

## CHAPTER 3 NATURAL AND HISTORIC RESOURCES

### Section One: Natural Resources

#### Introduction

In order to appropriately protect the county's natural and historic environments and develop sound workable alternatives for future land use in Morgan County and its municipalities, it is important to understand the existing conditions of the physical environment. Identification of existing natural and historic resources helps to determine land, historic sites and structures that should be protected as well as the facilities and programs that will be needed in the future. This chapter presents information on the county's natural systems (soils, slopes, hydrology, wetlands, tree cover, etc.), and historic manmade resources (architecture, towns, and archeological sites). In addition, the chapter includes those goals and policies that are needed in order for the county to realize the vision of protecting the natural and historic environment as well as the quality of life of residents.

#### 3.1 Watersheds

##### Inventory

All of Morgan County lies within the greater Oconee River watershed. The county is also within the Upper Oconee Basin. The Oconee River only touches the far eastern edge of Morgan County in the form of Lake Oconee.

There are two principal watersheds within Morgan County (Map 3.1). The first, the Apalachee River watershed, includes the bulk of the eastern edge of the county. The second is the Hard Labor Creek watershed. Both of these watersheds are important water-supply watersheds for Morgan County. Other sub-watersheds are Sandy Creek (water supply watershed), Lake Oconee, Sugar Creek, Indian Creek, and Little River.

##### Assessment

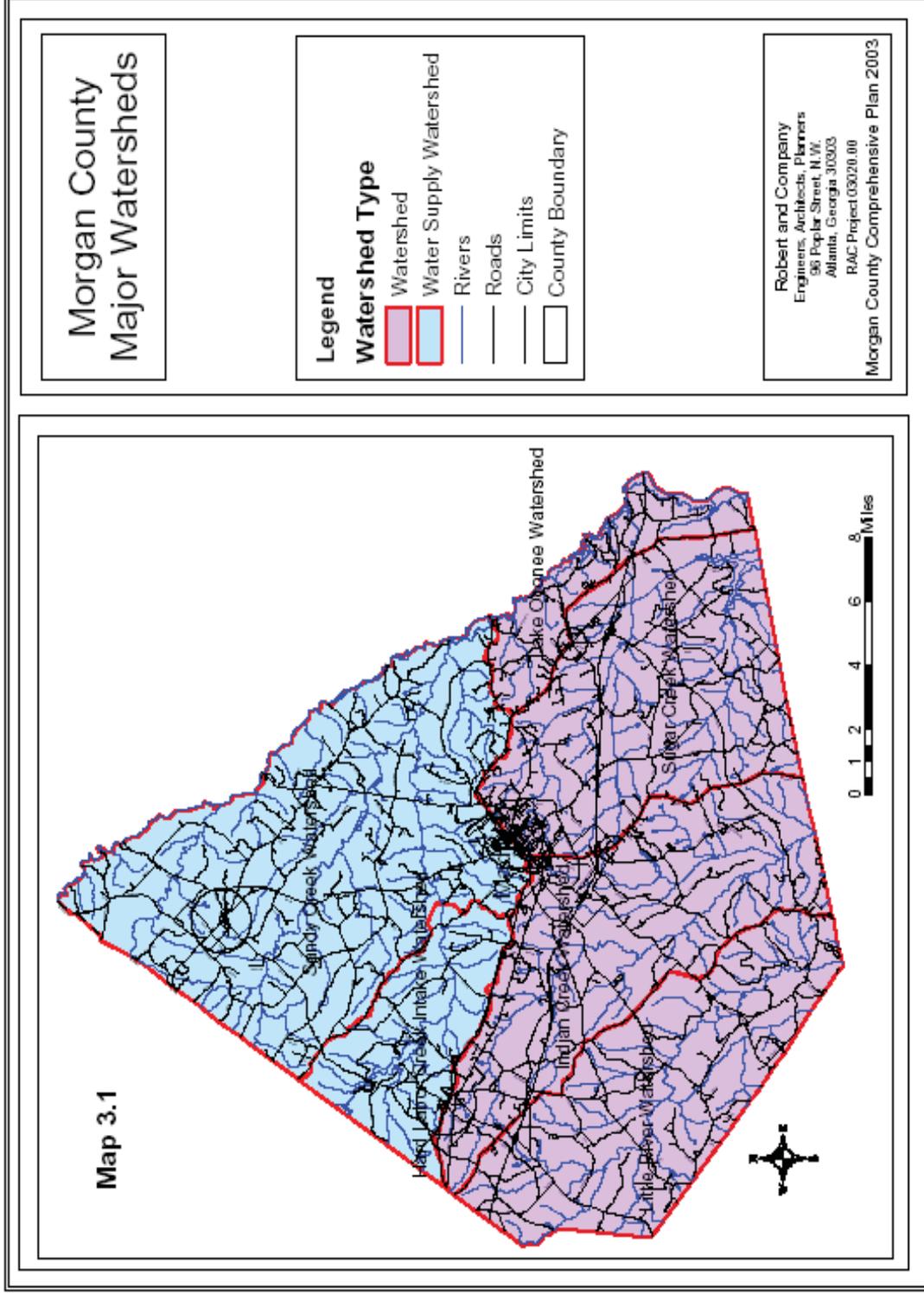
The development of Morgan County proceeded slowly from its incorporation in 1807 through the 1920's. From the 1920's to the 1970's the population of the county was in decline. Since 1980 the county has experienced increasing rates of growth. The current population of Morgan County is mostly concentrated in the center of the county near the ridgeline that runs from west to east along the historic railroad line connecting Rutledge, Madison, and Buckhead. There is also a clustering of population along the ridge from the Flat Rock community to Bostwick. Thus, in terms of impacts on watersheds, settlement patterns impact almost every possible water basin by being along the ridgelines which drain down hill into all the water features of the county.

In the last ten years, the majority of population growth has been on the periphery of the county three of its four sides. On most of the southern edge of the county there has been no appreciable growth, though the highest percentage of growth has been in the southeast corner of the county, below I-20 and near Lake Oconee. In absolute terms, the majority of the growth has been along

the Lake Oconee edge of the county and the western edge closest to Atlanta on I-20. The northeastern edge of the county by the Apalachee River and the far southern edge of the county have also experienced significant growth. The historic core of the county around Madison and Rutledge saw only modest growth, with declines in some of Madison's older neighborhoods. Thus, growth in the last ten years had the potential to impact almost every possible water basin by being widely dispersed throughout the county.

Growth and development within Morgan County's water supply watershed areas pose a potential threat to water quality. In light of the past, recent and projected population growth in Morgan County and municipalities, it is of vital importance that measures be taken to protect water quality from the damaging effects of erosion, sedimentation and pollution. Morgan County and all municipalities must work to enact and enforce regulations to protect and preserve watersheds and water quality.

Map 3.1 Morgan County Major Watersheds



## 3.2 Groundwater Recharge

### Inventory

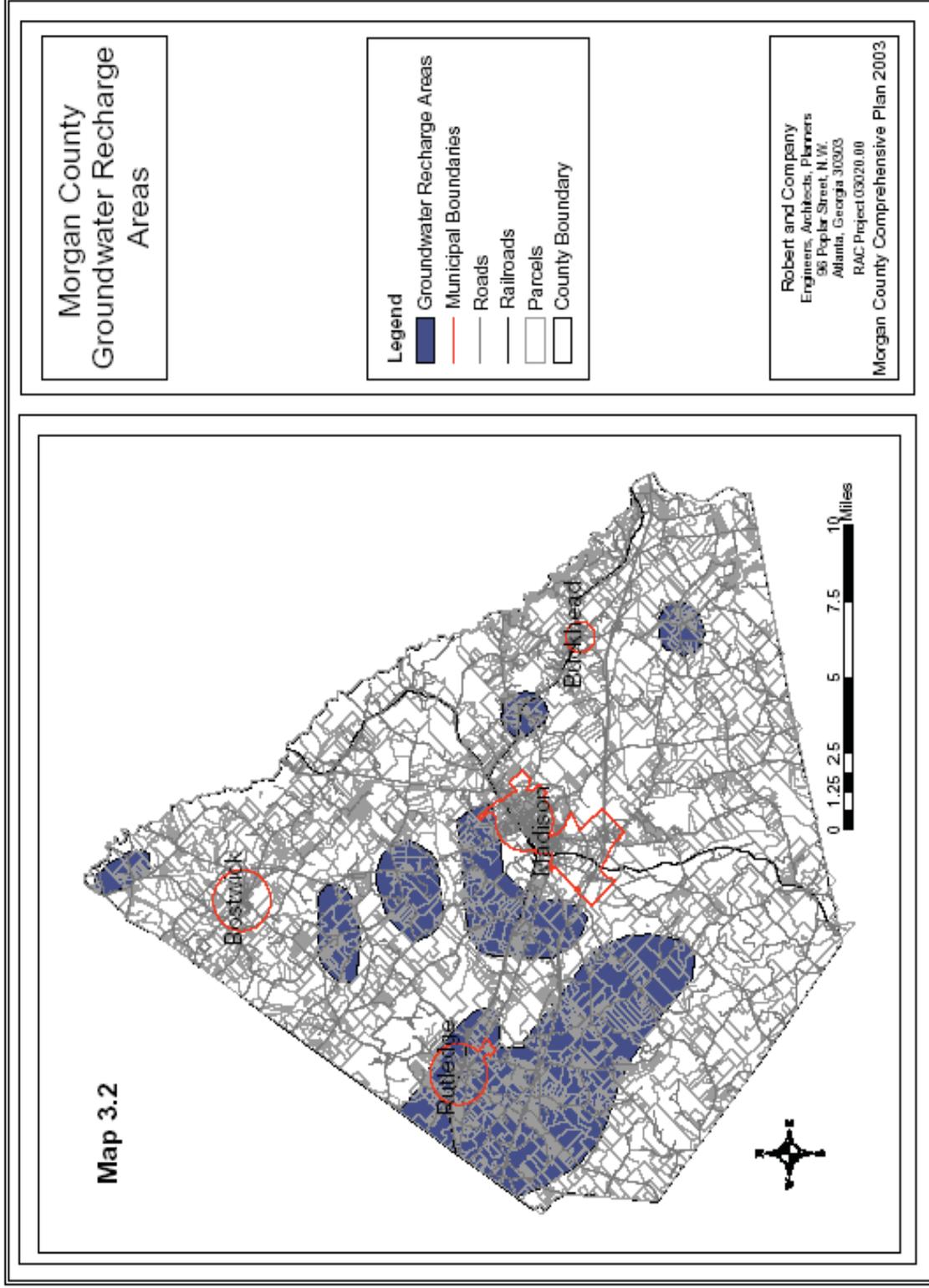
Groundwater recharge areas, as defined by state law, are any portion of the earth's surface where water infiltrates into the ground to replenish an aquifer. Probable "significant recharge areas" have been mapped by the Georgia Department of Natural Resources. Mapping of recharge areas is based on outcrop area, lithology, soils type and thickness, slope, density of lithologic contacts, geologic structure, the presence of karst, and potentiometric surfaces. Standards have been promulgated for their protection, based on their level of pollution susceptibility. Significant recharge areas are generally those with thick soils and slopes of less than 8%. The areas have not been mapped at a scale that corresponds to county maps and are therefore difficult to locate with precision.

Recharge areas in Morgan County are located primarily in the unincorporated areas of the county west of Madison (Map 3.2). Rutledge is entirely within a recharge area. Recharge land within the unincorporated area is largely agricultural, including crop and forest land. The recharge area near Madison is largely undeveloped. The recharge area within Rutledge is partially developed. The expectation is that development pressures will continue to increase on recharge areas in the Rutledge and Madison area.

### Assessment

It is important that these recharge areas be protected because many residents and businesses of Morgan County depend on wells for drinking water, livestock production and irrigation. If polluting substances seep into the ground in a recharge area, these pollutants may be carried into the aquifer and contaminate the groundwater, making it unsafe to drink. Thus the purpose of recharge protection standards and ordinances is to prevent the contamination of groundwater. Such standards may include limits on waste disposal permits, impervious surface paving areas, storage tanks for toxic liquids, and standards for buildings and overall development. Groundwater recharge guidelines are established by the Department of Natural Resources, and Morgan County and municipalities must work to meet or exceed these standards to protect groundwater quality.

Map 3.2 Morgan County Groundwater Recharge Areas



### **3.3 Wetlands**

#### Inventory

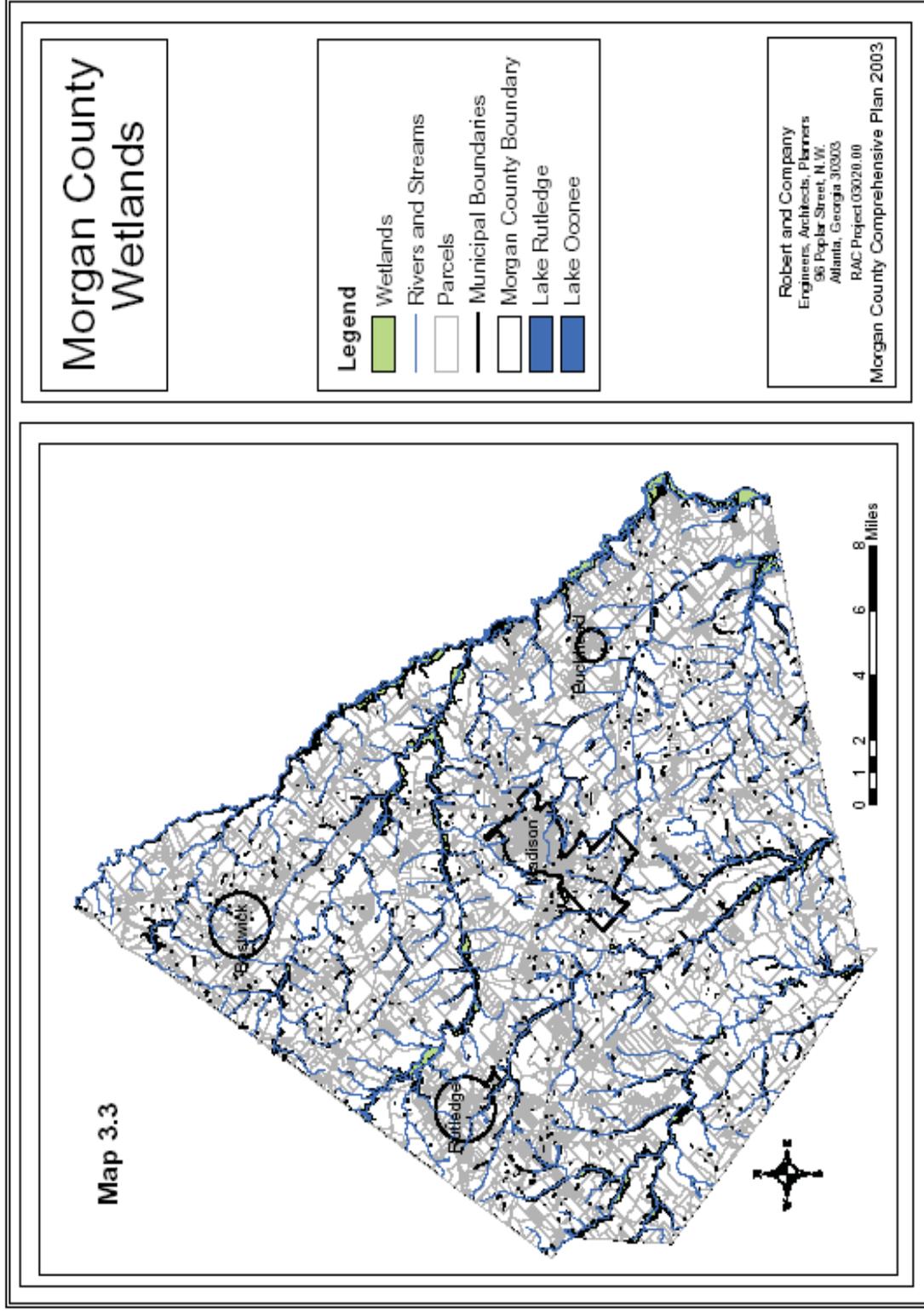
Freshwater wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal circumstances, a prevalence of vegetation typically adapted for life in saturated soil conditions. The ecological parameters for designating wetlands include hydric soils, hydrophytic vegetation, and hydrological conditions that involve a temporary or permanent source of water to cause soil saturation.

The wetlands in Morgan County have been mapped by the U.S. Fish and Wildlife Service using aerial photography. As one might expect, the majority of wetlands are located in the bottomlands of the county along all major creeks and rivers. Many of these linear riverbank wetlands stretch for miles and are extensive, interconnected and relatively contiguous. The major wetlands are along Little Creek, Big Indian Creek, Little River, Shoal Creek, Holgers Creek, Pole Ridge Creek, Hunnicut Creek, Rawlings Branch, Rice Creek, Hard Labor Creek, Big Sandy Creek, and the Apalachee River (Map 3.3).

#### Assessment

Wetlands are important for several reasons. They provide a major habitat for all kinds of wildlife and provide a major natural filtration system which protects the water quality of an area. Their existence is also desirable for the quantity of water storage they provide in times of flood and backup reserves in times of drought. Thus wetlands protect and provide for the human community surrounding them. For these and other reasons, every effort should be made to preserve Morgan County's contiguous system of wetlands to enable these areas to perform their positive functions even more efficiently, effectively, and also to a much greater degree. Wetlands protection ordinances and enforcement of wetlands protection through the development review process must be given a high priority in local policy.

Map 3.3 Morgan County Wetlands



### 3.4 River Corridors

#### Inventory

Morgan County is contained within the Oconee River Basin along its upper reaches (Map 3.4). The Apalachee River is the eastern boundary of Morgan County for approximately 34 miles. Lake Oconee is the result of an impoundment on the Oconee River and backs up water along the far southeastern edge of the county.

#### *Apalachee River*

The headwaters of the Apalachee River are in Gwinnett County. The river then forms the border between several counties until it joins the Oconee River at Lake Oconee. The river flows primarily through forest and agricultural lands, and there are no incorporated towns in the Apalachee River floodplain, which varies in width from 200-400 feet. The Apalachee River is part of the Regionally Important Resources (RIR) nomination submitted by the Northeast Georgia Regional Development Center to the Georgia Department of Community Affairs (DCA) in 1992, with the Apalachee qualifying as a stream of 3<sup>rd</sup> order or greater. Development is typically restricted close to 3<sup>rd</sup> order streams with a minimum protective buffer of 200 feet or the 100-year floodplain, whichever is greater. Successful RIR nominations lead to resource management strategies that include policies to manage, conserve, and protect the site.

#### *Oconee River/Lake Oconee*

The Oconee River Basin was established as an RIR in 1993. Its headwaters are in Hall County and its form in Morgan County is a shallow lake made by the creation of the Wallace Dam in 1979. Lake Oconee was created by the Georgia Power Company and covers 19,050 acres with 374 miles of shoreline. Fifty-five miles of shoreline are in Morgan County. Due to its relatively constant level, Lake Oconee is becoming known for fishing and for the subdivisions and resort communities that are appearing on its shores. The Georgia Power Company maintains a 25-foot vegetative buffer around the lake, which is larger in some areas for aesthetic screening. No boathouses are allowed and Georgia Power must permit all marina developments. Morgan County does not have direct jurisdiction over Lake Oconee or its buffers.

#### *Little River*

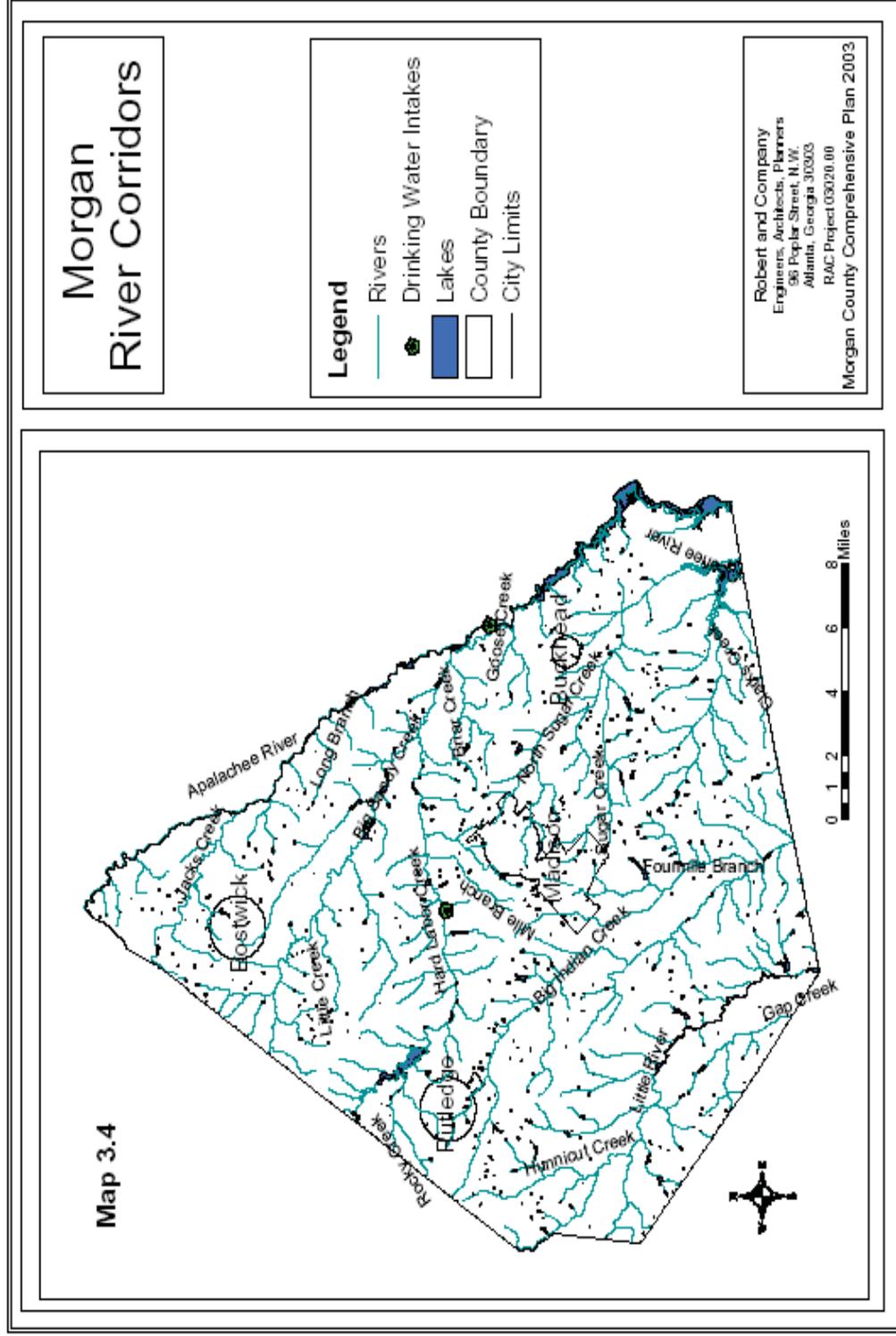
The Little River is located near the Pennintgon Community in southern Morgan County. The river crosses Georgia Highway 83 about 6 miles south of I-20 and is the water supply for Eatonton, Georgia.

#### Assessment

A significant amount of development has already occurred in the areas adjacent to Morgan County's major river corridors, and there is a high likelihood of more such development in the future. While Lake Oconee is managed and protected to a significant degree, the Apalachee River corridor may not be sufficiently protected. Morgan County should make efforts to exceed state standards for protection of the Apalachee River

corridor, as water from the Apalachee above Lake Oconee is a prime source of drinking water for residents in Morgan County, Madison, Rutledge, Bostwick and Buckhead.

Map 3.4 Morgan County River Corridors



### **3.5 Floodplains**

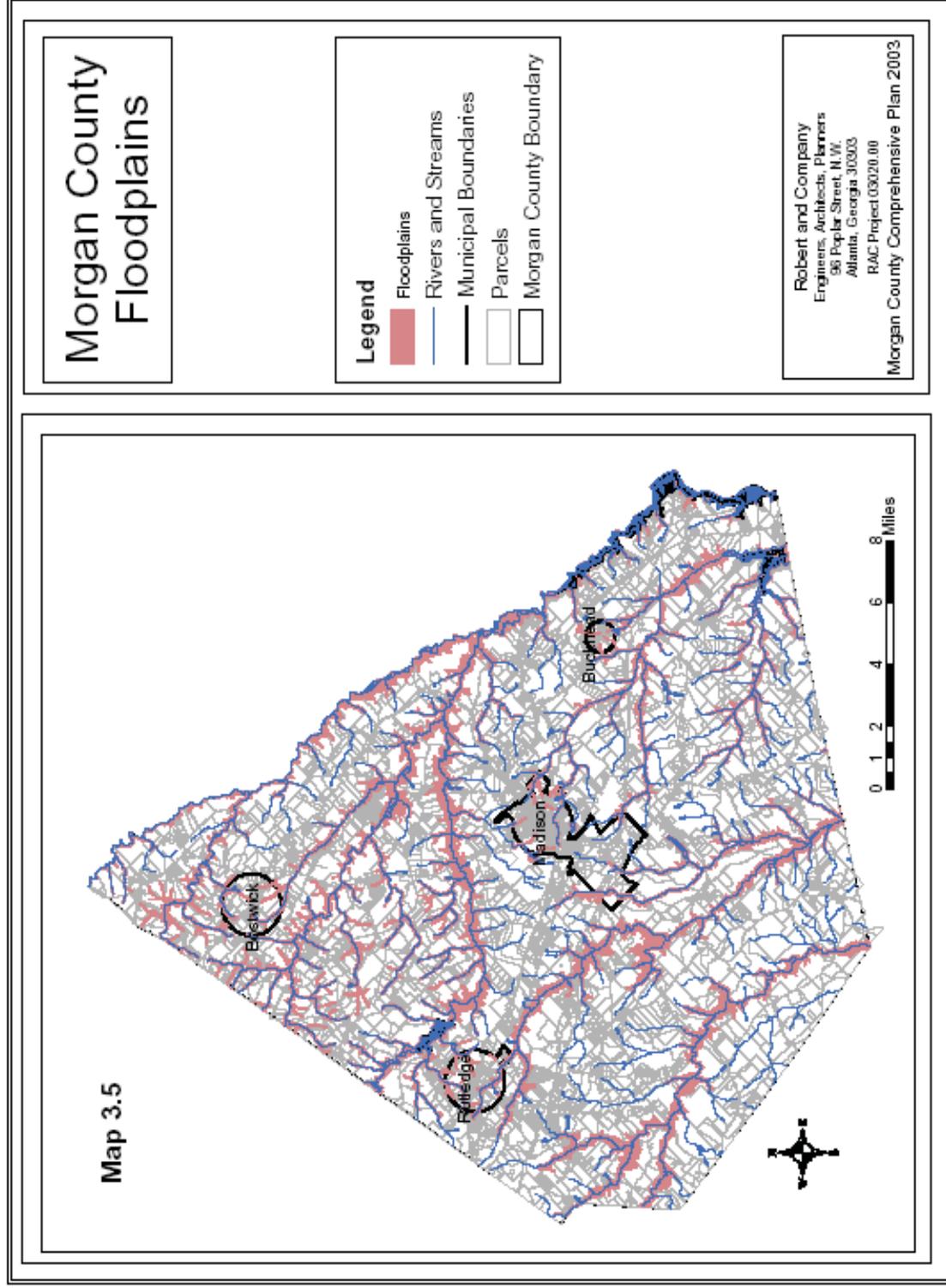
#### Inventory

Flood hazard boundary maps have been prepared for Morgan County and the municipal jurisdictions within the county. Floodplain information for the unincorporated county is not yet available in digital format by FEMA. However, the 2002 FEMA floodplain maps for Morgan County have been digitized by Robert and Company for use with the GIS system (Map 3.5). The 100-year flood hazard maps indicate those areas that have a one percent annual chance of a flood event that will equal or exceed a selected magnitude having significance vis-à-vis floodplain management and insurance rates. Bostwick, Buckhead, Madison and Rutledge have participated in the National Flood Insurance Program since 1975, and the county was recently re-surveyed in February of 2002. To date there have been only scattered reports of flood damage along Hard Labor Creek. Due to the fact that the municipalities are all located along ridgelines, there has been no significant flooding damage to municipalities in recent history.

#### Assessment

As more land cover is disturbed and as development occurs in lower lands along creeks, the potential for flood damage in Morgan County will increase. Floodplain areas in Morgan County should be protected from development for this reason. Alternate forms of land use such as agriculture, forestry, recreation and greenspace preservation are appropriate for floodplain areas.

Map 3.5 Morgan County Floodplains



### **3.6 Soil Types**

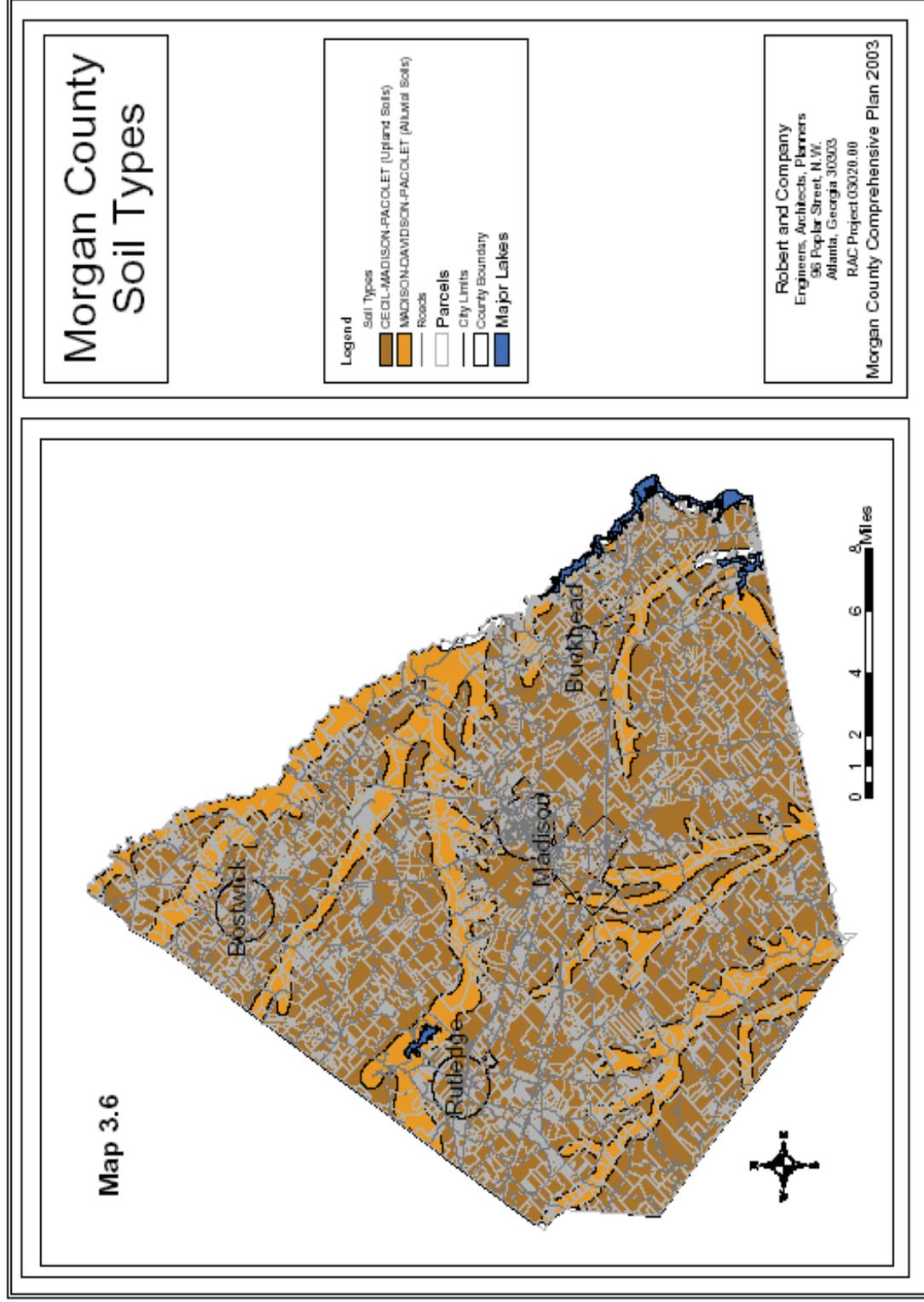
#### Inventory

An analysis of county soils reveals information useful in long range planning for land development (Map 3.6). Soils can be categorized by their suitability for development and their suitability for farming. The farmland soils will be examined in the Prime Agriculture Soils section. The most important criteria for planning purposes includes an evaluation of soil suitability for septic tanks and recharge potential as well as identification of soils susceptible to severe erosion. This latter category is often a function of the topographical slope of the site and will be examined in the next section.

#### Assessment

Morgan County does not own or operate a countywide wastewater treatment system. Thus, the majority of new development in the county is reliant on wastewater disposal using septic tanks, with a few exceptions. Septic tanks can provide a low cost, environmentally safe solution to wastewater treatment. However, if septic tank-leachfield systems are not properly designed or are installed in unsuitable soils, they can pose serious environmental and health-related concerns. A majority of the county's soils, 66.4%, are suitable for septic tank drain fields. In Morgan County the majority of unsuitable soils are located along the low areas adjacent to rivers, creeks, and streams. These areas are typically found within the 100-year floodplain of major water courses and in alluvial land along smaller streams. Land that is unsuitable for septic tanks is also generally unsuitable for building foundations.

Map 3.6 Morgan County Soil Types



### 3.7 Steep Slopes

#### Inventory

Sloping, non-rocky terrain of more than 25% is considered to have a high risk for severe soils erosion. Morgan County is in the middle part of the Piedmont Province in the gently rolling landscape of the Central Georgia region. The northern and western part of the county is higher and more sloping than the southern and eastern parts (Map 3.7). The highest elevation in the county is 820 feet and the lowest point on Lake Oconee is 426 feet. Although the variation in topography is over 400 feet, the change is so gradual that there are almost no steep slopes over 25% in the entire county. This means that there are relatively few areas which are too costly to grade or too fragile to develop when the potential for erosion is considered.

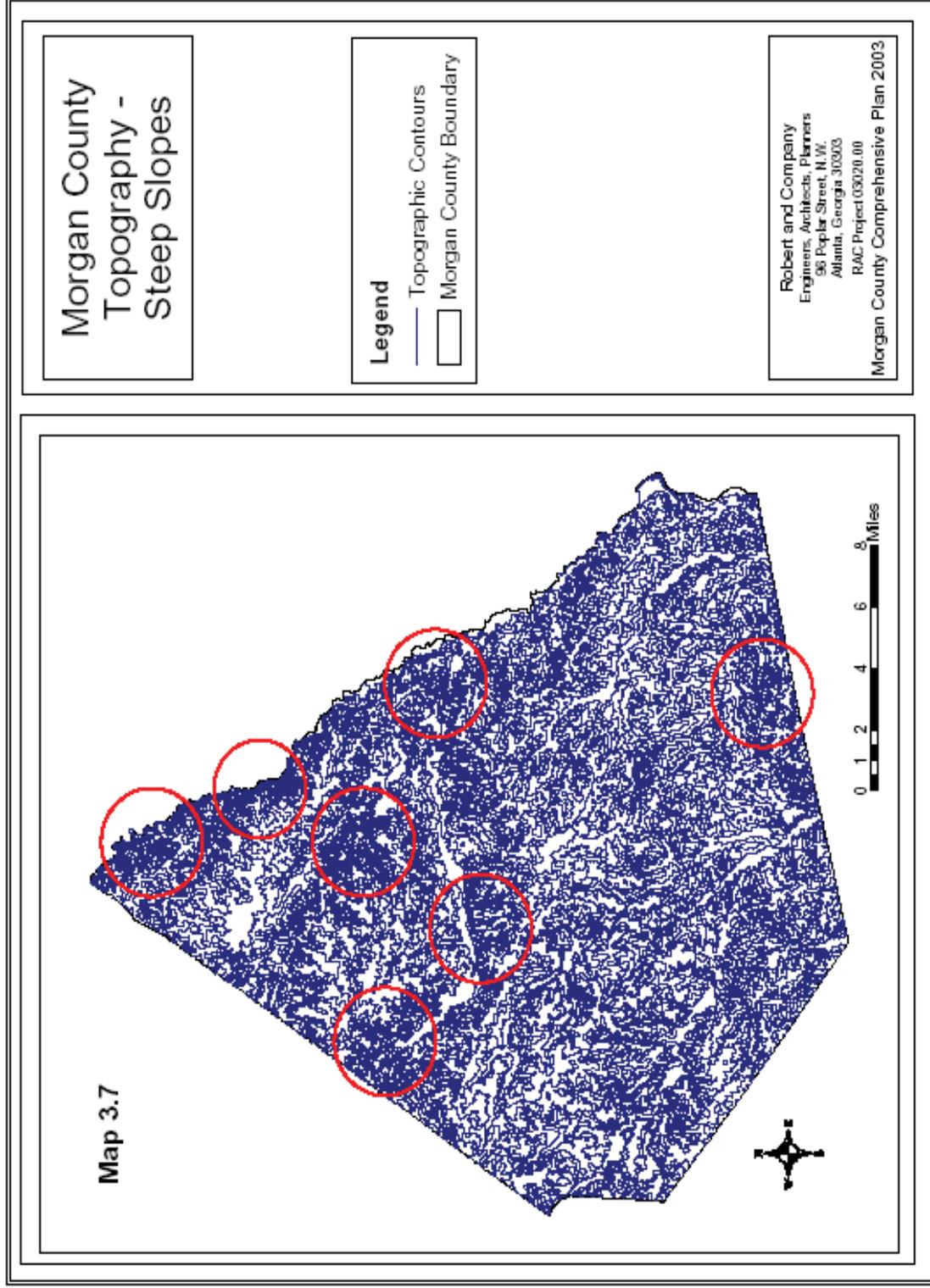
The few areas of potential steep slopes have been generally identified from contour lines on the topographical map of the county to determine where contours bunch together in their closest formations indicating steeper slopes. In looking at the map of potential steep slopes, one can see that they tend to cluster along water features: along the Apalachee River to the north and east, along Sandy Creek and Hard Labor Creek in the center of the county, and along Fourmile Branch to the south.

#### Assessment

Steep slopes and water features, combined with periodically heavy rainfall, lead to the potential for erosion susceptibility. Erosion susceptibility is of concern in land use planning because of negative impacts of sediment buildup in rivers and lakes, the loss of topsoil and the potential transfer of nonpoint source pollutants. Erosion occurs naturally but can be greatly accelerated by human activity. Other factors can affect erosion rates such as climate and tree cover. By reviewing a tree cover map for Morgan County, one can see that the county has maintained a large percentage of tree cover which, along with other vegetative cover, acts as a break on erosion. The preservation of forested areas in Morgan County is important to preventing erosion, as is the use of best management development practices that include, for example, selective rather than clear cutting for new subdivision development.

Soils susceptible to severe erosion are commonly found in close proximity to the steeply sloping areas of the county but are also widely dispersed. The watersheds in the northern half of the county seem to be at highest risk for erosion damage. These northern watersheds also form the water supply watersheds for the county. Particular attention should be paid to preventing erosion in the northern half of Morgan County.

Map 3.7 Morgan County Topography – Steep Slopes



### **3.8 Prime Agricultural Soils**

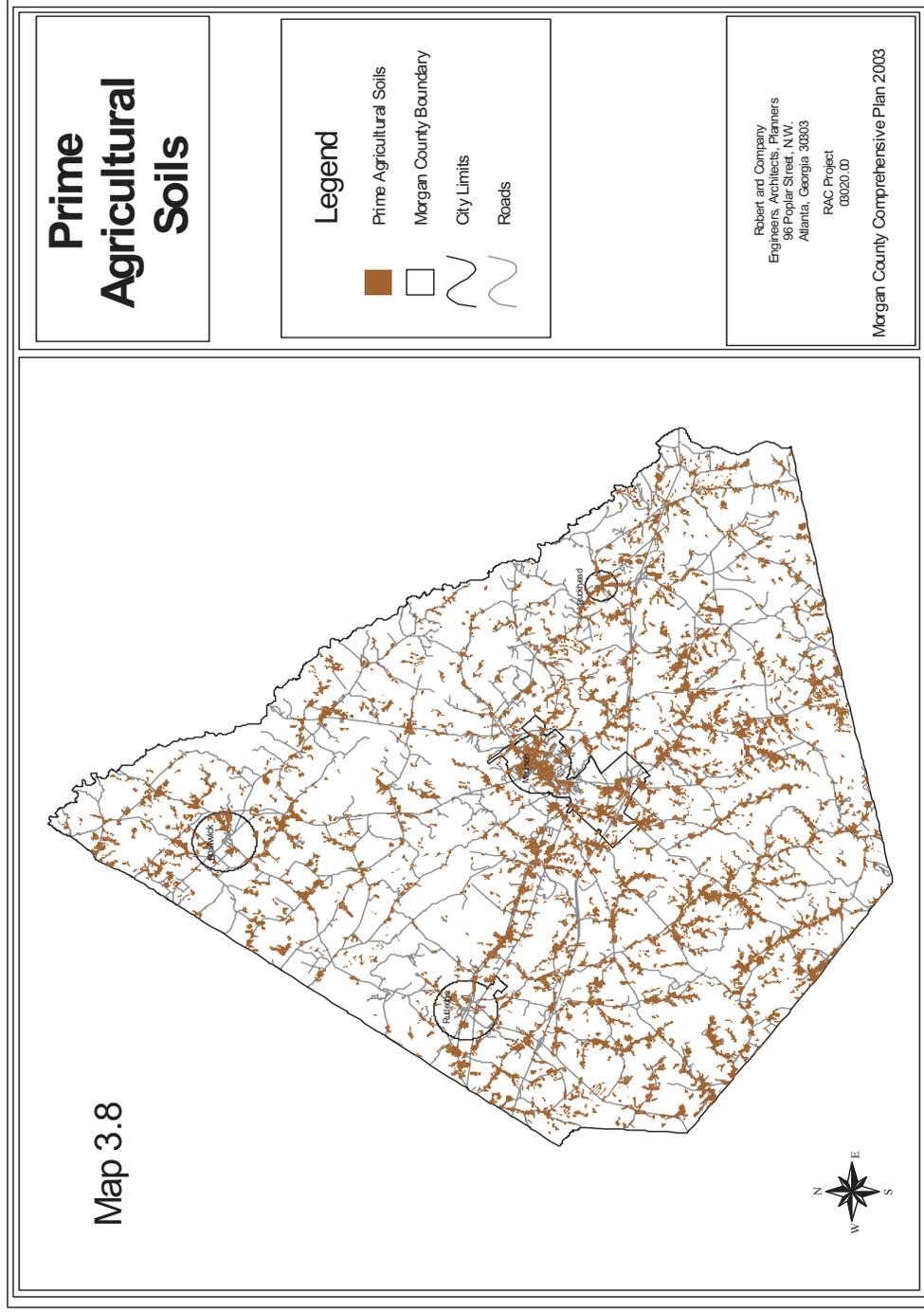
#### Inventory

In Georgia, prime farmland soils are those soils best suited for producing food, feed, forage, fiber, and oilseed crops. These soils have the soil quality, growing season, and moisture supply needed to produce sustained good yields of crops. According to the Soil Conservation Service, 22.4% of Morgan County's soils are prime farmland soils (Map 3.8). In terms of the municipalities, 75% of Bostwick soils and 25% of Buckhead soils are prime farmland soils. In Madison and Rutledge most of the land with prime agriculture soil has been developed, though a significant amount of land in each municipality is still in agricultural production.

#### Assessment

Prime agricultural soils are a valuable resource that is easily destroyed in a developing environment. While it is impractical for all of these soils to be preserved, efforts should be made to do so where possible. In terms of protection, the prime soils in the unincorporated areas of Morgan County should be a major focus of any conservation efforts in this plan or other county documents and programs.

Map 3.8 Prime Agricultural Soils



### **3.9 Plant & Animal Habitats**

#### Inventory

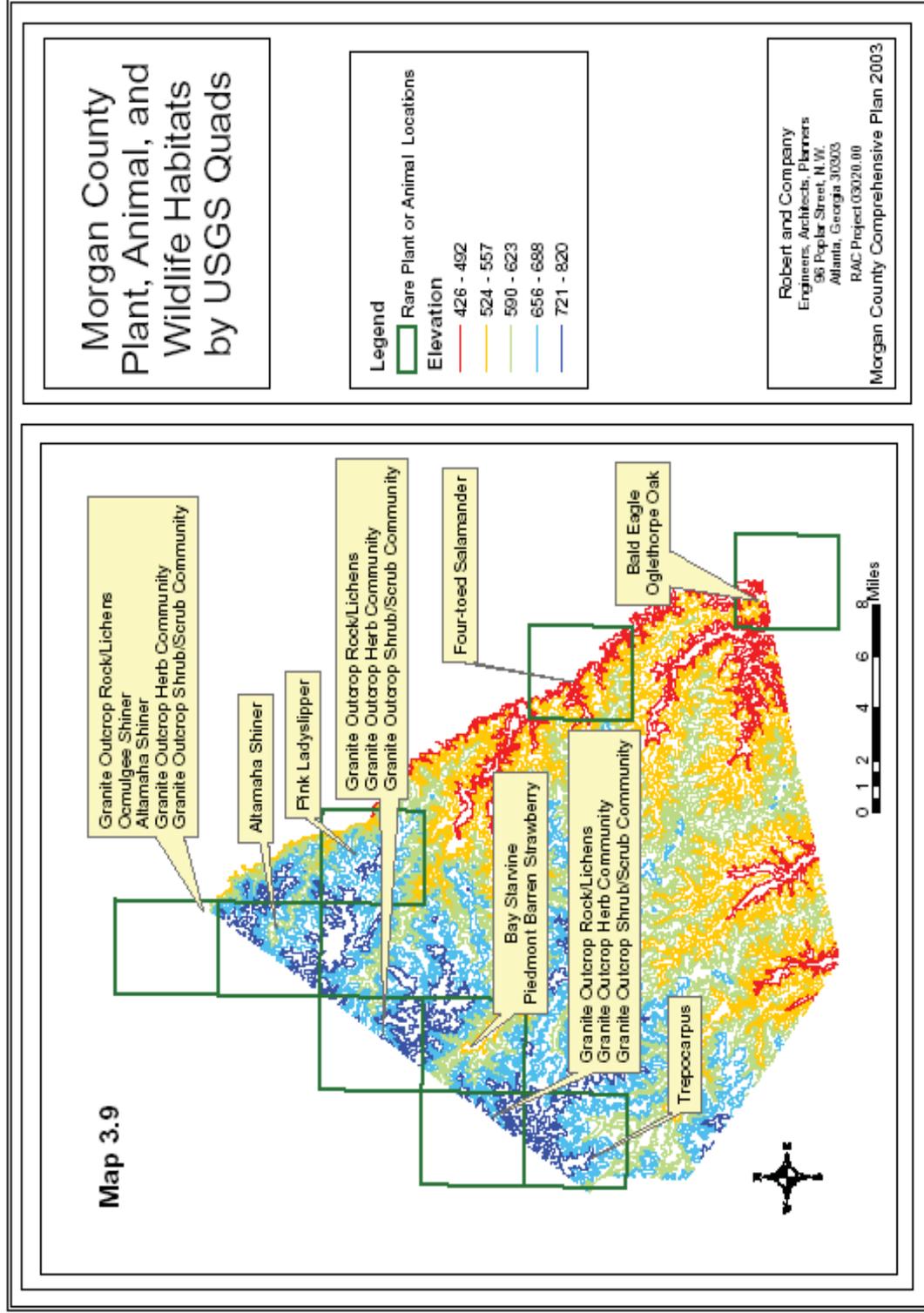
Land use in Morgan County and the resulting demands placed on natural resources such as soils, trees, wetlands, and water is such that a variety of species can find adequate habitats within the county. Familiar species such as deer, swamp rabbit, squirrel, beaver, raccoon, otter, muskrats, songbirds, raptors, woodpeckers, and waterfowl are seen on a regular basis in Morgan County. Trees and vegetation common to the Piedmont Province of Georgia and the Southeastern United States are also common in the county due to its extensive and largely intact vegetative cover.

The Department of Natural Resources, Freshwater Wetlands and Natural Heritage Inventory (FWNHI) section, has compiled a list of rare element (Plant and Animal) occurrences for Morgan County. A rare element occurrence is a “species of concern...considered sufficiently rare or the status unknown so as to warrant the collection of occurrence information.” The information is available on a county-wide basis only. In looking at the map of rare plant animal and wildlife habitats of Morgan County one can see that the majority of occurrences are in the upland topographic sections on the western and northern edges of the county. There are two areas identified as habitats on the eastern edge of the county (Map 3.9). One is on Lake Oconee and the other is on the Apalachee River. The identified plant elements include lichens, herbs and shrubs common to granite outcroppings, the Bay Starvine, the pink Ladyslipper, the Piedmont Barren Strawberry, the Trepocarpus, and the Oglethorpe Oak. The animal elements include the Ocmulgee Shiner, the Altamaha Shiner, the Four-toed Salamander, and the Bald Eagle. The general locations of habitat for these various relatively rare species are shown on Map 3.9.

#### Assessment

Protection of sensitive plant and animal habitats is generally commensurate with the protection of sensitive environmental features such as wetlands, floodplains and steep slopes, though uplands and other environments not considered “sensitive” also provide important habitat. It is important to place emphasis on protection of all species of plants and animals as the local ecosystem is highly interdependent. Environmentally conscious land use planning and other measures should be employed in Morgan County to protect sensitive plant and animal habitats.

**Map 3.9 Morgan County Plant, Animal and Wildlife Habitats by USGS Quads**



### 3.10 Major Recreational Areas

#### Inventory

Major federal, state, and regional parks and recreation areas are identified because of their significant contribution to the quality of life of the community. They not only provide for recreation but also for the preservation of the natural resources identified in the earlier sections of this chapter. As of 2003 there are three major recreational sites in Morgan County (Map 3.10).

#### *Hard Labor Creek State Park*

Hard Labor Creek State Park is one of the largest and most popular state parks in Georgia. It came into being during the Great Depression when the National Park Service acquired 44 individual parcels of land that were joined to form a 5,805 acre Hard Labor Creek Recreation Demonstration Area. The purpose of the site was to demonstrate the reclamation of marginal farmland for recreation. The facilities on site were built by the Civilian Conservation Corps and the Works Progress Administration and currently include an 18-hole golf course, camping areas, rental cottages, stables, hiking trails, and a lake with a swimming area. The Georgia State University observatory is also located in the park.

#### *B.F. Grant and Redlands Wildlife Management Areas*

The B.F. Grant Wildlife Management Area (WMA) is located in the very far southern edge of Morgan County, immediately south and east of the Godfrey community. A second WMA, Redlands, is located in the portion of the Oconee National Forest that is in eastern Morgan County, southeast of Buckhead. Both WMAs are managed by the Fish and Game Division of the Department of Natural Resources and are open to the public for camping, hiking, and hunting.

#### *Lake Oconee*

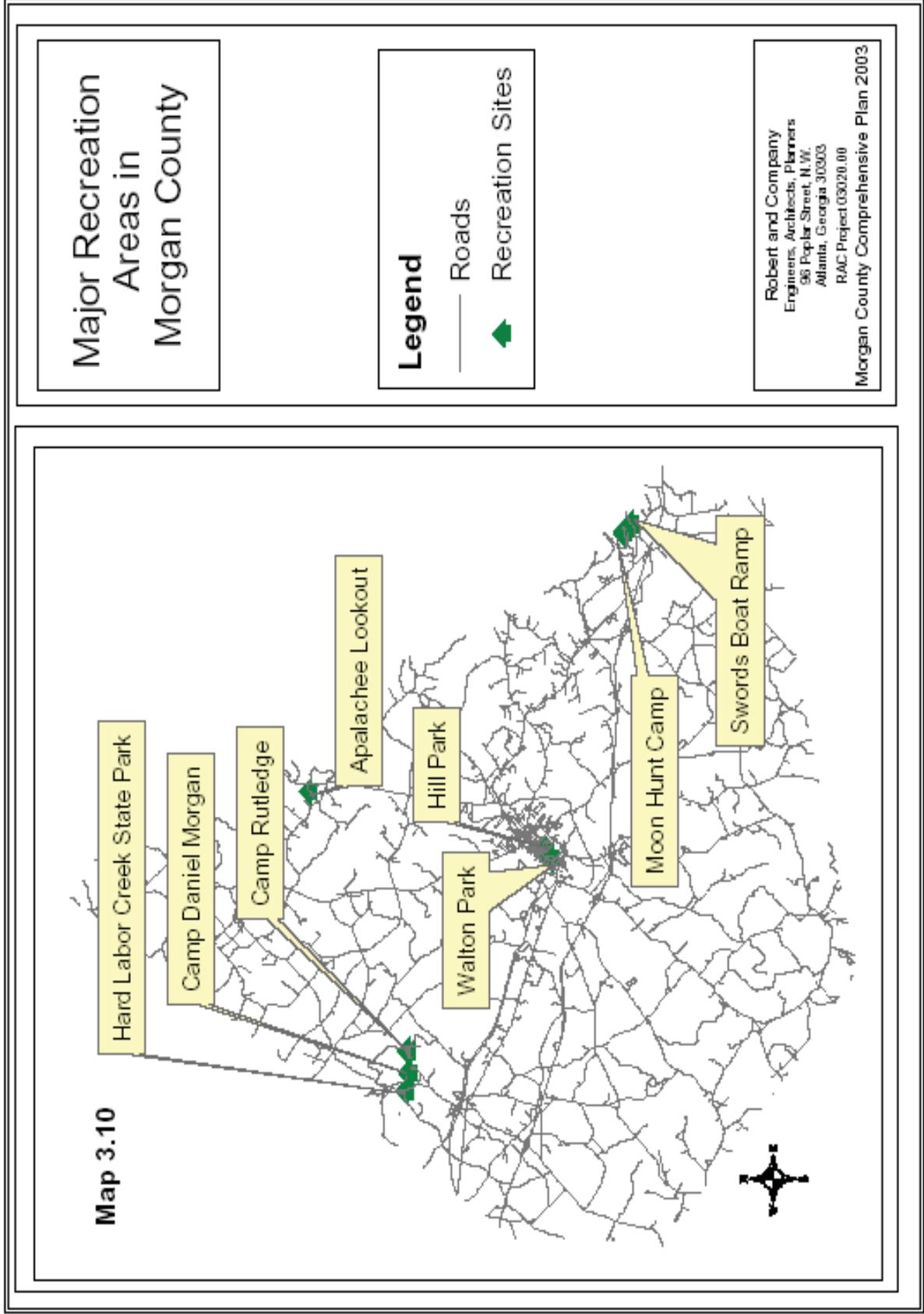
Lake Oconee is a major recreational resource for Morgan County. Public facilities at Swords Crossing includes a community boat ramp, and there are numerous parks and public facilities scattered along the edge of the Lake in adjacent counties.

Other parks and recreation facilities are present in Morgan County and the municipalities which serve the needs of residents. These smaller facilities, primarily for active recreation use, are considered in greater detail in Section 4.7 of the Community Facilities and Services element.

#### Assessment

Parks and recreation areas in Morgan County significantly contribute to the quality of life for residents. Local government efforts should be made to continue to preserve and enhance these areas as well as to better promote them as a quality of life factor to enhance the potential for attraction of quality economic development.

Map 3.10 Major Recreation Areas in Morgan County



### 3.11 Scenic Views and Sites

#### Inventory

Scenic views and sites have been identified during the process of developing the Morgan County Comprehensive Plan by the Comprehensive Planning Task Force. In addition, a public workshop was conducted as part of developing the Morgan County GreenPrint conservation plan. The GreenPrint workshop sought to identify important natural resources such as scenic views for conservation purposes. Numerous potential scenic corridors were identified and are listed below, also see Map 3.11.

#### *Potential Scenic Corridors*

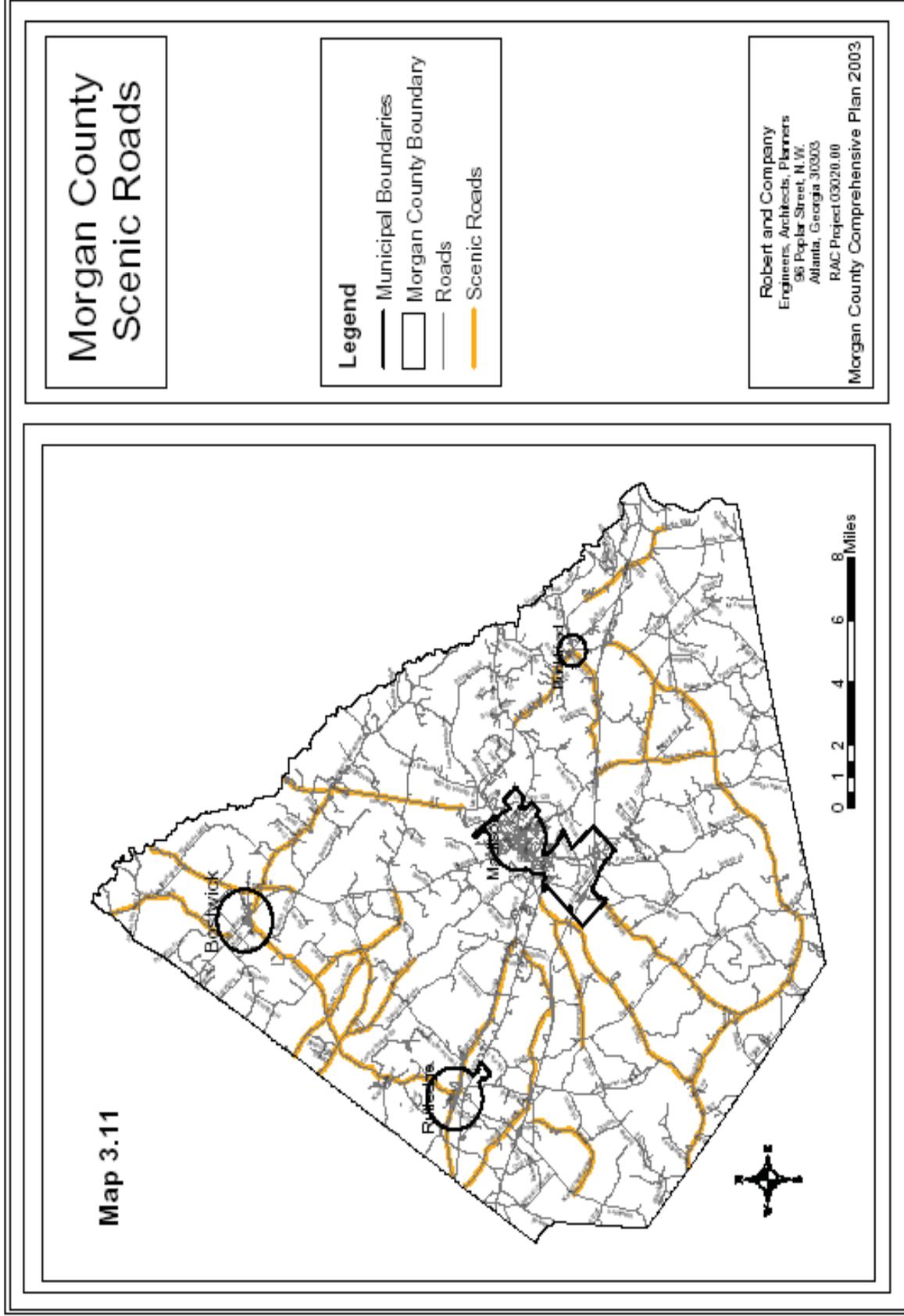
- US 441 corridor
- GA 83 corridor
- US 278
- Apalachee Road between Bostwick and Apalachee
- Aqua Road/Mission Road
- Baldwin Dairy Road
- Bethany Church Road south of Plainview Road to its intersection with Seven Islands Road
- Bethany Rd to its intersection with Seven Island Rd
- Broughton Road
- Brownwood/Knight Roads
- Buckhead Road, south of intersection with US 278 to downtown Buckhead
- Centennial Road
- Clack Road
- Davis Academy Road between the county line and Old Mill Road
- Dixie Highway
- Doster Road to Thomas Road
- Fairplay Road between Sandy Creek Road and Prospect Road
- Hardeman Mill Road
- Hester Town Road
- High Shoals Road between County Line and Bostwick Road
- Keecheefoonee Road
- Little River Road to its intersection with GA 83
- Nathan Store Road
- Newborn Road
- Old Mill Road
- Parks Mills Road east of Buckhead until his intersection with Zion Rd
- Paxson Dairy Road
- Prosection Road to its intersection with Sandy Creek Road
- Seven Island Road

#### Assessment

Due to the level of access afforded by road corridors, these areas are the most susceptible to unattractive or undesirable development. While industry and commerce is largely

dependent on corridors for the shipping and receiving of goods, it is important to also consider the aesthetics of corridors, scenic views, and their contribution to quality of life. Corridor regulations mandating a high level of design sensitivity are already in place in the City of Madison. Morgan County and the municipalities of Bostwick, Buckhead and Rutledge should consider formal recognition of scenic corridors and establishment of an appropriate level of corridor regulations in order to protect the scenic quality of corridors and the views that they offer to residents and visitors.

Map 3.11 Morgan County Scenic Roads



### **3.12 Tree Cover**

Due to its rural character and the presence of a number of commercial tree farms Morgan County has a significant level of tree cover, see Map 3.12. In addition to providing a vital economic resource for the county, tree cover enhances the environment and quality of life for county residents and visitors. Throughout the public input processes for the Morgan County Comprehensive and GreenPrint Plans the need for increased preservation and protection of the county's tree cover was noted as a priority.

Map 3.12 Morgan County Tree Cover

