discusses the confluence of the previously analyzed events and issues with a revitalized and growing concern on the part of historically indigenous Muscogee people with defining and protecting cultural heritage in their former homelands in Georgia. The interface between environmental conservation and cultural preservation in middle Georgia was something of an unexpected development, but one with potentially national conservation implications. Chapter 6 summarizes the work and outlines a series of conclusions and recommendations for future work.

### CHAPTER II

#### LITERATURE REVIEW

During the last decade of the 20<sup>th</sup> century, conservationists and conservation-minded scientists were increasingly occupied with questions of how best to identify and prioritize species and landscapes for increased protection (Scott, et. al., 1993; Vance-Borland, et. al. 1995; Scott, et. al., 1996; Savitsky and Latcher, 1998; Soule and Noss, 1998; Soule and Terborgh, 1999; Foreman, et. al. 2000; Convis, 2001; Groves, et. al. 2003). It has been clearly established that 21<sup>st</sup> century conservation faces two major sets of problems. First, conservation scientists are called upon to formulate rational strategies for safeguarding as much of the Earth's current biota as possible from the effects of anthropogenic change. Second, conservation advocates must convince societies and governments to implement these strategies to allow for the possibility of 22<sup>nd</sup> century biotic recovery and future evolution.

#### **Measurements of Human Impact**

The growing population of the U.S. impacts wilderness, and nature generally, in countless way. At the national level, the 2000 census recorded an additional 33 million Americans, the largest ten-year population increase in U.S. history (Pollard and Mather, 2001). In October of 2006, the U.S. population was estimated to have passed the 300 million mark, joining China and India as the only countries in history to reach this mark (Jackson, 2006). America is now, essentially, the only developed or industrialized nation that is still undergoing significant population growth. The country consumes a quarter of global energy resources, and

given the patterns of energy use land is being developed at twice the rate of population growth (Buncombe, 2006; CNN, 2006).

In the case of Georgia, almost 2 million new residents were added to the state in the last census, increasing the population by 26 percent (Cook, 2001; Leister, 2006). Concurrent with these burgeoning numbers, a recent report by the American Farmland Trust indicated that the U.S. is now losing 0.8 hectares (2 acres) of primary farmland to urbanization every minute (Becker, 2002). This equates with 425,405.5 hectares (1,051,200 acres) per year. For the period between 1992 and 1997, Georgia ranked third in the nation, behind Texas and Ohio, with 74,462 hectares (184,000 acres) of prime agricultural land lost to development (American Farmland Trust, 2002).

In addition, a report recently released by the U.S. Forest Service paints a stark picture of projected forest loss and conversion in the coming decades (Seabrook, 2001; Wear and Greis, 2001; Ewing and Kostyack, 2005). According to the report, urban sprawl is expected to replace 31 million acres of forest in the southeast over the next 40 years, equivalent to 41 Chattahoochee National Forests. Over the same period, timber harvesting is expected to increase by 50 percent, pine plantations are expected to expand by 67 percent, and harvesting of hardwoods will exceed regeneration.

The building and maintenance of roads is another example of a human impact on the land surface with very far reaching ecological repercussions. Over the course of the 20<sup>th</sup> century, the U.S. constructed over 4 million miles of public roadways. As of 2005, the state of Texas led the nation with 304,171 miles of roads, almost double second-place California's 169,906 miles. In comparison, Alaska, the largest state in terms of area, had only 14,367 miles of road, over a thousand miles less than the tiny U.S. territory of Puerto Rico with 15,993 miles (U.S.

Department of Transportation, 2007; see also <u>http://www.fhwa.dot.gov/policy/ohim/hs05/</u> <u>htm/hm20.htm</u>).

The state of Georgia has been no laggard in the frenzy to build roads. The present day road system of Georgia contains more than 1,200 miles of Interstate highways, over 18,000 miles of state highways, greater than 83,000 miles of county roads, and in excess of 14,000 miles of city streets, for a total of approximately 117,644 total miles. In addition, the state continues to add, on average, about a thousand miles of new roads each year (Georgia Department of Transportation, 2007).

In recent years, a growing body of research has focused attention on the environmental impacts of roads (see e.g.; Forman and Alexander, 1998; Findlay and Bourdages, 2000; Forman, 2000; Haskel, 2000; Jones, et al., 2000; Trombulak and Frissell, 2000; Strouder, 2004; Curley and Petersen, 2005; Watson, 2005). A short and partial accounting of the impacts resulting from road building on formerly unroaded landscapes would include the following.

Roads are responsible for direct habitat destruction, as well as habitat fragmentation, leading to the potential isolation of subpopulations within a previously freely interacting population. In addition, fragmentation can entail the constriction, obstruction, or elimination of movement corridors and migratory pathways. The existence of roads can lead to behavioral modifications in some species, disrupting breeding and recruitment within a population, and causing population movements, or the abandonment of preferred habitats. Roads can alter local hydrology and geomorphology to the detriment of the health of aquatic habitats. Such impacts can include sedimentation, soil compaction and erosion, and pollution in the form of chemical runoff. Roads create ease of access to formerly hard to reach places. Accessibility can foster species mortality through increases in poaching and harvesting. It can also facilitate and speed the movement of invasive weeds, insect pests, exotic species and pathogens, which kill, weaken, or compete with native residents for space and resources. Possibly, the most direct and visible effect of roads on wildlife is roadkill. The number of animals killed by vehicles every year in the U.S. is difficult to gauge, but it is known to be in the millions.

Datasets on the multitudinous variety of human impacts are beginning to appear and be refined that will allow for the visualization and assessment of cumulative ecological effects. Examples of increasingly useful data sources include the USGS National Map (<u>http://nationalmap.gov/</u>), the Earth Science Data Interface of the University of Maryland's Global Land Cover Facility (<u>http://glcfapp.umiacs.umd.edu:8080/esdi/index.jsp</u>), and the various state GIS data clearinghouses (e.g. <u>http://gls.state.ga.us/</u>). In addition to data, however, an understanding of and choice between several competing land conservation prioritization methodologies must be made.

### Approaches to the Setting of Conservation Priorities

Cowling and Pressey (2001) have noted that, with regard to the problem of devising rational strategies for conservation, alternative ecological prioritization exercises or reserve designs are theoretical predictions and not empirical facts. In reality, conservation scientists seldom have the luxury of testing alternative hypotheses. They may have the opportunity, if they are lucky, to participate in the implementation of science-based conservation initiatives, the ultimate effectiveness of which may not be determined during their lifetimes. Currently, four broad alternative approaches exist to the setting of conservation priorities.

The most common strategy is known as the **species richness or pattern representation approach.** The focus of this conservation approach is on identifying quantitative targets for representing species and habitat types. The best known example of this approach is the U.S. Geological Survey's (USGS) Gap Analysis program, whose mission it is to map the vertebrate biological diversity for every state in the union [see e.g., Scott, et. al., 1993; 1996]. According to Kramer, et. al. (2003), Gap analysis utilizes a method for determining "the degree to which native animal species and natural communities are represented in our present-day mix of conservation lands. Those species and communities not adequately represented in the existing network of conservation lands constitute conservation 'gaps'".

In spite of its intuitive and straightforward method, the pattern representation approach has been criticized for its static view of diversity. Critics argue that tactics targeting current species richness may meet with short-term success, but failure to account for the dynamic nature of diversity generation will have long term consequences. In other words, species confined to static refugia designed around current pattern representation are unlikely to respond favorably to changes in the abiotic conditions of those refugia brought about, for instance, by climate change or increasing anthropogenic fragmentation of the wider landscape (Dobson, et. al., 1997; Cowling and Pressey, 2001; Rosenzweig, 2001; Templeton, et. al., 2001; Gian-Reto, et. al., 2002).

A growing number of researchers are advocating for a shift in emphasis from the conservation of pattern to prioritizations based on the **representation of ecological function** (Jernvall and Wright, 1998; Knowlton, 2001; Meyers and Knoll, 2001). In this view, ecosystem integrity relies more on functional aspects of species, than on species richness per se. Consequently, functionally unique species are critical to conservation, while many functionally redundant species are thought to be expendable. The key problem becomes how to identify and protect a comprehensive suite of functionally unique species. It remains unclear how functionally important species can be conserved independently of the wider systems (including

the "expendable" species) of which they are a part. Also, it has been suggested that the perception of ecological redundancy among species is illusory, since apparently redundant species are likely to exhibit varied ecological responses to changing environmental circumstances and differential resilience to disturbance. Furthermore, the differential response of apparently functionally similar species to environmental change is largely unpredictable (Chapin, et. al., 1997).

Cowling and Pressey (2001) have recommended a third approach to the setting of conservation priorities. In their view, weaknesses in the species richness/pattern representation approaches can only be overcome by combining them with a complementary approach that focuses on the **representation of evolutionary process**. According to these authors, evolutionary process can be captured by spatial surrogates, such as: 1) topographic, climatic, and geomorphic gradients; 2) riverine and other movement corridors; and 3) transitional boundaries between major biomes. Thus far, however, there has been little theoretical or empirical support for the reliability of process proxies and it is unclear that ecological or evolutionary process can be captured, in any meaningful sense, other than by the protection of very large landscapes. From a practical perspective, there have been few enough examples of the successful implementation of pattern-based reserve designs. The proliferation of conservation targets implied by the addition of complementary evolutionary process-based criteria, even if it were theoretically viable, would only exacerbate the difficulties faced in implementing simple pattern-based conservation reserve systems.

A final method for prioritizing conservation targets is the **human footprint or wildness representation approach** (Aplet, et. al., 2000; Barry, et. al., 2001; Sanderson, et. al., 2002). This approach recognizes the weakness of the pattern representation approach, as well as the problems associated with the representation of ecological function and evolutionary process. In response, advocates for a wildness oriented strategy minimize the focus on direct conservation of biodiversity, and emphasize the identification of reasonably large areas where the contemporary human impacts on the landscape are least direct and heavy handed. This approach is explicitly less concerned with, though not exclusive of, the restoration of former states of ecosystems and more interested in conserving the relative autonomy of the natural system or maximizing the dehumanization of a particular landscape. One criticism of this approach would be that it fails to guarantee biodiversity preservation, a main focus of conservation thinking since the rise of modern ecology. In addition, it might be argued that if the conservation of small refugia associated with a pattern representation approach is difficult, then the conservation of large wildlands faces even greater obstacles.

Although several authors have argued for the ultimate integration of human footprint/wildness assessments with the species richness/pattern representation approach as the best means of optimizing the identification of conservation targets (Soulé and Noss, 1998; Soulé and Terborgh, 1999), the sheer complexity of such an attempted integration is beyond the scope of this dissertation. For the purpose of this study, a **wildness representation approach** has been chosen as the primary means for addressing the prioritization of conservation areas in the state of Georgia. There are several additional reasons for choosing this approach: 1) it is less common than the pattern representation approach and should provide a useful complement to work being conducted on species richness by the Georgia Gap Analysis; 2) unlike the Gap Analysis it can, in theory, be completed in a timely manner by one person; and 3) unlike ecological function or evolutionary process, the human footprint is easily quantifiable (at least at a coarse level).

## <u>Further Comments on Biodiversity versus Wildness as Contrasting Means of</u> <u>Assessing Conservation Value</u>

In reality, biodiversity is not a straightforward and uncontentious concept. At a general level, biological diversity is said to be "the full variety of life on Earth" (Takacs, 1996). Such a definition, while clear and concise, is of little use in devising meaningful and practical conservation policies. Consequently, scientists have erected a series of more problem-specific definitions for characterizing biodiversity. A single unified conceptual schema, however, has yet to emerge.

In the ecological literature, some researchers discuss biodiversity as occurring, simply, at the genetic, species, and ecosystem levels (Harte, 1996; Ecosystem Health, 1999). A more complex typology uses the term **alpha-diversity** in reference to the variety of organisms occurring within a single habitat, measured as the number of species per area (Fisher, et. al., 1943; Whittaker, 1960; Whittaker, 1967; Huston, 1996). **Beta-diversity** then is the variety in species between different habitat types. In other words, for a given geographical area, the more dissimilar species communities are between habitats, the higher the beta-diversity (Whittaker, 1960; Whittaker, 1967). Some ecologists add the term **gamma-diversity** to refer to the variety of species at even broader geographical scales (Whittaker, 1960; Whittaker, 1972).

In contrast, scientists working on the U.S Geological Survey's Gap Analysis Program use similar terminology, but with slightly different meanings. Gap researchers use alpha-diversity to refer to landscape features less than 1 km<sup>2</sup> in extent. Beta-diversity refers to entire landscapes of 1 to 100 km<sup>2</sup> in extent. Gamma-diversity refers to planning units of 100 to 10,000 km<sup>2</sup> in extent. And finally, the term **epsilon-diversity** is applied to planning regions encompassing 10,000 to 1,000,000 km<sup>2</sup> in extent (Davis and Stoms, 1996).

This lack of consensus over a common terminology poses great problems, not so much in the arena of individual research projects, but rather in transferring the results of research into policy prescriptions and public understanding. Nonetheless, the national Gap Analysis, initiated in the early 1990s, now represents the primary unified attempt to evaluate the status of biological diversity within the United States. Each state is conducting a Gap Analysis with the following three major objectives. First, accurate land cover maps are being produced. Second, predictive models of vertebrate species distributions are being generated. Third, species currently underrepresented in the system of public conservation lands are being identified (Scott, et. al., 1993; Scott, et. al., 1996).

As stated earlier, the concepts of biodiversity and wilderness, though distinct, are often conflated. The wildness approach to conservation strategy is an outgrowth of the wilderness preservation movement. As such, it is independent of the notion of biological diversity. The term "wilderness" in the classical sense refers to land that is "self-willed", i.e., land that is not dominated or controlled by human activity (Nash, 2001). This is not to say that land is disqualified from being wilderness simply by having experienced the occurrence of human activity at some point in its' history, only that such activity should have been insubstantial and non-deformative. Presumably, if an expanse of land were to be self-willed, then it might "will" a greater or lesser degree of biological diversity without affecting its degree of wildness. Thus, though not necessarily irrelevant from a human standpoint, an area's biological diversity is of secondary importance in determining its wildness value.

#### Federal Land Conservation Designations – the Significance of National Parks

In a roundabout, piecemeal, and rather less-than-intentional way, the federal system of conservation lands devised over the course of the last century and a half has allowed for both

conceptual and geographic space enough to encompass both wildness and biodiversity values. Since the beginnings of the American conservation movement in the late 19<sup>th</sup> century, the federal government has been the primary vehicle for land conservation in the United States (Fox, 1981). Federal bureaus such as the National Park Service (NPS) and the Bureau of Land Management in the Department of Interior, and the Forest Service in the Department of Agriculture have been, by far, the major land managing agencies through which advances in conservation science and policy have been implemented.

In 1872, Yellowstone became the first National Park established by Congress, on the border between the Montana and Wyoming Territories. The park was established, under the control of the Secretary of the Interior, as "a public park or pleasuring-ground for the benefit and enjoyment of the people". In subsequent years, Congress created additional parks, monuments, and historic areas managed by multiple federal agencies in addition to the Department of Interior, including the Forest Service and the War Department (see <a href="http://www.nps.gov/aboutus/history.htm">http://www.nps.gov/aboutus/history.htm</a>).

The National Park Service Organic Act was passed by Congress in 1916 and signed into law by President Woodrow Wilson. This enabling legislation founded the National Park Service within the Department of Interior and had as a major objective the consolidation of numerous, though not all, parks and monuments under a single managing agency. According to the Act, the mission of the NPS was to "promote and regulate the use of the Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (http://www.nps.gov/aboutus/history.htm).

In 1933, 56 additional monuments and historic military sites were transferred, by executive order, to the NPS from the Forest Service and the War Department. With this executive order the NPS became a truly national institution with nearly 100 units stretching from coast to coast (see http://www.nps.gov/aboutus/history.htm).

Today there exist a range of names or designations for the various land units that make up the National Park System. In addition to National Parks and National Monuments, other designations include National Battlefields, National Parks and National Recreation Areas, and National Seashores. Of all of these designations, National Parks are considered to be the jewels of the system. The National Parks are generally large natural places having a wide variety of attributes, often including significant historic assets. Hunting, mining and consumptive activities are not authorized within National Parks. National Preserves are areas having similar characteristics to National Parks, but in which Congress has permitted continued public hunting, trapping, and extractive activities. In contrast, National Monuments tend to be smaller units, though some are quite large, and are most often protected by Presidential proclamation under the Antiquities Act of 1906, due to their historic and scientific interest (<u>http://www.nps.gov/legacy/</u> <u>nomenclature.html</u>).

From one perspective, this wealth of potential designations creates a sense of conceptual clutter and potential confusion for the average citizen. However, from another perspective, this same diversity of nomenclature provides a means for incorporating under a single management framework both natural resources, such as wildlife and ecosystems, and cultural features with significant, or potential natural values, such as archaeological remains, ancestral tribal areas, and

historic sites such as battlefields and the homesteads of nationally prominent Americans. As one example, the Kennesaw Mountain National Battlefield Park in Georgia has been identified by the National Audubon Society as one of the most critical habitats in Georgia under the Important Bird Areas Program (see http://www.audubon.org/bird/iba/).

In addition, once a unit is designated within the National Park system, its classification can migrate or be upgraded as new land is added, new features (such as archaeological sites) are added, or increases in use and popularity warrant additional management and financial or personnel resources. For instance, in Ohio the Cuyahoga Valley National Recreation Area was established in 1974 to preserve rural landscapes between the cities of Cleveland and Akron and historic features such as remnants of the Ohio and Erie Canal. In 2000, in response to public sentiment and volume of visitation, an Act of Congress redesignated the unit as the Cuyahoga Valley National Park (see <u>http://www.nps.gov/cuva/index.htm</u> and

#### http://www.nps.gov/history/history/online\_books/cuyahoga/).

The significance of the changeability of a unit's designation has important implications, to be discussed below, in the case of Georgia. A final point of import concerns the way in which the broadness and flexibility of the federal land conservation framework may provide a way, in a practical sense, of sidestepping or bypassing some of the modern intellectual and academic currents seeking to discard age old concepts of wilderness and nature.

#### **Controversy Surrounding the Idea of Wilderness**

In recent years, a substantial intellectual effort has gone into discrediting or downplaying the wilderness ideal. In particular, the interrelated schools of social theory known as postmodern relativism, social constructionism, or deconstructionism, having roots in early to mid 20<sup>th</sup> century Western philosophy and literary criticism, have attacked wilderness as being a fallacious concept

on a number of grounds (Redford, 1990; Callicott, 1991; Gomez-Pompa and Kaus, 1992; Cronon, 1995).

The postmodernist critique can take both hard and soft forms. In its soft form, the position is part of a wider examination of the legacy of human inhabitation of the non-human and pre-human world. As such, it exemplifies the recognition that humans, being social and linguistic animals, naturally bring a vast cultural baggage to bear on all of their interactions with the world. No encounter between a human social group and the natural world is pure, unmediated by language and values. Rather, humans inevitably attach definitions and ideals to their actions and activities. The postmodernist critique of wilderness, and the concept of nature in general, has centered on a series of questions such as the following. After a vast period of human existence on the Earth: 1) What about Nature is natural and what is humanized? 2) How can we make demarcations between the human and natural worlds and how can such demarcations be justified? 3) What is the meaning of preservation and to what degree can Nature be preserved? 4) What is the relationship between conservation and the modern conservation movement, on the one hand, and Western colonialism and imperialism, on the other? 5) Does Nature impose limits on human designs? 6) Can Nature, once degraded or humanized, ever be restored (Evernden, 1992; Evernden, 1993; Cronon, 1995; Soule and Lease, 1995; for related discussion see also Ehrenfeld, 1981; Hardison, 1989; and Carroll, 2004)?

Such questions deserve serious consideration, as they represent an attempt to come to terms with some of the darker and more troubling aspects of human history (and even prehistory). By raising these issues, the postmodernists have forced an increasing sensitivity in conservation debates to problems of ethnocentrism and social and environmental justice for indigenous groups around the world. Nonetheless, postmodernism has a more ominous aspect.
The hard form of the postmodernist doctrine as been succinctly summarized by Charles Upton, as follows.

(1) There is no objective truth, therefore, (2) reality is not perceived but rather constructed, by inherent patterns of perception, or by history, or by society and language, or by the individual, thus (3) all attempts to create comprehensive worldviews that transcend history, or society, or even (ultimately) the individual are oppressive, therefore (4) all such arbitrarily constructed worldviews should be deconstructed in order to celebrate diversity and preserve the rights of marginalized minority constructions of reality (Upton, 2004: 10).

To say that all worldviews are socially constructed in their totality, is the same as to say that they are a function of power, rather than of truth. Consequently, all alternative worldviews stand equally valid, equally falsified, and equally corrupt (postmodernism included, one would think). This is especially and increasingly made manifest in our contemporary globalizing, hyperfast, electronic, meltingpot culture. However, Upton clearly recognizes that, in its hardest form, postmodernism must imply a self-deconstruction and self-negation, but one that it never engages in.

Presumably, in its origins, the aim of postmodernism was to call into question uncritical claims of objectivity. Since particular views of reality can never be identical with reality itself, deconstruction of a particular worldview can act to prevent cultural idolatry of single, narrow perspectives. The danger however, and one that Upton asserts has been vigorously realized, is that the postmodernist mind is forced into idolizing its own viewpoint, since the individual, subjective viewpoint is thought to be the only "reality" that exists. Traced to its ultimate conclusion, postmodernism functions as a kind of counterfeit mysticism, descending into forms of nihilism (i.e., the philosophical doctrine that traditional values and beliefs are unfounded and that existence is senseless and useless) and solipsism (i.e., the theory that the individual self is the only existent thing and that knowledge of reality outside of the self is impossible) [Upton,

2001: 32-39]. While, for some, such viewpoints may be sustainable as an individual or personal philosophy, they become incoherent as foundations for social and cultural life.

What does any of this have to do with conservation? The grounds upon which the wilderness concept has been deconstructed include accusations that wilderness is: 1) an ecologically naïve notion of a pristine and unchanging nature; 2) romantic in the pejorative sense (i.e., irrational, sentimental, emotionalistic), rather than in the more noble sense of a relationship to nature characterized by a sense of beauty, mystery, or love; 3) a conceptual imposition of urban, statist, or racist elites who possess an arrogant, deformed, or unsympathetic understanding of the reality of rural life (see e.g., Spence, 2000); and 4) an outright falsehood, since the very idea of Nature itself is a human artifact (i.e., a social construction). In this last view, humans have always and everywhere "actively managed" the landscape. In fact, since humanity appeared on the planet all landscapes have been "man-made landscapes" and "attributable to the bioregional management programs of the indigenous population(s)" (Callicott, 1991: 352-353).

The present study is based on a recognition of the continuing value and legitimacy of the wilderness ideal. Consequently, without entering into an exhaustive discussion of the postmodern critique of wilderness, the following brief statements in defense of the concept can be made. First, with regard to the charge of ecological naïvete, the author of a recent history of The Wilderness Society gives the following response.

The founders of The Wilderness Society did see wilderness areas as places meant to preserve pristine nature... but they almost always spoke of such an ideal in relative rather than absolute terms. Ecological critiques of wilderness, in other words, have tended to overstate the extent to which wilderness was, and is, an ideal of ecological purity. Indeed, ecological concerns were not a central causative agent or a major component in the founder's definition of modern wilderness... (M)ore important to the founders was the contrast between the modern, mechanized world of the early twentieth century and the few remaining large areas in the United States where nature dominated. Wilderness was as much about "wildness," the absence of human control, as it was about pristine ecological conditions. The modern wilderness idea was shaped more by a collective

uneasiness with the enormity of change at a given historical moment than it was by the emergence of a new scientific way of looking at nature (i.e., modern ecology) [Sutter, 2002: 14].

Second, a fundamental flaw underlying the charge of the historical ubiquity of human "management", i.e., that all landscapes are "humanized", is that the advocates of this view (e.g., see Devevan, 1992) make no qualitative anthropological distinctions concerning the imprints left during the various phases and cultural epochs of human pre-history and history, e.g., foraging, or hunting and gathering (a 2 million year adaptation), versus subsistence horticulture; subsistence horticulture versus pre-industrial agriculture; pre-industrial agriculture versus industrial agriculture; industrial agriculture versus the age of mass urbanization. Implicit in this view is the belief that all human "influences" on the land are equal, in essence if not in substance.

To defenders of the wilderness ideal, such assumptions are contradicted by the facts (Vale, 1998). Many would maintain that the distinction between foraging culture and agricultural civilization *is* the distinction between wildness and domesticity, and that this distinction is qualitative and not simply quantitative (Zerzan, 1994; Shepard, 1998; Berman, 2000; Perlman, 2002; and Zerzan, 2008). Furthermore, only very recently, since the hyper-expansion of the human population coinciding with the discovery and exploitation of fossil fuels (especially petroleum) has humanity acquired the ability to exert anything resembling global influence, or control, over the biosphere (Hubbert, 1976; McNeill, 2000).

Finally, with regard to the claim that wilderness advocates falsely perceive nature in wilderness to be unchanging, it is again important to reassert the distinction between the notions of biodiversity and wildness. Whereas, it is certainly true that a quantitative entity, such as the biodiversity of Clarke County, Georgia can be conserved, but not frozen in time and space, wildness as a quality (the degree of natural autonomy in a landscape) certainly can be preserved

and even restored. One implication of this view is that conservationists may face the unpleasant dilemma, especially in temperate parts of the world, of having to choose between focusing their efforts on areas of high wildness, but possibly less-than-high diversity or, alternatively, areas of high biodiversity, but potentially low wildness. This may turn out to be a scenario faced in the case of Georgia, as discussed below.

On a related note, the Gap Analysis for the state of Maine was completed in 1998 (Krohn, et. al., 1998). In 2002, the lead author of the Maine Gap Analysis final report indicated that the area of greatest biological diversity within the state coincided with the most heavily populated southern third of the state landscape. It was the researcher's personal opinion that conservation efforts should be concentrated in the south, rather than in the relatively most wild northern two thirds of the state (Krohn, 2002). This opinion was in sharp contrast with other conservationists who were advocating the preservation of Maine wildlands, and even the creation of a very large National Park to achieve these ends (see e.g., RESTORE: The North Woods, 1994; Northern Forest Alliance, 1997, Bond and Long, 1998; North Woods Vision, 1998; National Parks Conservation Association, 2000).

One final refutation of the hard form of the postmodernist critique involves the recognition that if one adopts the position described by Upton above, no constructive action can be taken in favor of conservation. Those forces arrayed against the conservation of Nature, e.g., those favoring development, land transformation, resource extraction, and deregulation or unregulation of pollution, such as  $CO_2$  emissions, are seldom given pause by postmodernist accusations that their world view is no more legitimate or compelling than the next interest group's. Instead these forces move relentlessly forward and, more often than not, use the postmodernist argument to politically hog-tie conservation advocates and sow seeds of self doubt

among those whose inclination is to support the protection of Nature. Unless wildlife and Nature lovers are content to surrender the field and hope for the best, they can ill afford to become ensnared in the web of postmodern deconstruction, especially when the advocates of Nature deconstruction are unwilling to deconstruct their own motives and intellectual underpinnings. As the legendary 20<sup>th</sup> century philosopher of language, Ludwig Wittgenstein, once noted, all of the fundamental problems of philosophy are caused by the bewitchment of our intelligence by means of language (Monk, 1990: 380).

# <u>Modeling Landscape Wildness as a Course Filter Approach to Prioritizing Regional</u> <u>Land Conservation</u>

A Georgia model of landscape wildness fits well within a recent trend in wildernesscentric mapping. In recent years, advances in GIS technology and remote sensing, along with the availability of a variety of high resolution digital datasets, has facilitated evaluations of the current state of wildness at the global (Sanderson, et al., 2002), national (Aplet, et al., 2000), and regional levels (Barry, et al., 2001). Thus far, there have been few, if any, state level assessments of landscape wildness, though the biodiversity focused evaluations of the GAP Analysis have, by now, covered most of the states.

Whereas the biological diversity of a specific locale is relatively easy to measure using indirect proxy indices (at least in theory), landscape wildness is more difficult to capture as a single quantitative measurement. Species richness, i.e., the number of species per unit area or land cover type, provides a common metric for evaluating diversity. However, in the case of landscape wildness it is absence rather than presence that is assessed by measuring the various types of human impact that impinge on the autonomy of a natural system. Human impacts on a landscape can thus be mapped and the process of combining multiple kinds of impact will, by implication, produce an assessment of the relative wildness of a given geographic space.

However, before continuing with the discussion of a wildness model for the Georgia landscape, it will be useful to briefly touch on purpose and nature of geographic modeling in general and then to examine three previous examples in which the wildness modeling approach has been utilized.

# **Geographic Modeling**

There exists a wide range of approaches to the experimental simulation of natural phenomena within the discipline of geography.

*Model*: 1. An abstraction of reality. 2. A set of rules and procedures for representing a phenomenon or predicting an outcome. The terms modeling and analysis are often interchanged, although modeling implies simulation or prediction while analysis refers to the larger process of identifying a question and using the results of a model to answer it. 3. A data representation of reality (for example, vector data model, TIN data model, raster data model). - from Dictionary of GIS Terminology, ESRI Press, 2001.

In the sense of the above definition, a paper map is a kind of simple model that allows for the static visualization of spatial relationships among a limited set of thematic elements. Geographers have noted a late 20<sup>th</sup> century shift, coinciding with the advent and spread of the computer, from an earlier communications paradigm of which the hardcopy map was an exemplar, to a more contemporary analytical paradigm in which hardcopy maps are one of numerous elements in a much more complex computer-based array of data manipulations and transformations (Demers, 1997: 53). Under the newer paradigm, the GIS database is the exemplary component, though this has, if anything, only increased the prominence of printed maps themselves, since computer automation greatly eases the production and printing process.

However, for purposes of the current discussion we will limit our examination to modeling within the context of a GIS. A GIS is itself a complex package of analytical tools, though not in and of itself a model. Demers (1997) defines a GIS as "a series of subsystems within a larger system". In this view there are four primary subsystems that perform the

following functions: 1) data input, 2) data storage and retrieval, 3) data manipulation and analysis, and 4) data reporting and display (Demers, 1997: 9). Under a slightly different definition, a "GIS is a System of computer software, hardware, and data, along with personnel to help manipulate, analyze and present information that is tied to a spatial location" (Bourrough, 1986).

Within a GIS environment, the most common type of modeling method is the cartographic model. According to one of the founders of modern geographic information science, a cartographic model is "...a set of interacting, ordered map operations that act on raw data, as well as derived and intermediate map data, to simulate a spatial decision making process" (Tomlin, 1990). A more elaborate definition of a cartographic model might refer to: "1) A representation of attributes or features of the earth's surface in a digital database, 2) a set of algorithms written in computer code that describe a given physical process or natural phenomenon of the earth's surface... (or), 3) A statistical distribution or a conceptualization of spatial variation" (Burrough and McDonnell, 1998: 302).

# Other Uses of the Wildness Modeling Approach: A Global Model

Perhaps the most ambitious attempt to model landscape wildness to date appeared in 2002 when researchers at Columbia University and the Wildlife Conservation Society produced a global map of human influence on the Earth's terrestrial surface area (Sanderson, et al., 2002). This effort was made possible by advances in earth observation technology during the 1990s and the appearance of the first high quality global land use and land cover maps (see e.g. Loveland, et al., 2000), along with the creation of additional global datasets, such as improved digital maps of global human population densities (see CIESIN, et al., 2000). Given these improvements, the authors of the global wildness model assert that... "(a)lthough the datasets now available are

imperfect instruments, they are of sufficient detail and completeness that scientists can map the influence of humans on the entire land's surface" (Sanderson, et al., 2002: 892). This mapping of the human influence, the authors call "the human footprint".

Nine datasets were used by Sanderson, et al. (2002) to construct four broad categories of data depicting the human influence (Table 1). The four categories were population density, land transformation, accessibility, and electrical power infrastructure. In order to combine the data, several standardization procedures were employed. First, all datasets were converted to a single map projection with consistent regional and coastal boundaries. Second, all datasets were converted into grids with a cell size of 1 km<sup>2</sup>. Finally, a scoring scheme was erected for each dataset ranging between 0 (low human influence) and 10 (high human influence).

Human population density numbers were derived from the world population dataset cited above (CIESIN, et al., 2000). Local increases in human population densities are commonly associated with species declines and ecosystem degradation (Cincotta and Engelman, 2000; Brashares, et al., 2001; Harcourt, et al., 2001; and Parks and Harcourt, 2002). In addition, for humans that depend exclusively on hunting, it has been estimated that even the most productive ecosystems cannot sustainably support much more than one person per square kilometer (Robinson and Bennett, 2000). Consequently, the authors employed the following weighting scheme. "(H)uman influence scores for densities between 0 and 10 persons per km<sup>2</sup> increased linearly from 0 to 10 and the score above 10 persons per km<sup>2</sup> was held constant at 10.

The Sanderson, et al. (2002) evaluation of land transformation utilized the following four datasets: 1) global land use/land cover, produced by the U.S. Geological Survey, the University of Nebraska, and the Joint Research Centre of the European Commission (1992-1993); 2) a vector map of built-up centers produced by the U.S. National Imagery and Mapping Agency

 Table 1

 Variables Used to Assess Landscape Wildness at Several Spatial Scales

Scale			
Global	National - U.S.	Regional - Northern Great Lakes	State - Georgia
(Sanderson, et. al., 2002)	(Aplet, et. al., 2000)	(Barry, et. al., 2001)	(Watson, 2008 - dissertation)
1 Population Density	1 Solitude/Population Density	1 Population Density	1 Population Density
	a) Census Block Groups		
		2 Road Density	2 Road Density
2 Land Transformation	2 Remoteness		
a) Land Use/Land Cover	a) Distance from Major Highways	3 Forested Land Cover	3 Land Cover
b) Built-Up Centers			
c) Population Settlements	3 Uncontrolled Process	4 Contemporary Forested Land Cover	4 Proximity to Publicly-Managed Lands
d) Roads and Railways	a) Natural Vegetation Patch Metrics	with Presettlement Vegetation Types	or Lands Managed for Conservation
	b) Dams Per Watershed		
3 Access		5 Publicly-Owned Land	5 Proximity to Known Pollution Sources
a) Roads and Railways	4 Natural Composition		a) Hazardous Waste Sites
b) Coastlines	a) Land Cover Characteristics	6 Wolf Habitat Suitability	b) Industrial Facilities Discharge Sites
c) Rivers	b) Urbanization		c) Landfills
			d) Mineral Industry Locations
4 Electrical Power Infrastructure	5 Unaltered Structure		e) National Sediment Inventory
a) Stable Nighttime Lights	a) Cities and Towns		f) Toxic Release Inventory Facilites
	b) Highways		g) Resource Conservation and
	c) Dams		Recovery Information System
	d) Airstrips		h) Comprehensive Environmental
			Response, Compensation, and Liability
	6 Pollution		Information System (Superfund)
	a) NASA Lights at Night		
	b) EPA National Priority List		6 Proximity to Core Black Bear Habitat

(NIMA) [1960s-1990s]; 3) a vector map of population settlements, also produced by NIMA (1960s-1990s); and 4) a vector map of roads and railways, produced again by NIMA (1960s-1990s).

During the past 30 years, massive global land transformation has occurred through the expansion of human settlements, the growth and intensification of agriculture, and the development of extensive highway and railway systems. Not all transformations of land use are equal however, in the degree to which they impinge on habitat quality and alter ecosystem functioning. The following weighting scheme was devised to assess the affects of land transformation. Built-up environments were given the maximum score of 10. Agricultural land covers were assigned scores ranging between 6 and 8. Mixed use land covers were given a score of 4. The remaining land cover types were given a score of 0 (e.g., forests, grasslands, Mediterranean-type ecosystems). The authors noted that extensive grazing areas in arid regions were difficult to map and were likely to be underestimated in the final results. The spatial accuracy of the NIMA roads and railways data was +/- 2 km. Consequently, a 2 km buffer was placed around each linear transportation feature and a score of 8 was assigned within each buffer, though it was realized that this procedure could overestimate the spatial extent of the actual influence.

In order to estimate human access, the following three NIMA datasets were employed... 1) a vector map of roads and railways, 2) a vector map of coastlines, and 3) a vector map of rivers. Access to land for hunting and resource extraction is facilitated by roads, railways, rivers, and coastlines. In much of the world, hunting still provides a major component of the human food supply. In tropical regions, access by river or coast may be more prevalent than access by road (Redford, 1992; Peres and Terborgh, 1995). In order to quantify access impacts, the authors used the distance of 15 km as an estimate of the distance that an individual could walk in a "difficult-to-traverse" ecosystem (e.g., moist tropical forest) in a single day (see Wilkie, et al., 2000). Any area falling within 2 to 15 km of a road, river, or coast was assumed to receive at least intermittent use and assigned a score of 4. River access was likely to have been underestimated, since the NIMA database only recorded rivers that reached the sea and were wide enough to be recorded as polygons, thus excluding smaller rivers and tributaries.

Electrical power infrastructure was represented using a single dataset, a map of stable nighttime lights, produced by the National Oceanic and Atmospheric Administration (NOAA) and the National Geophysical Data Center (NGDC) (Elvidge, et al., 1997a). Prior to the industrial revolution and the widespread exploitation of fossil fuels, the human ability to extensively and rapidly alter the environment was heavily constrained (McNeill, 2000). The degree of technological development, as well as the consumption of fossil fuels at the local level is closely approximated by the distribution of electrical power infrastructure, as revealed by artificial lights (Elvidge, et al., 1997b; Sutton, et al. 1997). Areas possessing visible light for more than 89-percent of nights were assigned a score of 10. Areas with visible light for between 40-percent and 88-percent of nights were assigned a score of 4. Areas with lights visible for 0-percent of nights were assigned a score of 0.

After all of the datasets were assembled, a human influence index was created by summing all scores. The results indicate that:

Overall, 83-percent of the land surface and 98-percent of the area where it is possible to grow rice, wheat, or maize, is directly influenced by human beings. The theoretical maximum (score of 72) is reached in only one area, Brownsville, Texas, USA, but the top 10-percent of the highest scoring areas looks similar to a list of the locations of the world's largest cities... The minimum score (0) is found in large tracts of land in the boreal forests of Canada and Russia, in the desert regions of Africa and Central Australia,

in the Arctic tundra, and in the Amazon basin. The majority of the world (about 60percent), however, lies along the continuum between these two extremes... (Sanderson, et al., 2002: 895).

Finally, a biome normalization procedure was employed using two datasets, Terrestrial Biomes and Terrestrial Biogeographic Realms, produced by the World Wildlife Fund's U.S. Conservation Science Program (Olson, et al., 2001). In each biome, within each biogeographic realm, minimum value grid cells were given a revised score of 0, maximum value grid cells were given a revised score of 100, and intermediate values were linearly stretched between these extremes. The advantage of the normalization procedure is that it allows the wildest remaining areas in each biome to be identified. The final map is displayed in Figure 1. The authors conclude that... "it is in these wildest places that the greatest freedom and opportunity to conserve the full range of nature still exists (Sanderson, et al., 2002: 897).

# Other Uses of the Wildness Modeling Approach: A National Model

In recent years, at least three notable models of landscape wildness have appeared in the literature, each focusing on a unique spatial scale. One of the earliest pioneering efforts was an attempt by The Wilderness Society to empirically evaluate the wildness of the land surface of the contiguous United States. GIS methods were used to represent the coterminous 48 states as a grid of approximately 16 million 1 km<sup>2</sup> cells (Aplet, et al., 2000). Six classes of indicators were used to derive a wildness index (Table 1). Each of the six indicators, in turn, denotes an attempt to characterize one of two kinds of traits, i.e. "attributes of the land that contribute to its freedom" and "attributes that contribute to (its) naturalness" (Aplet, et al., 2000: p. 4). Attributes that capture the notion of freedom, according to the authors, include: "1) the degree to which land provides opportunities for solitude, 2) the remoteness of the land from mechanical devices, and 3) the degree to which ecological processes remain uncontrolled by human agency."





Source: Sanderson, E.W., M. Jaiteh, M.A. Levy, K.H. Redford, A.V. Wannebo, and G. Woolmer. 2002. The human footprint and the last of the wild. *Bioscience* (October), 52(10): 891-904.

Attributes that capture the notion of naturalness include: "1) the degree to which (the land) maintains its natural composition, 2) the degree to which it remains unaltered by artificial human structure, and 3) the degree to which it is unpolluted."

Based on the proposition that the "most wild land must be the least inhabited", the indicator for solitude consisted of a single dataset, population density by 1990 census block groups, broken down into 5 classes. To construct an indicator for remoteness, roadlessness was evaluated by examining the distance of each grid cell from roads, using a USGS major highways dataset. The results, again, were broken down into 5 "distance" classes. The third "freedom" variable, uncontrolled ecological process, was assessed by combining two different measurements. The first of these was an appraisal of natural vegetation patch metrics (e.g. area, distance to edge, and major axis of polygon), using an unspecified dataset. The second measurement involved a calculation of the number of dams per major watershed, as a means of representing alterations in hydrologic function. The results of these two measures were combined and divided into 5 classes. The authors noted that "(a)lteration of process is probably the most difficult to measure of the six attributes that contribute to wildness" (Aplet, et al., 2000: p. 6).

In order to weigh the idea of "naturalness", an attempt was made to represent the natural composition of each grid cell, based on the principle that "(t)he species composition of any area... can be quantified in terms of proportion of native species". The authors recognize that "(d)etermining the degree to which native species composition has changed as a result of human agency" is currently a major problem, though they note that advances in historical ecology and paleobotany should help to improve future datasets (Aplet, et al., 2000: p. 7). To derive an indicator for natural composition, one of the few datasets found providing coast-to-coast species

composition coverage was the USGS North American Land Cover Characteristics classification, which provided over 200 classes of surface vegetation, both natural and anthropogenic. This dataset was combined with the urban classes extracted from a different (unspecified) USGS Land Use / Land Cover dataset. The combined result of these two datasets was divided into 5 classes ranging from primarily unnatural to primarily natural vegetation types.

A second indicator of naturalness is the variable conceptualized by the authors as unaltered structure. In framing this variable the authors state that "(e)cosystem structure refers to the spatial arrangement of the components of ecosystems" (Aplet, et al., 2000: p. 7). Many alterations of structure are fairly easy to map. Out of the multitude of possible ways that humans alter ecosystems, available data was limited to built structures. As a consequence, 4 variables were extracted from unspecified datasets and combined to depict unaltered structure. These variables were cities and towns, highways, dams, and airstrips. Grid cells containing any of these variables were assigned a value of 1, while those lacking them were given a score of 5. As an interesting aside, the authors assert that "the standard against which alteration is to be judged is the condition of the ecosystem prior to the invasion by modern technological society... Some structures, such as the earthworks of the Southeast... were part of the historical ecosystem and should be considered natural". This assertion has some bearing on the Georgia case study, as will be discussed below.

The final indicator of naturalness was pollution. Despite a wealth of data on various kinds of pollution for different regions and localities across the nation, two of the only available nationwide datasets were a NASA produced study of U.S. light pollution at night and an EPA database of national pollution regulation priorities. These datasets were combined and reclassified into 5 classes. The combination of the six variables yielded the wildness index

displayed in Figure 2. The major shortcoming of the methodology, as noted by the authors, concerns the fact that "by displaying the data in a one-square-kilometer grid, we have implied a level of precision to the data that is inappropriate for an index based on data collected at a number of scales, some of them quite coarse" (Aplet, et al., 2000: p. 14). Presumably, future iterations of the model would address this problem by incorporating continually improving datasets.

# Other Uses of the Wildness Modeling Approach: A Regional Model

In 2001, researchers at the University of Wisconsin applied a wildness modeling approach to the examination of a large region within the United States (Barry, et al., 2001). The western northwoods region of the upper Great Lakes consists of parts of three states, Wisconsin, Minnesota, and the upper peninsula of Michigan. The paper's authors do not state why this region was chosen for study and they do not cite the national wildness map of Aplet, et al. (2000). However, an examination of the national wildness map (Figure 2) shows this region to be one of very few areas of high wildness and relatively low human impact east of the Rocky Mountains.

One interesting aspect of this regional assessment is the authors' apparent conflation of the biodiversity and wildness concepts, as discussed above. The study makes the assertion that a determination of landscape wildness provides an evaluation of "biodiversity value". Yet the paper provides no data on regional biodiversity (e.g. species richness) to back up this assertion. Furthermore, toward the end of the paper, the authors' recognize that... "(t)argeting areas for conservation based on a wildness criterion will probably correspond only weakly with other approaches to assessing biodiversity at a regional level" (Barry, et. al., 2001: 239). It should be



noted however, that this apparent conflation of the biodiversity and wildness concepts does not diminish the report's worth as a wildness assessment.

The authors cite three justifications for adopting wildness as a criterion in conservation planning. First, the evaluation of human impacts on ecosystems requires areas of relatively wild and unmodified habitat to serve as benchmarks (Jenkins and Bedford, 1973; Maser, 1994; Hunter, 1996). Second, top-level predators find optimal conditions in large wildland habitats. Ecosystem integrity is compromised, in many cases quite seriously, with the loss of these toplevel predators. Such predators function, among other things, to structure the communities of which they are a part. Consequences of top-predator extirpation can include increases in mesopredator and ungulate densities, which are associated with songbird declines, the extirpation of sensitive plant populations, and the alteration of community compositions (Logan and Irwin, 1985; Mattson, et al., 1992; Rooney and Dress, 1997). Finally, quantification of wildness is made feasible by the increasing availability of geospatial datasets depicting human impacts on the environment.

The following six data layers were used in the Barry, et al., (2001) Northwoods assessment: 1) land cover, 2) forest cover type, 3) land ownership, 4) human population density, 5) road density, and 6) wolf habitat suitability (Table 1). All datasets were acquired as, or converted into raster grids with a 2147 metre cell size to match the layer with the largest cell size. For each layer, grid cells were assigned to one of two states. Grid cells that were determined to be "more wild" were assigned a score of 1, while those determined to be "less wild" were assigned a score of 0.

Current forested land cover was determined from a classification of AVHRR satellite imagery acquired from the Great Lakes Ecological Assessment (GLA). The GLA is a collaborative interagency governmental effort to acquire and archive environmental, biological, and socioeconomic data for the northern Great Lakes states. The dataset was reclassified and aggregated forest lands (including old growth, plantations, and recent clearcuts) were assigned a value of 1 (more wild). All other land cover classes were given a value of 0 (less wild).

Next a determination was made as to which forested lands still possessed the same land cover types as were present during pre-settlement times. This was permitted by the availability of a GLA dataset entitled "Early Settlement Vegetation in Northern Great Lakes Ecoregions" that was compiled from early survey records of the General Land Office. These survey records dated from 1816 to 1856 for Michigan, 1832 to 1866 for Wisconsin, and 1847 to 1907 for Minnesota. Pre-settlement cover types were then overlayed onto current land cover. Grid cells that contained the same forest cover types in both datasets were assigned a score of 1, while those with changed land cover types were given a value of 0. It was found that 15-percent of the region still possessed the pre-settlement land cover types remain essentially identical to presettlement conditions". They further assert that... (w)ithout active timber management and fire suppression efforts, most areas would eventually revert to their presettlement forest cover type" (Barry, et al., 2001: 233).

With regard to land ownership, a GLA dataset was acquired that depicted the locations of federal, state, and county-managed public lands, as well as properties owned by private land trusts. Based on the assumptions that public lands were more likely to retain forested land cover types than non-public lands and that management of extensive areas by relatively few agencies facilitates conservation, grid cells in public ownership received a score of 1. Management of public lands that might contribute toward biodiversity loss, such as logging practices, was not

evaluated. Grid cells not in public ownership received a score of 0. The results indicated that 34-percent of the region is in public, or land trust, ownership.

A U.S. Forest Service dataset, derived from U.S. Census Bureau Tiger/line files was used to calculate human population densities. Based on the fact that the density of human populations is positively correlated with extinction risk in plants, birds, and mammals, grid cells with fewer than 1 person per km<sup>2</sup> were given a score of 1, while cells with >1 person per km<sup>2</sup> were given a score of 0. Based on these criteria it was found that 52-percent of the region had a relatively low population density.

Another U.S. Forest Service dataset, derived from U.S. Census Bureau Tiger/line files was used to calculate regional road densities. Areas with low road densities tend to exhibit better overall ecological conditions and provide more favorable habitat for top-level carnivores, while high road densities increase wildlife mortality, interfere with metapopulation dynamics and dispersal, and promote the movement of exotic species. Consequently, grid cells containing < 0.5 km of road per km<sup>2</sup> received a score of 1 and grid cells containing > 0.5 km of road per km<sup>2</sup> received a score of 0. The results indicated that 43-percent of the region had a relatively low road density.

Finally, the authors obtained a dataset produced by wildlife ecologist D.J. Mladenoff depicting wolf habitat suitability and indicating where the probability of wolf pack recolonization was highest. The dataset was derived from a study of known wolf pack locations, based on radiotelemetry, and related these locations to landscape scale factors (Mladenoff, et al., 1995; Mladenoff, et al., 1999). Grid cells in which the probability of wolf colonization was >75percent received a score of 1, while those in which the probability of wolf colonization was <75percent received a score of 0. It was predicted that wolves could recolonize 18-percent of the landscape.

When the final data layers were summed, only 5.7-percent of the region met all of the wildness criteria. Areas receiving a summed wildness score of 3, 4, or 5 occupied 43-percent of the landscape and areas receiving a summed wildness score of 0, or 1 occupied 41.1-percent of the landscape. The final map is displayed in Figure 3. In conclusion, the authors make the following recommendations. "Areas scoring a 3 or higher... could be used as a threshold for inclusion in a conservation plan. Areas with a wildness score of 2 might be targeted for restoration (and)... connectivity. Over the next century a modest restoration goal might be to restore all lands within a Northwoods conservation network to a wildness level of 4, or if public lands are present, a 5 (Barry, et al., 2001: 239-240).

# A Parallel Approach to Wildness Modeling: The Ecological Footprint

Another approach to evaluating human environmental influence deserves brief mention. Not to be confused with the human footprint model discussed above, the "ecological footprint" approach was developed in the 1990s by William Rees and Mathis Wackernagel (Rees, 1992; Rees and Wackernagel, 1994; Wackernagel and Rees, 1996, Wackernagel, 2002). This approach had its origin in an attempt to design an environmental accounting procedure for the city of Vancouver in British Columbia, Canada.

Ecological footprinting does not provide an assessment of landscape wildness, as do the models discussed previously. Instead, the procedure attempts to determine the quantity of productive land that is needed to maintain a specified human population indefinitely. The basic idea is that if a population's ecological impact, or footprint, can be quantified, then the degree of



(dark green = high wildness, gray = low wildness)

Source: Barry, G.R., T.P. Rooney, S.J. Ventura, and D.M. Waller. 2001. Evaluation of biodiversity value based on wildness: A study of the western northwoods, upper Great Lakes, USA. *Natural Areas Journal*, 21:229-242.

ecological sustainability of that population can be better understood and progress toward a more sustainable state can be measured and tracked. Ecological footprinting provides decision makers with a means by which sustainability costs and benefits can be compared with regard to the available alternatives between goods and services, energy supplies, design choices, and policy implications.

The ecological footprint creates a single area-based (e.g. acres, hectares, etc.) aggregate measurement of impact, based on the natural environment's ability to renewably produce resources and absorb wastes for the specified population. In theory, the population in question can be scaled from a local level (e.g., a city or county) upwards to state, national, or even global levels. Different classes of human activity are distinguished and quantified, such as energy use, food and fiber production, solid waste generation, water utilization, and the extent and intensity of built-up land.

The methodology behind ecological footprinting is quite complex, however, two versions of this approach have been employed. The first is a bottom-up procedure, called component footprinting, which computes and then sums the ecological footprints for the various constituent parts, or subsystems, with a cultural system or population. Alternatively, a top-down procedure can be utilized, called compound footprinting, in which per capita aggregate figures are used for the production, import, and export of various commodities, usually using national-level statistics. Both procedures allow for the comparing of demand with ecological production and availability.

Ecological footprinting has been criticized on a number of grounds, which will not be reviewed here. However, the procedures are being continually refined and have received widespread attention and advocacy by such organizations as the Global Footprint Network (<u>http://www.footprintnetwork.org</u>), Redefining Progress (<u>http://www.rprogress.org</u>,

<u>http://myfootprint.org</u>), and the World Wildlife Fund's biannual Living Planet Report (<u>http://www.panda.org/news\_facts/publications/living\_planet\_report/index.cfm</u>).

Wildness modeling differs from the ecological foot print method in that, whereas a wildness assessment seeks to identify the least impacted lands within a given area or region for purposes of biological land conservation, the ecological footprint seeks to assess consumption and waste remediation needs for a specified population for purposes of cultural sustainability. Nonetheless, it is easy to envision that future developments might see these two approaches working in tandem. Certainly, it is difficult to imagine a non-oxymoronic concept of cultural sustainability that fails to factor in the preservation of biodiversity and wildness. We now turn to a discussion of the effort to model landscape wildness for the state of Georgia.

# CHAPTER III

# MODELING POTENTIAL CONSERVATION LANDS IN GEORGIA

When it comes to the modeling of landscape wildness within a GIS environment, a range of variables have been used to explore global, national, and regional scales (Table 1). These modeling approaches will be adapted, utilizing Georgia-specific data, to depict landscape wildness in Georgia. In addition to non-biotic anthropogenic factors, if one or more key biotic elements still exist in a landscape that may serve as indicators of or proxies for a high degree of wildness, then they may be included in a model, along with measures of direct human impacts on the land (Vance-Borland, et al., 1995; Beazley, 1998; Miller, et al., 1998; Soule and Terborgh, 1999; Foreman, et al., 2000). In the case of Georgia, the American black bear (*Ursus americanus*) still persists in the landscape in three discrete and widely separated populations and, as a consequence, will be included as a focal biotic element in the model. Input variables for Georgia will include: a) human population density, b) road density, c) land cover, d) proximity to publicly managed lands and/or lands managed for conservation, e) proximity to known pollution sources, and f) proximity to core black bear habitat.

### Components Of The Georgia Model

Table 1 provides a comparison between the variables to be used in Georgia and those used in previous models targeting other spatial scales, while Table 2 depicts the array of datasets that were assembled in order to represent these variables. While the variables included in the TWS Georgia model created in this research certainly do not exhaust the total range of human impacts on the landscape, they do provide a highly informative snapshot of the relative degree and extent of humanization of the contemporary terrain.

Details about the Georgia data layers listed in Table 2 are discussed further below. Geographic information system techniques were employed to classify and score each input dataset according to its "wildness" value, using a 2.58 km<sup>2</sup> (1 mi<sup>2</sup>) fishnet grid with 62,774 cells covering the landmass of the state. In the discussion that follows, English units will be referenced. All six variables were then combined to generate a cumulative scored and gridded map depicting the relative wildness of the state.

Although much of the data discussed above is pre-existing, efforts must be made to locate and obtain datasets with statewide coverage. Furthermore, integration of these data is a very large effort, often requiring transformation from disparate coordinate systems to a common projection and grid coordinate system (e.g., Universal Transverse Mercator (UTM) registered to the North American Datum (NAD) of 1983), as well as additional conversions. For instance, in order to derive a population density variable for input into the model, first The U.S. Bureau of the Census Summary Tape File (STS) of 2000 census data must be acquired. Next, this file must be linked to a spatial boundary file, e.g., census block group boundaries, in order to integrate it into a GIS. After block group statistics are linked to the proper boundaries, then absolute numbers must be converted to densities for each block group. Each dataset required some similar series of transformations. Finally, all inputs into the model must be converted from vector format to raster grids and for each dataset a classification scheme must be created in order to assign a value to each cell, thus allowing for the commensurability of all model inputs. The primary software packages employed were ESRI's ArcInfo, ArcView, and ArcGIS. Additional database manipulations will utilized Microsoft Access. Important mathematical and spatial

# Table 2 Georgia Datasets for Assessing Landscape Wildness

Variable			Dataset	Source	Description
I Human Po	pulation Density	53	Summary Tape File (STS)	U.S. Bureau of the Census	2000 census data (tabular)
	1	q	Census Block Group Boundaries	Georgia GIS Data Clearinghouse	spatial boundary file
2 Road Den:	sity		General Highway Base Map	Georgia Department of Transportation	digital roads and highways
3 Land Covi	c.		U.S. Geological Survey Gap Analysis Land Cover	University of Georgia Institute of Ecology	1998 Landsat imagery, 30 m. pixel resolution
4 Proximity and/or Lar	to Publicly Managed Lands nds Managed for Conservation		U.S. Geological Survey Gap Analysis Stewardship/Conservation Lands	University of Georgia Institute of Ecology	(No Metadata Provided)
5 Proximity	to Known Pollution Sources		8 Merged Pollution-Related Datasets	Various Sources	See Table 5
6 Proximity	to Core Black Bear Habitat		Digitized Black Bear Range Map	Georgia Department of Natural Resources	Georgia Black Bear Management Plan (1999)

analysis procedures within the GIS were buffers, merges, clips, and intersects. Input variables were scored up to three points for maximum wildness value per dataset. The total possible score for each grid cell was eighteen points.

# Human Population Density

Figure 4 depicts the method used to create the human population density dataset. Census block group boundary polygons were acquired from the Georgia GIS Data Clearinghouse (Figure 5). The Summary Tape File (STF) of 2000 census data was acquired from the U.S. Bureau of the Census. Georgia block group demographic data were extracted and then joined to the block group boundaries. The data were then classified into three categories as follows. High density polygons were given a value of 1, representing the range of 201 to 41,459 persons per square mile. Medium density polygons were given a value of 2, representing the range of 34 to 200 persons per square mile. Low density polygons were given a value of 3, representing the range of 0 to 33 persons per square mile.

Density classes were derived through an examination of human population density within core black bear habitat, as defined by the Georgia Department of Natural Resources (Carlock, et al., 1999) [Figure 6]. As previously mentioned, bears persist in the Georgia landscape in three distinct and unconnected populations, these being in the north, the central, and the southeastern parts of the state. In order to be conservative in granting a designation of high wildness (i.e., low human population density), statistics for the bear habitat having the lowest human numbers (that in the southeast) were used in setting the classes (Table 3). The classes were defined by the following rules.

Low density equates with the range from 0 to the mean human population density (33 persons/mi<sup>2</sup>) for block groups in the southernmost bear habitat. Medium density equates with







**Figure 5** U.S. Bureau of the Census Georgia Block Group Boundaries (2000)



**Figure 6** Core Black Bear Habitats

Source:

Carlock, D., J. Ezell, G. Balkcom, W. Abler, P. Dupree, and D. Forster (1999). Black bear management plan for Georgia. Georgia Department of Natural Resources, Wildlife Resources Division, Game Management Section: Gainesville, GA.

Table 3Statistical Profile of Human Population Density Per 2000 Census Block Group, Within Three Zones of<br/>Core Black Bear Habitat in Georgia

Statistics	Zone 1 (North)	Zone 2 (Middle)	Zone 3 (South)	All Zones Combined
Sum	9,100	2,172	800	12,072
Count	98	28	24	150
Mean	93	78	33	80
Maximum	825	378	200	825
Minimum	6	6	1	1
Range	816	372	199	824
Variance	9,699	8,788	2,175	8,703
Standard Deviation	98	94	47	93
Class	<b>Population Density</b>	<b>Population Density</b>	<b>Population Density</b>	<b>Population Density</b>
Low	0 - 93	0 - 78	0-33	0 - 80
Medium	94 - 825	79 - 378	34 - 200	81 - 825
High	826 - 41,459	379 - 41,459	201 - 41,459	826 - 41,459

the range from the mean plus one to the maximum human population density (200 persons/mi<sup>2</sup>) for block groups in the southernmost bear habitat. High density equates with the range from the maximum plus one to the maximum human population density (41,459 persons/mi<sup>2</sup>) for all block groups in the state. Figure 7 represents the final scored and gridded output map for the population variable.

# **Road Density**

Figure 8 depicts the method used to create the road density dataset. The digital dataset depicting the Georgia Department of Transportation's general highway base map was acquired from the Georgia GIS Data Clearinghouse (Figure 9). A Cartesian grid was generated in ArcInfo using the "fishnet" command, in order to produce a coverage that divided Georgia into one square mile cells. The grid was then intersected with the general highway base map and road densities were calculated for each cell in miles of road per square mile.

Road density by cell was classified into three categories as follows. High density cells were given a value of 1, representing the range of 15.06 to 37.99 miles per square mile. Medium density cells were given a value of 2, representing the range of 2.02 to 15.05 miles per square mile. Low density cells were given a value of 3, representing the range of 0 to 2.01 miles per square mile.

Density classes were again derived through an examination of road densities within core black bear habitat (Figure 6). This time all three bear habitats were combined in order to generate statistics and set class boundaries. The classes were defined by the following rules. Low density equates with the range from 0 to the mean road density (2.01 mi/mi<sup>2</sup>) for cells in all three bear habitats. Medium density equates with the range from the mean plus one to the maximum road density (15.05 mi/mi<sup>2</sup>) for cells in all three bear habitats. High density equates



**Figure 7** Population Density by Census 2000 Block Group







**Figure 9** Road Network of Georgia
with the range from the maximum for cells within bear habitat, plus one to the maximum road density (37.99 mi/mi<sup>2</sup>) for all cells in the state. Figure 10 represents the final scored and gridded output map for the road density variable.

# Land Cover

Figure 11 depicts the method used to create the land cover dataset. An 18 class digital land cover dataset with 30 meter pixel resolution was acquired. This dataset was produced for the USGS Gap Analysis by the University of Georgia's Institute of Ecology using 1998 satellite imagery (Figure 12).

The image data were converted to a grid and re-projected to produce a final cell size of approximately 98 feet and the 18 land cover classes were reduced to three "wildness" classes in the following manner. Low wildness grid cells, representing land cover classes comprising 5 percent or less of the land cover on all three core bear habitats, were given a value of 1. Medium wildness grid cells, representing land cover classes comprising 6 to 24 percent of the land cover on any of the three core bear habitats, were assigned a value of 2. Finally, high wildness grid cells, representing land cover classes comprising 25 percent or more of the land cover on any of the three core bear habitats, were assigned a value of 3. Three classes qualified as high wildness. These were deciduous forest (41), evergreen forest (42), and forested wetland (91). Table 4 represents the Gap Analysis land cover classification system for Georgia. Table 5 depicts the breakdown of land cover within the three core bear habitats, along with the scoring rules for assessing wildness. Figure 13 represents the final scored and gridded output map for the land cover variable.



Figure 10 Road Density As A Variable in the Determination of Relative Landscape Wildness







Figure 12 Georgia Land Cover from the U.S. Geological Survey Gap Analysis (1998 Imagery)

 Table 4

 Classification System for Georgia GAP Statewide Land Cover, 1998

	Code	<b>Class Name</b>	Description
-	7	Beaches/Dunes/Mud	Open sand, sand bars, sand dunes, mud - natural environments as
			well as exposed sand from dredging and other activities
3	11	Open Water	Lakes, rivers, ponds, ocean, industrial water, aquaculture
3	18	Transportation	Roads. Railroads, airports, and runways
4	20	Utility Swaths	Swaths maintained for transmission lines
5	22	Low Intensity Urban	Single family dwellings, recreation, cemeteries, playing fields, campus-
			like institutions, parks, schools
9	24	High Intensity Urban	Multi-family dwellings, commercial/industrial, prisons and At'l Int'l
			Speedway, junkyards, confined animal operations
2	31	Clearcut/Sparse	Recent clearcuts, sparse vegetation, clearcut wetlands
8	33	Quarries/Strip Mines	Exposed rock and soil from industrial uses, gravel pits, landfills
6	34	Rock Outcrop	Rock outcrops, mountain tops, barren land
10	41	Deciduous Forest	Forest composed of at least 75% deciduous trees in the canopy,
			mountain shrub/scrub, deciduous woodland
11	42	Evergreen Forest	Evergreen forest, at least 75% evergreen trees, managed pine
			plantations, evergreen woodland
12	43	Mixed Forest	Mixed deciduous/coniferous, fall line and coastal plain shrub/scrub,
			mixed woodland
13	73	Golf Courses	Golf courses
14	80	Pasture	Pasture, non-tilled grasses
15	83	Row Crop	Row crops, orchards, vineyards, groves, horticultural businesses
16	91	Forested Wetland	Cypress gum, evergreen wetland, deciduous wetland, depressional
			wetlands, and shrub wetlands
17	92	Coastal Marsh	Coastal freshwater and brackish marsh
18	93	Non-forested Wetland	Inland freshwater marsh

Northern	n Habitat		Middle I	Habitat		Southern	n Habitat		Final		
Class	Percent	Rank	Class	Percent	Rank	Class	Percent	Rank	Class	Rank	Score
0	0	Low	0	0	Low	0	1	Low	0	Low	1
7	0	Low	7	0	Low	7	0	Low	7	Low	1
11	2	Low	11	1	Low	11	0	Low	11	Low	1
18	5	Low	18	5	Low	18	5	Low	18	Low	1
20	0	Low	20	1	Low	20	0	Low	20	Low	1
22	2	Low	22	0	Low	22	0	Low	22	Low	1
24	0	Low	24	0	Low	24	0	Low	24	Low	1
31	4	Low	31	6	Medium	31	12	Medium	31	Medium	2
33	0	Low	33	2	Low	33	0	Low	33	Low	1
34	0	Low	34	0	Low	34	0	Low	34	Low	1
41	52	High	41	7	Medium	41	0	Low	41	High	3
42	10	Medium	42	25	High	42	35	High	42	High	3
43	17	Medium	43	10	Medium	43	1	Low	43	Medium	2
73	0	Low	73	0	Low	73	0	Low	73	Low	1
80	7	Medium	80	3	Low	80	0	Low	80	Medium	2
83	0	Low	83	11	Medium	83	1	Low	83	Medium	2
16	0	Low	91	25	High	91	43	High	91	High	3
92	0	Low	92	0	Low	92	0	Low	92	Low	1
93	0	Low	93	0	Low	93	2	Low	93	Low	I

 Table 5

 Land Cover Composition of Core Bear Habitats in Georgia



**Figure 13** Land Cover As A Variable in the Determination of Relative Landscape Wildness

# **Proximity to Stewardship Lands**

Figure 14 depicts the method used to create the dataset depicting proximity to publicly managed lands and/or lands managed for conservation. These lands are referred to variously as conservation lands or stewardship lands/parcel in the literature and these terms will be used interchangeably in the following discussion. Stewardship lands include publicly owned lands that are managed by federal, state, and local government agencies, along with private lands that are managed for conservation purposes, such as lands owned by The Nature Conservancy, leased lands in the state Wildlife Management Area system, or private forestlands preserved through conservation easements. By far the vast proportion of conservation lands in Georgia are federally managed units, such as the National Forests and National Wildlife Refuges. The input dataset used in this model was compiled for the USGS Gap Analysis by the University of Georgia's Institute of Ecology and consists of ownership boundary polygons for all known lands nominally managed for conservation in Georgia (Figure 15).

It must be noted that within this dataset all conservation lands are not equal. For instance, the management regimes for a federally designated wilderness area (e.g. in the Chattahoochee National Forest) and a state designated Wildlife Management Area on leased private land may be quite divergent. The justification for including such potentially disparate sites within the same dataset is the recognition that in all cases there is a management focus on meeting some manner of conservation objective. Also, the lands included in this dataset, in spite of their differences, represent the "cream of the crop", or the highest levels of conservation protection currently recognized and granted by society.







**Figure 15** Georgia Gap Analysis Stewardship Parcels

Two buffers, each of 5 miles width, were created surrounding the conservation lands and the dataset was then categorized into four classes as follows. Conservation lands were designated as having high wildness and were assigned a value of 3. Areas less than or equal to 5 miles distant from conservation lands were designated as having medium wildness and were given a value of 2. Areas greater than 5 miles but less than or equal to 10 miles distant from conservation lands were designated as having low wildness and were given a value of 1. Finally, areas greater than 10 miles distant from conservation lands were assigned a wildness value of 0. The buffer distances were arbitrarily, but conservatively chosen, with the intention of facilitating identification of potential future linkages between current conservation lands. The buffered conservation lands were clipped, using the Georgia state boundary, and the dataset was converted to a grid with 0.25 mi<sup>2</sup> cells. The small cell size was chosen in order to preserve, to a reasonable degree, the representation of the wildness value of small conservation parcels. Figure 16 represents the final scored and gridded output map for the conservation lands variable.

### **Proximity to Known Pollution Sources**

Figure 17 depicts the method used to create the dataset depicting proximity to known pollution sources. Eight input datasets were acquired from the sources listed in Table 6. The datasets were highly variable, both in their subject matter and in the quality of the information provided by their metadata. Consequently, a hazard rank (HR) was devised in order to distinguish pollution sites that were well defined as being highly hazardous (HR1), e.g. Super Fund sites, from those that were defined as hazards, but for which the degree of hazard was difficult to determine (HR2). The procedures used to assign the hazard ranks are described in Table 7.



Figure 16 Proximity to Stewardship Lands As A Variable in the Determination of Relative Landscape Wildness





# Table 6Georgia Pollution-Related Datasets

	Dataset	Source	Title	Description	Name
					(as listed in Fig. 17)
	l ga_cerclis	Environmental Protection Agency	Comprehensive Environmental Response	e, Superfund Sites	Superfund Sites
			Compensation, and Liability Information		
			System		
1	2 ga haz99	Georgia Department of Natural	Hazardous Waste Sites	(No Metadata Provided)	Hazardous Waste Sites
		Resources			
	3 ga_ifd	Environmental Protection Agency	Industrial Facilities Discharge Sites	Surface Water Point Sources	Industrial Facilities Discharge Sites
	4 ga landfl	Georgia Department of Natural	Land Fills	(No Metadata Provided)	Land Fills
		Kesources			
1	5 ga mines	U.S. Geological Survey	Mineral Industry Locations	Mines and Mineral Processing Plants	Mining Industry Sites
	6 ga_nsi	Environmental Protection Agency	National Sediment Inventory	Acquatic Sediment Contamination	Sediment Contamination Sites
	7 ga_rcris	Environmental Protection Agency	Resource Conservation and Recovery Information System	Hazardous Waste Handler Tracking System	Hazardous Waste Handling Sites
	8 ga toxicri	Environmental Protection Agency	Toxic Release Inventory Facilities	Annual estimated releases of over 300 toxic chemicals to air, water, and	Toxic Release Inventory Facilities
				Ianu oy me manuacumme muusuy	

Table 7	Determination of Hazard Ranks for Georgia Pollution-Related Datasets
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Dataset	Description
1 ga_cerclis	This dataset depicts the point locations of hazardous waste sites that are part of the U.S. Environmental Protection Agency's (EPA) Superfund program, including Superfund sites that are on the National Priority List (NPL). All sites in this dataset were ranked HR1.
2 ga_haz99	This dataset originated with the Georgia Department of Natural Resources. It depicts the point locations of hazardous waste sites in
	Georgia. However, no metadata is available for this dataset. The attribute table contained extensive information, such as the names and addresses of industrial facilities, along with specific chemicals of concern. Unfortunately, sufficient information was not
	available to allow for qualitative distinctions in the degree of hazard by site. Consequently, all records were ranked HR2.
3 ga_ifd	This dataset depicts the point locations of industrial facilities, monitored by the U.S. EPA, that discharge waste into surface waters.
	The attribute table lists discharge flows in thousands of gallons per day. However, the nature of the materials discharged are not identified and no distinctions are made with regard to the degree of hazard. Consequently, all records were ranked HR2.
4 ga_landfl	This dataset originated with the Georgia Department of Natural Resources. It depicts the point locations of landfills in Georgia.
	However, no metadata is available for this dataset. Due to the lack of metadata, preventing any finer determination of degree of hazard by site, all records were ranked HR2.
S on mines	This detect activities of the ITS Carlorined Survey It devices mined access in the state of Caronia The attribute table contained
o ga mino	This dataset originated with the U.S. Octobleta Survey. It behaves that a way or Octoblet. The autionic table contained information on the type of mine and the mineral commodities produced. However, information of the size, pollution hazard, and degree
	of reclamation was missing. Assessing mine site data in the context of pollution hazards is problematic, since mine sites are
	potentially reclaimable and could, in the future, be incorporated into conservation planning. In the present context, it was decided to
	give all records a rank of HR2.
6 ga nsi	This dataset depicts the U.S. EPA's National Sediment Inventory and describes the accumulation of chemical contaminants in river,
and a	lake, ocean, and estuary bottoms. Within the dataset, point locations are classified as Tier 1 (associated adverse effects on human
	and environmental health are probable). Tier 2 (associated adverse effects are possible, but expected infrequently), or Tier 3 (no
	indication of associated adverse effects). For the purpose of this study, Tier 1 sites were given a rank of HR1, Tier 2 sites were
	given a rank of HR2, and Tier 3 sites were assigned a rank of HR0 and dropped from consideration.
7 ga rcris	This dataset is used by the U.S. EPA to monitor facilities regulated under the Resource Conservation and Recovery Act (RCRA),
	including entities involved in the generation, transportation, treatment, storage, and disposal of hazardous waste. Since the nature of th
	hazardous materials handled at each site are not identified in the metadata and no distinctions are made with regard to the degree of
	hazard, all records were ranked HR2.
8 ga toxicri	This database contains data on annual estimated releases, monitored by the U.S. EPA, of over 300 toxic chemicals to air, water, and
	land by the manufacturing industry. Point locations of industrial facilities where these chemicals are manufactured, processed, or
	otherwise used are depicted. Congress mandated the creation of this database as part of the Emergency Planning and Community
	Right-to-Know Act (EPCRA) of 1986. Since the nature of the hazardous materials handled at each site are not identified in the
44	metadata and no distinctions are made with regard to the degree of hazard, all records were ranked HR2.

After hazard ranks were established, all eight datasets were merged into a single ArcView shape file entitled "Multi-Dataset Pollution Point Locations" (Figure 18). Point locations having a hazard rank of 1 were then buffered using a value of 0.5 miles. Point locations having a hazard rank of 2 were buffered using a value of 0.25 miles.

In many respects, pollution data was the most difficult to evaluate objectively and to represent within the model. Buffer distances were arbitrarily chosen and are not likely to adequately reflect the nature of the hazards or the true area of impact. The potential array of pollution types is much larger than the eight datasets included in the model. Also, devising a comprehensive scheme for weighing and depicting the hazards inherent in the various types of pollution would warrant a dissertation unto itself. The treatment of this data included here is necessarily limited to the available GIS datasets with their incomplete supporting explanatory information. However, the buffers devised for the model do effectively serve to give the pollution point locations a spatial representation that can then be factored into the wildness analysis. It is expected that at some future date much better pollution-related input data will be available that can be utilized in models of this type.

With regard to the calculation of wildness value, lands falling within the pollution point buffers were assigned a value of 0. Areas falling outside the pollution point buffers were assigned a value of 1. The dataset was then converted to a grid with 0.25 mi<sup>2</sup> cells. A small cell size was chosen once again to preserve the representation of the very small parcel sizes of the buffered pollution points. Figure 19 represents the final scored and gridded output map representing proximity to known pollution sources.



Figure 18 Multi-Dataset Pollution Point Locations



Figure 19 Pollution Hazard As A Variable in the Determination of Relative Landscape Wildness

### **Proximity to Core Black Bear Habitat**

Figure 20 depicts the method used to create the dataset depicting proximity to core black bear habitat. The official state black bear management plan (Carlock, et. al., 1999) was acquired from the Georgia Department of Natural Resources and the map of core bear habitats contained in this report was digitized. Core polygon boundaries were then adjusted to exclude some areas of urbanization and more closely correspond to the cited acreage figures for the three core areas (Figure 6).

Next, two buffers were created surrounding the core habitats and the dataset was categorized into four classes using a similar procedure to that used for buffering conservation lands. The core bear habitats were designated as having high wildness and were assigned a value of 3. Areas less than or equal to 5 miles distant from the core habitats were designated as having medium wildness and were given a value of 2. Areas greater than 5 miles but less than or equal to 10 miles distant from the core habitats were designated as having low wildness and were given a value of 1. Finally, areas greater than 10 miles distant from the core bear habitats were assigned a wildness value of 0.

The choosing of the buffer distances was somewhat arbitrary, though the decision was made to err on the side of conservatism. The general consensus in the black bear literature is that a male bear can cover up to 15 miles (24 km) in a day, with females traveling somewhat less (White, et al., 2000; Reid, 2006; U.S. Fish and Wildlife Service, 2008). Buffer distances might have reasonably been doubled, thereby increasing the portions of the landscape designated as medium and low wildness. Lastly, the buffered core areas were clipped, using the Georgia state boundary, and the dataset was converted to a grid with 1 mi<sup>2</sup> cells. Figure 21 represents the final scored and gridded output map representing proximity to core black bear habitat.







**Figure 21** Proximity to Core Black Bear Habitat

### The Black Bear as an Indicator of Wildness

The Georgia black bear carries considerable weight in the wildness model and a few words are in order regarding the logic behind the choice of this animal as the sole focal biotic element. Why include any biotic element in a model of wildness? If a biotic element is to be included, then why should the bear which is not currently listed as threatened or endangered take precedence over other species or communities such as the red cockaded woodpecker or remnant patches of long-leaf pine forest?

The contemporary ranges or distributions of bears (and large mammalian carnivores in general) approximate a wild state in the landscape and are thus useful in modeling landscape wildness for the following reasons: 1) their size and physiological similarity to humans; 2) the extent of their spatial requirements and the intensity with which space is used; 3) the umbrella function that such species perform, i.e. the fact that a system of conservation lands that managed for viable bear populations would, by default, preserve habitat required by a large number of less charismatic species; 4) the incompatibility of large mammalian carnivores with human design at the landscape level; and 5) simplicity, in the case of Georgia. This simplicity results from the fact that, in the east, the black bear is the last remaining large mammalian carnivore (with the exception of a remnant panther population in south Florida) from the historic and Holocene faunas. In locales where multiple large mammalian carnivores still exist, then the modeling procedures would become more complex. Nonetheless, in regions where such a species exists, there is no reason not to include it in a wildness model as a surrogate for landscape wildness.

# Summary of Black Bear Status in Georgia

In 1994, biologists estimated that black bears on the southeastern Coastal Plain had been eliminated from 93-percent of their historic range. The primary reason cited for this drastic range contraction is habitat conversion due to human population growth and associated development (Wooding, et al., 1994). No similar estimates are provided for the piedmont or the mountains, though habitat loss is likely to be comparable.

Of the three discrete populations in Georgia, the northernmost occupies the Chattahoochee National Forest and surrounding lands. According to the Georgia Department of Natural Resources (GDNR), the northern population occupies about 1.6 million acres of habitat, and is comprised of approximately 900 to 1100 individuals (Carlock, et al., 1999). The central population occupies parts of the Ocmulgee River Basin, south and east of Macon. According to the GDNR, the central population occupies about 290,000 acres of habitat, and is comprised of approximately 200 to 300 individuals. It should be noted that, compared with the northern and southern bear populations, the occupied habitat in central Georgia contains a relative scarcity of federal or state protected lands. The three largest protected areas are: 1) Ocmulgee Wildlife Management Area (WMA) at 18,000 acres, 2) Oaky Woods Wildlife Management Area at 15,000 acres, and 3) Bond Swamp National Wildlife Refuge at 4,000 acres (Figure 22). The first two of these areas are not in public ownership, but are managed by the state under short-term lease agreements, formerly with Weyerhaeuser Corporation. In early 2004, the Weyerhaeuser Corporation announced the sale of well over 300,000 acres of forestland, including the WMAs listed above. (Associated Press, 2003; Associated Press, 2004; Peters, 2004; Seabrook, 2004; Shelton and Seabrook, 2004). While the majority of the Oaky Woods and Ocmulgee WMAs are still under state lease, they are now owned by private real estate developers with announced plans for extensive future development.

The southeastern Georgia bear population occupies the Okefenokee National Wildlife Refuge and surrounding lands. According to the GDNR, this population occupies 1.5 million



**Figure 22** Federal and State Public Lands in Relationship to Middle Georgia Bear Habitat

acres of habitat, and is comprised of approximately 600 to 750 individuals.

According to guidelines established by the Florida Game and Fresh Water Fish Commission for assessing viability and relative security, a wildlife population should consist of more than 200 individuals in order to be considered potentially secure. Given high quality habitat and favorable management conditions, the persistence of such a population will be dependent on the frequency of catastrophic events, rather than on genetic degradation. As populations fall below 200 individuals, they can lose significant genetic variability over a period of several generations and face an increasing risk of extinction. In the southeast, documented black bear population densities range between 0.05 and 0.10 breeding individuals per km<sup>2</sup>. Consequently, between 2,000 and 4,000 km<sup>2</sup> (or roughly 500,000 to 1,000,000 acres) of habitat are required to support a single potentially secure population of 200 bears (Cox, et al., 1994:50).

According to these standards and assuming that current population estimates are reasonably accurate, all three Georgia bear populations are potentially secure with regard to numbers. With regard to the central Georgia bear population, there is reason to doubt the accuracy of current population estimates, since it is the least studied of Georgia's three populations and there have been no detailed habitat-wide surveys. Even if the central population estimates are accurate however, this population is on the cusp of insecurity. In all three cases, the majority of occupied habitat is not in the public domain. In the north, less than 750,000 acres of the 1.6 million acre habitat (i.e., about 46-percent) lies within the Chattahoochee National Forest. In the south, roughly 396,000 acres of the 1.5 million acre habitat (i.e., about 26-percent) lies within the Okefenokee National Wildlife Refuge.

In the case of central Georgia, only about 4,000 out of 290,000 occupied acres are under public ownership, with another 33,000 acres under public lease. Taken together these publicly

managed lands constitute less than 13-percent of the occupied habitat. The conclusion to be drawn from these observations is that insufficient habitat protection, coupled with continued human population growth, development, and land conversion are likely to move all three Georgia populations in the direction of increasing insecurity in the years ahead. Furthermore, the central population is of particular concern in that the currently occupied habitat falls short of the recommended 500,000 to 1,000,000 acres.

A further guideline emerging from the Florida bear research asserts the critical importance of protecting multiple populations of a focal species in order to guard against the possibility that a catastrophic event could impact all populations simultaneously. Cox, et al. (1994) refer to this as the principle of "placing your eggs in different baskets". In keeping with this principle, the authors recommend that a minimum of ten potentially secure populations be used as the standard for the conservation of rare or imperiled species. Ten potentially secure populations will also equate with an effective population size of several hundred individuals. While the authors recognize that "the chances of establishing 10 black bear habitat conservation areas (in Florida), each (between 500,000 and 1,000,000 acres) in size, are remote... Nonetheless, a goal of establishing 10 (such areas) might be sought within the total geographic range of the black bear in the southeastern coastal plain..."

Table 8 lists recent black bear population estimates for all of the southeastern states. The potential for creating additional strategic habitat conservation areas (to use the Florida terminology) exists in Georgia, however the public land base is currently very restricted. Such conservation areas would offer the opportunity to also protect the largest remaining wild landscapes in the state and would further create possibilities for the ecological restoration of other species and communities.

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	State	Estimated population size	Population trend	Status
-	Alabama	<50	Stable	Game
2	Arkansas	2,200	Slightly increasing	Game
ε	Florida	1,000-2,000	Stable	Game
4	Georgia	1,700	Slightly increasing	Game
5	Kentucky	<200	Increasing	Protected
9	Louisiana	200-400	Slightly increasing	Threatened
7	Mississippi	<50	Slightly increasing	Endangered
8	North Carolina	6,100	Increasing	Game
6	South Carolina	200	Slightly increasing	Game
10	Tennessee	750-1,500	Increasing	Game
11	Texas	50	Increasing	Threatened
12	Virginia	3,000-3,500	Slightly increasing	Game

**Source:** Pelton, M.R., van Manen, F., Coley, A., Weaver, K., Pedersen, J., and T. Eason. 1994. Black Bear Conservation Action Plan - North America. IUCN/SSC Bear Specialist Group.

Most notably, there is a high potential for increasing the habitat security of the central Georgia bear population through either additions to the public land base, or substantial private conservation easements. The expansion of the Ocmulgee National Monument and the Bond Swamp National Wildlife Refuge could be used to provide the basis for increasing public ownership of core bear habitat in middle Georgia (Figure 22). In addition, roughly 17 miles north of the northernmost edge of the central George core bear habitat, lies the Piedmont National Wildlife Refuge (36,091 acres) and the southern limit of the Ocenee National Forest (116,629 acres). This area is highly fragmented, relatively small, and currently unoccupied by bears. However, it could potentially provide additional suitable bear habitat, thus increasing the likelihood of bears persisting in middle Georgia through the coming century.

Finally, additional opportunities may exist for increasing public ownership of bear habitat in the lands surrounding the Okefenokee National Wildlife Refuge in south Georgia. A complex of state Wildlife Management Areas (WMAs) exist to the north and the east of the refuge (Figure 23). In addition, recent news reports have indicated that industrial timberlands surrounding the refuge may be placed on the market. Strategic additions to the National Wildlife Refuge linking the Okefenokee swamp to the state WMAs would be of great conservation value. Incidentally, the U.S. Fish and Wildlife Service has also identified the Okefenokee region as having high potential as a Florida panther recovery site (Jordan, 1994).

### The Wildness Map

The six datasets described above were added together, in grid format, with the output cell size specified as 1 mi<sup>2</sup> (Figure 24). The end result is a map depicting the relative wildness of the Georgia landscape (Figure 25). Each 1 mi<sup>2</sup> cell was assigned a wildness score ranging between 3 and 16 points, with 16 representing the highest possible degree of wildness. The resulting map





State Wildlife Management Areas of Georgia in Relation to Core Black Bear Habitat







**Figure 25** Relative Wildness of the Georgia Landscape

provides a well grounded picture of Georgia's current state of wildness. The six combined datasets work together to provide a balanced assessment. For example, whereas the Atlanta area appears relatively more wild when proximity to publicly managed lands and/or lands managed for conservation is considered in isolation (Figure 16), this appearance is offset when the other datasets are taken into account.

Weak links in the data consist of the inability to more rigorously evaluate and depict the hazard impact of the combined pollution datasets. As a consequence, based on the currently available information, it was decided that the pollution data layer would be weighted less, contributing only 1 point to the wildness score, whereas all other datasets contributed up to 3 points each. In addition, access to a more detailed landcover dataset would have been beneficial. For example, whereas the Georgia data consisted of only 18 classes, The Wilderness Society was able to utilize up to 50 land cover classes in a recent project in the Sierra Nevada region of California (Wilmer, no date – ca. 2001). This could be due, in part, to higher biological and physiographic diversity in California. Nonetheless, a more refined landcover classification scheme for Georgia may have provided a somewhat different assessment of wildness.

Few remaining areas outside Georgia's small wilderness network are likely to still qualify under the strict legislative definition of wilderness, based on such factors as roadlessness (Figure 9). However, the state still contains a surprising number of medium to high wildness areas, some of which could be restored in the direction of wilderness conditions under public ownership and/or conservation management.

The Georgia Wildness Map (Figure 25) reveals several noteworthy features deserving of increased recognition and attention. First, the Chattahoochee National Forest region in the north and the Okefenokee National Wildlife Refuge region in the south represent the wildest areas in

the state (Figure 26 - #1 and #2). Although much of both regions are currently in public ownership under federal management, neither region is entirely protected and both suffer from continual encroachment and fragmentation around the edges as population and development pressures increase. This is especially true in the north, where such pressures are the greatest.

Additional attributes of high interest include a wide swath of land stretching along the fall line from the southwest through the northcentral parts of the state (Figure 26 - #3). . Within this swath, several features are particularly prominent. Most striking is an area south and east of Macon, between the Ocmulgee and Oconee rivers, that turns out to be essentially the third wildest remaining region in the state (Figure 26 - #4). Additionally, this area lies in close proximity, roughly 20 miles away, to two large federally managed public lands to the north, the Piedmont National Wildlife Refuge and the Oconee National Forest (Figure 26 - #5). If these two clusters of landscape wildness could be linked, it would create an area comparable in size to the state's two premier wildlands in the Chattahoochee National Forest and Okefenokee National Wildlife Refuge regions. This middle Georgia wildland will be the central focus of the second half of this dissertation.

Three further characteristics of the Wildness Map are noteworthy. First, a large regional patch of landscape, within the larger fall line swath, begins along the upper reaches of the Ogeechee River and stretches east to the Savannah River around Clarks Hill Lake/Strom Thormond Lake on the South Carolina border (Figure 26 - #6). Second, a very large crescent of land on the Alabama border, between the Flint and Chattahoochee Rivers, contains a splotchy distribution of patches of high and medium landscape wildness intermingled with patches of more heavily impacted urban and agricultural landscapes (Figure 26 - #7). Not surprisingly, the Flint has been a river of high biodiversity conservation concern on the part of the Georgia



**Figure 26** Prominent Features of the Georgia Wildness Map

Department of Natural Resources (Couch and McDowell, 2006). Finally, the Altamaha River corridor in the southeastern part of the state stands out on the Wildness Map (Figure 26 - #8). This river corridor has received much attention from the Georgia chapter of The Nature Conservancy in recent years and the organization holds a number of conservation easement along the river (<u>http://www.nature.org/wherewework/northamerica/states/georgia/ preserves/art20701.html</u>). Conservation linkages between the Altamaha River and the nearby Okefenokee Swamp to the south would provide potential movement corridors for bears and other wildlife between the Okefenokee and the middle Georgia wildland, along the Ocmulgee and Oconee Rivers.

# <u>Comments Regarding Currently Existing Georgia Wilderness Areas, Along With</u> <u>Proposed Additions</u>

In 1996, The University of Montana's Wilderness Institute partnered with the federal government's wilderness training and research components, the Arthur Carhart National Wilderness Training Center and the Aldo Leopold Wilderness Research Institute to establish a comprehensive U.S. wilderness information clearinghouse on the web (<u>www.wilderness.net/</u>). Wilderness.net now serves as the definitive resource for up-to-date statistical, educational, and archival information about all wilderness areas managed by the National Park Service, the USDA Forest Service, the US Fish and Wildlife Service, and the Bureau of Land Management.

According to Wilderness.net, the state of Georgia currently houses fourteen units within the National Wilderness Preservation System (Table 9). The total area of federally designated wilderness in the state now stands at 486,530 acres, with the largest single component of 353,981 acres contained in the Okefenokee National Wildlife Refuge and managed by the U.S. Fish and Wildlife Service. Of the remaining 132,549 wilderness acres, ten units are contained within the Chattahoochee National Forest and managed by the USDA Forest Service. Management of the 
 Table 9

 Current Georgia Components of the U.S. Wilderness Preservation System

5	/ILDERNESS NAME	AGENCY	STATE	UNIT ACREAGE	TOTAL ACREAGE	YEAR DESIGNATED
m	ig Frog Wilderness	FS	GA	89	8,082	1984
m	lackbeard Island Wilderness	FWS	GA	3,000	3,000	1975
m	lood Mountain Wilderness	FS	GA	7,800	7,800	1991
m	rasstown Wilderness	FS	GA	12,896	12,896	1986
()	ohutta Wilderness	FS	GA	35,268	36,977	1975
C	umberland Island Wilderness	NPS	GA	9,886	9,886	1982
ш	llicott Rock Wilderness	FS	GA	2,021	8,274	1975
2	ark Trail Wilderness	FS	GA	16,400	16,400	1991
O	kefenokee Wilderness	FWS	GA	353,981	353,981	1974
r	aven Cliffs Wilderness	FS	GA	9,115	9,115	1986
R	ich Mountain Wilderness	FS	GA	9,476	9,476	1986
in	outhern Nantahala Wilderness	FS	GA	11,770	23,473	1984
F	ray Mountain Wilderness	FS	GA	9,702	9,702	1986
$\leq$	/olf Island Wilderness	FWS	GA	5,126	5,126	1975
in	ummary					
5	/ilderness Areas:	14				
-	nit Acreage Sum:	486,530 Acres				
F	otal Acreage Sum:	514,188 Acres				

Source: <u>http//:www.wilderness.net</u> (2008)
final three coastal wilderness areas is split between the U.S. Fish and Wildlife Service (Wolf Island National Wildlife Refuge and Blackbeard Island National Wildlife Refuge) and the National Park Service (Cumberland Island National Seashore).

Next to the Okefenokee, at one tenth the size, the Cohutta wilderness stands at 35,268 acres. The majority of the remaining units are small, at less than 10,000 acres. Additionally, all of Georgia's wilderness areas fall along the northern, coastal, and southern borders of the state, with no federally designated wilderness in the interior of the state.

In 2000, The Wilderness Society reissued a report, entitled "Georgia's Mountain Treasures", first compiled in 1995, detailing a significant list of undesignated, wilderness quality areas still remaining in Georgia (The Wilderness Society, 2000). The report examines 44 areas, all within the Chattahoochee National Forest, totaling 235,700 acres and ranging in size between 1,000 and 14,000 acres (Table 10). Four of these areas are greater than 10,000 acres in size, while seventeen range between 5,000 and 10,000 acres. Several of the areas described are worthy of independent wilderness designations, while others are contiguous with and could form extensions of, or additions to previously designated wilderness.

Most of the areas listed in the Mountain Treasures report emerged from the RARE II process, a nationwide assessment conducted by the U.S. Forest Service between 1977 and 1979 of potential wilderness areas on all national forests. The RARE II process identified nearly 220,000 acres divided between twenty six areas in the Chattahoochee National Forest as potential wilderness. Out of this assessment emerged the current set of ten wilderness areas, totaling 114,537 acres in the Chattahoochee.

The Georgia Mountain Treasures report did not seek to identify similar areas throughout the rest of Georgia and no process like RARE II has ever been undertaken to assess remaining

Table 10

		Table 1	U	
Undesignated	Wilderness	Areas of the	Chattahoochee	National Forest

	WILDERNESS-QUALITY AREA	TOTAL ACREAGE	GEORGIA ACREAGE
1	Cohutta Extensions	4,500	4 500
2	Grassy Mountain	7,000	7,000
3	Emery Creek	3,500	3 500
4	Mountaintown	13,000	13,000
5	Rich Mountain Extension	5 500	5 500
6	Rocky Mountain	4 000	4 000
7	Springer Mountain	12 000	12 000
8	Mill Creek	6,000	6,000
9	Toonowee	1 300	1 300
10	Licklog Mountain	9,000	9,000
11	Duncan Ridge	2 500	2 500
12	Board Camp	5,000	5,000
13	Cooper Creek Scenic Area Extensions	1,000	1,000
14	Horse Gan	4 500	4,500
15	Hogback Mountain	3,000	3,000
16	Blackwell Creek	3,000	3,000
17	Little Cedar Mountain	1,500	3,000
19	Black Mountain	3,000	3,000
10	Blood Mountain Extensions	2,000	3,000
20	Payan Cliffs Extensions	2,000	2,000
20	Mark Trail Extensions	6,000	8,000
21	Presstown Extensions	4,500	4,500
22	Andrews Cours	2,000	2,000
25	Anna Pubu Falla Saania Araa Estansian	3,500	3,300
24	High Shoels	3,500	3,300
25	Tray Mountain Extensions	5,500	5,500
20	Kally Bidge Measurin Creek	1,500	1,500
21	Ruge - Moccasin Creek	15,500	13,300
20	Southern Montohala Extensions	6,500	6,500
29	Dotteman Can	5,500	6,500
21	Patterson Gap	5,500	5,500
22	Rabun Baid	14,000	14,000
32	Filicett Deals Extension	8,500	8,500
33	Pack Care	1,000	1,000
25	Rock Gorge	7,000	4,500
35	Big Shoais	7,000	5,000
30	Dires Della	12,000	7,000
3/		10,000	0,500
38	Worley Ridge	3,500	3,500
39	Panther Creek	6,700	6,700
40	Middle Fack Dated Direct	3,200	3,200
41	Nilddle Fork Broad River	4,300	4,300
42	KOCKY Face	6,600	6,600
43	Jonns Mountain	6,400	6,400
44	Hidden Creek	6,700	6,700
	TOTAL ACRES	252,700	235,700
	DIFFERENCE		-17,000

Source: The Wilderness Society. 2000. Georgia's Mountain Treasures: The Unprotected Wildlands of the Chattahoo chee National Forest. The Wilderness Society: Washington, DC.

potential wilderness outside of the public lands system in the east. Consequently, there may still exist some wilderness-quality private parcels in Georgia. However, it would be expected that the Georgia Mountain Treasures has pinpointed the great bulk of wilderness-quality and potentially federally designatable areas left in the state.

## Additional Supporting Evidence for the Importance of Features Identified on the Wildness Map: Florida Panther Recovery

Since the initiation of the Georgia Wildlands Assessment in 2002, the confluence of several independent events have served to highlight the significance of the middle Georgia wildlands near Macon. These events will be discussed in more detail below. However, predating these recent events by a decade, biologists working on the conservation and recovery of the Florida panther (*Felis concolor coryi*) had identified several regions in Georgia as being worthy of further investigation as potential panther reintroduction sites (Jordan, 1993; Jordan 1994).

According to the Florida Fish and Wildlife Conservation Commission there are presently between 50 and 70 adult Florida panthers residing in the fragmented remnants of southern Florida's wildlands (see <u>http://myfwc.com/panther/</u>). Population viability assessments for the Florida panther have indicated that, assuming full habitat connectivity and favorable management conditions, such a population would have a reasonable chance of persisting for 200 years (Cox, 1994: 64). Nonetheless, in order to promote species recovery and guard against single population catastrophes, the official Florida panther recovery plan has as its primary objective the establishment of three viable, self-sustaining populations (including the southern Florida population) within the historic range of the panther (U.S. Fish and Wildlife Service, 1995). To this end, in between 1991 and 1993 the U.S. Fish and Wildlife Service conducted a preliminary analysis of potential Florida panther reintroduction sites throughout the southeast (Jordan, 1993). State wildlife agency directors throughout the region were enlisted to assist in the identification of areas within their states that were thought to be worthy of further scrutiny. Site evaluation forms were constructed, that utilized ten evaluation criteria for each candidate site that were believed, at that time, to signify minimum habitat suitability (Jordan, 1993: 109). These evaluation criteria were as follows: 1) site size, 2) prey density, 3) human population density, 4) paved highway density, 5) land use, 6) attitudes toward reestablishment, 7) human population growth, 8) private vs. public land ownership, 9) hunting activity, and 10) density of small livestock operations. Preliminary evaluations produced a list of 24 candidate sites (actually, regions) [Figure 27].

This preliminary analysis relied very heavily on expert opinion and as a result there was concern that the assessment embodied a high degree of subjectivity and possible informant bias. Because of this concern and to increase the objectivity of the study, it was decided that a site reanalysis should be undertaken that would utilize only those evaluation criteria for which region-wide standardized data would be more readily available.

The following four criteria were chosen for the site reanalysis, site size, extent of forest cover, human population density, and road density. A second change was also made to facilitate the reanalysis. In the preliminary analysis site boundaries had been aligned with major highway systems. In the reanalysis however, county lines were used to delineate site boundaries. The reason for this was to more easily accommodate standardized data, rather than that biotic boundaries were thought to bear any correspondence to county political boundaries.





Source: Jordan, D.B. 1993. *Preliminary Analysis of Potential Florida Panther Reintroduction Sites*. U.S. Fish and Wildlife Sevice: Gainesville, FL.

Of the 24 candidate site identified in the preliminary analysis, several were separated only by a water body, or highway. In the reanalysis, in response to informant feedback to the first assessment, it was decided that many of the original candidate sites should be expanded, deleted, or realigned. This resulted in a final delineation of 14 sites for reevaluation (Figure 28). All of the states in the panther's historic range contained all, or at least part, of a site.

In the reanalysis, site sizes ranged between 3,716 and 13,450 mi<sup>2</sup>, will all sites exceeding the current occupied range in south Florida of 3,438 mi<sup>2</sup>. Road densities ranged between 0.92 and 1.73 miles per mi<sup>2</sup>. Human population densities were between 4.65 and 19.35 housing units per mi<sup>2</sup>. For forest extent, a rating system was employed to reflect the average percent of forest area. Counties with 81-100-percent forest cover were given a rating of 9, those with 61-80-percent forest cover were rated a 7, 41-60-percent forest cover garnered a 5 rating, 21-40-percent received a rating of 3, and 0-20-percent forest cover counties were given a rating of 1. In the reanalysis, forest ratings ranged between 7 and 8.86.

Interestingly, 5 out of the 14 candidate sites for Florida panther reestablishment contained Georgia counties. Fifty nine Georgia counties were found to meet a reasonable expectation of suitability as habitat for population reestablishment. In addition, the five sites containing Georgia counties fell on the borders with every surrounding state (i.e. FL, SC, NC, TN, AL) [Figure 29].

As noted in the site identification report (Jordan 1994), the 14 identified sites represent a very basic assessment and only a first step in a more extensive process, creating a foundation for further studies to determine factors that would limit successful future reintroductions. Nonetheless, with regard to the issue of the conservation of Georgia wildlands it is significant that the panther report captures essentially the same broad features as the landscape wildness







**Figure 29** Georgia Portions of Candidate Florida Panther Population Reestablishment Sites

map (compare Figure 25 with Figure 29). Site 13 from the panther report is especially relevant in that it captures key parts of the middle Georgia wildland from Figure 25, and in particular Twiggs and Wilkinson counties. In the last decade, there has been little apparent momentum for Florida panther population reestablishment efforts, but when similar landscape features reoccur in independent conservation assessments, it is a sign that the features being identified have real significance. Another perspective on this problem can be gained by examining a further dataset focusing on patterns of biodiversity elements in the landscape, this time originating with the Georgia Natural Heritage Program.

## <u>Pattern Representation of Biodiversity Elements: The Georgia Natural Heritage</u> <u>Program Dataset</u>

In order to provide an example of pattern representation of biodiversity elements in Georgia, against which the wildness modeling approach could be compared, it was decided to undertake a detailed examination of the Georgia Natural Heritage Program (GNHP) database. This database houses a standardized system of records of location occurrences of rare and imperiled species.

The GNHP is part of a much larger network of 74 independent heritage programs and data centers operating throughout the U.S. and Canada, as well as much of Latin America and the Caribbean. The very first state heritage program was founded by The Nature Conservancy (TNC) in 1974. Since that time, every state in the union has established a heritage database (<u>http://www.natureserve.org/aboutUs/index.jsp</u>).

In 1986, the GNHP was initiated as a collaborative effort of TNC and the Georgia Department of Natural Resources (GDNR). The program is now a privately funded component of the GDNR's Wildlife Resources Division. In order to build the database while protecting the whereabouts of sensitive species and natural communities, known locations (also called element occurrences) are generalized to both the county and the U.S. Geological Survey quarter quadrangle level (<u>http://georgiawildlife.dnr.state.ga.us/content/displaycontent.asp?</u> <u>txtDocument=87&txtPage=1</u>).

In 1994, TNC spun off a new organization called the Association for Biodiversity Information, since renamed NatureServe, to coordinate the efforts of heritage network members and to provide scientific and technical support, including the establishment of scientific standards for biological inventory and biodiversity data management.

While the heritage network databases provide one of the most comprehensive and best organized systems of records on rare and endangered species and threatened ecosystems, they embody several limitations that must be recognized. The information included in GNHP database comes from a wide variety of sources, all of which are not equal in quality or detail. Sources include scientific literature, biological field surveys, museum records, and landowner and other individual reports. In addition, record dates are variable, such that species that existed in a certain county or quarter quadrangle at some time in the past may, or may not, occur there at present. Especially problematic is the fact that at the time the database was examined for the purposes of this dissertation, record dates were not included in the database and could not be reflected in the display of the data. Finally, large parts of the state of Georgia have never been the subject of rigorous biological surveys. Consequently, it is often impossible to know whether counties or quarter quadrangles in the GNHP database for which there are few or no records, are the result of low biological diversity or simply a lack of human observation and record keeping. That being said, the GNHP database is probably the best existing dataset of its kind for the state of Georgia.

With the abovementioned limitations in mind, the GNHP database was acquired from the GDNR, reformatted, and mapped in order to display weighted element occurrences (EOs) for four permutations of the data. These were: 1) animal species, 2) acquatic species, 3) plant species, and 4) all records combined.

Once the GNHP data was acquired, fifteen species groups were divided into separate .dbf files and recombined as specified above (i.e., animals, acquatic species, plants, grand total). A decision was made to format the data to the USGS quarter quadrangle level, rather than to the county level, in order to utilize small but standardized spatial units. Quarter quads for which there were no natural heritage records were not represented in the database. As a consequence, the dataset contained numerous holes (Figure 30). These holes had to be addressed in order to distinguish, cartographically, quarter quads with no significant natural heritage records from those with no data.

A digital index grid of all USGS quarter quadrangle boundaries for Georgia was acquired from the University of Georgia's Office of Information Technology Outreach Services (ITOS). The GNHP records were then joined to the quarter quad boundaries. Unfortunately, the quarter quad naming conventions were not identical for the two datasets. Consequently, the nearly 4,000 quarter quad names had to be standardized manually before the datasets could be joined. The USGS naming convention was chosen as the standard and, where discrepancies existed, all GNHP quarter names were converted to their USGS counterparts. Some examples of the mistakes, or inconsistencies, discovered within the GNHP dataset during this conversion process are listed in Appendix 1.

After database standardization was accomplished, a series of rules had to be erected for editing and scoring the EO records. These rules constitute the weighting scheme. The GNHP



Figure 30 U.S. Geological Survey Quarter Quadrangles Containing Georgia Natural Heritage Program Element Occurrence Records (2002)

categorizes EO attribute data in four ways. The species rarity of each EO is defined by a "Global Rank" and a State Rank". In addition, each EO is defined by a "Federal Legal Status" and a "State Legal Status". An explanation of these rank and status codes, along with the details of the weighting scheme, appear in Appendix 1.

Finally, each EO in the revised dataset received a score comprised of 10 points awarded for each rank and each designation. Consequently, if an EO was recognized under each category, it would receive a maximum score of 40 points. In addition, each quarter quadrangle that contained *any* records at all in the GNHP, whether or not they were dropped from the final dataset, received 1 point. Quarter quads for which there were no GNHP records received a zero. This allowed no-data quarter quads to be distinguished from those with no *significant* GNHP records in the creation of the final maps (Table 11). Once the weighting scheme was in place, the range of point values were classified, using a natural breaks classification, and the results were depicted cartographically for animal species, aquatic species (both plants and animals), plants, and all species combined (Figures 31, 32, 33, 34).

To assist in the visualization of features of interest, the rivers of Georgia have been overlayed on each of the GNHP maps. The reader should also refer to Figure 26 to facilitate the identification of features under discussion. Figure 31 depicts the weighted animal species element occurrences. Under the scoring and classification schemes employed, only fifteen quarter quadrangles placed in the high value class. The four most prominent features of this map are as follows. First, the north Georgia mountains, encompassing the Chattahoochee National Forest, contain numerous high and medium scoring quarter quadrangles. Within this region, a linear feature in the northwest, comprised of high-scoring black quarter quads, represents the

<b>GNHP Category</b>		<b>Possible Points</b>
State Rank	11	10 points
Global Rand		10 points
State Legal Status	11	10 points
Federal Legal Status	11	10 points
Quarter Quadrangle Containing Any Records	11	1 point
Quarter Quadrangle Containing No Records	11	0 points
Total Possible Score	11	41 points

 Table 11
 Scoring Scheme Used in the Evaluation of Georgia Natural Heritage Program Element Occurrence Records



Figure 31 Distribution of Weighted Animal Species Element Occurrences in the Georgia Natural Heritage Program Database (2002)



**Figure 32** Distribution of Weighted Aquatic Species Element Occurrences in the Georgia Natural Heritage Program Database (2002)



**Figure 33** Distribution of Weighted Plant Species Element Occurrences in the Georgia Natural Heritage Program Database (2002)



**Figure 34** Distribution of Weighted Element Occurrences for All Species in the Georgia Natural Heritage Program Database (2002)

Conasauga River corridor. An additional linear feature, slightly to the southeast of the Conasauga River, trending in a northeast to southwesterly direction and comprised of mediumscoring red quarter quads, delineates the Etowah River.

Second, the long linear feature extending in an arc from middle-west Georgia to the southwest corner of the state and comprised of many medium scoring quarter quads, represents the Flint River and some of its' tributaries. Third, another major linear feature extending in a southeasterly direction from south-central Georgia to the coast, and consisting of two high and many medium-scoring quarter quads, denotes the Altamaha River. Fourth, the large block slightly to the northeast of the Altamaha River, containing mostly medium and three high-scoring quarter quads, encompasses the Fort Stewart Army installation near Savannah. Finally, it is rather puzzling that one of the largest, best protected, and most well-studied ecosystems in Georgia, the Okefenokee Swamp south of the Altamaha River, does not feature prominently on this map.

Figure 32 displays the weighted aquatic species element occurrences. On this map, only seven quarter quads received highest value scores. In spite of having less than half as many high-scoring quarter quads as the animal species map, the same basic features stand out in the two maps. To reiterate, these are: 1) the Chattahoochee National Forest region, with the Conasauga and Etowah Rivers being especially important; 2) the Flint River corridor; 3) the Altamaha River corridor; and 4) the Fort Stewart region near Savannah. Again, even more surprisingly than for the animal species map, the Okefenokee Swamp does not stand out at all on the aquatic species map. One additional feature of the aquatic map is notable. A stretch in the middle of the Oconee River, at its confluence with Big Sandy Creek, contains a sizeable cluster of significant GNHP records, but with only two medium-scoring quarter quads.

The weighted plant species element occurrences map appears in Figure 33. The plant species map contains 48 quarter quads that are classified as high value. In addition to having more high value quarter quads, the pattern of high and medium records is more dispersed in the plant map than in the animal and aquatic maps. Still, the plant map shares several similar features with the other two maps. These are the prominence of: 1) the Chattahoochee National Forest region in the north, though the Conasauga and Etowah Rivers are de-emphasized while the Coosa River and Chickamauga Creek areas are highlighted with black high-value quarter quads; 2) the Flint River, with numerous medium-value quarter quads on or near its banks, though it is less emphasized than in the previous two maps; 3) the Altamaha River corridor remains distinct; and 4) the Fort Stewart region decreases in prominence, though it still contains several medium-value quarter quads. Also the Okefenokee Swamp region gains with slightly more medium-value quarter quads.

In addition to these similarities, the following unique aspects of the plant map are notable. First, the region between the Chattahoochee and Flint Rivers, encompassing the Fort Benning Army base in the west and extending eastward, is highlighted with three high-value and numerous medium-value quarter quads. Second, the lower reaches of the Chattahoochee River on the southwestern border with Alabama is much more emphasized than in the previous maps. Third, the Ohoopee River, feeding into the middle of the Altamaha from the north, is much more distinct with three high-value and several medium-value quarter quads. Finally, between Atlanta and Athens there lies a cluster of six high-value and several medium-value quarter quads that are not replicated on the animal or aquatics maps.

The last map, Figure 34, depicts all GNHP records from the previous three maps combined. Figure 34 unites the prominent traits common to the three preceding maps with the

unique features of the plant map. The first major conclusion to be drawn from this assessment of the GNHP data is the fundamental importance of river corridors for biodiversity conservation in Georgia. Several of the major rivers are accentuated on both the GNHP maps and the wildness map (Figure 25), e.g. the Altamaha, Flint, and lower Chattahoochee. A second conclusion is that the mountainous Chattahoochee National Forest region in the north is the most extensive and prominent region of the state with regard to element occurrence records. Again, the importance of this region is corroborated by the wildness map (Figure 17). Third, the Fort Stewart area east of Savannah is another region in which landscape wildness and biodiversity indicators reinforce each other.

The coincidence of major federal public lands with areas of significant GNHP value is less than might be expected. Whereas Fort Stewart and the Chattahoochee National Forest, and to a lesser extent Fort Benning, provide solid examples of such coincidence, the Okefenokee National Wildlife Refuge region does not embody an area of high GNHP value. Also, in middle Georgia's, the state's second National Forest, the Oconee, along with the Piedmont and Bond Swamp National Wildlife Refuges fail to capture high GNHP-value areas within the state, even though these features are significant based on landscape wildness indicators (Figure 25). It might be expected that large federal public lands would house a greater degree of the state landscape's biodiversity value simply because such lands tend to be more sheltered from high impact economic activities.

One reason for this seeming failure of middle Georgia public lands to capture such values is related to the fact that the Piedmont Refuge (established in 1939) and later the Oconee National Forest (established in 1959) were created on highly degraded lands formerly devoted to cotton agriculture. Although these lands unquestionably have significantly greater wildlife value today than when they were brought into the public domain, it may be the case that not enough time has passed for these areas to have recovered their true potential biodiversity value. A second reason that middle Georgia lags behind other areas of the state with regard to significance within the GNHP obviously relates to the prevalence of no data quarter quadrangles in the region, likely indicating that this region has received little attention with regard to previous efforts at biological inventory. As a consequence, the true GNHP-value of these areas must be said to be undetermined in the absence of further study. Moreover, one of the most prominent features of the wildness map, i.e. the middle Georgia wildland which lies to the south and east of Macon and south of the Oconee National Forest and Piedmont Refuge, fails to appear on the GNHP maps. Again, the biodiversity value of this region remains undetermined due largely to a lack of biological inventory data. In conclusion, it seems highly likely that a state conservation strategy that combined biodiversity indicators, such as the GNHP data, with an emphasis on landscape wildness would succeed in covering most of the major conservation features of significance within the state.

## CHAPTER IV

## THE MIDDLE GEORGIA WILDLAND AND THE POTENTIAL CREATION OF AN OCMULGEE NATIONAL PARK

Arguably the most important feature on the Georgia Wildness Map (Figure 25) is the region south and east of Macon between the Ocmulgee and Oconee rivers. As mentioned previously, this region is essentially the third wildest remaining area of the state and, unlike the other two major Georgia wildlands centered on the Chattahoochee National Forest in the north and the Okefenokee National Wildlife Refuge in the south, the middle Georgia wildland is largely devoid of significant state or federal public ownership and the protections that such ownership would entail. Furthermore, the middle Georgia wildland lies in close proximity to federal public lands to the north, namely the Piedmont National Wildlife Refuge and the Oconee National Forest. Linking the middle Georgia wildland with the federal public lands to the north would create an area comparable in size to the state's two premier wildlands in the Chattahoochee N.F. and Okefenokee N.W.R. regions.

In early 2004, the Weyerhaeuser Corporation announced the sale of 320,000 acres of forestland scattered throughout the middle Georgia wildland region (Figure 26). At the time of the sale, the state government was facing budget shortfalls and, in spite of a \$26 million dollar loan offer from The Nature Conservancy, refused to act to protect key conservation parcels on the Weyerhaeuser lands (Seabrook, 2004). As a consequence, developers acquired much of the Weyerhaeuser holdings and the state has since been confronted with the potential loss to development of two important units of the state Wildlife Management Area (WMA) system that had been under lease for over 30 years (the Oaky Woods and the Ocmulgee), along with an array of lesser known and yet to be identified natural and cultural resources (Duncan, 2007).

In the case of the 21,000 acre Oaky Woods WMA, a core component of central Georgia black bear habitat, the parcel was acquired by Oaky Woods Properties. This corporation was created by four Macon area developers who have since announced plans for converting the WMA into a city-sized development with 30,000 new homes, commercial infrastructure, and up to ten new schools. Since the Weyerhaeuser sale, preservationists, hunters, and anglers have been calling for the state to intervene to ensure that the WMAs become permanent units in the state's conservation system. The state has thus far been unwilling to act, in part because the developers have demanded \$14,000 per acre, or nearly nine times more than the \$1,600 an acre asked by Weyerhaeuser in 2004 (Duncan, 2007).

The Weyerhaeuser sale and its aftermath represents the latest flashpoint in a long running effort to gain greater public support and awareness for the conservation significance of the Ocmulgee River corridor. As far back as 1992, Macon resident and conservationist John Wilson proposed the idea of expanding the current Ocmulgee National Monument and upgrading it to the status of a National Park (Leister, 2006; Wilson, 2007). In 2005, Wilson updated his proposal and outlined three scenarios for creating the park before the Central Georgia Rivers Partnership, a citizen-stakeholders group formed partly in response to the impending loss of the Weyerhaeuser conservation lands. Wilson's proposals sought to link 26,593 acres of existing publicly owned or managed lands along the river into a park that would stretch 46 miles, straight line distance, or the equivalent of 83 river miles, from Macon south to the town of Hawkinsville (Wilson 2005; Wilson 2007).

The *first* and largest of Wilson's scenarios would preserve the entire river corridor between Macon and Hawkinsville, along with several tributaries. This scenario would require the public acquisition of 52,000 acres, 95-percent of it in the flood plain, thus creating an 82,000acre park (37-percent of which is already publicly owned or permanently protected as mitigation land) [Figure 35]. If the cost of floodplain acreage were estimated at \$1,500/acre, then the total cost of land acquisitions would be approximately \$78 million. If this estimate were raised to \$2,000/acre, then the cost would jump to \$104 million. The second scenario would entail 31,000 acres of public acquisitions to preserve much of the river corridor, excluding tributaries. This would result in a 61,000-acre park (47-percent of which is currently in public ownership or preserved as mitigation land) [Figure 36]. The total cost of land acquisitions under this scenario would be slightly greater than \$46 million at \$1,500/acre, or \$62 million at \$2,000/acre. The *third* and smallest of Wilson's alternatives would create a 48,000-acre park (58-percent of which is already in public ownership or permanently protected as mitigation land) through public acquisition of 18,000 acres to minimally connect existing public, river corridor properties (Figure 37). Total cost of these acquisitions would range between \$27 - 36 million, at \$1,500/acre and \$2,000/acre, respectively.

In addition, Wilson noted that all public lands along the Ocmulgee River corridor from Macon to Hawkinsville could be linked together in a continuous band if only a small number of property owners would become willing sellers of all or part of their properties, possibly as few as seven to ten individuals. Wilson went on to elaborate several arguments in justification of the park idea (Wilson 2005).

First, a variety of local, state and federal agencies already own or manage significant portions of the Ocmulgee River corridor below Macon. However, the continuity of these public parcels is fragmented by private land holdings. Additionally, the segmentation of public ownership under many different jurisdictions fails to facilitate the maximum enhancement and utilization of these properties, and fails to achieve economies of scale in the protection and management of the corridor's significant cultural and natural resources. As a consequence, under present arrangements, the region's public land amenities do not serve to enhance the image of Middle Georgia but, rather, prevent effective marketing for recreation and tourism (e.g. most of these fragmented public lands are not even depicted on road maps).

Second, in recent years, rapid and unchecked commercial and residential development in close proximity to U.S. military installations has begun to have negative impacts on military preparedness and training nationwide by creating land use incompatibilities with vital military training and weapons management and testing functions. In middle Georgia, Robins Air Force Base, south of Macon in Warner Robins, has been no exception to this trend. The base houses "the Warner Robins Air Logistics Center, the 78th Air Base Wing, and more than 60 other units" and represents "the largest industrial complex in Georgia" with more than 25,000 military, civilian, and private industry employees (see <a href="http://www.robins.af.mil/">http://www.robins.af.mil/</a>). The base sits in a central location along the Ocmulgee River corridor, roughly mid-way between Macon and Hawkinsville.

From a military perspective, the problem of development encroachment around bases has the following major negative implications. For one thing, there is a basic public safety concern with limiting civilian proximity and exposure to military chemicals, noise, dust, and weapons use and testing. In addition, business and resident complaints in areas of new development often lead to calls for restrictions on an installation's intended mission. Furthermore, in the face of

119



Figure 35 Proposed Ocmulgee National Park and Preserve: Scenario 1 (Large) Courtesy of John Wilson, Macon, GA (2008)



Figure 36 Proposed Ocmulgee National Park and Preserve: Scenario 2 (Medium) Courtesy of John Wilson, Macon, GA (2008)



Figure 37 Proposed Ocmulgee National Park and Preserve: Scenario 3 (Small) Courtesy of John Wilson, Macon, GA (2008)

encircling development, military bases can become de facto natural areas and refugia for threatened and endangered species, the protection of which can place further constraints on base operations (see <a href="http://www.eurekalert.org/pub\_releases/2007-06/rc-mbc062707.php">http://www.eurekalert.org/pub\_releases/2007-06/rc-mbc062707.php</a>; <a href="http://www.nga.org/Files/pdf/032403MILITARY.pdf">http://www.nga.org/Files/pdf/032403MILITARY.pdf</a>).

In response to rapid land development near bases, many states are struggling to devise legislation and regulations to protect base viability. For example, the state of Georgia recently passed a law requiring local communities adjacent to military installations to seek the base commander's recommendations before zoning changes and development projects are approved near a base. The city of Warner Robins is situated south of Macon, between the Bond Swamp National Wildlife Refuge to the north and the Oaky Woods and Ocmulgee state Wildlife Management areas to the south. The Air Force Base lies between the city on the west and the Ocmulgee River Flood plain immediately east. Roughly 25 miles to the south, beyond the state WMAs, lies the town of Hawkinsville . The proposed National Park could extend from Macon to Hawkinsville. Consequently, if implemented, land acquisition and preservation for the National Park would serve a substantial buffering function for the Air Force Base preventing future encroachment, with the exception of urbanized areas to the west.

Third, swamp lands along the Ocmulgee River, in combination with adjacent wildlands, possess many of the qualities, though on a finer scale, as Georgia's largest wilderness area, the Okeefenokee National Wildlife Refuge. However, Macon is much closer to the Atlanta metro population and has amenities like hotels, museums, historic buildings and a night life that Waycross, the largest town bordering the Okeefenokee swamp, lacks. In addition, middle Georgia has a much richer archeological and Native cultural heritage. The proximity to Atlanta and its international airport would greatly facilitate the development and marketing of ecological and historical tourism for a new National Park. Moreover, the economic impact of a Park would constitute a stable and continuing community presence, unlike private businesses and industries that can close down or relocate to other states or countries.

Fourth, under the assumption that current hunting and fishing uses would be maintained, the donation of 11,000 acres of state-controlled land in the river corridor toward a National Park and Preserve or expanded National Wildlife Refuge should provide a substantial savings to the state in operational and maintenance costs. It could also attract federal funding for more acquisitions and staffing.

Finally, the park proposal has garnered little outright opposition and a good bit of initial support from the business and political communities. In 2004, in the wake of the Weyerhaeuser sale, the Georgia General Assembly passed a resolution, with bipartisan backing, in favor of the National Park idea, though without getting specific about acreage or boundaries. In addition, a year earlier both the Chamber of Commerce and the Tourism and Visitor's Bureau for the city of Macon passed resolutions in favor of expanding the Ocmulgee National Monument into a National Park (Duncan, 2003).

The only major negative assessment has come from some wildlife and hunting advocacy organizations, like the Georgia Wildlife Federation, who oppose any park designation that would place restrictions on areas like the Bond Swamp NWR and the state WMAs, thus closing them to hunting and fishing. A former NPS ranger has noted that this problem could be easily overcome. While it is true that, as a general rule, hunting is not Congressionally authorized in National Parks, the same is not necessarily true for fishing (e.g. angling has been a major visitor activity in Yellowstone National Park for over a century). Furthermore, multiple other NPS-unit designations exist which do permit hunting. Ultimately, any new unit in the National Park System will allow or prohibit whichever activities Congress mandates in the enabling legislation (Flowers, 2007; see Appendix 2 for examples of hunting activities permitted in specific NPS units).

In the case of a new Ocmulgee NPS unit, a dual designation might be employed. For instance, Congress could designate the unit as a *National Park and Preserve*. The precedent for dual designations was established in Alaska. As of 2000, two units in the lower 48 states had received dual "Park and Preserve" designations. The first of these is Great Sand Dunes National Park and Preserve in Colorado (formerly Great Sand Dunes National Monument), with 44,246 acres of National Park and 41,686 acres of National Preserve (see <u>www.nps.gov/grsa/parkmgmt/index.htm</u>). The second is Craters of the Moon National Monument and Preserve in Idaho (an expansion of the original National Monument), with 53,398 acres of National Monument and 410,732 acres of National Preserve (http://www.nps.gov/crmo/parkmgmt/index.htm). In both of the above cases, Congress applied the dual designation expressly for the purpose of permitting hunting to continue within the new unit (Kinzer, 2007).

In the case of the Ocmulgee, such a dual designation could preserve, and would likely expand, regional hunting access while limiting the strictest National Park protections to the area of the current National Monument and associated archaeological and cultural sites. This would be a "best of both worlds" scenario in which the new unit would receive both the increased status and acclaim generally attached to the term "National Park", while also stabilizing and permanently protecting traditional hunting areas (Flowers, 2007; Kinzer, 2007). It is important to remember that, under current circumstances and in the absence of a National Park or some similar conservation area, the likely fate of the current hunting areas is elimination through privatization, development, and decreases in wildlife populations. One further potential obstacle to an Ocmulgee National Park deserves some brief discussion. The Cherokee Brick and Tile Company is a 130-year old family owned business occupying nearly 1,300 acres of the Ocmulgee River floodplain between the Ocmulgee National Monument and the Bond Swamp National Wildlife Refuge (Morris, 2005). Along with the smaller adjacent Boral Brick Company, the clay mines and brick works on the floodplain constitute one of the oldest industries in Macon.

In the late 1990s, Cherokee Brick applied to the U.S Army Corps of Engineers for permits to expand mining operations on its property. The sites of the proposed mines fall within a region known as the Traditional Cultural Property (TCP) of the Muscogee people, an area considered by the Muscogee to be the birthplace of their nation (see below for a discussion of the TCP) [Duncan, 2003b]. As part of the permitting process, the Corps mandated that archaeological investigations should be undertaken to determine the significance of the areas proposed for mining. These studies took place between 1999 and 2000 (Duncan, 2003c). At the conclusion of the investigations, nine previously unknown archaeological sites had been discovered, the oldest of which, called Four Oaks, dates to approximately 8,000 b.p. The largest site, called Adele, is a Lamar period complex of 17 mounds, villages, and workshops. Investigators determined that seven out of the nine sites were either eligible, or potentially eligible to be listed on the National Register of Historic Places. Three of the sites however, including Four Oaks, would be destroyed by mining operations (Duncan, 2003b).

Because of the cultural significance of the area, as well as its location within environmentally sensitive wetlands, both Native American groups and conservationists opposed approval of the permit application. Nonetheless, in 2005 Cherokee Brick was granted permission to go forward with its expansion plan and continue mining in the floodplain for the next 50 years (Duncan, 2005). The company will strip mine parcels of up to 25-35 acres at a time, adding up to approximately 360 acres over the length of the permit. In exchange for consent to mine, Cherokee Brick agreed to preserve or restore nearly 2,000 acres of wetlands, including some of its own previous mining sites (Duncan, 2005; Morris, 2005).

The decision by the Corps of Engineers to approve the permit angered Native American groups. According to Alan Cook, a consultant to the Muscogee National Government in Oklahoma: "Destruction of any of these sites has a diminishing effect on the Traditional Cultural Property and limits our opportunity and our capacity to better understand important periods within the 12,000 year scope of history" (Duncan, 2003b). Historical authorities also disputed the Corps claim that the expansion of mining would have "no adverse effect" on the overall archaeological resource. The National Trust for Historic Preservation listed the Ocmulgee Old Fields in 2003 as one of the country's most endangered historic sites. Cherokee Brick officials responded that the four archaeological sites that were definitely eligible for listing on the National Register would be preserved, while the three sites to be destroyed were of lesser value (Duncan, 2003b; Duncan, 2003c).

Under any of Wilson's three National Park scenarios discussed above, the clay mining lands form a large and important link between the current-day National Monument and the National Wildlife Refuge to the south (Figure 38). Given the recent conflict that occurred over the permitting process between Cherokee Brick officials, on the one hand, and Muscogee and local conservationists, on the other, simply excluding brick company lands from any park proposal might represent the path of least resistance. However, another alternative might prove fruitful, if both sides were willing to give it some thought.



Figure 38 Clay Mining Lands on the Ocmulgee River Flood Plain Owned by the Cherokee and Boral Brick Companies

Courtesy of John Wilson, Macon, GA (2008)

In at least one instance, the precedent has been set for the inclusion of commercial operations of historical significance within an existing unit of the National Park System. At Point Reyes National Seashore north of San Francisco, examples of diary and cattle operations with historic ties to the development of San Francisco are incorporated within the park. As of 2002, six family dairies dating to the 1850s and representing some of "earliest and largest examples of industrial-scale dairying in the state of California" are still operating. Nine additional historic ranch sites continue to raise beef cattle within the bounds of the National Seashore. Current park plans anticipate that 17 ranches to be listed on the National Register will eventually form a historic landscape district as a permanent feature of the National Seashore (http://www.nps.gov/pore/historyculture/people\_ranching.htm).

The original motivation for incorporating industrial-scale agricultural operations inside NPS units stems from a period when rapid urbanization began to encroach onto the Marin Peninsula in the 1950s and 60s. The establishment of the park in 1962 resulted from a creative collaboration between the dairy and cattle ranches and the Sierra Club to preserve the open space and traditional pastoral lifeway of the Marin Peninsula. In exchange for the National Park Service's agreement to retain the working ranches and grant permits for cattle grazing, ranchers agreed to sign 25-30 year use and occupancy agreements. In 1973, when one ranch went out of operation, Congress authorized the incorporation of the ranchland into a wilderness area for the reintroduction of tule elk. Today a local land trust runs tours of some of the working ranches as an interpretive service to park visitors.

The lesson of this example is that it could be possible for the brick works in the Ocmulgee floodplain to be incorporated into a National Park as commercial operations of
historical significance. This possibility is bolstered by the following statement contained in the report on the archaeological assessment conducted as part of Cherokee Brick's permit application.

During the course of fieldwork, the historic significance of the Cherokee Brick and Tile Company brickyard was... noted. Therefore, in accordance with *Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties*, a National Register Nomination for the Cherokee Brick and Tile Company brickyard was prepared. In February 2001, three staff members of the Historic Preservation Division, Georgia Department of Natural Resources, conducted a site visit of the proposed Cherokee Brick and Tile Company Historic District... (T)he site visit included a tour of the historic factory buildings, outlying structures, mines, railroad resources, and levee. At the March 2001 meeting of the Georgia National Register Review Board, the Board recommended the historic district for listing in the National Register of Historic Places (Bland, et. al., 2001).

It might be objected that whereas cattle farms on a National Seashore have the advantage

of being themselves picturesque, the same might not hold true for operations that manufacture bricks from swamp clays. And yet there are other examples within the National Park System where the historical significance of certain industrial practices have warranted federal conservation efforts. The Keweenaw National Historical Park (http://www.nps.gov/kewe) preserves the historic copper mines and mining communities in the Upper Peninsula of Michigan. Though the mines are no longer active, the NPS engages with various public and private entities to preserve and interpret the resource (Kinzer, 2007).

In addition, the Lowell National Historical Park in Massachusetts was established to commemorate the early industrial revolution in America as embodied in the New England textile mills (http://www.nps.gov/lowe). And finally, NPS recently undertook a Special Resource Study for Great Falls at Patterson, New Jersey (http://www.nps.gov/nero/greatfalls/studyreport.htm). This park also memorializes early American industry and its use of water power. The site was founded by Alexander Hamilton as an American response to the industrial revolution in England and became a hub for many types of manufacturing including cotton fabrics, railroad locomotives, textile machinery, jute, and the spinning, weaving and dyeing of silk. In this instance, the study concluded that the Great Falls Historic District met the criterion for national significance but, at the present time, not those for suitability or feasibility. The NPS suggested that the site might better warrant inclusion in a New Jersey state park and designation as an Affiliated Area of the National Park System (Kinzer, 2007).

The above examples demonstrate that both the National Park Service and the National Park ideal embody the flexibility and breadth of purpose to potentially encompass sites like the Cherokee brick works. Cherokee Brick has the added advantages of housing significant archaeological resources, not to mention the potential wildlife conservation value of reclaimed wetlands on former strip mines. Eventually, at some future date, one would assume that the clay deposits will be mined out. Will this occur in 50 years at the end of the current permit or 100 years from now? If conservationists and the Muscogee were willing to engage the mine owners in a conversation about the future, there could be ways of bringing the brick works into a park in such a way that the commercial viability of the business would not be compromised. The future outcome would potentially accomplish full inclusion of the brick lands into the park, protecting archaeology, natural areas, and historic structures. At least this possibility should not be discounted.

#### Two Approaches to the Expansion of the Ocmulgee National Monument

Another approach to expanding the Ocmulgee National Monument is to consider other NPS designations. The range of possible designations for the various land units that make up the National Park System is rather diverse. In addition to National Parks and National Monuments, other designations include National Battlefields, National Preserves, National Recreation Areas, and National Seashores. Of all of these designations, National Parks are considered to be the jewels of the system. The National Parks are generally large natural places having a wide variety of attributes, including significant historic assets. As pointed out above, hunting, mining and consumptive activities are generally not authorized within National Parks. The significance of changing a unit's designation from a National Monument to a National Park can include, among other things, an expansion in the acreage under protection and the enhancement of the unit's perceived status. Since the National Parks are considered to be the jewels of the system, such a designation can act to cultivate the local economic impact of the unit through significant increases in tourism and visitation. Likewise, the elevated level of use and visibility can garner an increase in federal resources dedicated to management.

National Preserves are areas having similar characteristics to National Parks, but in which Congress permits continued public hunting, trapping, and extractive activities. In contrast, National Monuments tend to be smaller units (though a few are quite large) protected, by Presidential proclamation through the Antiquities Act of 1906, for their historic and scientific interest.

There are two paths, recognized by the federal government, by which the current Ocmulgee National Monument could be expanded and/or re-designated as a new type of unit. The first scenario would involve an administrative adjustment of the boundary for the current Monument, to increase the Monument's size and take in some additional landscape elements of concern. This kind of adjustment would most likely focus on incorporating several archaeological features that lie outside the current boundary. Boundary adjustments are not generally intended to greatly increase the size of a park unit, nor are they used to change a unit's designation, say from a National Monument to a National Recreation Area. Also, any resources to be incorporated in a new, adjusted boundary must be directly related to the purpose of the existing park unit. For instance, the Ocmulgee National Monument's boundary, which was established in 1936 to protect Mississippian-era archaeological features, would not likely be expanded to incorporate habitat for an endangered species. Amalgamating the current unit with an unrelated contiguous feature would require a second type of study, called a Special Resource Study, which is more expansive in scope than a boundary adjustment study. The National Park Service is empowered to undertake boundary adjustment studies for existing park units under its own initiative, without further direction from Congress. However, a Special Resource Study cannot be initiated by the Park Service and requires direct Congressional authorization (National Park Service, 2005a; National Park Service, 2005a; Barger, 2007; Kinzer, 2007; Sussman, 2007).

The following information is taken from a National Park Service publication detailing criteria for the establishment of new National Parklands (National Park Service, 2005). The same criteria would generally apply in cases where an existing NPS unit is proposed for major expansion, or re-designation as another type of unit.

Proposals for additions to the National Park System may come from the public, state and local officials, Indian tribes, members of Congress, or the National Park Service. To be eligible for favorable consideration as a unit in the National Park System, an area must possess *nationally significant* natural or cultural resources, be a *suitable* and *feasible* addition to the System, and *require direct NPS management* instead of protection by some other governmental agency or by the private sector. (emphasis added)

According to Congress, four standards must be met in order for a proposed unit to be considered **nationally significant**. First, it must represent "an outstanding example of a particular type of resource". Second, it must "possess exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage". Third, it must offer "superlative opportunities for public enjoyment or for scientific study". And fourth, it must retain "a high degree of integrity as a true, accurate, and relatively unspoiled example of the

resource" (National Park Service, 2005b).

In evaluating a proposal under the national significance criteria, the area under

consideration is compared against a list of ideal principles or illustrations. For **natural areas** 

these include the following.

- \* an outstanding site that illustrates the characteristics of a widespread landform or biotic area;
- \* a rare remnant natural landscape or biotic area of a type that was once widespread but is now vanishing due to human settlement and development;
- \* a landform or biotic area that has always been extremely uncommon in the region or nation;
- \* a site that possesses exceptional diversity of ecological components (species, communities, or habitats) or geological features (landforms, observable geologic processes);
- \* a site that contains biotic species or communities whose natural distribution at that location is unusual (for example, a relatively large population at the limit of its range or an isolated population;
- \* a site that harbors a concentrated population of a rare plant or animal species, particularly one officially recognized as threatened or endangered;
- \* a critical refuge that is necessary for the continued survival of a species;
- \* a site that contains rare or unusually abundant fossil deposits;
- \* an area that has outstanding scenic qualities such as dramatic topographic features, unusual contrasts in landforms or vegetation, spectacular vistas, or other special landscape features;
- \* a site that has invaluable ecological or geological importance due to an extensive and longterm record of research and scientific discovery (National Park Service, 2005b).

For cultural areas, the following case examples are used as standards of national

significance.

- \* a resource associated with events that significantly contributed to and are identified with, or that outstandingly represent the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained;
- \* a resource importantly associated with the lives of persons nationally significant in United States history;
- \* a resource that embodies distinguishing characteristics of an architectural type specimen exceptionally valuable for study of a period, style, or method of construction, or represents a significant, distinctive, and exceptional entity whose components may lack individual distinction;
- \* a resource with several components that may not warrant individual recognition but that collectively compose an entity of exceptional historical or artistic significance, or that outstandingly commemorates or illustrates a way of life or culture;
- \* a resource that has yielded or may be likely to yield information of major scientific importance

by revealing new cultures, or by shedding light on periods of occupation over large areas of the United States (National Park Service, 2005b).

While many units within the National Park System protect areas significant for their public use and recreational opportunities, recreational values are generally not considered independently from the natural and cultural resource values that determine national significance. Potential recreation values of an area remain an important consideration in the assessment of a new park unit proposal, however, as natural and cultural resources often provide settings for compatible recreational activities (Kinzer, 2007).

In addition to the national significance criteria, a proposed new unit must also meet

criteria for suitability and feasibility. According to the NPS:

To be suitable for inclusion in the system an area must represent a natural or cultural resource type that is not already adequately represented in the National Park System, or is not comparably represented and protected for public enjoyment by another federal agency; tribal, state, or local government; or the private sector. Adequacy of representation is determined on a case-by-case basis by comparing the proposed area to other units in the National Park System and other protected areas for differences or similarities in the character, quality, quantity, or combination of resource values.

To be feasible as a new unit of the National Park System an area's natural systems and/or historic settings must be of sufficient size and appropriate configuration to ensure sustainable resource protection and visitor enjoyment. It must have potential for efficient administration at a reasonable cost. Important feasibility factors include land ownership acquisition costs, lifecycle maintenance costs, access, threats to the resource, and staff or development requirements. (National Park Service, 2005b)

In the case of the Ocmulgee National Monument, a Congressional re-designation bill

could be the end result of a completed boundary study or a special resource study. Alternatively,

a member of Congress could bypass the study process by drafting, or asking the NPS to draft, a

re-designation bill that would then be directly introduced to Congress (Barger, 2007; Kinzer,

2007). An instructive example for Georgia is the re-designation of the Congaree National

Monument in South Carolina, as the Congaree National Park (N.P.) in 2003 (Holleman, 2003).

An NPS rule of thumb is that National Parks are large units that protect multiple nationally significant resources. In contrast, National Monuments tend to be smaller, and protect a single nationally significant resource (National Park Service, 2005). The Congaree N.P. is unique in the following regards. First, it is the smallest National Park in the mainland United States at slightly more than 26,000 acres (Holleman, 2003; Kinzer, 2007). An Ocmulgee N.P. might be roughly twice as big, though still small by NPS standards.

Second, the normal feasibility study process for the Congaree was bypassed. Redesignation and expansion of the unit was initiated by former South Carolina Senator Ernest Hollings. Hollings was a long-serving, influential, and well respected senator on the verge of retirement. The park designation had been a major priority of his for some time. It is unclear that such a confluence of circumstances could or would be replicated within the present-day Georgia Congressional delegation. If not, then the normal boundary/special resource study process would have to be followed, potentially entailing a legislative mandate to begin and up to three years to finish. Additionally, Congress can authorize a special resource study, but a separate appropriation is required to fund it. There are currently a number of special resource studies that have been authorized, but not funded (Kinzer, 2007).

Third, in violation of the rule of thumb cited above, the Congaree protects but a single nationally significant resource. It is the site of the largest remaining remnant old growth bottomland hardwood forest in the U.S. An Ocmulgee N.P. would likely obey the rule of thumb and protect multiple potentially nationally significant resources. Like the Congaree, the region proposed for an Ocmulgee park contains significant areas of bottomland hardwood forest, an extremely rare forest type. Little, if any, of this is likely to be old growth, though the condition and integrity of the forest has apparently never been extensively evaluated. The Ocmulgee N.P. could potentially encompass and protect additional rare ecosystems, such as the Georgia black belt prairies. Black belt prairies are a very rare ecosystem scattered in patches from Houston county, Georgia to east Texas. Georgia is home to 12 of these prairies, ranging in size between two and twenty acres. All 12 are contained on the Oaky Woods and Ocmulgee Wildlife Management Areas which are currently under threat of development. The unique soils of the black belt prairies are remnants of an ocean floor geologic formation dating between 65 and 144 million years before present. Marine fossils, including remains of an ancient whale, have been recovered from the Georgia black belt prairies. In spite of the rarity of the ecosystem, the black belt prairies have received limited conservation attention because, overall, their individual flora and fauna tend not to be threatened or endangered (Georgia Conservancy, 2006). In addition, the relatively small size of the Georgia black belt prairies could not, alone, be used to justify a 40-60,000 acre National Park. However, as one of several landscape elements, the prairies could contribute toward collectively making the case for "an exceptional diversity of ecological components".

More problematic is the fact, referred to during the discussion of the Georgia Natural Heritage Program dataset, that the biodiversity value of much of middle Georgia remains undetermined due largely to a lack of biological inventory data. As a result, summarizing the proposed park region's total ecological diversity may prove difficult. Some promising anecdotal evidence does exist however. According to a retired NPS ranger with experience of the Ocmulgee National Monument, though the Ocmulgee is currently one of the smaller units in the National Parks system, an inventory of reptiles and amphibians conducted several years ago identified almost as many species as are known to exist at Congaree National Park (Flowers, 2007). Another biological member that might contribute toward a case for "an exceptional diversity of ecological components" is the remnant black bear population centered on the Oaky Woods WMA. The black bear as a species is not listed as threatened or endangered in Georgia; however as noted earlier, black bears on the southeastern Coastal Plain have been eliminated from over 93% of their historic range. Throughout the southeast, remaining bear populations tend to be scattered among fragmented wildlands encompassed within a matrix of humanized landscape, and the size and integrity of these scattered habitats continue to be eroded year by year. The states that have adopted the most progressive stances toward wildlife conservation in recent years, like Florida, have begun to shift their focus away from a vague consideration of species status unanchored to specific habitats and populations, toward a more proactive management of specific habitats and populations, along with aggressive land acquisition campaigns to secure those habitats and populations (Cox, et al., 1994).

For at least the last decade, Florida conservationists have been attempting to achieve listing of the Florida black bear as threatened under the Endangered Species Act (Environmental News Network, 1998; South Florida Sun-Sentinel, 2004; Panama City News Herald, 2006). Florida bear numbers are generally estimated in the range of 1,600 to 3,000. In 1994, state conservation planners proposed five Strategic Habitat Conservation Areas for the bear in Florida, each consisting of a mix of public and private lands that, if properly conserved, could indefinitely support viable bear populations. The five areas are the Big Cypress Strategic Habitat Area, the Ocala Strategic Habitat Area, the Osceola Strategic Habitat Area, the Apalachicola Strategic Habitat Area, and the Elgin Strategic Habitat Area. For the last decade, the state has been working, with various degrees of intensity, to better conserve these areas through public acquisitions and private easements. Though many conservationists might argue that much more needs to be done, the example set by Florida is worlds ahead of any similar state-led effort in Georgia. A greater sense of urgency on the part of the state of Georgia to conserve the middle Georgia bear population and its habitat would lend additional weight to the conservation importance of the Ocmulgee corridor and suitability of the region for a National Park, or some other enhanced NPS unit.

Other species-specific arguments might remain to be made, though in the absence of more regionally focused data no one is likely to make them. It may be highly useful for park advocates to petition the Georgia DNR for: 1) a thorough and up to date catalog of known populations of rare, threatened, and endangered plants and animals in the area encompassed by a potential park; and 2) giving a high priority to the effort to conduct a more thorough biological inventory of the area. One intriguing species that has been little mentioned in the context of Georgia conservation, but that could have some degree of relevance for future conservation of the Ocmulgee corridor is the ivory-billed woodpecker.

The ivory-billed woodpecker was one of the largest members of the woodpecker family. Around the time of the Civil War the bird inhabited bottomland hardwood forests and swamps from North Carolina to Texas and Florida to Illinois. By the turn of the 20<sup>th</sup> century, industrial logging had nearly eliminated the bird's habitat and by the end of the century the species was believed to be extinct. Then, confirmed sightings in the Big Woods region of Arkansas in 2004 and 2005 revealed that at least one remnant population still existed in the wild (http://www.nature.org/pressroom/press/press1884.html). Since that time scientists, led by researchers from Cornell University and The Nature Conservancy, have continued conducting intense field surveys for the endangered bird in areas believed to provide potentially favorable habitat throughout the southeast (Cornell Lab of Ornithology, 2007). In 2006, evidence was presented for the possible presence of ivory-billeds along the Choctawhatchee River in the Florida panhandle (Hill, et. al., 2006). However, there has been little in the way of additional unambiguous verification of the bird's presence in the Big Woods area since 2005. In spite of this fact, The Nature Conservancy has continued with an ambitious land acquisition and forest restoration program for the Big Woods, with the federal government's assistance and approval (http://www.nature.org/pressroom/press/press1886.html).

In Georgia, a 21 km section of the Ebenezer Creek tributary of the Savannah River was searched, on foot and by canoe, for the equivalent of four person days in January of 2007. Though the creek did contain some significant old growth specimens, it was found to represent low quality ivory-billed habitat, due to the narrowness of the riverine forest and the proximity of residential developments (Cornell Lab of Ornithology, 2007). It is a near certainty that the Ocmulgee corridor is not a habitat for a relic ivory-billed population. Nonetheless, if one were to anticipate that current conservation efforts in the Big Woods might bear fruit in the coming years, one can envision a time when an ivory-billed captive breeding and reintroduction program could become a possibility. In making a case for a National Park designation for the Ocmulgee, the future potential for endangered species reintroductions will carry little weight. However, at a bare minimum, it would be a worthy endeavor for park advocates to petition the U.S. Fish and Wildlife Service to formally and systematically survey the Ocmulgee between the Bond Swamp NWR and Hawkinsville to determine the likelihood of ivory-billed presence and assess the extent and quality of the habitat, as ivory-billed habitat. In addition, beyond consideration of the woodpecker, park advocates would be wise to consult with the National Audubon Society about determining the Ocmulgee corridor's eligibility to be nominated as an important bird area, under the organization's Important Bird Area Program (http://iba.audubon.org/iba/

<u>viewState.do?state=US-GA</u>). Such efforts, over time, would build the case for the region's "exceptional diversity of ecological components".

Finally, the carbon sequestration value of the Ocmulgee floodplain forests constitutes a potential feature of the park that may not easily factor into a re-designation, but taken collectively with others elements such as those discussed above, could add to the weight of the area's significance. With the advent of the new "road map" developed at the U.N. climate conference in Bali in 2007 (Associated Press, 2007) including, for the first time, an endorsement by the U.S. government, it seems that a corner may have been turned in the global effort to address climate change, with a special emphasis being placed on forest protection. In combination with the impending U.S. elections, a window of opportunity may be opening for forest conservationists to engage in the creation of a new carbon regulation regime in the U.S. (The Forest-Blade, 2007; see also http://www.gacarbon.org/, http://carbon.sref.info/). Given these developments, it would be wise for park supporters to advocate for a study of the carbon sequestration potential of the Ocmulgee corridor forests, both the swamp and flood plain forests and the surrounding upland forests, especially the WMAs. Such information may carry very limited weight in the immediate future, but by systematically creating a documentary catalog of significant benefits, the weight of the argument in favor of an expanded NPS unit continually grows.

The carbon sequestration issue has been slow to gain traction in the U.S.; however significant recent developments have taken place and the state of Georgia would appear to be on the cutting edge of this issue in the southeast. In 2004 the Georgia General Assembly mandated the creation of the Georgia Carbon Sequestration Registry, under the jurisdiction of the Georgia Forestry Commission, to provide a means by which both public and private landowners can

quantify and document forest carbon sequestration, thus laying the groundwork for eventual market-based trading in carbon credits. Apparently, a protocol for estimating and reporting carbon stocks in forests, which was under development for several years, has now been implemented (http://www.gacarbon.org/). The Carbon Registry will develop similar protocols in the near future for conservation tillage and urban forestry.

It will likely be a number of months before landowners and land managers fully grasp the utility of pursuing the identification, valuation, and management of their carbon stocks. Conservationists would do well to engage in this process early and actively, especially utilizing the real estate and land conservation expertise of the land trust community. In the case of federal parks and conservation lands, it may be possible to develop a mechanism whereby local governments accrue carbon credits for conserved lands, similar to the "Payments in Lieu of Taxes" program used by the U.S. Department of the Interior and USDA Forest Service to offset losses in property taxes due to the existence of nontaxable Federal lands within local jurisdictional boundaries (http://www.doi.gov/pilt/).

To reiterate the NPS criteria for suitability, a new area under consideration for park status must represent a natural or cultural resource type that is not already "adequately represented" in the National Park System. The Congaree National Park, due to its old growth character, would seem to constitute the premier remaining example of bottomland hardwood forest. However, whether or not this resource is "adequately represented" in the National Park System is open to some interpretation. This determination would require the proposed Ocmulgee park's forest extent to be more thoroughly evaluated for national significance. Does it: 1) represent an outstanding example of a particular type of resource; 2) possess exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage; 3) offer superlative opportunities for public enjoyment or for scientific study; and 4) retain a high degree of integrity as a true, accurate, and relatively unspoiled example of the resource?

It has been suggested that in order to be successful, an Ocmulgee National Park proposal would need to draw distinctions between the Ocmulgee and the Congaree National Park, thereby justifying the existence of the Ocmulgee as a distinct National Park. To do this, the best approach might be to emphasize the Native American cultural heritage and archaeological aspects of the potential unit, including the Muscogee Creek traditional cultural property (to be dicussed below), rather than the bottomland hardwood ecosystem (Kinzer, 2007). One potential obstacle is the fact that, taken together the cultural resources and archeological sites may not add up to the thirty thousand acres, or more, that park proponents seek to protect. A rejoinder to this criticism is that the forest lands would buffer the cultural and archaeological features and would greatly enhance public recreational opportunities.

Additionally, proponents of the new park might need to explain why management by the U.S. Fish and Wildlife Service (USFWS), which currently oversees the Bond Swamp National Wildlife Refuge is not adequate to protect the area. Presumably the answer to this last question would relate to the fact that, while either agency might do a satisfactory job of managing the natural resources, the National Park Service has vast expertise in protecting and interpreting cultural and historical resources that the USFWS lacks (Kinzer, 2007). A very recent incident lends credence to this contention.

In January of 2008, Macon area conservationists discovered that a multi-acre timbering operation using heavy equipment had been carried out on the Brown's Mount archaeological site. Browns Mount is owned by the State of Georgia, under the jurisdiction of the Department of Natural Resources. It is managed by the USFWS however, as part of Bond Swamp National Wildlife Refuge, under an agreement signed in July 2006 (Flowers, 2008; Wilson, 2008).

The entire summit of Brown's Mount is a major Mississippian and Woodland-era archaeological site, with ties to the Ocmulgee National Monument. The site also falls within the Ocmulgee Old Fields Traditional Cultural Property (TCP) of the Muscogee Creek Nation (see the discussion of the TCP below). The top of the Mount is encircled by the remains of a stone wall and ditches. A round earth lodge, almost identical to the one at the Ocmulgee National Monument was excavated during the 1930's and a second square earth lodge was excavated in the 1970's. The entire Mount was originally recommended for inclusion into the National Monument. The unexcavated "Little Mound" also sits on the summit and another earthwork, "Myrtle's Mound", is on the side of the Mount and has a pit in its center from past looting. An additional small mound near "Myrtle's Mound" was bulldozed thirty years ago (Flowers, 2008; Wilson, 2008).

In July or August of 2007, state officials hired loggers to take out trees infested with southern pine beetles. Apparently, the USFWS was unaware of the existence or locations of the archaeological sites, and though the state Department of Natural Resources' Historic Preservation Division was consulted prior to the logging, the DNR was not aware of the sites either. In the logging operation that followed a loading deck was built on top of the remains of the square earth lodge. A 26-acre area was then cleared of pines and cutdown machines and skidders were used to cut and drag logs up to the log deck. Heavy machinery also drove on top of the unexcavated Little Mound from which the trees were removed. Damage to the site and its features remains to be fully assessed, since the post-logging slash and debris was left on site and was too thick to permit a comprehensive visual evaluation (Duncan, 2008; Duncan, 2008b).

Several lessons can be taken from this episode. First, Brown's Mount (not to mention the Bond Swamp National Wildlife Refuge) is managed at a distance from the Piedmont National Wildlife Refuge, approximately 40 miles to the north. Due to present federal budget priorities and constraints, the Piedmont Refuge is facing staff cuts and layoffs. In addition, Refuge officials have admitted that there is considerable illegal looting of archaeological sites occurring along the river and that at current staff levels it is difficult to catch thieves and vandals. Clearly this "absentee" management is not effectively conserving the area's cultural resources (Flowers, 2008; Wilson, 2008).

Second, given the above situation in combination with other recent incidents, local archaeologists are calling for a regional preservation plan for sites and cemeteries in middle Georgia (Duncan, 2008b). In the absence of some such plan it can be expected that the erosion of cultural resources will get progressively worse over time. Finally, especially in the case of Brown's Mount, the logical agency possessing the professional capabilities to best conserve and manage the archaeological and cultural resources of the area would seem to be the National Park Service.

At the present time, there is no apparent comprehensive and scholarly synthesis of the archaeological record of the Ocmulgee River corridor, or the broader region of middle Georgia. Instead, archaeological data are scattered amongst a variety of published and unpublished sources. Though the task of synthesizing these data has much import for any formal proposal that conservationists might make for an Ocmulgee National Park, such work lies beyond the scope of the present study. Instead, the remainder of this study will explore another aspect of the Ocmulgee region that has received even less attention than its archaeological heritage.

Occurring in tandem with the aforementioned concern for the conservation of natural areas and wildlands, there has been resurgent interest on the part of the historically indigenous Muscogee Creek people, residing in Oklahoma since the time of Indian Removal, in protecting their cultural heritage through the reassertion of tribal interests in historic Georgia lands. Thus land conservation in middle Georgia could act to arrest development and preserve landscapes in such a way, previously unsuspected, as to meld and unify both natural and cultural values. This possibility exists because landscape features of considerable cultural significance to the Muscogee people are, in fact, coincident with parts of the middle Georgia wildland and, in particular, with areas along the Ocmulgee River that have been targeted by the National Park proposal.

### CHAPTER V

# THE CULTURAL IMPORTANCE OF MIDDLE GEORGIA LANDS TO CONTEMPORARY MUSCOGEE PEOPLE

This dissertation research had its origin in an attempt to use GIS-based mapping techniques to model landscape features of the state of Georgia for the purpose of identifying an effective procedure for protecting the state's natural heritage. Once a model of landscape wildness had been produced it became apparent that a sizeable area in middle Georgia possessed significant conservation value, but was not receiving state attention commensurate with its worth.

During the course of the ensuing research it became further apparent that the importance of the region identified in the model was not limited to its natural heritage value alone. Rather, the middle Georgia landscape embodies substantial value for its indigenous cultural heritage as well. Thus the scope of the research expanded in order to address this dual aspect of the regions conservation significance. Since this project's beginning the situation on the ground has degraded with respect to the conservation of both natural and cultural resources and, thus far, the state government has failed to respond.

The final component of this dissertation, therefore, represents an effort to begin to understand the cultural resource value of the middle Georgia landscape from the perspective of the historically indigenous people of the Muscogee (Creek) Nation who have resided in Oklahoma since the time of Indian Removal. In a sense, this last section of the dissertation cannot possibly give due justice to the Muscogee and their concerns. Though the author does possess significant training in anthropology, he is not a scholar of Muscogee history and culture, nor is he a speaker of that culture's languages. Thus the objective of this final chapter will not be to give a comprehensive accounting of the Muscogee experience. The goal will be much more humble.

First, it should be recognized as a significant development that renewed interest has emerged in the last 10-15 years, on the part of some Muscogee, in their historical cultural relationship to middle Georgia lands. Second, this study initiates what is hoped will become a continuing engagement with concerned Muscogee regarding their ideas, priorities, and visions for the future of the middle Georgia landscape and possibly other traditional lands in the southeast. This is done in the hopeful belief that the conservation of Georgia's natural and cultural landscapes will benefit from a Muscogee perspective and that in the coming years the contemporary society of Georgia, and the southeast more broadly, might be strengthened and made more complete by a revitalized Muscogee participation and presence.

Before continuing one final statement needs to be made concerning two differing approaches to understanding cultural relationships to the landscape. By the mid to late 20<sup>th</sup> century, Western academic anthropologists and linguists who studied indigenous cultural groups became increasingly sensitive to the need to distinguish between their own academically framed perspectives on cultural phenomena and the often differing understandings of the same phenomena held by their indigenous collaborators and informants. This distinction has been referred to by historians as a tribal-historical perspective versus an academic-historical perspective (Deaver, 2000:25). Alternatively, this distinction has been labeled emic versus etic by anthropologists (Headland, 1999). An emic understanding refers to an explanation of a phenomenon, or a description of beliefs or behaviors that originates or is situated internally to a specific cultural perspective or world view. In contrast, an etic understanding attempts to account for culture-specific phenomena, beliefs, and behaviors based on the perspective of an observer situated outside of the culture being described.

The present study is situated within an academic-historical or etic context and cannot claim to represent encyclopedic knowledge of the Muscogee tribal-historical viewpoint. It is hoped that what follows is a discussion that is respectful of the material and of those Muscogee who have agreed to share their insights. First a brief discussion of the current academichistorical understanding of the earliest settlement of Georgia will be presented.

#### The Antiquity of the Human Settlement of Georgia

The date of human entry into the Georgia landscape is difficult to determine with exactitude. However, the history of human habitation in the state extends back at least 12,000 years. In the terminal stages of the last ice age, Georgia's land mass was considerably larger than at present. Sea levels were lower and the coast line was shifted up to 80 miles to the east. In all likelihood this extended coastal plain, now underwater, houses significant prehistoric cultural remains. Archaeological research in the Gray's Reef National Marine Sanctuary, located 17.5 nautical miles off Sapelo Island, Georgia, has uncovered fossilized remnants of extinct large mammals, including ground sloths, mastodons, camels, horses and bison, 60-70 feet below the ocean surface (http://graysreef.noaa.gov/arch.html). According to geologists, the Gray's Reef area was exposed dry land for a period of approximately 40,000 years prior to being resubmerged about 7,000 years before present. The current period of rising sea levels began about 20,000 years ago at a rate of about 1 meter per century. Beginning about 6,000 years ago the rate of submergence dropped substantially to about 0.3 meters per century and this rate has continued

to the present day (<u>http://graysreef.noaa.gov/geology.html</u>). If large mammals were making a living in these formerly exposed lands, then in all probability humans were utilizing the landscape as well. In the coming years, maritime archaeological work now underway could potentially push back the date for Georgia's first human inhabitants by up to several thousand years.

The commonly accepted cultural sequence for pre-European contact times includes the following four broad periods: the Paleo-Indian (11,000 B.C. - 8,500 B.C.), the Archaic (8,500 B.C. - 1,000 B.C.), the Woodland (1,000 B.C. - A.D. 1,000), and the Mississippian (A.D. 1,000 – ca. A.D. 1,600) [Williams, 1993: 10]. The first Paleo-Indians arrived in the Georgia landscape as small, wide-ranging bands of hunter-gatherers. According to the Southeast Archaeological Center of the National Park Service, "The best diagnostic archeological evidence for these early Paleo-Indian bands are long, fluted chipped stone projectile points. These early points are named "Clovis" after the Clovis, New Mexico archeological site where the point type was first recognized in association with Late Pleistocene fauna". Furthermore, the "(g)reat mobility of the Paleo-Indians of this period is suggested by the finding of stone tools and debitage (i,e, the lithic byproducts of stone working) traded or transported by these small bands over hundreds of kilometers from their quarry source" (<u>http://www.nps.gov/history/seac/outline/02-paleoindian/index.htm</u>).

Band-level social organization, consisting of single kin-based units of less than 40 people, continued into the Archaic period. There is no evidence of warfare during these culture periods. During the Woodland period, a tribal level of organization emerged based on larger, multiple family units. In eastern North America, limited cultivation appears as a supplement to the hunting and gathering mode of production. By the Mississippian period, societies became

much larger, more stratified chiefdom-level social entities. Limited horticulture gave way to more intensified agriculture and warfare became common (Williams, 1993: 10). As early as the Paleo-Indian period, there was a human presence on the Macon Plateau (Kelley, 1938).

Thanks to the Great Depression and the consequent institution of federal works programs, the 1930s and 1940s was a period of concentrated archaeological activity in Georgia. Major archaeological survey work was conducted across the northern part of the state, while serious excavations were undertaken of coastal sites, particularly in the Savannah area, and of inland sites concentrated around Macon. On the Macon Plateau, archaeologist A.R. Kelly recovered a large Clovis point, one of the earliest discovered in a stratigraphic context in eastern North America, along with thousands of additional examples of worked flints (Anderson, et. al., 1990: 12).

In 1986, to gain a more comprehensive picture of the pattern of Georgia's earliest occupation a statewide Paleo-Indian Artifact Recording Project was undertaken. That effort compiled location data for over 100 early and middle Paleo-Indian period points. Prior to 1986, fewer than one dozen fluted points had been formally documented (Anderson, et. al., 1990: 45). Figure 39 shows a distribution for Paleo-Indians artifacts in Georgia and surrounding locales.

Taken as a whole, the southeastern landscape reveals a spotty and discontinuous distribution of early sites. Some regions show significant concentrations of artifacts, while other regions indicate sparse and sometimes no occupation. The southeastern sites that contain the most profuse collections of fluted points and associated artifacts tend to be situated in close proximity to high quality sources of lithic raw materials which themselves are scarce in the landscape. In addition, the greatest number of Paleo sites by far are found in a surface context,



**Figure 39** Sites and Localities Yielding PaleoIndian Artifacts in and Near Georgia (as of 1986)

Source: Anderson, D.G., R.J. Ledbetter, and L. O'Steen. 1990. PaleoIndian Period Archaeology of Georgia. *Laboratory* of Archaeology Series Report No. 28, Georgia Archaeological Research Design Paper No. 6. University of Georgia: Athens, GA.

as opposed to an excavated muli-layered stratigraphic sequence. The implication is that very few sites represent periods of long-term occupation or repeated use (Anderson, et. al., 1990). Several hypotheses have been offered to account for the generally low occurrence of Paleo sites throughout the south. The first is the abovementioned patchy availability of high quality lithic resources, which are seen as critical raw materials for an efficient and successful hunting lifeway. Second, it has been suggested that Paleo sites are really more plentiful than suspected, but a survey bias that has focused more on open lands at the expense of forested areas has yet to fully document the available record. Third and also mentioned earlier, some archaeologists assert that early settlement systems would likely have favored coastal plain resources and thus much of the record is now submerged in the wake of late Pleistocene and Holocene sea level rise. Finally, some researchers have proposed that Paleo-Indian migrations would have occurred along the major river corridors connecting the east to the middle of the continent, examples being the river valleys of the Ohio, Cumberland and Tennessee. Smaller southeastern river basins at a distance from these major arteries would have attracted less attention and visitation by small populations of foragers (Anderson, et. al., 1990).

One site in Georgia where a large quantity of artifacts have been recovered in an undisturbed context is Taylor Hill near Augusta. Additionally, surveys conducted over a 20 county area in the Big Bend region of the Ocmulgee River revealed eight Clovis era sites, along with two additional sites at other locations along the Ocmulgee, and one site on the Oconnee River at Mount Vernon (Snow, 1977).

The transition between the Paleo-Indian and Archaic periods is marked by the appearance and proliferation of a new point type, the Dalton. This change in the lithic technology is usually interpreted as being indicative of an adaptive shift coinciding with the environmental transformations that resulted in the replacement of Pleistocene fauna and forests types by the smaller Holocene fauna and more modern vegetation assemblages (Anderson, et. al., 1990: 49). In addition, the evidence from the Paleo-Archaic transition suggests that a significant population increase was occurring at that time, as indicated by the growing abundance of artifacts at such important sites as Feronia, Barnett Shoals, and the Russell and Wallace Reservoirs. Thus, by early Archaic times a first "filling in" of the landscape by a well distributed collection of human social groups had taken place (Anderson, et. al., 1990: 86-87).

With regard to the long held view of a general absence of early, Paleo-Indian social complexity, Anderson, et. al. have noted that...

One thing that has emerged in recent years is a sense of respect for the early populations in the region. While it is sometimes suggested that Paleo-Indian socio-political organization was simple and uncomplicated, in actuality, fairly sophisticated information exchange and mating networks would have had to have been present for these populations to have remained reproductively viable. In all probability the need to find and exchange mates in a cultural environment characterized by an extremely low population density shaped Paleo-Indian settlement systems in the region. As the landscape filled over the course of (time)... this driving force would have lessened. Local (band-level) and regional (macroband-level) settlement systems such as those postulated during... Archaic times in the Southeast may have had analogs operating at much larger geographic scales during these earlier periods (Anderson, et. al., 1990: 88-89).

We have now established the early, widespread, and probably socially sophisticated low density, human occupation of the Georgia landscape, dating to the terminal Pleistocene. A detailed accounting of subsequent phases in the pre-European settlement of the state is outside the scope of this study. Appendix 3 provides a time line of some of the major pre-historic and historic developments for the Ocmulgee Old Fields region near Macon.

Finally, a note regarding terminology. The term "Creek" was an appellation applied by early British colonists to Muscogee peoples in Georgia, presumably because of the close association between Muscogee settlements and the creeks and rivers of the southeast. For instance, when the first British trading post was established in middle Georgia in 1690, the present-day Ocmulgee River was known as Ochese Creek (<u>http://www.muscogeenation-nsn.gov/history/history.htm</u>, <u>http://www.nps.gov/ocmu/historyculture/index.htm</u>). In the discussion that follows, the terms Muscogee, Creek, and Muscogee (Creek) will be used interchangeably.

We will now jump ahead to examine some of the major events in the Muscogee post-Contact experience, along with the circumstances surrounding the recent creation of the Ocmulgee Old Fields Traditional Cultural Property, and the resurgent Muscogee concern with the conservation of their traditional Georgia lands.

## Georgia Muscogee (Creek) Disinheritance, Removal, and Diaspora

In the wake of the post-Revolutionary War expansion of American settlement the pressures on Creek society to relinquish land and resources rapidly increased. In 1802, the Treaty of Fort Wilkinson pushed all Creek settlement to the west of the Oconee River. This boundary adjustment was short lived and within three years the Creek were forced to surrender to the United States the land between the Oconee and Ocmulgee Rivers in the first Treaty of Washington (1805). The only exception consisted of a 3 by 5 mile strip of land east of the Ocmulgee River known as the Old Ocmulgee Fields Reserve, or the Macon East Reserve (Deaver, 2000; Flowers, 2007). The Reserve was considered to be sacred ground by Creek people, since oral tradition held it to be the place of origin of the Creek culture and thus, the cradle of the historic Creek Confederacy (Bear, 2003).

In 1811, comprehending the magnitude of the westward expansion of American settlement, Shawnee Chief Tecumseh traveled from his tribal lands in Ohio up and down the frontier attempting to rally a united indigenous defense against American incursion. Creek popular opinion split, with a "Red Stick" movement joining Tecumseh's coalition, while others aligned with "loyalist" leaders seeking accommodation with the American government. A period of Creek civil warfare ensued, culminating in the Battle of Horseshoe Bend on the Tallapoosa River in Alabama, in which a combined force of Americans and Loyalist Creeks, Cherokees, Choctaws, and Yuchis, under the command of Andrew Jackson, decisively defeated Red Stick forces in 1814. The Treaty of Fort Jackson that same year formally ended the Red Stick War and granted permission for loyalist Creeks to stay on their lands (Deaver, 2000; Flowers, 2007).

The American government continued to push, however, for the relinquishment of native lands amongst their loyalist allies. Several years later, loyalist Creek leader William McIntosh led negotiations with the U.S. government culminating in the Treaty of 1822 by which the Creek were compelled to abandon their Georgia lands west to the Flint River. More intra-tribal conflict resulted, ending in William McIntosh being put to death, essentially for treason, in 1825 (Bear, 2003; Flowers, 2007). In 1826 the second Treaty of Washington legally abolished the last Creek land holdings in Georgia. Georgia's Creek population was scattered from its ancestral homeland, with some moving into Alabama, while others headed to Florida to join the Seminole, and some began to voluntarily emigrate to the government established Indian Territory in Oklahoma. Finally, in 1830 the U.S. Congress passed the Indian Removal Act formalizing a national policy of coercive relocation of remaining eastern tribes to the west. The Act provided funding by which President Andrew Jackson could negotiate final removal treaties with individual tribes. Two years later, in the Treaty of Cusseta (1832), the Creek people ceded to the United States all traditional lands east of the Mississippi (Deaver, 2000; Flowers, 2007).

The social diaspora created by Indian Removal left pockets of Muscogee Creek culture spread around the southeast all the way to Oklahoma, where the bulk of Muscogee people reconstituted their national and cultural life. Today, in addition to individuals living in Georgia and elsewhere, descendants of the state's original indigenous Muscogee population can be found in several distinct tribal groupings including: 1) the Muscogee (Creek) Nation of Oklahoma; 2) Kialegee Tribal Town in Oklahoma; 3) Alabama-Quassarte Tribal Town in Oklahoma; 4) the Alabama-Coushatta Tribe of Texas; 5) the Coushatta Tribe of Louisiana; 6) Thlopthlocco Tribal Town in Oklahoma; 7) the Poarch Band in Alabama, the last remaining federally recognized Creek community east of the Mississippi River; 8) those Muscogee who were absorbed into the Florida tribes of the Seminole and the Miccosukee; and 9) isolated families of descendants with no active tribal relationship (Deaver, 2000; Trepp, 2008).

In the discussion to follow concerning the establishment of the Ocmulgee Old Fields Traditional Cultural Property, and the wider conservation of middle Georgia cultural resources, the Muscogee (Creek) Nation (<u>http://www.muscogeenation-nsn.gov/</u>) has taken the most active leadership role in advocating on behalf of Muscogee views and interests in federal consultations and planning mandated under the Native American Graves Protection and Repatriation Act (NAGPRA) and other relevant legislation. While some groups, such as the Seminole, Miccosukee, the Poarch Band, and several of the Creek independent tribal towns have sent representatives to the various consultations, others like the Alabama-Coushatta Tribe of Texas have declared that since they have been removed from Georgia for almost 200 years, they are no longer interested in consultation on Georgia sites. However, given the active interest in Georgia issues that has been exhibited by several members of the Muscogee (Creek) Nation's government and other prominent citizens of the Nation, many of the smaller independent groups have actively deferred to the Nation's recommendations and judgments on Georgia concerns (Deaver, 2000; Flowers, 2007).

#### Muscogee Engagement in Middle Georgia in the 1990s

One of the main catalytic events heralding a renewed Muskogee cultural involvement in the landscape of middle Georgia occurred in the 1990s with the successful effort to designate the Ocmulgee Old Fields Traditional Cultural Property. A Traditional Cultural Property (TCP) is defined as a property, or a place, that is "eligible for inclusion on the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community'' (Parker and King, 1990:1; see also Parker, 1993).

The TCP concept is traceable to the passage of the National Historic Preservation Act of 1966, which established a National Register of Historic Places, administered by the National Park Service, to identify and maintain a formal list of U.S. cultural resources worthy of preservation (<u>http://www.nps.gov/history/nr/about.htm</u>). But it was not until the publication of National Register Bulletin 38, by the National Park Service in 1990, which provided detailed guidelines for evaluating and documenting TCPs, that the TCP designation began to gain more widespread awareness and greater use (Parker, 1993).

Though legislatively the concept was not limited to Native American sites, subsequent to the publication of Bulletin 38 Native American groups have been the most active in seeking ways to utilize the TCP designation to protect areas of concern. In addition to the National Historic Preservation Act, several other key pieces of legislation have been instrumental in facilitating expanded Native American involvement in federal conservation and planning decisions. The National Transportation Act (1966) and National Environmental Policy Act (1969) both contain stipulations about the preservation and management of cultural resources. Additionally, the American Indian Religious Freedom Act (AIRFA - 1978) granted greater access by Native American groups to traditional sacred places on federal lands for the conduct of religious observances. The Act also recognized the right to collect and use sacred items, like peyote and eagle feathers, which had previously been restricted by U.S. drug and environmental laws [Deaver, 2000]. Furthermore, the Native American Graves Protection and Repatriation Act (NAGPRA - 1990) mandated the return to the tribes of "human remains, funerary objects, sacred objects, and objects of cultural patrimony" that were held by federal agencies, museums, and other institutions (<u>http://www.nps.gov/history/nagpra/</u>).

The cumulative effect of these laws added momentum to a new activism in which Native American tribal governments sought to exercise stronger oversight and co-management roles in the identification and protection of traditional lands and sacred sites. In spite of these advances, however, there has been widespread criticism that currently enacted legislation has not gone far enough, especially with regard to the protection of sacred lands (Harjo, 2003a; Harjo, 2003b; Trepp, 2002; see also <u>http://www.fcnl.org/issues/item.php?item\_id=1475&issue\_id=96</u>).

In particular, usefulness of the TCP concept by Native Americans has been, to some, a mixed blessing. To return to the earlier distinction between academic-historical and tribal-historical perspectives, in nearly all cases federal cultural resource laws have been written from an academic-historical or Euro-American perspective in which some of the foundational terms and concepts are not commensurable with significant ideas within a tribal-historical perspective (Deaver, 2000: 25). Parker has noted that the very term "traditional cultural property" is offensive to some Native American groups who are insulted by "the implication that places of

cultural, historical, ancestral, and spiritual value are 'property', presumably to be bought and sold" (Parker, 1993: 3).

Contentious also has been the use of the term cultural "resource", with its implication that cultural sites are to be used, managed, and thought of as a kind of commodity. This is especially true with regard to the treating of human remains as archaeological commodities (Trepp, 2008). The very act of trying to codify and define the sacred is deeply anathema to some Native Americans, in sharp distinction to the materialist and empiricist orientation of the dominant society, for whom the sacred remains a fuzzy concept in the absence of some legalistic formalization. Even within Native American societies and tribal governments there is much discord over how to approach the definition and management of sacred places.

In an article marking the 25<sup>th</sup> anniversary of AIRFA, Harjo noted that simply granting Indian governments standing in the consultation process has not guaranteed that religious freedoms will be protected or even recognized. "For those Indian nations that are theocracies, it makes sense for their traditional governments to have sole standing. For the other 99 percent of the tribes that are not theocracies, it is nonsensical and backward to recognize the secular entities to the exclusion of the traditional religious entities and practitioners" (Harjo, 2003a).

An example of this discontinuity between traditionalist and secular views within Native American culture itself is provided by the testimony of one Muscogee citizen before the U.S. Senate in 2002.

Another disturbing series of events has been at Hickory Ground, outside Wetumpka, Alabama. The Department of the Interior granted funds to the State of Alabama in 1978 to protect this site, and Alabama granted the funds to the Poarch Band (of Muscogee), then a state recognized tribe. The site was placed in USA Trust for the Poarch Band in the 1980s upon their federal recognition, but in 1998 a preservation covenant in the deed expired, and the Poarch Band has conducted archaeological surveys, graded land, installed utilities, and built a bingo hall on the site. All these actions were taken or approved by the Eastern Area Office of the BIA, without any consultation whatsoever with the people of Hickory Ground Tribal Town (now relocated to Oklahoma), who are still an organized tribal town with an exact location and known officers. The leaders of Hickory Ground cannot be here today because of their responsibilities for their annual ceremonies, but their position is still that they are disturbed by the situation because they have not been consulted. They feel a responsibility for the burials of their people which far exceed the standards of the American culture... Our traditional people do not understand the ambivalence of the Poarch Band: they are "Creek" when it is to their advantage and they are "not Creek" when they see an opportunity for gain (Trepp, 2002).

In similar testimony before the U.S. Senate Committee on Indian Affairs, Harjo discussed the need for new legislation to overcome deficiencies in the original American Indian Religious Freedom Act of 1978. In 2002, Native American traditional religious leaders and adherents, along with representatives of tribal governments, cultural specialists, and attorneys gathered under the auspices of the Sacred Places Protection Coalition in San Diego to develop a major policy statement about future legislation to protect Native sacred places. According to Harjo, "(p)articipants at the gathering... arrived at a consensus on the essential elements and the objectionable elements of any public policy to protect Native sacred places... The very first of the essential elements is a *sacred places cause of action*", which was deleted from the 1978 version of AIRFA (Harjo, 2003b).

In legal terminology, a cause of action is a set of facts sufficient to establish the right to sue. Without it, Native Americans have been unable to use the courts in defense of sacred places. The complete list of essential elements, outlined by Harjo, that a serious piece of legislation should contain is given below.

- 1. Cause of action for the protection of sacred places.
- 2. Zero tolerance for desecration, damage or destruction of sacred places.
- 3. Recognition that sacred places are to be defined only as places that are sacred to practitioners of Native traditional religions and that sacred places include land (surface and subsurface), water and air; burial grounds, massacre sites and battlefields; and spiritual commemoration, ceremonial, gathering, and worship areas.
- 4. Early, meaningful consultation with traditional religious leaders and tribal leaders.
- 5. Recognition of and reliance on traditional religious leaders, tribal science and oral history as the authorities on Native sacred places.

- 6. Respect for traditional religious tenets and tribal law regarding non-disclosure of confidential and private information about sacred places.
- 7. Notice requirements, with burdens of proof on the developers, for proposed development within the aboriginal territory of Native nations, in accordance with mapping to be developed by Native nations.
- 8. Application to undertakings and actions on federal land, water and airspace and to all other land, water and airspace with a federal nexus.
- 9. Provisions for protection of sacred places by transferring or conveying ownership title to the affected Native nations.
- 10. Provisions for protecting the integrity of sacred places through agreements for management or co-management of or access to sacred places.
- 11. Severe federal penalties for violations of sacred places.
- 12. Recognition and application of tribal laws regarding arrests, penalties and imprisonment for violations of sacred places.
- 13. Appropriations and allocations of land acquisition funds and other monies for acquisitions of sacred places and maintenance of the integrity of sacred places (Harjo, 2003b).

In addition to these essential elements, Harjo described in her testimony before the Senate

a list of objectionable elements opposed by Native Americans when applied legislatively to

sacred sites. The first and most serious of these objectionable elements is the definition of the

sacred. Harjo noted that "there was considerable pressure for Native Americans to define the

term 'sacred object'" in the crafting of the language of NAGPRA (1990), but that "(u)ltimately,

Congress agreed with Native Americans that no other religions had to define the sacred in

American laws or legal proceedings and that it would be discriminatory and unduly burdensome

for Native Americans and only Native Americans to define the sacred (Harjo, 2003b).

The complete list of objectionable elements, outlined by Harjo, that in the traditionalist

Native American view any serious piece of legislation must reject is as follows.

- 1. Definition of the sacred.
- 2. Prioritizing sacred palces.
- 3. Centrality or degree of significance requirements.
- 4. Discrimination against non-federally-recognized tribes with traditional sacred places to protect.
- 5. So-called "mitigation" of impacts to sacred places.
- 6. Reliance on previously published or recorded coerced or incomplete information regarding sacred places.

7. "Discrete delineation" requirements (Harjo, 2003b).

This last point brings to the fore the problem of boundaries and the discrepancy, again, between Euro-American and traditionalist tribal viewpoints. As Trepp has noted, "(u)sually, what archaeologists identify as a site is only the epicenter of a community which occupied all of the nearby lands" (Trepp, 2002). More broadly, as Deaver has pointed out, the academic-historical perspective, underlying the National Historic Preservation Act and Bulletin 38 (the legal framework for designating TCPs)...

assumes that humans are separate and qualitatively distinct from places. A person may use a place, buy or sell a place, or live in a place, but this is strictly a physical relationship between the person and the place. Many tribal traditionalists do not make the same assumption. Rather, their worldview assumes there is always a spiritual as well as a physical aspect to the relationship between a person and a place. All places have spiritual as well as physical characteristics. All people have spiritual as well as physical characteristics. Places and people interact at both levels (Deaver, 2000: 40).

In the Muscogee view, prior to the era of Indian Removal, there existed cultural practices that bound a person's family and descendants to a place in the landscape and those bonds last essentially forever (Trepp, 2008). The practical implication of this distinction is that, whereas "the legal definition of a property under the National Historic Preservation Act assumes that a property/site is a location with particular physical and cultural characteristics, which can be documented and bounded" traditionalists assume that the physical and cultural characteristics of a place cannot be segregated from its spiritual aspects, and these are "by definition boundless" (Deaver, 2000: 40-41). Thus, in the traditionalist view any legally mandated boundary drawn around a sacred site is in some sense an arbitrary deformation of the place.

Nonetheless, the bureaucratic needs of the wider Euro-American culture require a set of "standard operating procedures" that allow incommensurate cultural traditions to be treated equally when "identifying, documenting, and evaluating (sites) and considering them in

planning" (Parker, 1993: 3). Given the requirements of the National Register, a TCP must always be a place, i.e., a property with boundaries. It must possess integrity of relationship to a specific cultural group, i.e., it is "important in the retention or transmittal of a belief, or to the performance of a practice" (Parker and King, 1990: 11), as well as integrity of condition, i.e., the historical modification or degradation of a site cannot be so great that its usefulness in the continued enactment of traditional cultural practices has been compromised (Parker and King, 1990: 12). Additionally, a TCP is subject to a time threshold. In other words, it must be demonstrable that the site has been important in the maintenance of a cultural tradition for at least 50 years (Parker, 1993: 4). So, while no easy translation between the Euro-American and tribal perspectives has been achieved, the TCP concept has provided a mechanism by which some ground has been gained by Native American groups in the effort to protect cultural sites.

As Deaver has noted...

Although traditionalists recognize site and district boundaries as management tools necessary for federal agencies to function, they have no meaning in the context of traditional cultural activities. Any Traditional Cultural Property management boundary is irrelevant from the perspective of traditional behavior and belief. It becomes important only when some outside agency tries to change the relationship to the Traditional Cultural Property by disturbing anything within the boundary (Deaver, 2000: 42).

In terms of the southeast, Deaver notes that there are "several feature types and artifacts that are (most) commonly associated with traditional cultural practices and spiritual beliefs (of Muscogee peoples)" (Deaver, 2000: 32). Included among the most significant features are the following: 1) **mound sites**, which are a central element in Muscogee origin stories; 2) ceremonial **earth lodges**; 3) **square grounds**, usually having a sacred fire in the center of a ceremonial plaza; 4) the depiction of stylized **hawk designs** on a variety of ceremonial objects; 5) **old fields**, representing abandoned agricultural plots, or abandoned developed landscapes; 6) **stones rings**, believed to have been associated with ritual activity; 7) **medicine rocks**, often

quartz crystals or other small gem-like stones, believed to possess special medicinal properties or spiritual powers; and finally, 8) sites containing groves, clusters, or communities of traditionally important **plant resources** (Deaver, 2000).

To return to the case of the Ocmulgee Old Fields, designation of the area as a TCP emerged as a response to a road building scheme proposed in the 1990s, the Eisenhower Parkway Extension project (EPE) in Macon. The Eisenhower Parkway, a section of U.S. Highway 80 that crosses the Ocmulgee River and serves as an east-west artery through the city of Macon, extends through Georgia from Columbus in the west to Savannah on the coast. The existing Parkway is a multiple land roadway, however, as part of a long-range transportation planning process, regional planners have identified a need to upgrade east-west connectivity for the purpose of reducing traffic congestion (<u>http://www.kimley-horn.com/Projects/GDOT/</u> <u>Public/background.htm</u>).

The Georgia Department of Transportation (GDOT) has been studying potential extensions and realignments of the Parkway, including its environmental impacts as required under the National Environmental Policy Act of 1970. GDOT contracted with Kimley-Horn and Associates to produce a draft Environmental Impact Statement (EIS), which includes a review of cultural resource impacts. At the time of this writing, there have been multiple delays in the EIS study process and a Final EIS document has yet to be released (<u>http://www.kimley-</u>

## horn.com/Projects/GDOT/Public/background.htm).

Butler, et. al. (2001) provide a detailed account of the circumstances leading to the designation of the Ocmulgee Old Fields as a TCP. In brief, beginning in the early 1990s, highway engineers began looking for a route for the proposed EPE near the National Monument and crossing the wetlands of the Ocmulgee River. In 1992, The National Park Service submitted
comments expressing concern over potential "visual, noise, air quality, and flooding impacts" of the proposed routing. In addition, the Muscogee (Creek) National government passed Tribal Resolution 92-10 which articulated tribal opposition to the highway project as it was then being characterized (Butler, et. al., 2001: 57).

Because of this opposition, that version of the route was dropped and a second iteration was undertaken to identify an alternative. In 1994, GDOT chose a new preferred alignment that bisected the flood plain about half way between the main National Monument and the smaller outlying Lamar Mounds and Village Unit. To understand the further controversy caused by this proposed placement of the roadway, it helps to review a bit of the Monument's history (http://www.nps.gov/ocmu).

In 1934, Congress authorized the creation of a 2,000 acre Ocmulgee National Park. However, it was not until two years later, in 1936, that President Franklin Roosevelt signed the proclamation officially establishing the unit, by which time the language had been changed, making the unit a National Monument instead of a National Park. Additionally, although Roosevelt directed the National Park Service to "preserve and protect 2,000 acres of lands commonly known as the Old Ocmulgee Fields..." the economic circumstances of the Great Depression permitted only enough funding for the acquisition of slightly less than 700 acres, including the main unit with the temple mounds and earth lodge, where the visitor's center is now located, and the 45 acre Lamar Mounds and Village site a couple of miles to the south (Figure 38). In the last 70 years, there have been virtually no new acquisitions and the current park size now stands at 702 acres, but in the original enabling legislation it was envisioned that the two separate units would eventually be connected by future land acquisitions (http://www.nps.gov/ocmu/historyculture/index.htm). The Lamar Mounds and Village Unit is a palisaded former town site containing two mounds facing each other across a plaza. The town was founded in the swamps of the Ocmulgee River in late Mississippian times, after the decline of the larger Macon Plateau town, represented by the main Monument. One of the Lamar mounds is the last remaining mound of its kind in the U.S., incorporating a counterclockwise spiral ramp from base to summit. The Spanish expedition of 1540, led by Hernando DeSoto recorded many Lamar culture villages in the southeast, but the early European-Lamar encounters were followed by a period of cultural collapse as Lamar culture populations dropped by up to 75-percent, presumably in the wake of introduced European epidemic diseases. "The survivors of this catastrophe and their descendants banded together to form the groups that historically were known to the early English settlers as the Muscogee Creeks" (see <u>http://www.nps.gov/ archive/ocmu/Lamar.htm, http://www.nps.gov/ archive/ocmu/Lamar.htm</u>, http://www.nps.gov/

As noted above, the Lamar unit is presently detached from the main Monument. The National Park Service maintains the site in an undeveloped state with restricted access via special permit. The 1994 proposed alternate route for the EPE only served to intensify the controversy by threatening to permanently split the two Monument units and this was followed by the assertion by GDOT in 1995 that it was exempt from Section 4(f) of the National Transportation Act.

Under the principles of U.S. Indian law, the federal government holds a trust responsibility toward all federally recognized Indian tribes. Trust responsibility is the legal mandate that compels federal agencies to protect the interests of Native American tribes, as "sovereign, domestic dependent nations". One part of this responsibility involves consultation with tribal governments on any federally funded initiatives that might impinge on treaty obligations or other sovereign tribal concerns. Section 4(f) helps to ensure that the Federal Highway Administration (FHWA) meets federal trust responsibilities toward the tribes. With respect to historic properties, the Secretary of Transportation cannot approve any projects using land on a historic site unless there is no feasible and prudent alternative to the use of that land and every effort has been made to minimize impacts to the historic site.

At the time, however, GDOT issued a statement saying that "the proposed preferred corridor does not constitute a use under Section 4(f) and is exempt for evaluation because the preferred corridor would occupy private land" (Butler, et. al., 2001: 58; see also Deaver, 2000:1). In other words, GDOT recognized neither the region's true significance to the Muscogee, nor any federal treaty obligations to formally consider tribal opinion. It was in response to this GDOT assertion that the notion of seeking the designation of a Traditional Cultural Property within the project area began to be explored.

It appears that the first mention of the possibility of a TCP designation as it applied to the Old Fields region occurred in November of 1995, when representatives of the Muscogee (Creek) Nation met with federal and state agency officials at the Ocmulgee National Monument. At this meeting, the Muscogee asserted the significance of a broad historic landscape, in sharp contrast to the GDOT argument that Muscogean sites were isolated and discrete, and that road construction could go forward along an alignment that was designed to avoid specific sites. One outcome of this meeting was that FHWA officials, for their part, found the Muscogee assertion credible and began to appreciate the area's greater import. The State Historic Preservation Officer (SHPO) was similarly impressed by the implications of the Muscogee arguement. In hindsight, this meeting may have been the turning point at which the vision and assertiveness of

the Muscogee (Creek) National Government succeeded in re-defining the relevant issues and bringing the momentum for the proposed project to a stop (Cook, 2008).

In communications with GDOT, the FHWA now took the position that "a large part of the study area could be part of some presently undefined culturally significant district, and could require considerable coordination between interested parties" (Butler, et. al., 2001: 58). In fact, the study area coincided with a sizeable portion of the 15 mi<sup>2</sup> Old Ocmulgee Fields Reserve that the Muscogee had refused to cede as part of the first Treaty of Washington in 1805 and ceding of the Reserve under the influence of Chief William McIntosh in the Treaty of 1822 was a major factor leading to his execution by his own people three years later (Bear, 2003).

Late in 1995, in communications with the U.S. Army Corps of Engineers, the Principal Chief of the Muscogee (Creek) Nation, Bill Fife, reasserted the Muscogee position... "Our historians tell us that the Muscogee Confederacy, the political and cultural antecedent of the Muscogee (Creek) Nation, began as a sacred union of the foundation Muscogee tribal towns located near the fall-line of the Ocmulgee River. We consider this region to be the 'Cradle of the Muscogee Confederacy'" (Butler, et. al., 2001: 59).

In December of the same year, the Muscogee National Council upheld the TCP concept through Tribal Resolution 95-10, stating "the Muscogee (Creek) Nation identify and affirm certain portions of the Ocmulgee Old Fields as a Muscogee Traditional Cultural Property, and state their opposition to the proposed highway along corridors that would adversely impact said Traditional Cultural Property". The Resolution also specified general TCP boundaries incorporating the Ocmulgee River from the northern boundary of the National Monument to the southern limit of Bond Swamp National Wildlife Refuge (Butler, et. al., 2001: 60). In addition to the concerns expressed by the Muscogee (Creek) Nation, GDOT was approached in 1996 by representatives of independent Creek and Seminole bands and tribal towns in Alabama, Florida, and Oklahoma seeking full participation in federal consultations. The Georgia Department of Transportation then produced a draft Request for Determination of Eligibility (DOE) for eventual submittal to the National Register, seeking a TCP designation for the Ocmulgee Old Fields. The draft DOE for the proposed TCP was then presented to tribal representatives for review. At this point, GDOT acknowledged that the boundaries of the TCP coincided with the entire 15 mi<sup>2</sup> Macon Reserve retained by the Muscogee after the first Treaty of Washington in 1805. In the review process for the draft DOE, there ensued some controversy regarding exact boundaries for the TCP. In particular, there was debate over whether recent residential and commercial development within the old Macon Reserve should be excluded from the TCP, while areas of historic Creek settlement to the west of the Ocmulgee River should be incorporated within the TCP (Butler, et. al., 2001: 60-61).

In 1997, the Keeper of the National Register examined the draft DOE materials and concurred that the Ocmulgee Old Fields were likely eligible for TCP status, but that a boundary determination was required. The Keeper accepted the northern and southern boundaries, as specified by the Muscogee (Creek) Nation. However, GDOT was informed that eastern and western boundaries required further consideration, based on the following guidelines.

The eastern boundary should include the floodplain and those areas on the upland terraces where significant cultural occupation already has been documented by historical and archaeological research and exclude those areas where residential, commercial, or industrial development has occurred. The west side of the river needs further study to define the area which still retains the imprint of traditional Creek culture and to exclude areas whose integrity has been significantly compromised (Butler, et. al., 2001: 62).

Consultations between GDOT, FHWA, the Muscogee (Creek) Nation, and the other concerned parties continued throughout 1998. In addition, Brockington and Associates and

Ethnoscience, two outside consultants, were brought in to undertake further analyses and formulate a revised Request for Determination of Eligibility addressing the Keeper's requests. Part of this process involved new field reconnaissance to document previously unrecorded Muscogee cultural elements in the landscape, along with modern intrusions on these historic features. A revised Request for DOE was produced in 1999 and submitted to all consulting parties for review, after which a final document was submitted to the Keeper of the National Register in June of 1999.

The Keeper responded by accepting the eastern boundary specified in the DOE; however, several modifications were specified to the western boundary. With those modifications, the Ocmulgee Old Fields were formally designated as a Traditional Cultural Property on the National Register of Historic Places, the first such designation east of the Mississippi (Butler, et. al., 2001: 63). Figure 40 depicts the designated area.

Repeated unsuccessful attempts were made to access a copy of the final Determination of Eligibility for inclusion in this dissertation. The following agencies were contacted, but could not provide the document: the Georgia Historic Preservation Division, the National Park Service, the National Trust for Historic Preservation, the Georgia Department of Transportation, and the Cultural Preservation Office of the Muscogee (Creek) Nation. The National Register was also contacted and conveyed that, since the agency receives thousands of requests for documents and only has two part-time staff members devoted to filling these requests, it could be a number of weeks before the document request would be processed. As of the time of this writing, the author of this dissertation has been unable to examine the DOE.

The final aspect of this dissertation involves a formal survey that was undertaken in the summer and fall of 2007 to reflect on the attitudes and perspectives of several prominent



North 1 0 1 2 Miles

**Figure 40** Ocmulgee Old Fields Traditional Cultural Property (1999)

Courtesy of Sylvia Flowers, National Park Service (retired) Macon, GA (2007) Muscogee individuals regarding the continuing cultural significance of middle Georgia lands for the future of the Muscogee (Creek) Nation. These reflections are discussed below.

#### The Muscogee Survey

In the fall of 2004, the author of this dissertation took part in the founding of the Central Georgia Rivers Partnership (CGRP), a conservation stakeholders group incorporating local citizens, state and federal agency representatives, business interests, non-governmental organizations, and academic participants. During the next two years the organization met to formulate a conservation agenda for the Ocmulgee River corridor. As of this writing, the CGRP is still in existence. During the time of this author's participation in the CGRP, though many were familiar with Muscogee involvement in the Eisenhower Parkway Extension issue, it became evident that, in a broader context, the interests and concerns of Muscogee people were not well known or considered within the state. This was true, even within the context of the CGRP, in spite of the fact that there seemed to be much potential common ground between the concerns of Muscogee cultural preservationists and local conservation advocates.

Therefore an effort was made to gain a better understanding of Muscogee perspectives on the conservation of the middle Georgia landscape. In consultation with John Wilson, the leading proponent of the middle Georgia National Park and Preserve idea, Sylvia Flowers, a retired master ranger with the National Park Service, and Alan Cook, a historic preservation consultant of Muscogee ancestry, an initial list of Muscogee contacts in Oklahoma was developed and the idea of conducting a formal survey of Muscogee views was initiated.

Once the initial Muscogee contacts were made in the late Spring and early Summer of 2007, the list of potential survey participants began to grow as individuals suggested other tribal members with knowledge of and interest in middle Georgia issues. The list of proposed

participants grew to fifteen individuals, focusing on those Muscogee tribal members who had either been directly involved in cultural preservation activities in Georgia, or who could articulate current or potential Muscogee (Creek) Nation interests and policy in the middle Georgia region. Ten of the fifteen proposed participants were actively involved, in some capacity, in the Muscogee (Creek) national government, while the other five were prominent and knowledgeable citizens working in business, consulting, and tribal-related non-profit activities. Because of the leadership role that the Muscogee (Creek) Nation had played in the establishment of the Traditional Cultural Property (TCP), as well as simple limitations on researcher time and resources, efforts were limited to recruiting survey participants from amongst Muscogee (Creek) Nation tribal members. No efforts were made to identify contacts from the other tribal groups, mentioned earlier, who were involved in federal consultations regarding the TCP.

During the summer of 2007, a survey questionnaire was developed and refined, while discussions were undertaken with potential survey participants in order to recruit them into the study. Fourteen participants were contacted by mail, with a follow-up effort by a phone and/or email contact. No contact information was available for the fifteenth potential participant.

Of the fourteen individuals, eight agreed to participate in the survey by completing and returning a questionnaire containing twelve questions [The complete survey questionnaire is contained in Appendix 4]. The remaining six individuals did not respond to multiple attempts to recruit them into the study and could not be included in the final sample. Time constraints imposed a limitation on the duration of the attempt to recruit participants. If the recruitment effort could have continued, then a larger sample of Muscogee viewpoints could have been assembled.

Of the eight individual who agreed to participate in the survey, five actually completed and returned the questionnaires. These five responses constitute the final sample size. Worthwhile future work in this area would involve an effort to expand the number of participants, as well as to broaden the extent of the conversation with those who did participate. There has been no indication that those individuals who did not respond failed to do so out of a lack of interest in the topic under discussion.

The purpose of the first question in the survey was to elucidate participant identification and background. Due to University of Georgia confidentiality requirements, this information will not be discussed below. Instead, we will proceed to examine the remaining questions, using the following approach. Each question will be examined by constructing a composite response built from elements of the participants' answers. The composite answers will embody, where necessary, variability in the range of responses. Since the sample is small and non-random, representing this variability will be straightforward. However, no claim can be made that the total range of contemporary Muscogee opinion is being summarized. Instead the objective is to capture a snapshot of the views of some of the most involved or informed individuals in Muscogee activities in middle Georgia. We now proceed to the questions.

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## In your own life, what events or circumstances triggered an interest in, or concern for, the lands of middle Georgia? Are there any stories or recollections, passed down within your family, relating to family or cultural ties to pre-removal Georgia?

Though none of the respondents related any specific family or tribal stories about Georgia, each one conveyed recollections, experiences, or life events that inspired an awareness of and concern with the significance of Georgia to the Muscogee cultural heritage. Instances of life events that were formative in cultivating an appreciation of Georgia heritage included an opportunity for post-high school study in Georgia and the first visit to the Ocmulgee National Monument. In addition, military experience and being stationed at a base in Georgia was key for one informant.

Other factors included education by grandparents and other elders, from early childhood on, that inculcated knowledge of ancestral ties to Georgia, along with an emphasis on a sense of place and its importance within the context of family and culture. In a couple of instances, early education about ancestry motivated a desire in adulthood to visit Georgia, in some cases repeatedly. Additionally, for some, the reaching of maturity produced an awareness of missing information within an individual's historical consciousness and a desire for understanding, to fill in the blanks. In one case, this awareness involved the recognition that place name similarities on maps of Georgia and Oklahoma were the result of a meaningful cultural connection between the two places.

One informant noted, on more than one occasion, that there is still today a general lack of historical information and perspective on Muscogee history, especially works written by Muscogee people themselves. This lack of information creates a sense that the Muscogee have two separate histories and inspires in many thoughtful individuals a strong desire to better understand the pre-Removal tribal experience. Finally, one individual observed that there are no official or formal keepers of Muscogee oral tradition. Most Muscogee pick up fragments of their culture's oral history, and some more than others, but in the absence of any tribally sanctioned and intentional process for compiling and preserving oral history information is constantly being lost. This loss is compounded by the fact that academic historians tend to undervalue and ignore the study of oral tradition.

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How would you describe the current and potential interests of Muscogee people and the Muscogee national government in middle Georgia? What might be some Muscogee ideas, priorities, and visions for the future of the middle Georgia landscape? What should Muscogee national policy be with regard to Georgia lands? Should the Muscogee Nation be involved in acquiring lands for the re-establishment of a National land base in Georgia?

Each of the survey participants asserted the importance of middle Georgia to Muscogee individuals, the greater community, and the National government. National government involvement in the Eisenhower Parkway Extension issue and the creation of the Traditional Cultural Property were given as the exemplary instances of this concern. Though this concern is not seen as being universally held by all Muscogee, it is widespread enough that its significance is not likely to diminish in the future and is, in fact, widely expected to grow. One informant traced the resurgence of tribal interest in historic lands to the ratification of a new tribal Constitution in 1979 and the reformation of the National government. Since the drafting of the new Constitution, there has been continual attention paid, in one form or another, to the need for protection of significant sites in the former homeland. Even during times when the attention of the National government has lapsed, the conscientious efforts of prominent citizens have kept a National preservation policy in place.

One respondent noted that, while concern with Georgia matters has been continuous, the National government, not to mention the broader community, still has not determined what a comprehensive scope of interest in Georgia, or the southeast generally, should entail. As moves to establish this comprehensive scope continue into the future, it is likely that economic development will become a dominant consideration. There are at least two reasons for this. First, as one informant has contended, the cultivation of a widespread environmental ethic within the Creek community has been slow to take root and mature. Consequently, the development of National policy is likely to be driven more strongly by economic needs than by preservation concerns. Second, as another participant pointed out, the distance between Oklahoma and Georgia is a great practical barrier. The seat of the National government in Okmulgee, Oklahoma is approximately 860 miles distant from Macon, Georgia. Additionally, tribal financial resources are limited and must be dedicated to meeting the needs of Muscogee citizens in Oklahoma. Major concerns of the tribal government include health care, education, and the alleviation of poverty, substandard housing, unemployment, underemployment, and related social problems. It is difficult for the National government to prioritize expending financial resources on preservation in Georgia over the addressing of local problems and issues in Oklahoma.

That being said, there remains a strong emphasis by all respondents on the importance of preservation in Georgia, including land acquisitions. One respondent articulated a belief in the potential of the National government to develop a broad policy toward Georgia that would integrate preservation and economic development. Land acquisition is seen as the common denominator between both of these facets of policy. Another respondent indicated that a comprehensive preservation policy itself would incorporate, along with protection of cultural sites in general, a very strong emphasis on the protection of burials. Additionally, the protection of flora, fauna, and natural areas, and tribal access to these resources, are vital to a comprehensive preservation policy. Again, land acquisition, in some manner, is seen as key. One informant expressed that there needs to be strong and conscientious effort on the part of the Muscogee government to make sure that economic development and cultural preservation do not work at cross purposes. In other words, it is not enough to prevent non-Muscogee development that destroys cultural sites just to follow up with Muscogee-led development that has a similar negative effect.

While exclusive acquisition of significant amounts of land by the Muscogee government may be cost prohibitive, several respondents conveyed that the National government might respond favorably to proposals for collaborative endeavors with the federal government and private interest groups. The most immediate positive impact will result from the National government remaining engaged in efforts to influence local and state development policy on the ground in middle Georgia.

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In 1995, historic sites in the Ocmulgee Old Fields region were recognized by the Muscogee Nation as a Traditional Cultural Property. What is the importance of this designation, and what role do the lands of middle Georgia play in the contemporary Muscogee National identity? Please describe your own personal involvement, if any, in activities to identify and protect the Traditional Cultural Property. Please describe your own personal involvement in any other activities within Georgia.

Nearly all of the respondents expressed the view that the significance of the TCP designation cannot be overstated. Beyond the obvious fact of stopping a destructive highway proposal, the TCP designation process engaged the Muscogee government in a focused and self-directed effort to identify former homelands. Given the expansive nature of the historic property involved, the documentation and application process was complex and extremely detailed. It involved the Muscogee government and a number of citizens in an active and concerted effort to monitor and communicate developments in Georgia surrounding the Eisenhower Parkway Extension project, to formulate position statements regarding these developments, and to follow up with the drafting of several significant pieces of tribal legislation.

These efforts were noteworthy as the act of a sovereign Native American nation to determine and define significant historic and cultural features, utilizing Muscogee standards and tribal processes, and then engaging these conclusions in the historic preservation process at the federal level. The success of this effort set a precedent for future similar actions by the Muscogee (Creek) National government and other southeastern tribes generally. The active assertion of sovereign tribal interests within the broader historic preservation process had a positive and lasting affect on both the federal and Georgia state historic preservation apparatus, not to mention the Macon community generally. One respondent expressed the concern that the accomplishment embodied by the creation of the Ocmulgee Old Fields TCP, the first such designation east of the Mississippi, has yet to be fully appreciated by the wider Muscogee community, or the Native American community as a whole.

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### What steps should be taken to identify other Muscogean sites and properties within this region? How should such sites, once identified, best be restored, protected, and managed?

There was near unanimity of opinion among survey respondents that the identification of historic and cultural sites is not the primary issue in the protection of Muscogean heritage in the southeast. Rather, the critical issue is protection and management of known sites. The National government has accumulated large volumes of descriptive information, including maps, regarding the locations of significant sites. For instance, mound sites and the locations of historic town sites are well known. One respondent maintained that for many important sites there has been minimal negative impact from development. However, lack of security at many of these locations is a very serious concern and the Muscogee cultural inheritance is constantly being eroded through theft and vandalism of burials and cultural objects. Much stronger collaborative efforts are needed between tribal, federal, state, and local governments, as well as interested private parties to control and provide oversight of current and future developmental activities that impact cultural sites and properties.

In addition to oversight and control of development, comprehensive site management plans should be established on a case by case basis. In addition to site maintenance, several respondents indicated that lands surrounding cultural sites should be restored, or allowed to revert to their natural conditions. One respondent stressed the critical importance of establishing and maintaining an active Muscogee presence in the southeast, as well as the creation and elaboration of Muscogee preservation models, as distinct from a simple reliance on the current federal preservation framework. Another respondent indicated that existing successful programs should be studied and emulated, such as a Maryland program that places resident curators at historic sites on state property.

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## How would you define cultural resources? What cultural resources in middle Georgia are the most important for the preservation of the Muscogee national heritage?

Respondents provided several senses in which the notion of cultural resources might be understood by Muscogee people. The most basic sense is similar to that generally accepted within a Euro-American cultural perspective. This would entail specific places, properties, material artifacts, cultural objects, permanent structures, or any created thing that would signify the giving of a distinct Muscogee order to the world. Cultural resources assist in the recovery, reconstruction, or understanding of historical events, past Muscogee ways of life, and of what it means to be Muscogee today. But in a way that is often dissimilar to the dominant society's understanding of cultural resources, Muscogee respondents expressed a more expansive view than that limited to a concern with the remnant elements of material culture.

First, respondents expressed a more personal and communally understood relationship to the past than is generally encountered in the wider society. One individual pointed out that Muscogee today are still linked to tribal towns and the historic locations of these towns in the east serve as cultural monuments and markers of historical identity. In addition, within this expanded view the importance of a sense of place asserts itself in other ways and the idea of cultural resources comes to encompass and take in land and landscape itself. One respondent conveyed the sense that to a Muscogee culture inter-penetrates with nature and thus every natural feature becomes a cultural resource. This inclusiveness is not limited to flora and fauna, but extends to all elements of one's natural surroundings...water, weather, the horizon, the view of the sun and the stars. In this view, the entire natural physical context of life is imbued with cultural significance.

The most unambiguous statement of this perspective came from one individual who asserted that the whole universe is a cultural resource. This stance seems to be quite distinct from the Western postmodern academic opinion that everything is cultural because nature itself is a cultural construct. From this Muscogee point of view, the whole universe is a cultural resource because Muscogee culture is present in nature. In the dominant society's view, culture seems outside of nature, or overriding nature, which it uses as a resource or commodity.

This is not to say that Muskogee culture doesn't consume nature's resources. In fact, a couple of respondents pointed out that throughout its history Muscogee society has been a less than perfect steward of nature. However, the Muscogee notion of culture inhabiting nature carries a different weight of meaning than it does in the Euro-American tradition. One marker of this is the adamant contention that burials are a source of cultural identity because they are embody proof of presence in a place or a landscape. Presence, in this sense, means not just occurrence at a place, but lived social participation in the place itself. As such, the disturbance of burials is a great violation of the dignity and respect due to those Muscogee who came before.

Particularly in the context of burials, the term cultural resource is a misnomer and an insufficient concept for designating a sign of lived ancestral presence in the land. It is insulting to Muscogee people to speak of a burial as being equivalent to a resource.

Another informant pointed out that the term cultural resource is a contrivance of archaeologists, anthropologists, and Federal and state policy makers. As such, it imposes a very limited view on the totality of what is Muscogee. This person asserted that, when the issue is put in terms of resources, culture for a Muscogee includes natural resources. The example was given that a single hickory tree might constitute a very small part of Muscogee culture, but the diminishment or extinguishing of that tree in a thoughtless or unjustified manner erodes, in a small way, the overall cultural integrity of the Muscogee. Enough such small destructive forces can be as effective in destroying Muscogee culture as one large cataclysmic event. The implication of this view for middle Georgia is that the preservation and protection of natural and cultural resources must be addressed in an integral, comprehensive, and culturally sensitive way.

One respondent discussed the discovery of the occurrence of unsuspected and unappreciated cultural meanings in the landscape in Arkansas, citing the existence of mound alignments, connected to the observance of repetitive astronomical events. If any of several mounds in this particular location had been destroyed, or if the horizon had been blocked, the significance of this alignment as an engineering feat would have been lost to our knowledge. Only by having access to undisturbed sites could we recover some understanding of the cultural contexts which are possible. There are likely numerous places in the southeastern landscape where the ability to perceive and appreciate such features has been lost. In a similar vein, another informant expressed the view that narratives of place, both individual and collective, are as much a cultural resources as any material artifact. Finally, several respondents made statements to the effect that sacred sites, such as ceremonial centers, cemeteries, and particular artifacts, are held to be of extraordinary importance. The language of resources is not sufficient for conveying their significance to Muscogee people.

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# For a Muscogee, is there any sense in which a natural resource, such as a remnant wildland or a black bear population, would count as a *cultural* resource? On what basis would you distinguish between a resource that is natural versus one that is cultural?

Respondents distinguished between an older, more traditional Muscogee understanding and a comparatively recent viewpoint impacted by historical assimilation with the larger population. Two individuals emphasized that even today the clan-based Muscogee kin structure is linked to animals and plants. For instance the black bear represents one of the largest Muscogee clans. Older, more traditional generations likely viewed the relation between clan and totemic ancestor in a more literal way than most Muscogee today for whom this understanding has faded. However, the plant and animal symbolism still resonates today and one respondent surmised that the more literal discernment of clan-plant-animal kinship has not completely vanished. Historically, as a land-based culture, the human element was understood as only one part of a greater, inter-connected order. Vestiges of this perspective still endure.

One individual suggested that, from a philosophical standpoint, there is a need to better articulate these older ideas regarding clan origins and human-nature kinship for younger generations of Muscogee. Moreover, it is not unreasonable to think that such a philosophical articulation could, in the future, form part of the basis of National policy regarding the natural environment. Three respondents argued that even in the more modern context Muscogee people tend not to make hard distinctions between natural and cultural resources, seeing them as more or less the same thing. Statements such as "nature has no ownership" or "every natural resource is a cultural resource" derive from this merging of the natural and the cultural. Returning to the example of the bear, one informant observed that the bear is the symbol of a clan and is part of the forest. Without the bear the forest is incomplete. And so the presence of the bear has cultural importance.

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What are your views on the idea of expanding the Ocmulgee National Monument through new federal land acquisitions and re-designating the area as a National Park? How might such a designation help to enhance the Muscogee National identity? Alternatively, do you foresee any ways that a National Park designation could hinder the preservation of Muscogee national heritage?

There was universal support among respondents for the idea of expanding and redesignating the Ocmulgee National Monument as a National Park. One respondent noted that a park designation, including land acquisitions under the auspices of the National Park Service, would serve to enhance the preservation of Muscogee national heritage and would be in the spirit of the Muscogee (Creek) National government's current policy of increasing tribal assets. Issues of concern would arise, however, if poor management threatened to degrade Muscogee cultural resources, or in the event that federal regulations became an obstacle to tribal access or involvement in park affairs and decision making.

These views were reflected by another respondent who thought that the National Park was a wonderful idea, as long as Muscogee people were allowed to play an active role in the defining, expression, and interpretation of their own culture. Muscogee history and cultural identity should never be defined by non-Muscogee, or in any way that excludes Muscogee people. A third participant was in general agreement with the above opinions and went so far as to say that expansion of the Monument and designation as a National Park was the only course of action that would comprehensively preserve and protect Muscogee natural and cultural resources in middle Georgia. Another informant expressed the belief that a National Park designation would achieve the additional goal of providing a vehicle to more effectively and thoroughly convey and publicize the history of the Muscogee Nation's original homelands to the American people.

The final respondent also asserted that the Muscogee (Creek) Nation would welcome expansion and re-designation of the Ocmulgee National Monument, but noted several caveats. First, the primary mission of a new National Park should be to serve as a memorial to the ancestral Muscogean peoples. A re-designation that put the primary focus on the preservation of the natural environment and thus downplayed the protection and expression of Muscogee cultural history would not be viewed in a positive light by Muscogee people. The great opportunity of a new National Park would be to provide a medium for communicating a superior telling of the Muscogean story. This informant observed that the narrative connection between descendant Muscogee peoples and their ancestral predecessors has never been fully developed. This should be the great mission of a new National Park.

A final caveat expressed by this informant regarded ultimate ownership of Native American historic properties. While in the near term, expansion and incorporation of additional properties under National Park Service protection and management might be the most effective course of action, ultimately this informant believed that the best thing for Muscogee people regarding national identity would be for the Muscogee National government to take possession of Muscogean monumental historic properties. In this view, the sovereignty of Native American nations is not served when other governments have ownership of the historic properties of tribal citizens, regardless of whatever good intentions may exist.

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Do you envision a role for the Muscogee Nation in the development of historical tourism in Georgia? Would a National Park provide a vehicle for the Muscogee Nation's involvement in historical tourism? Independently of a National Park, are there other roles that the Muscogee Nation might play in the development of historical tourism? The state of Georgia has, in recent years, taken an interest in the expansion of opportunities for historical tourism as an engine for economic development, the best known example being Civil War related activities associated with the newly acquired Resaca Battlefield State Park. Under what circumstances might it be appropriate for the Muscogee national government to partner with the state of Georgia in these types of endeavors?

The notion of Muscogee involvement in historical tourism in Georgia and of partnering with the state of Georgia drew mixed reviews from survey respondents. On a positive note, one informant remarked that it is extremely important to the Muscogee government to have the historical story of Georgia accurately portrayed from the perspective of Muscogee people. Consequently, the Muscogee National government would be an obvious partner with local government, state or federal partners, or private entities in cultivating historical tourism surrounding the preservation and protection of Muscogee cultural resources, and for Muscogee economic development generally. This respondent saw historical tourism as an integral component of a comprehensive preservation policy by the Muscogee government, stating that it is to the benefit of the Muscogee government to assist any partner in efforts to preserve and protect significant and important areas of Georgia, with the understanding that any complete and inclusive presentation of Georgia history must begin with the Muscogee people and their original presence in the state.

Another respondent saw much potential for Muscogee involvement in historical tourism in Georgia, but expressed apprehension that such possibilities would be stifled by the dominant culture's view of Muscogee history. The example was given of the preservation of William McIntosh's tavern in Georgia, and how this was as insensitive and insulting to Muscogee as would be Muscogee attempts to make a monument of the home of Benedict Arnold. McIntosh was the Muscogee Chief who signed the Treaty of Indian Springs in 1825 ceding all remaining Creek lands in Georgia to the United States. McIntosh was widely considered to be a traitor to the Creek cause and was ultimately executed for his role in the loss of Georgia homelands. He is still held in disrepute by many Muscogee today. Additional instances in which Muscogee and non-Native American views of historical events conflict were cited, such as towns and parks dedicated to the memory of Andrew Jackson and Hernando de Soto.

This informant also noted that the songs, dances, and ceremonies of Muscogee people are almost exclusively religious in nature. They must be performed at a ceremonial ground and adhere to a specific religious calendar. Though in some instances they might be shared they are not, generally speaking, fodder for tourism and economic exploitation. Additionally, the major religious observances occur in Oklahoma from mid-spring through mid-fall and those who are the keepers of these ceremonies and observances would not be available to travel to Georgia for the summer tourist season.

Another informant was in agreement with the negative view, saying that there exists too great a gap in the historical perspectives and interests of Native Americans and the non-native community. In all probability, this gap will mitigate against common ventures of real substance. Furthermore, the Muscogee (Creek) National government has not yet defined its own interests in the region in a comprehensive fashion. Until it does so, there is little prospect of a focus on expanding historical tourism initiatives in Georgia. If such initiatives ever do come about, the Muscogee (Creek) Nation must define and control the process. These sentiments were echoed by another informant who stated that a government-togovernment relationship between the Muscogee (Creek) Nation and the state of Georgia would be difficult to imagine given the conditions surrounding the exit of the Muscogee Nation from its homeland. There remains a significant degree of Muscogee resentment that would not likely be ameliorated in the absence of some sort of formal apology and expression of remorse about the history of Removal on the part of the state government of Georgia. That being said, the era of Indian Removal was almost 180 years ago. If a relationship based on mutual respect could be established between the two governments, then it might be possible to envision some arrangements in which resources might be pooled to address issues of common concern. Initial consultations on a government-to-government basis would be the best way to begin exploring the possibilities. It was again noted that the distance between the locations of the two governments could and does pose practical difficulties to the building of collaborative relationships.

The final informant noted that The Muscogee (Creek) Nation could have a significant role to play in the development of historical tourism in Georgia if the tribal leadership were to choose to make it a priority. Creative participation of the Muscogee in a National Park designation could provide the first major opportunity to define such a role. There could be some reservation on the part of the Muscogee (Creek) National government however when it comes to making major financial investments in Georgia-based endeavors, for reasons previously discussed.

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A land trust is a non-profit, non-governmental organization, the purpose of which is to conserve land and open space for its historical, natural, recreational, scenic, and productive values. Land trusts conserve land either through direct acquisition, or through the negotiation of conservation easements with interested private land owners. A conservation easement is a legal agreement between a landowner and a land trust that permanently limits some uses of the land in order to protect specified conservation values. From the perspective of a private land owner, the primary financial advantage of working with a land trust is that conservation easements and donations of land can confer a wide range of tax benefits.

There are a number of reputable land trusts working to protect natural and cultural resources in Georgia. In your view, could an active collaboration between the Muscogee Nation and a reputable land trust provide a viable means of addressing the conservation of Muscogee traditional lands and cultural resources in Georgia? If so, how might such collaboration be initiated? If not, what reservations would you have about a potential partnership between the Muscogee Nation and a land trust?

The prospect of working with or through a land trust to protect traditional lands in the southeast elicited mixed feelings from survey respondents. One respondent indicated that relationships between the Muscogee National Government and one or more land trusts already exist. This individual saw land trusts as the most practical and efficient means currently available for acquiring and/or preserving Muscogee sites.

Another respondent agreed that there is much potential for land trusts to play a positive role in a comprehensive National preservation policy. However, this individual offered two main qualifications. First, there have been cases in which land trusts have pursued the acquisition of Muscogean sites without engaging in any consultation or dialogue with the National government. Even in cases where it is not mandated by the federal government, consultation and dialogue with affected Native American tribes should be a standard of professional ethics within the land trust community. This is a matter about which land trusts need to be diligent. In addition, a second concern centers on management and site security for cultural resources that are protected under the auspices of a land trust. Given the enormous problems of looting and vandalism of historic and cultural sites, the lack of effective site security can, in some cases, cause more harm than good. The most appropriate and suitable role for a land trust is to function as a consulting partner in relationships in which the Muscogee (Creek) Nation controls land acquisition initiatives. The land trust would then serve as a transitory link

in the acquisition chain, temporarily holding or managing a site until it could be transferred to full Muscogee control.

One informant did not believe that partnering with land trusts would be a viable option for the National government. This person thought that the potential restrictions that a land trust might place on a site would prevent or limit sovereign Muscogee control and determination of that site's future.

Finally, one respondent indicated that there currently exists a land trust founded and run by tribal members and working in the southeast. However, according to this informant, this land trust has been unsuccessful in its attempts to secure the cooperation and support of the Muscogee (Creek) National government.

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# Should a distinction be made between historic lands and cultural resources, on the one hand, and *sacred* lands, on the other hand? If so, then how does one make such a distinction? Do the lands of middle Georgia have sacred significance with regard to traditional Muscogee religious belief, or is the significance historical only?

The subject of the sacred, with reference to land or places or sites, is one in which there seems a basic semantic incongruity between the common perceptions of individuals in the dominant society and members of Native American cultures. In spite of several generations of assimilationist policies and experiences (maybe, in part, as a defense against those experiences), Native Americans still use the language of the sacred in a manner that somehow differs from the dominant culture's usage.

In the dominant culture, land is not generally regarded as sacred. In the Western tradition, land (and organisms on the land) are seen through the prism of notions of property, property rights, and resources. Land and place is thus commodified and bounded. Although Native Americans live under a Western legal framework which codifies this notion of land as property, most Native cultures, it seems, still embody the vestiges of their pre-European contact awareness of land as something other than simply property.

The difficulty of gaining space for this indigenous awareness within the Western legal framework is illustrated by the earlier discussion by Harjo (2003b) regarding Native American efforts to amend the American Indian Religious Freedom Act of 1978 (AIRFA) to achieve recognition and stronger protections for Native sacred places. In the list of essential and objectionable elements that an amended AIRFA would contain, the greatest objection cited by Harjo surrounds attempts by the dominant society to define, codify, or bound Native conceptions of the sacred. This problem is reflected in the comments of survey respondents regarding distinctions between the sacred and non-sacred with reference to Muscogee historic places or cultural resources.

The most forceful and succinct statement was made by one informant who responded that whatever remains in Georgia that is Muscogee is sacred. For this individual, there can be no line drawn between natural and cultural resources of the Muscogee, and any attempts to make distinctions or categorizations in this regard are inappropriate.

Another informant noted that the term sacred is broadly applied by many Muscogee and other Native Americans to places that are accorded the highest level of significance within their world view. This person noted that within an older Muscogean mind-set the term would be more limited in scope, applying to particular places usually associated with historic occupation sites, and not necessarily applying to lands in a general sense. Muscogee people holding this perspective would make distinctions between sacred places and historic lands or cultural resources. Other respondents took this more restrictive view. According to one, sacred lands are locations where ceremonials took place, where burials are located, where medicine was made, or other similarly significant places. As such, the lands of middle Georgia have a sacred significance in regard to traditional Muscogee religious belief, because they are filled with the sites where these activities took place in pre-Removal and pre-contact times. Another informant echoed this view, stating that in addition to burial sites and ceremonial grounds, other locations where cultural objects had been constructed, such as the Rock Eagle or the structure on Fort Mountain, were held to be sacred because they were so distinct that they could only have been built for religious purposes. Furthermore such locations, including many of the "preserved" sites, are properly understood as representing only a small central point for a community that extended outward into the wider landscape. Again, the attempt to draw boundaries proves inappropriate since, in this understanding, every valley was home to a clan, and even the smallest stream in any valley was home to a family of a clan.

A final ambiguity with regard to distinguishing the sacred was discussed by one informant who indicated that the understanding of pre-contact sacred significances was being lost. This individual related the loss, in some part, to his own inheritance of and adherence to Christianity, not to reflect negatively on the Christian faith, but rather to point out the difficulty inherent in the attempt by any individual to fully comprehend or embody the traditions of two cultures.

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#### In closing, can you offer any final thoughts?

Final comments of survey respondents ranged from the hopeful to the circumspect and the skeptical. On the positive side, one respondent noted that active re-engagement in southeastern issues was almost a new frontier for the Muscogee (Creek) Nation. This person observed that much of the Nation's post-1970's evolution has been in response to federal guidelines and that the self-determination of National interests in the southeast posed a great challenge, as well as a great opportunity. Optimism was expressed that this self-determination would, or at least could, unfold in a dynamic and creative manner, drawing out the best aspects of the Muscogee community in the effort to define goals and objectives in the southeast and to engage the processes necessary for accomplishing these goals and objectives. In this individual's view, there is a great potential for the Muscogee (Creek) Nation to have a meaningful, positive and long-term impact on the preservation of Muscogean cultural resources in Georgia, as well as on the natural environment. Visionary and imaginative leadership, along with development of nationalistic perspectives within the Muscogee Community and the National government, will be the key to success in the southeast. One other informant noted that the ceremonial leaders of the Nation, as distinct from the political leaders, need to be accorded a greater role in determining the Nation's agenda in the southeast.

Another respondent was more reserved. This person noted that throughout his adult life he had been engaged in efforts and discussions to preserve and protect Muscogee natural and cultural resources. However, little of substance has materialized from these efforts. In this person's experience, political factors have obstructed or at least failed to facilitate progress. The grand plans of the well-intentioned will fail to meet with success until and unless the political machines of Georgia and the Muscogee government buy into a common effort. These political machines control the resources by which any grand plan can be realized and without the required resources the best opportunities will continue to be squandered. A different informant commented that when considering issues of the Muscogee past, the dominant culture tends to look at a 13th century culture through 21st century eyes. This is not quite true of the Muscogee themselves. Though Muscogee people have partially assimilated to modernity and Western culture, they retain cultural and personal memories inside themselves that link them to a time when every hollow had a family who was either part of their kin group or who could direct them to their relatives. This individual remarked that Muscogee people can still drive down the highway and envision the land without asphalt and telephone poles and barbed wire fences. These deep cultural experiences and memories connecting Muscogee people to the land are things that the dominant society can barely begin to understand.

A final respondent expressed the conviction that the Muscogee are now, for the most part, an Oklahoma tribe. Muscogee people, in spite of the hardships, injustices, and challenges that they have had to endure throughout the last two hundred years have, by all accounts, moved on and made the best of life in their new homeland. This individual expressed a lingering sense of personal resentment for the ways that their ancestors were treated back east. Because of these facts, it was stated that Georgia does not hold too much of their attention. Nonetheless, it is clear that in spite of a sense of acquired distance from past events this individual too embodies some strong remnant of the cultural and personal memories of the Muscogee past and the Muscogee experience in Georgia.

#### CHAPTER VI

#### SUMMARY AND CONCLUSIONS

Based on a central focus towards the conservation of nature, this doctoral research project aims to understand ways of comprehending variation in the state landscape of Georgia, with the major objective being to prioritize elements of that variation for elevated conservation attention. It was especially desired that the approach settled upon could be of practical use in the setting of a state agenda for a non-governmental conservation advocacy organization. In this case, the model for such an organization was The Wilderness Society, which provided funding for the early stages of the research.

The dissertation has four main components. First, a geographic model of the Georgia landscape was constructed and used to identify the wildest portions of the state. A sizeable region in middle Georgia was found to embody a significant degree of wildness, but was largely missing a state and federal public land base that would afford conservation protection befitting of the region's wildness value.

Second, the results of the landscape wildness model were contrasted against patterns of biological diversity indicators, as represented on maps generated from the Georgia Natural Heritage Program database. These data were found to compliment the wildness model, mainly by emphasizing the importance of rivers and riparian zones as biologically diverse landscape features and as corridors connecting isolated wildland regions. Third, the middle Georgia wildland, uncovered by the geographic model of landscape wildness, encompassed an area along the Ocmulgee River that has been the subject of citizen activism in the Macon area for over a decade, seeking the establishment of a new National Park unit. The ideas embodied in the National Park proposal were examined, along with their implications for conservation in the middle Georgia wildland. Additionally, the technical and legal requirements for the creation of new National Park System units were discussed and previously successful examples were explored as potential models with relevance for middle Georgia.

Finally, the fourth component of the study examined the relationship between post-Removal Muscogee Creek culture, in present-day Oklahoma, and the historic Muscogee lands and indigenous cultural resources of middle Georgia. Muscogee involvement in the attempt to halt the Eisenhower Parkway Extension highway project in the mid-1990s and the successful effort to establish a Traditional Cultural Property, listed on the National Register of Historic Places in 1999 were investigated. In order to provide a voice for Muscogee ideas, insights, and visions for the future of the middle Georgia landscape, a formal survey was undertaken among informants who have been actively involved in various aspects of the preservation of Muscogee heritage in Georgia.

The conclusions presented here are framed as a series of recommendations to a nongovernmental conservation advocacy organization. Given the project's origins and initial funding, The Wilderness Society would be the organization best positioned to hear these recommendations and take a leadership role in their implementation in Georgia. However, the approach outlined below would benefit from the engagement of multiple organizations and individuals for whom the conservation of Georgia lands is a focal concern. Recommendations will address the following four themes: 1) implications of and future elaboration on the landscape wildness model; 2) advancing the National Park idea for middle Georgia; 3) facilitating Muscogee involvement in Georgia conservation decision-making and promoting collaboration in the identification and protection of Muscogee cultural sites; and 4) additional concerns of Georgia conservation tangential to the direct results of this project.

#### Implications of and Future Elaboration on the Landscape Wildness Model

The creation of a landscape wildness model in this study underscored the visionary potential inherent in the Network of Wild Lands idea that was, for a brief time, an active program of The Wilderness Society in the late 1990s. This program was an attempt to broaden the traditional focus of The Wilderness Society on the conservation and management of federal public lands to integrate non-traditional and non-public landscape features into a greater national framework of land protection and management. The two facets of this idea were to elaborate a method for identifying regions within a landscape (e.g., a state) worthy of enhanced conservation attention and then to set about creating "networks of collaboration" in order to forge synergistic partnerships with potentially non-traditional allies to advance both public and private conservation within the targeted region. This dissertation has provided a pragmatic and functional prototype for executing a Network of Wild Lands approach to land conservation. By capturing a synoptic view of the state landscape, the wildness model provides a tool for prioritizing regions of high conservation value and a launching point for efforts to identify potential collaborative entities, such as local citizen advocates, Native American groups, and hunting and angling interests.

Elaboration of the Georgia landscape wildness model would be to expand the regional scope of the effort by undertaking the modeling of landscape wildness for the adjacent states of

Alabama and South Carolina. Depending on the resources that could be assembled for such an expanded regional, or three-state model, the Georgia landscape wildness model could be replicated as is (i.e., using the same variables), or improvements to the model could be implemented. Improvements might include efforts in several areas, such as better quantification and representation of pollution-related data. The development of indicators that can be easily mapped, representing the relative seriousness of hazards and the degree of hazard relative to distance from pollution source are needed in order to comprehensively factor pollution data into wildness models. In addition, the variety of recognized and potential pollutants is constantly increasing, for instance trace amounts of numerous pharmaceuticals in the hydrological system, the spread of potentially hazardous genetically modified organisms in the environment, or the appearance of and ecological uncertainty related to nano-technologically manipulated molecules in nature, etc. The creation of up-to-date GIS datasets that capture and quantify pollution data in greater variety and in a more sophisticated fashion are a major area for research and development.

An additional improvement to the landscape wildness model relates to the choice of additional regional, or state-specific focal species. Given the much smaller size of the black bear population in South Carolina and, especially, Alabama, one or more carefully chosen new focal species might be incorporated into the model in addition to the black bear. For example, the ivory-billed woodpecker could enhance a wildness model due to their sensitivity to human presence and modification of the landscape.

The most promising improvement to the landscape wildness model would involve moving from a strict evaluation of wildness, or human impact, to a hybrid model that would directly integrate as a model variable the biodiversity elements represented by the Natural Heritage Program data. To integrate the wildness model with the Heritage datasets would result in a highly robust prioritization of landscape features of conservation concern.

Another potentially powerful addition to a hybrid wildness-biodiversity model would be the incorporation of archaeological data on the nature and locations (generalized) of prehistoric sites. The Georgia Natural Heritage Program database provides a wonderful template that could be adapted for archaeological site records, allowing site information to be represented on maps, such as presence or absence at the USGS quarter quadrangle level, without providing specific site locations that could facilitate vandalism and looting. A logical and comprehensive system for ranking site significance would also be needed in order to extract the most value from a site database. The integration of archaeological data into a wildlands assessment could serve as one bridge uniting the interests of advocates for the conservation of natural areas and advocates for Native American sacred and cultural sites.

A truly serious effort to implement The Wilderness Society's Network of Wild Lands concept would involve incrementally adding states beyond Alabama and South Carolina. Over a period of years or decades, such an effort could achieve comprehensive coverage of the southeast, or even the nation. Determining the success or failure of such a regional or national endeavor would relate to the forging of "networks of collaboration" in the implementation of a Network of Wild Lands. If the approach described here were to be adopted by The Wilderness Society, then critical partners would include entities such as land trusts, hunting advocacy groups, and Native American interests. A scenario illustrating one such possible network of collaboration is discussed below as it relates to the middle Georgia National Park proposal.

#### Advancing the National Park Idea for Middle Georgia

In a roundabout manner, the results of the Georgia landscape wildness model were endorsed or validated, at least for middle Georgia, by the fact that citizen activism has been targeting areas along the Ocmulgee River for enhanced conservation since the early 1990s. This fact was unknown during the initial development of the wildness model.

While the Ocmulgee River corridor certainly does not encompass the whole of the middle Georgia wildland (compare Figures 22, 23, 25, and 26), certainly it captures a very significant portion and contains representative landscape features within that wildland. Moreover, in the case of middle Georgia the greatest development pressure comes from the populations centers in Macon and Warner Robins. A successful effort to preserve corridor lands in the form of a National Park, or other similar unit, could act as a buffer to eastward urban encroachment deeper into the current wildland-urban interface. Such a buffer would buy time for one or more partner organizations, such as a land trust, to make inroads into the conservation of private lands within the targeted region. It is thus worthwhile to propose several recommendations regarding how the middle Georgia National Park proposal might best be advanced.

In spite of generally widespread, though apparently superficial, political approval for the idea of expanding and converting the Ocmulgee National Monument into a National Park, little in the way of concrete action toward this end has taken place in the last several years. Organizations who have favored action on the Park idea have included The Wilderness Society, the National Parks Conservation Association, and the Muscogee (Creek) Nation, along with several active and well-informed citizens. In addition, there are a number of other organizations that might prove willing and able to contribute toward advancing the conservation of the river corridor. For instance, The Nature Conservancy offered at one point to loan the state money for
the purchase of Oaky Woods, and may be willing to do so again. The Georgia Land Trust and Ocmulgee Land Trust have been periodically active in the Macon area and may possess the best understanding of and acquaintance with local property owners. The Trust for Public Land has been involved in the establishment of a hiking and biking greenway through the city of Macon and at the national level operates a tribal lands program, mostly in the western states, that may be able to provide expertise in developing protections or acquisitions of cultural sites important to the Muscogee. Additionally, the InterTribal Sacred Land Trust, based in Chattanooga, Tennessee is an organization founded and run by Muscogee and other tribal members, the mission of which is to protect and preserve indigenous sacred sites. Established in 2001, the organization is small and under-resourced; however it has great potential for emerging as a standard-bearer for Native American land conservation issues in the southeast. Finally, the Archaeological Conservancy is the only national-level organization specializing solely in the acquisition and preservation of archaeological sites of national and regional significance. The organization maintains a southeast regional office in Acworth, Georgia and could provide invaluable expertise as a partner in southeastern projects.

One of the original components of the Network of Wild Lands vision was the idea that the expansion of The Wilderness Society's mission to encompass the conservation of private lands might entail the creation of a registry system in which private land owners could voluntarily register their lands as part of a national, state, or regional Network of Wild Lands. Such a registry would serve to consolidate and integrate the Network of Wild Lands by creating a mechanism to identify, record, and enhance the social value of non-public conserved lands. By incorporating the expertise of the land trust community within the "network of collaboration", the groundwork for such a registry could be laid. The creation, housing, and management of the physical registry itself could be conceptualized as a logical extension of the mission of the Georgia Natural Heritage Program, and of the state Heritage Programs, generally.

To move the National Park idea forward it is thus recommended that a national-level organization such as The Wilderness Society or the National Parks Conservation Association should cosponsor, along with the Muscogee (Creek) Nation, a meeting of invited participants such as representatives of the abovementioned groups and other relevant individuals. The purpose of such a meeting would be to draft an outline for an informal Special Resource Study that would make the case for the *national significance* of an Ocmulgee National Park, the *suitability* and *feasibility* of such an addition to the National Park System, and the *need for direct National Park Service management*. The meeting would also establish a working group to execute the informal Special Resource Study within a given timeframe and then present this study to the Macon-area Congressional Representative and the National Park Service. A formal, Congressionally authorized Special Resource Study would still be required, but the informal report would frame the relevant issues, assemble much of the pertinent information, and call for an official response from the Congressional Representative and the National Park Service.

The most vocal and unbending opposition to the middle Georgia National Park idea has come from hunters and hunting advocacy organizations who have asserted that a National Park would remove hunting rights and hunting access from lands where they have previously existed (prior to the Weyerhaeuser land sale and plans for the development of the Oaky Woods and Ocmulgee state Wildlife Management Areas). As was demonstrated earlier, this objection can be overcome by invoking a little used dual designation that would establish a *National Park and Preserve*, rather than simply a National Park. The Preserve appellation would not only safeguard traditional hunting access, but hold out the possibility of an expansion of hunting lands and potentially a significant expansion at that. Depending on the ultimate size of the new unit, the Preserve component of a *National Park and Preserve* could potentially encompass more land than was formerly contained in the two Wildlife Management Areas mentioned above.

Consequently, the meeting to outline an informal Special Resource Study should include participation by the Georgia Wildlife Federation (GWF), one of the largest and most active conservation and hunter advocacy organizations in the state. Given past opposition to the Park idea, some bit of outreach and persuasion may be required to convince GWF of the viability of a *Park and Preserve* and bring the organization to the table, but the payoff for such effort would be substantial. By gaining the endorsement of the main hunting advocacy group in the state, a major constituency not previously engaged would add its weight to the momentum in favor of the Park.

If Park advocates wished to be grandly ambitious and address the hunting rights issue on a much more expansive scale, then the potential exists for creating a National Preserve along much of the length of the Ocmulgee and Altamaha Rivers (Figure 41). Such a suggestion may, at first glance, seem to be overreaching. However, a look at the map indicates a region that is lightly populated and possessing several major state Wildlife Management Areas (WMAs). In addition to the Oaky Woods and Ocmulgee WMAs between Warner Robins and Hawkinsville, the following WMAs exist around the bend in the Ocmulgee River and on down the Altamaha to the coast: 1) Horse Creek at approximately 7,400 acres, 2) Bullard Creek at roughly 13,000 acres, 3) Big Hammock at about 6,300 acres, 4) Griffin Ridge with approximately 5,600 acres, 5) Sansavilla with nearly 16,000 acres, and 6) Altamaha, the largest of the WMAs at over 29,000 acres.



**Figure 41** State Wildlife Management Areas of the Ocmulgee and Altamaha Rivers

The state of Georgia has a large system of WMAs. However, the long-term sustainability of this system is tenuous because a great many units are leased rather than state owned. If the state's hunting and angling interests saw an opportunity to implement an extensive National Preserve designation, while limiting the National Park component to archaeological and cultural features, such a designation would permanently protect a great many traditional hunting lands that are threatened by land sales, potential development, and lack of state funding. These scenarios are mentioned, not to distract from the original Park proposal, but rather to point out that the region's conservation significance may appeal to conservationists, cultural preservationists, and hunters alike.

There exists one additional benefit that could arise from the forging of a "network of collaboration" centered around the middle Georgia Park proposal. Significant pieces of such a coalition could be transferable to future endeavors emerging out of a landscape wildness assessment for Alabama and South Carolina. For instance, the Muscogee (Creek) Nation is interested in protecting cultural sites in both states, the InterTribal Sacred Land Trust has interests throughout the region, and the Georgia Land Trust and Georgia Wildlife Federation both have sister organizations in Alabama, to give just a few examples. Thus, an exemplary collaboration constructed around middle Georgia could have wide regional applicability.

### Facilitating Muscogee Involvement in Georgia Conservation Decision-Making and Promoting Collaboration in the Identification and Protection of Muscogee Cultural <u>Sites</u>

In the popular mind, it often appears that the conservation of nature and the conservation of cultural resources and values are, if not contradictory, then at least at loggerheads in many instances. This has been especially apparent in much of the recent "new" wilderness debate in which the movement to preserve wilderness and wildlands has been depicted as the process of disinheriting indigenous and rural people from their land. In an alternative perspective, the wilderness/conservation movement can be seen as a minority tradition within Western civilization that has taken a stand against the more rapacious and shortsighted aspects of its own culture.

While hardly providing the final word on this debate, this study has demonstrated, at least for the case of middle Georgia, that a surprising degree of complimentarity exists between the sites relevant to nature conservationists and historically indigenous people concerned with cultural preservation. The possibility of harmonizing the interests between these two groups, relative to specific locales, holds out the potential for much greater collaboration on conservation issues across the southeast, nationally, and even globally.

Muscogee informants have stated explicitly that the importance of the successful campaign to designate a Traditional Cultural Property near Macon has not been fully recognized by either the Muscogee (Creek) National government, or the Native American community throughout the southeast. In this view, much work remains to be done before the Muscogee (Creek) National government will have comprehensively envisioned and defined its interests and objectives in Georgia and the wider region. As this defining of national interests unfolds, most informants expected that land acquisitions, in various forms, would play a large role in establishing a Muscogee footprint and presence in local conservation and economic development decision-making. The pursuit of further Traditional Cultural Property designations for specific sites in the southeast might also be in order.

It is not the place of Georgia conservationists to attempt to define the scope of interests for the Muscogee people. However, the Georgia conservation community can play a positive role by engaging the Muscogee in consultations and in facilitating Muscogee participation in Georgia conservation stakeholder groups, strategy formulation, and decision-making. Additionally, it would be a great step forward if the Georgia conservation community were to regularly and consistently incorporate Muscogee concerns and priorities, once these are defined by the Muscogee, into their own agendas and affairs. The identification, restoration, and conservation of sacred sites and archaeological features should become a topic of increasing common interest.

Without presuming to set priorities for Muscogee citizens and elected leaders, a few ideas can be elaborated that might, at some future time, provide a platform for collaborative endeavors. In the Winter 2005 issue of *The Society for Georgia Archaeology* newsletter, Richard Thornton examined the subject of teaching Creek heritage in the 21<sup>st</sup> century. In his discussion, Thornton makes the following intriguing statement: "In the near future, tribal leaders plan to build one or more living history towns where visitors can experience life as it was in the Southeast prior to European contact. They also anticipate a major expansion of the tribe's anthropological museum in Okmulgee, Oklahoma" (Thornton, 2005).

Probably the best known and most elaborate living history museum in the east is Colonial Williamsburg in Virginia (<u>http://www.history.org/</u>). A restored and reconstructed pre-Revolutionary era British colonial city, the site encompasses a 301-acre historic town area with restored buildings, along with several associated art and craft museums and botanical gardens. The Colonial Williamsburg organization operates a foundation, a teacher training institute, publishes journals, books and multimedia educational materials, and sponsors historical and archaeological research, workshops and conferences.

A Muscogee living history museum, possibly adapted from the Colonial Williamsburg model and sited somewhere in the Ocmulgee corridor between Macon and Hawkinsville, could provide an incredibly rich component of, or complement to, an Ocmulgee National Park and Preserve. Like the National Park and Preserve itself, a Muscogee living history town could serve, in the words of one survey participant, to provide a superior self-telling of the Muscogean story and to more fully develop the narrative connection between historic Muscogee homelands and descendant peoples. A fully functional living history museum could foster and revitalize primitive skills, historic arts and crafts, ethno-botanical lore and practices, architectural and construction methods and skills, and a host of other cultural traditions. A reconstructed pre-European Contact town could provide a training ground for young Muscogee people and a place of research, education, and outreach. Theatrical presentations of significant cultural events could be one means of communicating Muscogee cultural history to a wider audience. Long-running outdoor dramas like "Tecumseh" (<u>http://www.tecumsehdrama.com/</u>) and the popularity of Renaissance festivals (<u>http://www.garenfest.com/</u>) and Civil War re-enactments (<u>http://www.cwreenactors.com/</u>, <u>http://www.gettysburgreenactment.com/</u>) provide a few insights into the potential for reaching and educating a large constituency.

Additionally, one Muscogee expressed the need for and desire to see the eventual creation of a Southeastern Anthropological Museum of the American Indian. In 1989, Congress established The National Museum of the American Indian under the auspices of the Smithsonian Institute. However, the facilities of the National Museum are located in Washington, DC and New York City. In the view of this informant, the antiquity, diversity, and cultural richness of the indigenous southeastern peoples is deserving of its own regionally-based museum to record, preserve, and express its heritage. Citizens in the south should not have to travel to Washington or New York to access this rich heritage. Though it might take some time to fully conceptualize, fund, and build a Southeastern Anthropological Museum, what better location than in Macon,

Georgia in close association with an Ocmulgee National Park and Preserve? A Southeastern Anthropological Museum could serve as a central hub and sister organization connecting small tribal museums and archives scattered throughout the south.

Finally, with regard to the issue of land acquisition, several Muscogee survey participants have expressed a vision for the re-establishment of a tribal land base in Georgia that would serve the dual purposes of cultural preservation and economic development. There are numerous ways that such a land base might be created over time, for instance by implementing many of the ideas listed above. However, one issue stands out as having particularly unique potential.

As recent events attest (Atlanta Journal-Constitution, 2001; Seabrook, 2001; Associated Press, 2003; Seabrook, 2004; Shelton, 2004; Shelton and Seabrook, 2004), one of the great problems facing both middle Georgia and the state as a whole is the possibility of a very extensive transformation of the landscape in coming years as population and development pressures intensify and large forest land holders, especially corporations associated with the forest products industry, divest themselves of vast pieces of real estate. Conservationists are deeply concerned at this trend and are seeking ways to keep working forests and large forest holdings as viable parts of the economy and the landscape. However, the flip side of this issue is that industrial-scale forestry and the corporations that have practiced it in the southeast have often garnered a reputation for poor ecological stewardship. Consequently, Georgia conservationists would like to steer forestry in a more ecologically sustainable and enhancing direction and to integrate the carbon sequestering value of forests into conservation forestry practices.

It might be possible to institute a program by which conservationists, the state land trust community, and the Muscogee people worked collaboratively to establish an organization

210

dedicated to acquiring land for a Muscogee owned and operated, ecologically sensitive and sustainable timber industry in middle Georgia. Such an industry might foster spin-off endeavors in wood crafts, furniture making, carbon credit trading, etc. A national organization, known as the Forest Stewards Guild, currently exists (<u>http://www.forestguild.org/</u>), the mission of which is to promote land conservation that maintains and enhances the ecological values of land while allowing for productive human use. The organization has a Southeast Regional office in Monteagle, Tennessee and maintains a list of approved land managers, professional foresters, and consultants, along with a catalog of model forestry projects. The Guild could provide professional training and consulting services to a Muscogee-centered, forestry-oriented land acquisition project in Georgia.

#### **Other Recommendations Concerning Georgia Conservation**

There are a few additional recommendations that could serve to promote and enhance conservation efforts in Georgia. These comments are again directed to a non-governmental conservation advocacy organization modeled along the lines of The Wilderness Society. First, even in the absence of a concerted effort to model landscape wildness over an extended area beyond Georgia, a focus on black bear conservation in the southeast would, in essence, be a focus on wildlands. Black bear conservation in Georgia has not been made an issue of widespread conservation concern. The state Department of Natural Resources does try to manage for a healthy bear population in support of a seasonal hunt. However, the greatest energy has been focused on managing bears on the federal public lands of the Chattahoochee National Forest and Okefenokee National Wildlife Refuge. Much less effort has gone into habitat acquisitions in support of the middle Georgia bear population. In fact, middle Georgia's bears will lose much ground should the Oaky Woods and Ocmulgee WMAs be developed. Even the federal lands in middle Georgia, such as the Piedmont and Bond Swamp National Wildlife Refuges and the Oconee National Forest have not emphasized the re-establishment of and management for bear populations. In the absence of concerted efforts to protect and preserve sufficient habitat, the continued persistence of bears in the Georgia landscape over the long-term cannot be taken for granted. This is not to say that all habitat must be publicly owned, only that relevant private land owners must be identified and brought into the preservation process.

In Georgia's neighboring state of Alabama, a very promising effort to organize and elevate bear conservation efforts has been established. The Alabama Black Bear Alliance (ABBA) is a partnership founded by the Alabama Wildlife Federation and the Alabama chapter of The Nature Conservancy, and including private landowners, forest industry participants, state and federal agencies, and non-governmental conservation groups (<u>http://www.alabamawildlife.org/abba/</u>). The purpose of the Alliance, founded in 1997, is to

promote black bear research, education, and habitat management in order to restore, protect, and conserve Alabama's black bears.

The condition of the bear population in Alabama is much more dire than it is in Georgia. According to the Alabama Department of Conservation and Natural Resources (<u>http://www.outdooralabama.com/hunting/articles/truthbears.cfm</u>), from a historic range that included the entire state, bears are now restricted to a 146-square mile area in the Mobile River Basin in the south. Current population estimates place bear numbers at less than 50 individuals. The state also has a very small number of bears in the north associated with southern Appalachian populations in Tennessee. The ABBA is working with state biologists to determine bear abundance, ecology, and conservation strategies. The strategic and organizational expertise acquired by the ABBA over the last eleven years places the organization in a unique position to advise Georgia conservationists who would benefit from the establishment of a sister Alliance within Georgia. The founding of a Georgia Black Bear Alliance would provide a powerful mechanism by which conservationists could participate in defining a proactive regional bear conservation strategy with state and federal resource managers.

Following the suggestion of one of the citizen participants in the Central Georgia Rivers Partnership, another way to promote the conservation of the Ocmulgee River corridor would be to initiate an annual Georgia Black Bear Festival in the Macon area for the purpose of focusing on bear conservation and the celebration of Georgia wildlife in general. Such a festival could serve both a conservation and an economic development purpose if it were to be combined with a cultural element, e.g., a Georgia Black Bear Festival and Frontier Days, in order to synergize with the Muscogee theme. For such a combination to be successful, pains would need to be taken to incorporate and address Muscogee sensitivities surrounding the Frontier-era. Festivals in the eastern U.S. that have incorporated substantial Native American elements, such as Alabama Frontier Days at Fort Toulouse in Wetumpka (http://www.wetumpkalibrary.com/ Default.asp?ID=129) and the Ohio Valley Frontier Festival at Historic Fort Steuben in Steubensville, Ohio (http://www.byways.org/press/ news/travel/2008/940) might provide examples to emulate or learn from. Done well, such a festival in middle Georgia could become a fairly extravagant event and provide a keystone opportunity for education and outreach, not to mention fun.

A second recommendation for the Georgia conservation community concerns the issue, touched on earlier, of carbon regulation and carbon sequestration. A small number of land trusts have actively pursued the development of carbon sequestration programs. Among these are The Conservation Fund (<u>http://www.conservationfund.org/climate\_change/carbon\_sequestration</u>), the Pacific Forest Trust (<u>http://www.pacificforest.org/</u>), and Great Britain's World Land Trust (<u>http://www.worldlandtrust.org/index.htm</u>). Still, it appears that the vast majority of land trusts have been slow to recognize and investigate the incredible potential of carbon sequestration as a land conservation tool. Even more surprising is the fact that many national-level conservation organizations concerned with land preservation and management, including The Wilderness Society, have yet to embrace the formulation and structuring of the seemingly inevitable national carbon regulation regime.

It is thus advised that Georgia conservationists, including The Wilderness Society and the land trust community, develop and implement the conservation aspects of the state's emerging carbon registry. This advocacy and implementation role should include pressure on state and federal land managing agencies to develop explicit policies on the identification, valuation, and management of carbon stocks on federal and state public lands. It should also push forward efforts to educate and engage private land owners in the use of carbon stock management in private lands conservation. The aforestation of degraded agricultural lands and derelict urban landscape also could provide a platform for advancing conservationist involvement in carbon regulation and management.

A third and final recommendation, especially relevant to the "Network of Wild Land" perspective discussed above, falls between the traditional conservationist focus on federal public lands and the emerging emphasis on private lands conservation. This recommendation relates to the need to bolster state systems of conserved lands. As was discussed earlier, the state system of Wildlife Management Areas in Georgia consists of a mix of state owned and state leased lands. The state currently manages 122 WMAs, or other similar units. Out of this number only

about 49 constitute state-owned public lands. The remaining majority, or 73 units, are leased by the state from private land owners, corporations, or the USDA Forest Service (Fuller, 2008).

Great strides could be made if conservationists undertook a concerted campaign to formalize and expand the WMA system and, wherever possible, bring currently leased WMAs into state ownership. Such a campaign would also assist in the forging of collaborative bonds between hunting advocacy organizations and the wider conservation community. This effort could eventually be extended to encompass state wildlife management systems in South Carolina and Alabama.

In conclusion, this study employed geographical and anthropological methods to accomplish the following major objectives. First, the modeling and mapping of landscape wildness was found to be a highly effective means of identifying regions within the state that are worthy of increased attention as critical elements of any comprehensive state conservation policy. The value and effectiveness of this wildness-centric approach was further enhanced by the inclusion of data on biodiversity elements from the state Natural Heritage Program.

Second, the modeling procedure resulted in the discovery and isolation of one portion of the state landscape in middle Georgia that was particularly unique due to the fact that, in contrast to other prominent state wildlands, the high wildness value of the landscape coincided with a low degree of state or federal public ownership. This coincidence was amenable to the construction of an exemplary case study illustrating the value of and ideas behind The Wilderness Society's Network of Wildlands approach.

Third, the construction of this case study uncovered a history of citizen advocacy along the western edge of the middle Georgia wildland that has sought the expansion of the Ocmulgee National Monument and its redesignation as a National Park. This Park proposal was examined in detail, and a wide range of conservation issues and activities that pertain to the Park proposal were synthesized and described. Additionally, the legal and philosophical mandates that must be followed by the National Park Service in establishing or redefining NPS units were examined. It was found that the results of the modeling procedure bolster and validate the significance of the citizen advocacy efforts and further provide a substantial justification driving The Wilderness Society's conservation program in Georgia.

Fourth, the middle Georgia case study integrated an indigenous cultural heritage element, focusing on what is thought to be the first concerted Muscogee reassertion of tribal interest in historic Georgia lands and sacred sites since the era of Indian Removal to Oklahoma. The resulting Muscogee activism culminated in the designation of a Traditional Cultural Property (TCP) on the National Register of Historic Places in 1999. The Ocmulgee Old Fields TCP is apparently the first such designation in the eastern U.S. and is encompassed within the area that has been identified by local citizen advocates as being worthy of a National Park designation.

Unlike the case of the Park proposal, it cannot be said that the landscape wildness modeling procedure validates Muscogee regional interests. Those interests are self-defined and may not relate completely or inherently to areas of current natural heritage value. However, at the same time, it can be hypothesized that this correlation is more than wholly serendipitous. Put another way, areas of interest identified in future landscape wildness models cannot be expected, in every case, to coincide with areas of critical interest to historically indigenous people. However, particularly in the southeast and given the rising degree of Muscogee activity, it can be expected that *some* will.

By focusing on *these* areas, i.e. those possessing both landscape wildness value and indigenous cultural heritage value, conservationists have an opportunity to recognize and forge

synergistic relationships that integrate the natural with the cultural in ways that create new permutations of traditional models of landscape conservation. It is hoped that the greatest contribution of this study might be to aid in this process in the southeast. Further exploration of the TCP designation holds great promise in this regard.

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## APPENDIX 1

# GEORGIA NATURAL HERITAGE PROGRAM ELEMENT OCCURRENCE (EO) RANKING

## TYPOLOGY AND MODIFICATIONS

### **Global and State Ranks**

S1[G1]	Critically imperiled in state [globally] because of extreme rarity (5 or fewer occurrences).
S2[G2]	Imperiled in state [globally] because of rarity (6 to 20 occurrences).
S3[G3]	Rare or uncommon in state [rare and local throughout range or in a special habitat or narrowly endemic] (on the order of 21 to 100 occurrences).
S4[G4]	Apparently secure in state [globally] (of no immediate conservation concern).
\$5[G5]	Demonstrably secure in state [globally].
SA	Accidental in state, including migratory and wide-ranging species recorded only once or twice or at very great intervals.
SN	Regularly occurring, usually migratory and typically nonbreeding species.
SR	Reported from the state, but without persuasive documentation (no precise site records and no verification of taxonomy).
SU[GU]	Possibly in peril in state (range-wide) but status uncertain; need more information on threats or distribution.
SX[GX]	Apparently extirpated from state [extinct throughout range].
SXC[GXC]	Known only in cultivation/captivity and thought to be extinct in the wild.
SE	An exotic established in state. May be native elsewhere in North America. Sometimes difficult to determine if native (SE?).
SH[GH]	Of historical occurrence in the state [throughout its range], perhaps not verified in the past 20 years, but suspected to still be extant.

- T Taxonomic subdivision (trinomial, either a subspecies or variety), used in a global rank, for example G2T2.
- Q Denotes a taxonomic question either the taxon is not generally recognized as valid, or there is reasonable concern about its validity or identity globally or at the state level.
- ? Denotes questionable rank; best guess given whenever possible (e.g. S3?).

### Federal Legal Status (U.S. Fish and Wildlife Service, USFWS)

- LE Listed as endangered. The most critically imperiled species. A species that may become extinct or disappear from a significant part of its range if not immediately protected.
- LT Listed as threatened. The next most critical level of threatened species. A species that may become endangered if not protected.
- PE Candidate species currently proposed for listing as endangered.
- PT Candidate species currently proposed for listing as threatened.
- C Candidate species presently under status review for federal listing for which adequate information exists on biological vulnerability and threats to list the taxa as endangered or threatened.
- PDL Proposed for delisting.
- E(S/A) Listed as endangered because of similarity of appearance.
- T(S/A) Listed as threatened because of similarity of appearance.
- (PS) Indicates "partial status" status in only a portion of the species' range.
  Typically indicated in a "full" species record where an intraspecific taxon or population has U.S. ESA status, but the entire species does not.

### State Legal Status (Georgia Department of Natural Resources, GDNR)

- E Listed as endangered. A species which is in danger of extinction throughout all or part of its range.
- T Listed as threatened. A species which is likely to become an endangered species in the foreseeable future throughout all or parts of its range.
- R Listed as rare. A species which may not be endangered or threatened but which should be protected because of its scarcity.
U Listed as unusual (and thus deserving of special consideration). Plants subject to commercial exploitation would have this status.

For the purpose of this dissertation, with regard to Global and State ranks, the first three ranks were of primary interest (i.e. critically imperiled, imperiled, and rare organisms). Consequently the global and state rank data were edited and reformatted according to the rules specified below. In all cases, a precautionary principle was followed. In other words, a conscious effort was made to err on the side of caution when making decisions about which EO records to drop from the dataset.

- 1. EOs with ranks of G4, G5, S4, and S5 were dropped from the revised dataset.
- 2. In the event that an EO had a double rank, the most conservative rank was kept and the least conservative rank was dropped. For instance, an EO with a global rank of G2G3 was reassigned a rank of G2.
- 3. In the event that an EO had a modified rank, the modifiers were dropped and the rank was retained. For instance, an EO listed as G3T2T3Q would be reassigned a rank of G3.
- 4. EOs with ranks of GH (or GHQ) and SH were reassigned ranks of G3 and S3, respectively.
- 5. EOs with ranks of GX and SX were reassigned ranks of G1 and S1, respectively.
- 6. EOs with ranks of GXC and SXC were reassigned ranks of G1 and S1, respectively.
- 7. EOs with ranks of GU and SU were reassigned ranks of G3 and S3, respectively.
- 8. EOs with ranks of G?, G?Q, and G4? Were reassigned ranks of G3. EOs with ranks of S? and S?Q were reassigned ranks of S3.
- 9. EOs with ranks of S?N were dropped from the revised dataset.
- 10. EOs with ranks of SE1? were dropped from the revised dataset.
- 11. EOs of the Florida panther were reassigned ranks of G1 and S1.
- 12. All other G and S ranks were dropped from the revised dataset, leaving only EOs with ranks of G1, G2, G3, S1, S2, and S3.

With regard to federal and state legal status, designations were revised such that every

EO in the final dataset had a federal designation of either LE, LT, PE, PT, or C. In addition,

state legal status designations in the revised dataset were restricted to E, T, and R. To achieve

these results the following rules were applied.

- 1. EOs with federal status designations of PDL were dropped from the revised dataset.
- 2. In the event that an EO had a double status, the most conservative status was kept and the least conservative status was dropped. For instance, an EO with a federal status of (LE, LT) was reassigned a status of LE.
- 3. EOs with federal status designations of E(S/A) were reassigned a status of LE.
- 4. EOs with federal status designations of T(S/A) were reassigned a status of LT.
- 5. EOs with federal status designations of (PS), unmodified by LE or LT, were reassigned a status of LT. In other words, in the absence of information about a specific status assignment, the less conservative status was assumed.
- 6. EOs with federal status designations of (PS) with modifiers of LE or LT were reassigned the status of the modifier, e.g. (PS:LE) would be redefined as LE. Any modifiers other than LE or LT were dropped, e.g. (PS:LT, P) would become LT and (LE, PT) would become LE.
- 7. EOs with state status designations of U were collapsed into the R status.
- 8. EOs with federal status designations of C were retained.

Finally, each EO in the revised dataset received a score comprised of 10 points awarded

for each rank and each designation. Consequently, if an EO was recognized under each category, it would receive a maximum score of 40 points. In addition, each quarter quadrangle that contained *any* records at all in the GNHP, whether or not they were dropped from the final dataset, received 1 point. Quarter quads for which there were no GNHP records received a zero. This allowed no-data quarter quads to be distinguished from those with no *significant* GNHP records in the creation of the final maps (Table 11). Once the weighting scheme was in place,

the range of point values were classified, using a natural breaks classification, and the results were depicted cartographically (Figures 31, 32, 33, 34).

# Some Examples of Inconsistencies Between the GNHP and USGS Quarter Quadrangle Naming Conventions For Georgia

- 1. *Steinham Store* quadrangle and quarter quadrangle names should read *Steadhams Store*.
- 2. *Glissons Millpont* quadrangle and quarter quadrangle names should read *Glissons Millpond*.
- 3. *Ruppert* quadrangle and quarter quadrangle names should read *Rupert*.
- 4. *Red Bud* quadrangle and quarter quadrangle names should read *Redbud*.
- 5. *Blyth* quadrangle and quarter quadrangle names should read *Blythe*.
- 6. There are two *Gordon* quadrangles, one in central Georgia and one on the southwestern Georgia/southeastern Alabama border. Since this would have posed a problem when joining tables, the Gordon quarter quads on the Alabama border were renamed *gordon\_al\_ne*, *gordon\_al\_nw*, *gordon\_al\_se*, and *gordon\_al\_sw*.
- 7. There are two *Jackson* quadrangles, one in central Georgia and one on the Georgia/South Carolina border. To facilitate the joining of database tables, the two *Jackson* quarter quadrangles on the South Carolina border were renamed *jackson\_sc\_nw* and *jackson\_sc\_sw*.
- 8. There are two *Jasper* quadrangles, one in northwest Georgia and one on the Georgia/Florida border. To permit the joining of database tables, the two *Jasper* quarter quadrangles on the Florida border were renamed *jasper\_fl\_ne* and *jasper\_fl\_nw*.
- 9. There are two *Pineland* quadrangles, one in southern Georgia and one on the Georgia/South Carolina border. A single *Pineland* quarter quadrangle on the South Carolina border was renamed *pineland\_sc\_sw*.
- 10. There are two *Oak Level* quadrangles, one in southeastern Georgia and one on the northern Georgia/Alabama border. A single *Oak Level* quarter quadrangle on the Alabama border was renamed *oak\_level\_al\_ne*.
- 11. There are two *Martin* quadrangles, one in northeastern Georgia and one on the Georgia/South Carolina border. A single *Martin* quarter quadrangle on the South Carolina border was renamed *martin\_sc\_sw*.

Source: http://georgiawildlife.dnr.state.ga.us/

### APPENDIX 2

### EXAMPLES OF NATIONAL PARK UNITS THAT ALLOW HUNTING AND FISHING

The following comments were compiled by and are used with the permission of Sylvia Flowers, a retired Master Ranger at the Ocmulgee National Monument in Macon, Georgia, in response to an assertion by a Mr. Benson that a new National Park in middle Georgia would eradicate hunting and fishing rights in the affected areas.

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On 3/14/07, Mr. Benson wrote:

# "A National Park/Preserve has a distinct purpose and by definition will eliminate hunting... As drafted the resolution would eliminate all hunting, fishing, and camping, trapping, boating, and most other outdoor recreation... We are ready and will fight any and all attempts to make a National Park along the Ocmulgee River Corridor..."

"I didn't see the drafted resolution. However, I can assure Mr. Benson that not all National Parks and Preserves eliminate the activities he lists. Each unit of the NPS has a specific charter that allows or doesn't allow whatever Congress determines."

"It is difficult for me to understanded why Mr. Benson would go to such great lengths to keep portions of the Ocmulgee floodplain from being preserved because it might somehow affect his access, when he apparently hasn't taken equally strong action to prevent Oaky Woods WMA and other immediately threatened tracts formerly open to the public from being swallowed up by developers. These losses will negatively affect hunting, fishing and other outdoor activities in Middle Georgia to a much greater degree than would preserving them within a National Park or Preserve." "Following are some examples of hunting-fishing allowed at NPS sites across the

country. I didn't have time to go through the entire database."

# **Big Cypress National Preserve:**

A long-established recreational activity in the area, hunters were instrumental in protecting this corner of remote, wild Florida. **Hunting, fishing and trapping activities continue today and include seasons for archery, muzzle loading and general gun.** Typical game species are white-tailed deer, turkey and hogs. Alligator hunting is not allowed within the preserve. http://www.nps.gov/archive/bicy/hunting.htm

# **Everglades National Park:**

One third of Everglades National Park is covered by water, creating excellent boating and fishing opportunities. Snapper, sea trout, redfish, bass, and bluegill are plentiful. Saltwater fishing includes Florida Bay, Ten Thousand Islands, and elsewhere in the park's coastal zone. **Freshwater and saltwater fishing require separate Florida fishing licenses.** <u>http://www.nps.gov/archive/ever/visit/fishing.htm</u>

# Acadia National Park:

Freshwater and saltwater fishing opportunities abound in Acadia National Park and the surrounding area. Lakes and ponds can have several species of freshwater game fish, including trout, landlocked salmon, smallmouth and largemouth bass, and other species. Ocean species include mackerel, bluefish, and striped bass. Freshwater fishing requires a State of Maine fishing license, as determined by state law. A license is not required to fish in the ocean. http://www.nps.gov/acad/planyourvisit/fishing.htm

# **Yellowstone National Park:**

Yellowstone National Park is managed to protect cultural and natural resources and outstanding scenery, and to provide for visitor use. **Angling has been a major visitor activity for over a century.** Present regulations reflect the park's primary purposes of resource protection and visitor use. The objectives of the fishing program are to: 1) manage aquatic resources as an important part of the ecosystem, 2) preserve and restore native fishes and their habitats, and 3) **provide recreational fishing opportunites for the enjoyment of park visitors, consistent with the first two objectives.** <u>http://www.nps.gov/yell/planyourvisit/fishing.htm</u>

# **Great Basin National Park:**

All Nevada state fishing regulations apply in Great Basin National Park. A Nevada state fishing license is required for all persons 12 years of age or older. An annual license also requires a trout stamp. Fishing licenses can be purchased locally at T&D's Country Store in Baker, Nevada. <u>http://www.nps.gov/grba/planyourvisit/fishing.htm</u>

# **Shenandoah National Park:**

All streams within Shenandoah National Park, including all tributaries, are open for catch-and-release recreational fishing or additionally designated as open for harvest. Streams designated as open for harvest are also considered to be open for catch-and-release fishing. <u>http://www.nps.gov/shen/parkmgmt/upload/fishing\_regulations.pdf</u>

### **Congaree National Park:**

**Fishing is allowed within Congaree National Park with a valid South Carolina fishing license.** All South Carolina laws pertaining to licensing, size, and creel limits apply. <u>http://www.nps.gov/cong/planyourvisit/fishing.htm</u>

### Wrangell-St. Elias National Park & Preserve:

Subsistence fishing and hunting is part of the fabric of rural Alaskan lifestyles. When the U.S. Congress established Wrangell- St. Elias National Park and Preserve in 1980, it recognized the important connection between rural Alaskans and the land in allowing them a **continued opportunity for subsistence hunting, fishing, and gathering in the park**. <u>http://www.nps.gov/wrst/</u>

# **Picture Rocks National Lakeshore:**

Along with hunting, fishing is an activity specifically allowed by the Congress of the United States when it authorized the lakeshore in 1966. <u>http://www.nps.gov/piro/planyourvisit/</u><u>fishing.htm</u>

# **Chattahoochee River National Recreation Area:**

Fishing the Chattahoochee River year-round for its trout, bass, catfish, and other species can be a great experience... The river within the park is open for fishing from 30 minutes before sunrise until 30 minutes after sunset. Night fishing is not permitted in the park. http://www.nps.gov/chat/planyourvisit/fishing.htm

### **Upper Deleware Scenic and Recreational River:**

The Upper Delaware offers some of the finest recreational opportunities in the northeastern United States . In particular, sightseeing, boating, camping, **hunting**, **fishing**, hiking, and bird watching are popular activities in the river area. <u>http://www.nps.gov/upde/</u>

### **Mojave National Park:**

(b) **The Secretary shall permit hunting, fishing, and trapping on lands and waters within the preserve designated by this Act** in accordance with applicable Federal and State laws except that the Secretary may designate areas where, and establish periods when, no hunting, fishing, or trapping will be permitted for reasons of public safety, administration, or compliance with provisions of applicable law. Except in emergencies, regulations closing areas to hunting, fishing, or trapping pursuant to this subsection shall be put into effect only after consultation with the appropriate State agency having responsibility for fish and wildlife. Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the States with respect to fish and wildlife on Federal lands and waters covered by this title nor shall anything in this Act be construed as authorizing the Secretary concerned to require a Federal permit to hunt, fish, or trap on Federal lands and waters covered by this title. <u>http://www.nps.gov/archive/moja/</u>mojaplan/mojappa.html

# **Ozark National Scenic Riverways:**

Today, Ozark Riverways sees over 1.5 million visitors each year who come to canoe, camp, **hunt**, **fish** and enjoy the natural splendor of the Ozarks. <u>http://www.nps.gov/ozar/forteachers/about.htm</u>

# **Cape Hatteras National Seashore:**

The State of North Carolina , U.S. Fish and Wildlife Service, and National Park Service request hunters take extra care while hunting on Cape Hatteras National Seashore. To hunt legally at Cape Hatteras National Seashore you must have on your person a valid North Carolina hunting license with North Carolina waterfowl privilege and a Federal Duck Stamp. http://www.nps.gov/archive/caha/hunting.htm

# North Cascades National Park Complex:

**Hunting is permitted** in the national recreation areas with a Washington State hunting license. **Fishing is permitted** in the recreation areas and the national park with a Washington State fishing license. <u>http://www.nps.gov/noca/naturescience/bear-safety.htm</u>

# **Crater Lake National Park:**

All waters within Crater Lake National Park are **open to fishing** unless otherwise indicated below. No Fishing license is required within the boundaries of Crater Lake National Park. <u>http://www.nps.gov/archive/crla/brochures/fish.htm</u>

# Niobrara National Scenic River:

Most visitors come to the Niobrara River valley to float the river by tube, canoe or kayak during the summer months. Weekends are the busiest times and on a busy Saturday it is possible to encounter from 1,000 to 2,000 people floating the river. Other visitors come to drive the valley's scenic roads, hike, horseback ride, picnic, **hunt or fish**. <u>http://www.nps.gov/niob/planyourvisit/things2know.htm</u>

# **Obed Wild and Scenic River:**

**Fishing** opportunities are plentiful at the Obed Wild and Scenic River. An assortment of smallmouth bass, bluegills, catfish, and muskie are but a few of the various fish that swim the river. <u>http://www.nps.gov/obed/index.htm</u>

# **Rocky Mountain National Park:**

**Fishing**, bicycling, and picnicking are among the best ways to appreciate the park. They allow for a change of pace more attuned to that natural world. Fly fishing lessons and fly fishing guides for hire, as well as guides for bicycle tours, may be found by contacting our neighboring chamber of commerce. <u>http://www.nps.gov/archive/romo/visit/park/fishbikepic.html</u>

# Little River Canyon National Preserve:

**Fishing** is allowed anywhere on Little River within the Preserve. **Hunting** is allowed in the Backcountry Area (Little River Canyon Wildlife Management Area) during specified dates and times. **Bows & arrows must conform with State Regulations on specification**. http://www.nps.gov/archive/liri/ Rules/Hunting/Hunting.htm

### North Cascades National Park:

Washington State hunting and fishing licenses are required for all who plan to hunt or fish. http://www.nps.gov/archive/noca/eastbank.htm

### **Big South Fork National River and Recreation Area:**

In the Tennessee portion of Big South Fork the licensing requirements and hunting seasons are the same as those identified by the Tennessee Wildlife Resources Agency for the state. In the Kentucky portion of Big South Fork the licensing requirements are the same as those identified by the Department of Fish and Wildlife Resources. http://www.nps.gov/biso/ planyourvisit/hunting.htm

### Wilderness Areas:

Congress has directed four federal land management agencies—U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service-to manage wilderness areas so as to preserve and, where possible, to restore their wilderness character.

National park backcountry is protected only by administrative regulations that agency

officials can change. The Wilderness Act protects designated wilderness areas by law "for the permanent good of the whole people." With the Wilderness Act, Congress secures "for the American people of present and future generations the benefits of an enduring resource of wilderness."

Millions of people visit wilderness each year on their own or with an outfitter or guide to hike, ride horses, hunt, fish, ski, float rivers, take pictures and stargaze. Many visitors welcome wilderness not only for the self-reliant, challenging recreational experiences it provides but as a haven, a refuge from fast-paced, developed society – a place to reconnect with oneself and with the land. http://wilderness.nps.gov/faqnew.cfm

# APPENDIX 3

### OCMULGEE OLD FIELDS CHRONOLOGY

(Compiled by Sylvia Flowers, National Park Service, 2000)

Artifacts excavated within the boundaries of Ocmulgee National Monument document a continuum of people, interacting with their Fall Line environment and each other, during the early, middle and late portions of every southeastern cultural period from the Ice Age to the Space Age. The park's artifact collection is said to be the third largest in the National Park system.

pre-9,000 B.C.	<b>Paleo Indian Period</b> Ice Age hunters arrive in the Southeast, leaving one of their distinctive "Clovis" spear points on the Macon Plateau (in the 1930's this became the first such artifact found in situ in the southern U.S.).
8,000-9,000 B.C.	<b>Transitional Period</b> Adjustment to gradually warming weather as the glaciers melt and many Ice Age mammals become extinct.
1,000-8,000 B.C.	Archaic Period Efficient hunting/gathering adaptation to a climate much like today's; use of the atlatl (spear thrower), woodworking tools, etc.; white-tailed deer become a staple; extensive shell mounds along the coast and some inland rivers.

**2,500 B.C.** First Pottery in this Country appears along the Georgia/South Carolina coast and soon filters into what is now Middle Georgia; it is tempered or strengthened with plant fibers which burn out during firing, giving a worm-hole appearance to the vessel surface.

### 1,000 B.C.-A.D. 900 Woodland Period

Pottery tempered with sand and grit, sometimes decorated with elaborate designs incised, punctated or stamped into its surface before firing; cultivation of sunflowers, gourds, and several other plants; construction of semi-permanent villages; stone effigy mounds and earthen burial and

platform mounds; connections to the Adena/Hopewell Cultures farther North and, later, to Weeden Island in Florida and South Georgia.

### A.D. 900-1150 Early Mississippian Period

A new way of life, believed to have originated in the Mississippi River area, appears on the Macon Plateau. These people, whose pottery is very different from that made by the Woodland cultures in the area, construct a large ceremonial center with huge earthen temple/burial/domiciliary mounds and earthlodges, which serve as formal council chambers. Their economy is supported by agriculture, with corn, beans, squash and other crops planted in the rich river floodplain. Indigenous Woodland people in surrounding areas interact with these people, who possess early symbols and artifacts associated with the Southeastern Ceremonial Complex (Southern Cult), which later thrives at places like Etowah (GA), Moundville (AL), and Spiro (OK).

### 1150-1350 Mature Mississippian Period

The great Macon Plateau town declines. Pottery exhibiting the Etowah Nested Diamond motif appears at several sites. The Lamar and Stubbs Mounds and Villages begin to thrive just downstream. These towns combine elements of the old Woodland culture and the newer Mississippian ideas. The Southern Cult, distinguished by flamboyant artistic motifs and specialized artifacts, flourishes at places like Roods Landing and Etowah (GA), Moundville (AL), Hiwasee Island (TN), and Spiro (OK).

#### 1350-1650 Late Mississippian Period (Proto-historic)

The Lamar Culture, named for the Lamar Mounds and Village Unit of Ocmulgee National Monument, becomes widespread in the Southeast; chiefdoms marked by smaller, more numerous, often stockaded villages with a ceremonial center marked by one or two mounds; combination of the both Woodland and Mississippian elements; first European explorations of the "New World."

**1540** Members of Hernando DeSoto's Expedition into the interior of the Southest encounter people of the Lamar Culture, probably ancestors of the historic Creek (Muscogean) and Cherokee (Iroquoian) people. Many of their main towns, situated near rich river bottomland fields of corn, beans and squash, feature open plazas and earthen temple mounds. Public buildings and homes are constructed of upright logs, interwoven with vines or cane and plastered with clay (wattle and daub).

DeSoto visits a province, referred to by chroniclers of the expedition as Ichisi (Spanish) or Ochesi (Portugese), whose main town is probably located on the present Ocmulgee River. The expedition's 600 men and 300 horses devastate local food supplies; epidemics of European diseases decimate many populations. Whole towns are destroyed. Social disruption follows.

- **1565 The Spanish** establish their first permanent settlement at St. Augustine and begin to missionize the Florida Indians, set up outposts at towns along the Atlantic coast to the North, and travel up the river systems to other towns in the interior of the area which would become Georgia.
- **1670 The British** establish a town called Charles Town (Charleston, SC) on the coast. Despite Spanish opposition, English explorers initiate contact and trade with Indians in the interior.
- **A British Trading Post** is constructed on Ochese Creek (present Ocmulgee River at the site now protected within Ocmulgee National Monument). A number of Muscogee (Creek) towns move from the Chattahoochee River to this vicinity to be near the English. These people are referred to collectively as the "Ochese Creek Nation" (various spellings), eventually shortened to the "Creeks." They draw the Euchees (Yuchis), who speak an unrelated language, into their confederacy. At this time, the river is called Ochise-hatchee or Ochisi-hatchi (various spellings).

The Creeks acquire horses from Spanish Florida and guns from the English. Their culture and dress is modified by use of trade goods such as iron pots, steel knives, and cotton cloth.

- 1704 Col. James Moore, with a band of some fifty men from Charles Town, leads 1,000 warriors from the Creek towns on the Ocmulgee River to Florida. They destroy the Spanish Apalachee Mission system and drive the Spaniards back to St. Augustine. After many of the inhabitants of northern Florida are exterminated, some of the Creeks move into the area and incorporate the survivors into their own group. These people subsequently are known as the Seminole and Miccosuki, and regarded as a distinct people.
- 1715 The Yamassee War erupts in protest against British indignities related to the fur trade, including the taking of Indians shipped as slaves to work in Caribbean sugar plantations. Many traders in Indian territory are killed. In retaliation, the British burn Ocmulgee Town on Ochese Creek. The Creek towns withdraw to the Chattahoochee River and the Euchees move with them. These people are known as the "Lower Creeks." The towns of the "Upper Creeks" were centered on the Coosa and Tallapoosa Rivers to the northeast.
- **1733** The Georgia Colony settles on lands along the banks of the Savannah River given to General James Oglethorpe by Chief Tomochichi of the Yamacraws, a group related to the Lower Creeks. The Colony serves as a "buffer" between Spanish Florida and the Carolina Colonies.
- **1739 General James Oglethorpe,** founder of the Georgia Colony, travels the ancient trading path through the mounds and old planting fields at Ocmulgee enroute to

Coweta (near what is now Columbus, GA) to meet with "Emperor" Brims and other chiefs. One of Oglethorpe's Rangers writes a short description of the mounds at what is now Ocmulgee National Monument. A western boundary for the colony is defined along the Ogeechee River. The area extends along the coast to the present northern border of Florida.

**1773 The Georgians** are still confined to a narrow strip along the coast. British Indian Superintendent, John Stuart, and Georgia Governor James Wright meet with the Creeks at Augusta. As a result of indebtedness to English fur traders, the Indians cede the lands between the Little and Tugeloo Rivers. Settlers poured rapidly into the "New Purchase."

Names such as Musgrove, McGillivray, McIntosh, resulting from intermarriage between Europeans and Indians, proliferate among the Creeks. The children of these unions were often educated in both native and white cultures.

- **1774 William Bartram,** renowned naturalist and botanist, follows the Lower Creek Trading Path from Augusta through the "old fields" at Ocmulgee. In his journal, he records this account of the area: "On the heights of these low grounds are yet visible monuments, or traces, of an ancient town, such as artificial mounts or terraces, squares and banks, encircling considerable areas. Their old fields and planting land extend up and down the river, fifteen or twenty miles from this site. If we are to give credit to the account the Creeks give of themselves, this place is remarkable for being the first town or settlement, when they sat down (as they term it) or established themselves, after their emigration from the west..."
- **1776** William Bartram again passes through the Old Ocmulgee Fields and writes: "On the east bank of the river lie the famous Oakmulgee fields, where are yet conspicuous very wonderful remains of the power and grandeur of the ancients of this part of America..."
- **1778 During the Revolutionary War,** many Creeks want to remain neutral, but Alexander McGillivray (of Creek-Scottish descent, educated in South Carolina, Principal Chief of both the Upper and Lower Creeks) leads them into an alliance with England.
- **1783** The Peace of Paris officially ends the American Revolution. England returns Florida to Spain and cedes Creek territory to the new nation, informing her Creek allies only as an afterthought. Both the Spaniards and the Georgians hope to bring the Creeks under their influence.

New waves of American settlers pour into Georgia. Many of them covet the rich river bottomlands possessed by the Creeks. They see the Indians as obstacles to "progress" and press the federal government to remove all Indians to areas west of the Mississippi River. The state of Georgia negotiates an illegal treaty at Augusta taking Creek lands from the Ogeechee to the Oconee Rivers. A council of the whole Creek nation warns the Georgians not to claim the land, but the message is greeted with contempt and efforts begin to divide the area.

- **1784 The Creek Council** continues to disavow the fraudulent Treaty of Augusta. Alexander McGillivray makes a treaty with the Spanish on behalf of the entire Creek-Seminole nation. In return for protection and trade, the Creeks will obey the orders of the Spanish and admit no white people to their land without Spanish agreement.
- **1785** The United States Appoints a Commission to negotiate with the Creeks. McGillivray writes them a letter stating that after peace was made with England, the Creeks expected the United States to settle differences with them and confirm their territory. Instead, the encroachments and aggression of the Georgians have forced them to accept Spanish protection.

Georgia establishes Houston County, including the territory north of the Tennessee River in what is now the state of Alabama. Settlers try to hold the land, but the Indians drive them off.

A council is called at Shoulderbone Creek on the Oconee River; only the friendly chiefs of Tallasi and Cusseta came. Upon their arrival a group of rough, frontier Georgia militiamen surround them, brandish their swords and threaten to kill them unless they sign a treaty confirming the former illegal grants. They are taken as hostages to Augusta where they remain confined until liberated by James White, who has been sent by the U.S. Congress to investigate.

- **1786** The New American Congress under the Articles of Confederation asserts jurisdiction over all Indian matters.
- **1789** The Administration of President George Washington institutes the policy of purchasing all lands ceded by Indians. Creek leaders travel to New York where the Treaty of Shoulderbone is renegotiated. The Creeks are to receive an annual payment of \$1,500, with assurances that the United States will not allow encroachment of whites upon Indian lands. They are given permission to punish trespassers and will be provided implements and livestock to aid in their progress toward "civilization." The terms of the treaty require that the Creeks recognize the sovereignty of the United States.
- **1793 Invention of the Cotton Gin** greatly accelerates the desire for rich river bottomland. Creek Indians, most of them excellent farmers, quickly adapt to a cotton-based economy. Alexander McGillivray dies. Frontier settlers build houses across the Indian boundary and allow their cattle to roam miles into Indian territory. Skirmishes along the frontier increase. Shawnees from the North urge the Creeks to join them in a general war against the whites. Two Upper Creek towns are responsive to their talk, but the Lower towns work for peace.

- **Indian Agent Benjamin Hawkins**, headquartered on the Flint River near present Roberta, GA, encourages the Creeks to settle in villages away from their main towns and work their own individual fields. He supplies spinning wheels and looms to the Indian women, along with livestock, and cotton seed. Much of the population of the old towns drain away, but their public squares continue to be the sites of rituals, celebrations and deliberations. Hawkins also encourages the centralization of Creek government with each town sending five or six delegates to a National Council which would legislate for the entire nation.
- The Treaty of Fort Wilkinson cedes a strip of land west of the Oconee and Apalachee Rivers, along with a narrow corridor south of the Altamaha River.
- The first Treaty of Washington cedes the remainder of the land between the Oconee and Ocmulgee Rivers, excluding a 3 by 5-mile strip known as the Old Ocmulgee Fields Reserve at present Macon, which the Muscogee (Creek) people refuse to give up. The treaty allows the United States to construct a road across the Creek Nation to the Alabama River and facilities for public accommodations along this road. Much of this "Federal Road" follows the ancient Lower Creek Trading Path and eventually stretches from Washington, D.C. to New Orleans. The treaty also provides for a United States military fort on the Reserve to guard the frontier along the Ocmulgee River. This outpost is called Fort Hawkins.
- Fort Hawkins is built a short distance from the mounds. It serves as a frontier outpost, trading center and location for treaty payments to the Creeks until the United States boundary is later extended to Alabama Territory. For the entirety of its existence as a U.S. military fort, it sat on land owned by the Muscogee (Creek) Confederacy.
- Aaron Burr travels, under guard, through the Reserve after his capture in Alabama.
- **1811** Shawnee Chief Tecumseh, working with his brother the Prophet, travels up and down the frontier exhorting the Indians to discard their plows, whiskey and the white man's ways. Some of the Creeks join his movement and nearly every town has a so-called "Red Stick" faction. The leaders are as divided as their people. William McIntosh emerges as leader of the faction "loyal" to the government. William Weatherford (Red Eagle) became the most important leader of the Red Sticks.
- **General Andrew Jackson** (later President) stops at Fort Hawkins during the War of 1812. The fort is an important port of rendezvous for dispatching troops.

War with Great Britain breaks out again over the issues of neutral maritime rights and British involvement in Indian problems along the frontier. Hostilities between Creek loyalists and traditionalist Red Sticks increases. Red Sticks attack and destroy Tuckabatchee and several other Upper Creek towns in northern Alabama. A Red Stick band returning from Spanish Florida is attacked by militia.

**1813** In retaliation, the Red Sticks attack Fort Mims near Mobile and kill 247 people. After the Fort Mims "massacre." an article in the Nashville Clarion declares that the Creeks "have supplied us with a pretext for a dismemberment of their country." The event supports Andrew Jackson's effort to enlist volunteers to fight the Red Sticks. Loyalist Creeks, Cherokees and Choctaws join him.

In the first battle of the ensuing war, a band of loyalist Creeks attacks and defeats 150 Euchees (Yuchis) who are on their way to join the Red Sticks. Shortly afterward, Gen. Jackson dispatches Gen. John Coffee with 900 mounted troops to destroy the town of Tallushatchee on the Coosa River where 186 Indians, including women and children, are killed. Of the scene, Lt. Richard Keith Call writes:

"We found as many as eight or ten bodies in a single cabin. Some of the cabins had taken fire, and half-consumed bodies were seen amidst the smoking ruins. In other instances dogs had torn and feasted on the mangled bodies... Heart sick I turned from the revolting scene."

**1814** The Decimation of this Village convinces many Creek towns to side with Jackson, who heads South into Creek territory as the Georgia militia enters from the east and federal troops proceed from the South. The Creek Nation is laid waste. The carnage ends after Jackson and his combined forces attack the Red Stick stronghold at Horseshoe Bend on the Tallapoosa River in Alabama on March 27. More than 500 Red Sticks are killed, many surrender, while others flee to their kinsmen, the Seminoles.

Following the war, the treaty of Fort Jackson takes 11-million acres of Creek land bordering Spanish Florida. The loyalist Creeks are paid nothing for this cession, but the government agrees to indemnify them for damages suffered during the war. Of the \$195,000 award, \$85,000 is paid to them in 1817. The remainder is not appropriated until 1853. The land is sold to settlers and speculators for more than \$11,250,000.

- **1818** The Treaty of Fort Mitchell takes a small strip of land east of the upper Apalachee River.
- **1819 Thousands of Muscogee (Creek) people** gather for the last time in a great encampment at Ocmulgee to receive payment for their lands east of the river. General William McIntosh and the great orator Little Prince were present.

**The Ancient Lower Creek Trading Path,** now called the Federal Road (State Highway 49 follows much of this route), is the major artery from North to Southwest for many years. It serves as the postal route from New York to New

Orleans. A ferry is built near the mounds on the Old Ocmulgee Fields Reserve, and the first white child, later Mrs. Isaac Winship, is born in the area.

### The Lands Between the Ocmulgee River and the Flint River are Ceded.

The Creek Council passes a law providing the death penalty for anyone ceding land without the authority of the Council. Pressures for Indian removal continue to increase. Some Creeks, including William McIntosh, believe removal is inevitable.

The City of Macon is laid out across the river from Fort Hawkins. The first newspaper in middle Georgia, the *Georgia Messenger*, is published at Fort Hawkins, and a post office is established there.

- **A Muscogee (Creek) Council approves a policy** stating: "On no account whatever will we consent to sell one foot of our land, neither by exchange or otherwise. This talk is not only to last during the life of our present chiefs, but to their descendants after them." Fourteen chiefs sign the document.
- The infamous Treaty of Indian Springs ceding the last Creek lands in Georgia is signed by Chief William McIntosh. Argument continues as to whether he signed the treaty believing it was in the best interest of his people, or whether he was bribed. Whatever his motivation, he is consequently assassinated by his own people. The treaty is declared illegal by the federal government, but Georgia authorities disagree. They press harder for removal.
- **1826** The second Treaty of Washington officially surrenders the last Creek lands in Georgia, including the Old Ocmulgee Fields Reserve. Some of the Creeks join the Seminole in Florida, others move into Alabama. About 1,300, mostly members of the McIntosh faction, resettle to the valley of the Arkansas River in "Indian Territory," now the state of Oklahoma, on lands given to them under the government's voluntary removal program.
- The Old Ocmulgee Fields Reserve, including Fort Hawkins and the mounds, is surveyed and laid off into land lots incorporated into the city of Macon. Of the mound area, the local newspaper reported:

"The site is romantic in the extreme; that, with the burial mounds adjacent, have long been favorite haunts of our village beaux and belles, and objects of curiosity to strangers. We should regret to see these monuments of antiquity and of our history levelled by the sordid plow - - we could wish that they might always remain as present, sacred to solitude, to reflection and inspiration."

Voluntary removal is too slow for the ever-growing tide of settlers and cotton plantation owners. The government presses harder. Creek delegates sign a treaty

giving up part of their lands in Alabama. Each Indian family receives 320 acres and each chief is given 640 acres. They may stay on their allotments or sell them and move west at government expense to lands where they are promised autonomy. Deceit and violence follow immediately. Unscrupulous land agents defraud Indians who cannot testify in Alabama courts. Creek farms are burned and families physically forced from their land. Homeless, demoralized bands roam the countryside, foraging to keep from starving, but refusing to leave the neighborhood of their former homes. Some of the displaced Indians lash back by destroying cabins, burning crops, and killing white settlers.

**1836** The so-called Creek War of 1836 ends when about 2,500 Indians, including several hundred warriors in chains, are marched on foot to Montgomery, AL, and crowded onto barges during the extreme heat of July. They are pushed by steamboats down the Alabama River, beginning their forced removal to Indian Territory. During the summer and winter of 1836-early 1837, over 14,000 Creeks make the three-month journey to Oklahoma, a trip of over 800 land miles and another 400 by water. Most leave with only what they can carry. An observer is moved to write:

"Thousands of them are entirely destitute of shoes and many of them are almost naked, and but few of them have anything more on their persons than a light dress calculated only for the summer, or for a warm climate. In this destitute condition, they are wading in cold mud or are hurried on over the frozen ground... Many of them have in this way had their feet frost-bitten; and being unable to travel, fall in the rear of the main party... and are left on the road to await the ability or convenience of the contractors to assist them. Many... died on the road from exhaustion, and the maladies engendered by their treatment; and their relations and friends could do nothing more for them than cover them with boughs and bushes to keep off the vultures, which followed their route by thousands... for their drivers would not give them time to dig a grave and bury their dead. The wolves, which also followed at no great distance, soon tore away so frail a covering, and scattered the bones in all directions."

**1837** The government's promise to protect the families of the Indians serving in the Seminole War is forgotten. They, too, are driven from their homes. By March 8th, nearly 4,000 of these Creeks are rounded up into camps to await the arrival of their husbands, brothers and fathers. Many become sick and die before the warriors arrive in September. Finally, in October all are herded to New Orleans where they are placed on nine "rotten, old, and un-seaworthy" steam boats for the trip up the Mississippi.

One writer reports: "The crammed condition of the decks and cabins was offensive to every sense and feeling." During the trip, a ship collides with one of the steamboats, cutting it in half and killing 311 Creeks. Still, all of the Creeks have not emigrated. Surrender is demanded even of those who years earlier had intermarried and are living with the Cherokee. To escape capture, they flee to the

forests where officers find them "miserable and impoverished." Others are hunted out of the Chickasaw Nation in Mississippi. Whites hold many, mostly children, in bondage as slaves.

More than 3,500 Muscogee (Creek) people die along their "Trail of Tears." Survivors arrive at their destination in pitiful condition and many die soon after.

- **1839** The Cherokee begin their "Trail of Tears." A few escape and remain in the mountains of east Tennessee and North Carolina where most of their descendants now live on the Qualla Reservation around Cherokee, NC.
- **1842** For Over Six Years, the Seminoles fiercely fight an invading army 10 times their size. Driven into almost inaccessible swamps and hunted like wild animals, their removal is finally completed, except for a few hundred who manage to escape the soldiers and become the ancestors of the present Florida Seminole and Miccasuki.
- **1843** The Central Railroad constructs the first railroad line into Macon through the mounds destroying a portion of the Lesser Temple Mound.
- **1846** The Huge Oak Trees on the Mounds are cut for timber. Until this time, the Old Ocmulgee Fields Reserve and Brown's Mount (about 6 miles down river) had been favorite resorts for picnics and parties, first by the officers at Fort Hawkins then by the residents of Macon.
- **1852 Ex-President James K. Polk** rides the Central Railroad through the mound area into Macon.
- **1859 A Census Taken this Year** (after some time has elapsed for recovery following the drastic loss of live during the removal) lists 13,539 Creeks. Over 23,000 Creeks are accounted for by name and town in 1832 shortly before the removal, giving some indication of the extent of decimation suffered during the removal.
- **1864 Union General George Stoneman's Forces** near the city of Macon in July. Governor Brown, who is in Macon, calls for every able-bodied Man to defend the city. A battery is stationed near Fort Hawkins and big guns are loaded on flatcars at the railroad bridge over the Ocmulgee River. Gen. Stoneman destroys Griswoldville, continues to Macon and burns the railroad bridge over Walnut Creek inside what is now the boundary of Ocmulgee National Monument. He uses the Dunlap House as his headquarters during the ensuing skirmish. His troops are pursued into Jones County, where they are defeated. General Stoneman is taken prisoner at Sunshine Church. Stoneman and his officers are incarcerated at Camp Oglethorpe in Macon and his enlisted men are sent to the infamous prisoner of war camp at Andersonville. Stoneman is the highest ranking Union officer taken prisoner during the Civil War.

Later in the year Jefferson Davis, President of the Confederacy, passes through the Old Ocmulgee Fields on business in Macon.

- **1874 A Second Huge Cut for a Railroad** (still in use) is excavated through the mound area and destroys a large portion of the Funeral Mound. According to Charles C. Jones, in his book *Antiquities of the Southern Indians*, many relics and skeletons are removed during this work.
- **1900's Despite Continued Hardships** after their removal, citizens of the once-mighty Muscogee (Creek) Nation continue to carve a life for themselves in Oklahoma where they remain a proud and sovereign people.
- **1933** The Old Ocmulgee Fields served as the location of a fertilizer factory, open-pit clay mine, brickyard, and dairy farm. A portion of McDougal Mound was removed to use as fill dirt for Main Street. During the 1920's and early 30's, the Great Temple Mound was often used for motorcycle hill-climbing.

A group of local citizens becomes convinced that the mounds are of great historical significance and should be preserved. Led by General Walter A. Harris, Dr. Charles C. Harrold, and Linton Solomon, they seek assistance from the Smithsonian Institution. In 1933, the Smithsonian sends Dr. Arthur Kelly to organize and conduct large-scale archeological excavations occur. Crews are provided by Great Depression-era public relief programs.

- **1934** Archeological Treasures are unearthed, as the work progresses. A bill is introduced and passed by Congress to authorize establishment of a 2,000-acre National Park on the Old Ocmulgee Fields.
- **1936 President Franklin D. Roosevelt** on December 12th signs a Proclamation establishing Ocmulgee National Monument and directing the National Park Service to preserve and protect 2,000 acres of "lands commonly known as the Old Ocmulgee Fields..." Due to economic constraints, only 678.48 are acquired, including 40 acres at the detached Lamar Mounds and Village. Later, an additional 5 acres are added to the Lamar Mounds and Village Unit and the parcel known as Drakes Field is donated to Ocmulgee National Monument by the City of Macon. The park presently encompasses 702 acres.
- **1940 Relief Era Crewmen**, including members of Civilian Conservation Corps Company 1426 stationed at Ocmulgee National Monument, are drafted into military service as the United States enters World War II. Many are sent to nearby Camp Wheeler.
- **1950's** The State of Georgia finally rescinds a law which stated that any Creek Indian found in the state could be executed. The Muscogee (Creek) Nation sends an official delegation to Macon to help celebrate reopening of Ocmulgee National

Monument's newly renovated museum/visitor center. Many photos in the park's archives record this visit.

- **1960's** An Interstate Highway (I-16), constructed through the Macon Plateau Unit, cuts the primary visitor use area off from the park's mile-long river boundary and causes significant hydrological changes to lands located in the river floodplain. During archeological excavation within the highway corridor inside the park, evidence of Muscogee (Creek) and earlier settlement, along with three human burials, are discovered. A number of important sites outside the park are destroyed, including the Gledhill site where an Ice Age Clovis spearpoint was found by an artifact collector during removal of fill dirt for road construction. The New Pond site, Adkins mound, and Shellrock Cave are also destroyed.
- **1970's** The Swift Creek Mounds and Village, type-site for a widespread Woodland Period culture, is destroyed for construction of a Bibb County Sheriff's Department firing range. A number of young people from the Muscogee (Creek) Nation come to work at Ocmulgee National Monument.
- **1986** Ocmulgee National Monument celebrates it's 50th anniversary with a year-long series of special events, including representatives from the Muscogee (Creek) Nation. The park's new Dr. Charles Fairbanks Memorial Discovery Lab is dedicated and its *Teachers Guide* made available to area schools. The Lab is visited by representatives from museums and educational centers from across the Southeast and the "discovery" idea for parks and museums becomes widely emmulated.
- **1988** The National Park Service presents the Freeman Tilden Award, its highest commendation for interpretive and educational excellence, to Ocmulgee National Monument Ranger, Sylvia Flowers. The same year, the park also receives a national award from the Secretary of the Interior recognizing its outstanding efforts to educate the public concerning the importance of good stewardship for the nation's public lands.
- **1992** The Scott Estate donates to the National Monument over 250 acres adjoining the park's Walnut Creek boundary. The Archeological Conservancy accepts ownership pending legislation to incorporate it into Ocmulgee National Monument. This land, which had been owned by this family since the Old Ocmulgee Fields Reserve was sold after Indian Removal, has been designated the Scott-McCall Archeological Preserve.
- **1997 A Portion of the Old Ocmulgee Fields,** including much of Bond Swamp National Wildlife Refuge, is determined eligible to become the first National Register of Historic Places "Traditional Cultural Property" listing of its kind east of the Mississippi River, in recognition of the area's great significance to the Muscogee (Creek) people.

**Present** The Park's Annual Ocmulgee Indian Celebration brings scores of Muscogee (Creek), Seminole, Cherokee, Choctaw, Chickasaw and other American Indians to Macon. Ocmulgee National Monument's staff and its many volunteers remain dedicated to the mission of protecting and preserving this very special place for the enjoyment of this and future generations.

Features and artifacts from every Southeastern time Period, beginning with the First

Americans of the Ice Age, have been discovered on the Old Ocmulgee Fields at Macon, Ga., a

portion of which is now protected within Ocmulgee National Monument. Annually, an average

of over 110,000 visitors come to the park from all over the world. The park is open every day

from 9 a.m. until 5 p.m. except Christmas and New Years.

The Museum/Visitor Center is located at 1207 Emery Highway, Macon, GA 31201. For additional information call 478-752-8257.

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# APPENDIX 4

# THE CULTURAL IMPORTANCE OF MIDDLE GEORGIA LANDS TO CONTEMPORARY MUSCOGEE PEOPLE – A SURVEY

Conducted by Mr. Chris Watson Department of Geography University of Georgia Athens, GA 30602 Home Address: 4473 Emerson Road South Euclid, Ohio 44121 Tel: 216-320-1168

#### **Project Background:**

This project forms part of a doctoral dissertation in geography and originated from an attempt to identify important remaining wildland areas in Georgia. In 2002, researchers in the University of Georgia's Geography Department created a computer-generated map of the Georgia landscape depicting state wildlands. A wildland is defined as an extensive area of the state landscape that, when compared against the entire state landscape, shows the least amount of contemporary human impact (e.g. in the density of roads, built-up land, and pollution) and the greatest amount of naturalness (e.g. in the existence of undeveloped wildlife habitat and open space). In the case of Georgia, a wildland is not the equivalent of a wilderness area in the legal sense of a pristine area where development and human economic activities are prohibited or non-existent. Instead, wildlands are those parts of the modern landscape where human activities are the least intense.

Unexpectedly, an area south and east of Macon, between the Ocmulgee and Oconee rivers, turned out to be one of the three wildest remaining regions in the state. The other two such areas were the Chattahoochee National Forest region in the north and the Okefenokee Swamp region in the south (see Map 1). From a wildlife conservation standpoint, the middle Georgia region is especially significant because it represents the smallest and least protected of only three remaining black bear habitats in the state.

In early 2004, the Weyerhaeuser Corporation announced the sale of 320,000 acres of forestland within this middle Georgia wildland area, resulting in the potential development of two leased state Wildlife Management Areas, as well as other unidentified natural and cultural resources.

As far back as 1992, Macon resident and conservationist John Wilson proposed the idea of expanding the current Ocmulgee National Monument and upgrading it to the status of a National Park. This would be done by connecting the National Monument with other publicly owned parcels along the Ocmulgee River, such as the Bond Swamp National Wildlife Refuge (see Map 2). Wilson outlined three alternate plans, ranging in size between 46,700 acres and 63,000 acres, along a 46-mile stretch of the Ocmulgee River from Macon south to the town of Hawkinsville.

There exists a range of names or designations for the various land units that make up the National Park System. In addition to National Parks and National Monuments, other designations include National Battlefields, National Preserves, National Recreation Areas, and National Seashores. Of all of these designations, National Parks are considered to be the jewels of the system. The National Parks are generally large natural places having a wide variety of attributes, including significant historic assets. Hunting, mining and consumptive activities are not authorized within National Parks. National Preserves are areas having similar characteristics to National Parks, but in which Congress has permitted continued public hunting, trapping, and

261

extractive activities. In contrast, National Monuments tend to be smaller units protected, by Presidential proclamation, for their historic and scientific interest.

The significance of changing a unit's designation from a National Monument to a National Park can include, among other things, an expansion in the acreage under protection and the enhancement of the unit's perceived status. Since the National Parks are considered to be the jewels of the system, such a designation can act to cultivate the local economic impact of the unit through significant increases in tourism and visitation. Likewise, the elevated level of use and visibility can garner an increase in federal resources dedicated to management.

In 2004, the Georgia General Assembly passed a resolution, with bipartisan backing, in support of John Wilson's National Park idea. In addition, both the Chamber of Commerce and the Tourism and Visitor's Bureau for the city of Macon have passed resolutions to expand the Ocmulgee National Monument into a National Park. However, as of 2007 no further action has been taken at either the state or federal level.

In recent public debates concerning the National Park proposal and the conservation of resources, such as the black bear population, the concerns of the Muscogee Nation have not been widely known or considered within the state of Georgia. This survey represents an attempt to provide a summary of the middle Georgia area's current-day cultural significance to the Muscogee Nation and its' people. It is hoped that one result of this survey will be to advance the discussion regarding the protection of the natural and cultural resources of the Ocmulgee River corridor and to make the voices of the Muscogee more widely heard within the state of Georgia.

### **Instructions:**

Thank you for your willingness to contribute your knowledge and views to this survey. Your participation is greatly valued. Please answer the questions below to the best of your ability. Paper is provided for your convenience (feel free to use additional paper if needed).

Please be sure to write down the number of the question being answered. Completed surveys

should be returned, in the enclosed postage paid envelopes, no later than September 5, 2007.

Alternatively, if you wish to email your comments, they can be sent to:

watsonce@sbcglobal.net. Again, many thanks.

- 1. Please provide your name, occupation, and any current, or former positions that you have held in, or relating to, the Muscogee (Creek) National Government.
- 2. In your own life, what events or circumstances triggered an interest in, or concern for, the lands of middle Georgia? Are there any stories or recollections, passed down within your family, relating to family or cultural ties to pre-removal Georgia?
- 3. How would you describe the current and potential interests of Muscogee people and the Muscogee national government in middle Georgia? What might be some Muscogee ideas, priorities, and visions for the future of the middle Georgia landscape? What should Muscogee national policy be with regard to Georgia lands? Should the Muscogee Nation be involved in acquiring lands for the re-establishment of a National land base in Georgia?
- 4. In 1995 historic sites in the Ocmulgee Old Fields region were recognized by the Muscogee Nation as a Traditional Cultural Property. What is the importance of this designation, and what role do the lands of middle Georgia play in the contemporary Muscogee National identity? Please describe your own personal involvement, if any, in activities to identify and protect the Traditional Cultural Property. Please describe your own personal involvement in any other activities within Georgia.
- 5. What steps should be taken to identify other Muscogean sites and properties within this region? How should such sites, once identified, best be restored, protected, and managed?
- 6. How would you define cultural resources? What cultural resources in middle Georgia are the most important for the preservation of the Muscogee national heritage?
- 7. For a Muscogee, is there any sense in which a natural resource, such as a remnant wildland or a black bear population, would count as a *cultural* resource? On what basis would you distinguish between a resource that is natural versus one that is cultural?
- 8. What are your views on the idea of expanding the Ocmulgee National Monument through new federal land acquisitions and re-designating the area as a National Park? How might such a designation help to enhance the Muscogee National identity? Alternatively, do

you foresee any ways that a National Park designation could hinder the preservation of Muscogee national heritage?

- 9. Do you envision a role for the Muscogee Nation in the development of historical tourism in Georgia? Would a National Park provide a vehicle for the Muscogee Nation's involvement in historical tourism? Independently of a National Park, are there other roles that the Muscogee Nation might play in the development of historical tourism? The state of Georgia has, in recent years, taken an interest in the expansion of opportunities for historical tourism as an engine for economic development, the best known example being Civil War related activities associated with the newly acquired Resaca Battlefield State Park. Under what circumstances might it be appropriate for the Muscogee national government to partner with the state of Georgia in these types of endeavors?
- 10. A land trust is a non-profit, non-governmental organization, the purpose of which is to conserve land and open space for its historical, natural, recreational, scenic, and productive values. Land trusts conserve land either through direct acquisition, or through the negotiation of conservation easements with interested private land owners. A conservation easement is a legal agreement between a landowner and a land trust that permanently limits some uses of the land in order to protect specified conservation values. From the perspective of a private land owner, the primary financial advantage of working with a land trust is that conservation easements and donations of land can confer a wide range of tax benefits.

There are a number of reputable land trusts working to protect natural and cultural resources in Georgia. In your view, could an active collaboration between the Muscogee Nation and a reputable land trust provide a viable means of addressing the conservation of Muscogee traditional lands and cultural resources in Georgia? If so, how might such collaboration be initiated? If not, what reservations would you have about a potential partnership between the Muscogee Nation and a land trust?

- 11. Should a distinction be made between historic lands and cultural resources, on the one hand, and *sacred* lands, on the other hand? If so, then how does one make such a distinction? Do the lands of middle Georgia have sacred significance with regard to traditional Muscogee religious belief, or is the significance historical only?
- 12. In closing, can you offer any final thoughts?

Thank you for your participation.

- Chris Watson