

# **Recreation Master Plan**

for

## **Guana River Wildlife Management Area**



**Florida Fish and Wildlife Conservation Commission**



**September 2005**



# DRAFT GUANA RIVER WMA RECREATION MASTER PLAN

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## **I. Introduction**

### Purpose of the Recreation Management Plan

The purpose of this Recreation Master Plan (RMP) is to serve as a guide for providing recreational experiences focused on wildlife viewing and nature study on Guana River Wildlife Management Area (GRWMA). The plan contains specific recommendations for recreational enhancements and interpretive products and programs. It also provides guidelines for monitoring recreation-related use to avoid negative resource impacts and to ensure satisfactory visitor experiences.

In the RMP for GRWMA, emphasis is placed on integrating recreation and interpretive planning. Using this approach, the type of recreational experience offered and the location of recreation amenities provided, is strongly influenced by the interpretive goals for the area. Recreation opportunities thus become a means to an end - reaching visitors with important concepts about an area's natural resources, plant communities, wildlife and wildlife management.

### Significance of Guana River WMA

The 9,815-acre GRWMA is adjacent to the Guana-Tolomato-Matanzas (GTM) Reserve – Guana River Property. The 2,400-acre GTM Reserve – Guana River Property (a Florida Department of Environmental Protection Coastal and Aquatic Managed Area) and GRWMA are part of the larger Guana-Tolomato-Matanzas National Estuarine Research Reserve (GTMNERR). Located midway between Jacksonville and St. Augustine, the area is uniquely situated to afford outdoor recreational opportunities to a large and growing segment of Florida's population, as well as to tourists who traditionally visit the area.

The CARL committee in its project assessment prepared for the Governor and Cabinet expressed the unique character of the property:

“It is unusual for a single proposed project area to combine such a diversity of valuable natural, cultural and recreational resources. These include: (1) an unusually extensive natural area of undisturbed Atlantic coastal strand (scrub) vegetation; (2) extensive maritime hammock containing an unusual natural association of mature trees; (3) extensive estuarine wetlands (marsh); (4) extensive areas of pine flatwoods; (5) bird rookeries, including a sizable population of the endangered wood stork; and (6) extensive aboriginal middens, aboriginal burial mounds and artifacts of aboriginal and Spanish colonial (origin).” Also, on state owned land adjacent to GRWMA, there is excellent ocean-front beach with high dunes stabilized by natural vegetation;

## **II. Resource Inventory**

### Natural Communities

The diversity of natural communities is one of Guana River WMA's most striking features (Figure 1). For example, from the observation tower along Capo Road visitors can see salt marsh, maritime hammock, and pine flatwoods. These communities are highly influenced by coastal maritime conditions and are similar to the Sea Island Coastal Region of southern Georgia. The descriptions of natural communities provided below are from the 2002-2007 GRWMA Conceptual Management Plan.

#### **Salt Marsh** (2,157 acres)

The natural community of the largest extent on Guana River is salt marsh, a highly productive community that begins at headwaters of tidal creeks and drains, and gradually slopes downward toward the subtidal zone of associated rivers. This community is dominated by smooth cordgrass.

#### **Flatwoods** (1,348 acres)

Some botanists believe that most of the Guana peninsula was once covered with slash and pond pines. Currently pine flatwoods are primarily limited to the western, central, and northern portions of the area. Pine stands are also found on marsh islands within the salt marshes along the Tolomato River. Scattered pines and small stands can also be found within the maritime forests, with older stands having been invaded and replaced by hardwoods. Many of the pines were logged about 40 years ago. In 1978, slash pine plantations were established on about a third of the pine area.

#### **Maritime Forest Hammocks** (911 acres)

Extensive stands of oak hammock are located along the uplands adjacent to the west boundary of Lake Ponte Vedra. The maritime forest is a broad-leaved evergreen forest shaped by wind and salt spray and characterized by "flag-form" trees such as those along Lake Ponte Vedra. The overstory consists of live oak, laurel oak, slash pine, southern red cedar, cabbage palm, pignut hickory, southern magnolia, and red bay. The understory varies from dense stands of saw palmetto to relatively open grassy areas with a few low shrubs.

#### **Scrub** (867 acres)

Several stands of scrub exist within the WMA, probably representing a formerly more extensive stand of Atlantic coastal sand pine scrub. This community was dominated by sand pine with an understory of scrub oaks. However, the scrub on Guana River is dominated primarily by oaks of various heights, ages, and densities.

**Basin Marsh** (1,536 acres)

This freshwater community type includes interior impoundments, marshes and borrow areas. Vegetation is almost entirely of low-growing wetland types, but graduating into other communities (ecotones). Basin marshes have a distinctive cover composed primarily of emergent grasses and sedges, but also include a heterogeneous assemblage of leafy aquatics and various submergent species. Plant diversity and species richness are characteristically much higher than that found in brackish and estuarine marshes. There are both managed and unmanaged basin marsh communities on GRWMA.

**Basin Swamp** (297 acres)

Basin swamps occur on the northern portion of the property. Species diversity in these areas is low, with the overstory dominated primarily by gums, oaks and maples. This forested wetland community occurs primarily in poorly drained depressions and floodplain zones, and is largely dependent upon the hydroperiod. Basin swamps usually occur in close association with basin marsh communities. A complete survey of vegetative species occurrence on GRWMA has not been accomplished.

**Prairie Hammock** (195 acres)

Prairie hammocks occur on slight rises in relatively flat terrain. This community is characterized as a clump of tall cabbage palms and live oaks in the midst of prairie or marsh communities. These hammocks generally have a very open understory although saw palmetto typically rings the perimeter of these rounded clumps. Other typical plants include wax myrtle, water oak, stoppers, marlberry, pigeon plum, poison ivy, poisonwood, orchids, and wildflowers. Typical animals include box turtle, southeastern five-lined skink, black racer, and several species of shrews and rodents.

Prairie Hammocks may flood during extreme high water, but they are seldom inundated for more than 10 to 40 days each year. Oak and palm dominated Prairie Hammocks on drier sites tolerate occasional light ground fires, but more diverse hammocks rarely burn. Sites with heavy shrub layers are liable to be severely damaged by a canopy fire.

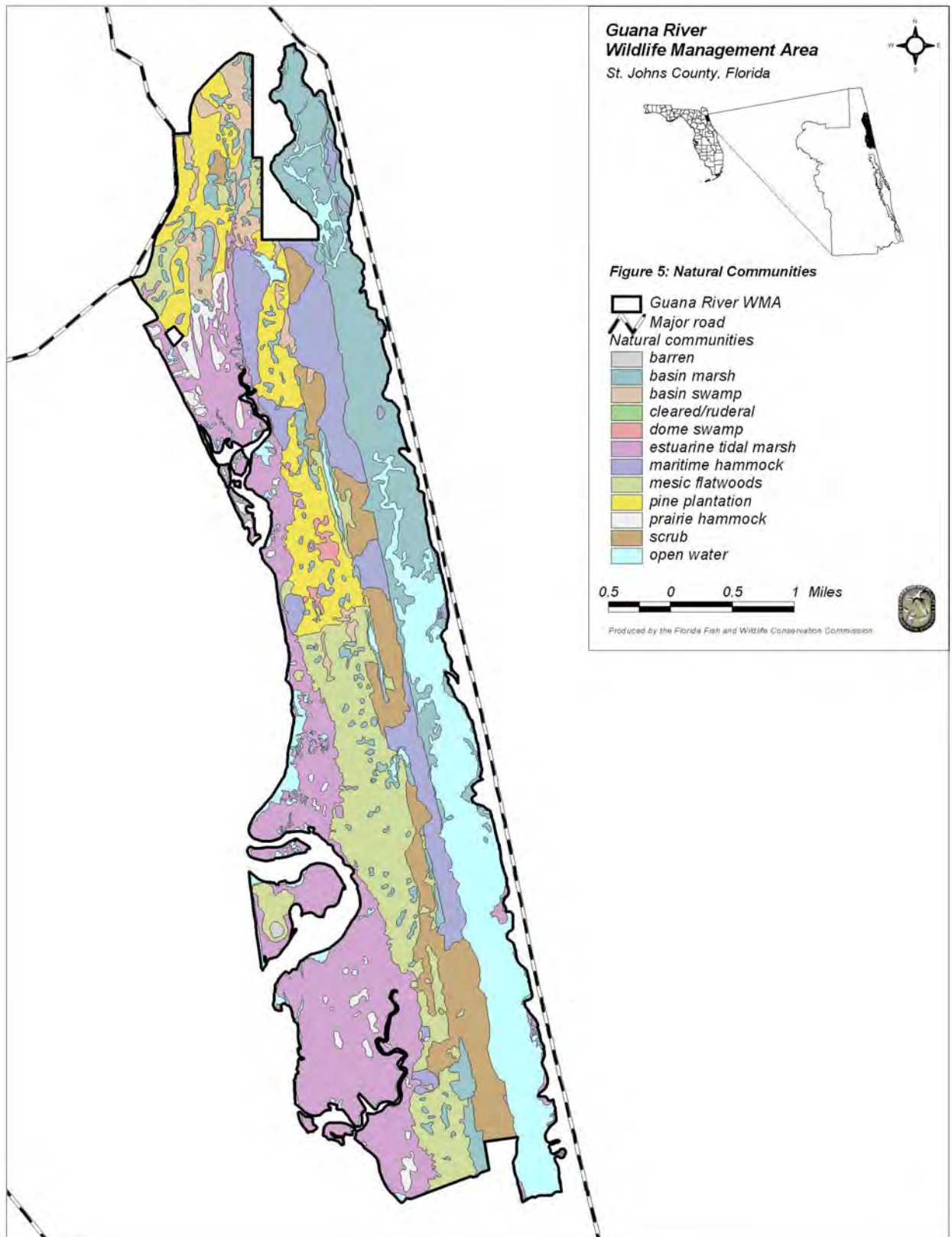


Figure 1. Natural communities on GRWMA

## Wildlife Resources

Active wildlife management practices combined with a diversity of natural communities make Guana River WMA an excellent place to view wildlife, especially birds. During April and October, especially with a west wind or after a cold front, this is the best place in northeast Florida to see peregrine falcons. Nearly 3000-4000 migratory ducks, American coots, common moorhens, common gallinules, and pied-billed grebes winter at Lake Ponte Vedra. White pelicans (January and February), ospreys, and bald eagles often fish at the impounded lake. When water levels are low, black-necked stilts, yellowlegs, dowitchers, and other shore birds are commonly observed at the lake's north end. At Big Savannah and other ponds, especially in May through September, visitors are likely to see many types of wading birds including wood storks, roseate spoonbills, and white and glossy ibis. Alligators are also commonly observed in the areas impoundments and ponds. The Guana Dam and the tower on Hammock Road are excellent spots to photograph and observe birds.



**Immature bald eagle**

## Scenic Resources

Scenic features include upland vegetation characteristic of mature maritime forest hammocks. Scenic views of pristine salt marsh and the Tolomato River, including its abundant tributaries, characterize the western boundary. Lake Ponte Vedra offers scenic views of open water, marshes and ecotones of upland maritime forest and coastal strand. Other wetland scenes include a view of inland freshwater impoundments and marshes, with several sites offering excellent wildlife viewing opportunities and scenic vistas. Some of these sites have been developed as scenic viewing areas with parking, boardwalks, viewing platforms, and interpretive signage.



**View from Capo Creek tower**

## Cultural Resources

Between 6000 and 4000 years ago, people began to inhabit the land between the Tolomato River and the Atlantic Ocean. These early inhabitants hunted deer and other animals, fished and collected shellfish, and deposited shells in middens. A large (100 meters in diameter and a

meter in elevation) shell ring consisting of oyster, clam, conch, and coquina is believed by some archeologists to be the remains of a circular village. The elevated area was used as house sites and the center was used for ceremonies. When Europeans arrived in the sixteenth century, they found Timucuan, the descendants of these earlier people, living in villages surrounded by fields of corn, beans, peas, and pumpkins.

Over 35 land grants were recorded for the land now within the Guana River WMA. Beginning in the 1770s, British Governor James Grant operated an indigo plantation on the southern tip of the peninsula. In 1781, another plantation was established to grow rice. Cattle and hogs were also raised on the land and sugarcane grown. A network of dikes, levees, and ditches were constructed as well as a rice and sugar mill.

When Florida was returned to Spain at the end of the Revolutionary War, the Guana Tract was largely abandoned until Minorcan immigrants began purchasing small tracts for farming. In the early 1900s, canals were dug along the northern portion of the Tolomato River for the northern expansion of the Atlantic Intracoastal Waterway. In the 1920s, real estate investors and developers began to consolidate these tracts in the hope of developing a residential community. Their plans ended with the Depression. A small herd of Spanish ponies inhabited the area until they were destroyed during efforts to eradicate Texas tick fever. An intense pine harvest began in the late 1930s and continued through the 1970s. Between 1931 and 1980, impoundments were constructed for waterfowl hunting. Guana Lake was created between 1957 and 1962 to increase and to enhance habitat for waterfowl by damming the river and installing water control structures.

In 1984, the land was purchased by the state through its Conservation and Recreation Lands (CARL) program, and Guana River State Park and Guana River Wildlife Management Area were established.

According to the GRWMA Conceptual Management Plan there are 13 recorded archaeological and historic sites on the area, including an archaic shell ring, a burial mound, and shell middens. The majority of these sites are located within the maritime forest hammock habitat. The subsequent discovery of additional sites is anticipated during future investigations, primarily in hammock habitats.

The Guana River Shell Ring (Master Site File # 8SJ2554) is the only Archaic (ca. 2500-1000 B.C.) shell ring reported in the State of Florida, and may be eligible for listing in the National Register of Historic Places.

There are 2 cemeteries located on the area.

### Resource Management

#### **Prescribed Fire**

A prescribed burning program has been implemented in pine plantations, pine flatwoods and selected marsh communities. Burn unit rotation provides an interspersed of burned and

unburned areas, thus increasing habitat diversity. Fire management will focus on maintenance of fire-dependent, sub-climax plant communities. Prescribed burning is used to reduce hazardous fuel accumulation and to increase species diversity and richness (fauna and flora). Prescribed burning enhances nutritive values of browse and herbs, and improves general habitat conditions for white-tailed deer, bobwhite quail, mourning doves, wild turkeys and many non-game species including raptors, songbirds, gopher tortoises and others. Burning also enhances aesthetic and scenic values by reducing dense vegetative growth.

Plant communities such as the maritime forest hammocks and estuarine salt marsh are not fire-dependent and are managed without fire. The scrub community is fire-dependent and is usually associated with intense crown fires. To improve wildlife habitat, overstocked pine stands are managed by thinning and periodic harvest. Understory vegetation is controlled by prescribed burning. Mechanical vegetation control (i.e., chopping or disking) is utilized where stand conditions or objectives preclude the use of fire.

In addition to prescribed fire, the scrub communities on the GRWMA are managed with mechanical treatments to rejuvenate and maintain early successional conditions. The goal is to maintain a diversity of seral stages to enhance habitat conditions for scrub endemic species.

Approximately 1,500 acres are burned yearly. The majority of burning is conducted between November and June.

### **Water Control on Area Impoundments**

Water level manipulations in Lake Ponte Vedra and interior impoundments increase food resource availability to fish, and many migratory and resident wildlife species. Of the 6,341 acres of natural and man-modified wetlands on GRWMA, 2,573 acres (41%) are managed impoundments. Lake Ponte Vedra accounts for 2,366 acres while interior impoundments total 207 acres. Interior impoundments include Big Savannah, Little Savannah, Booth's Pond, Cook's Pond, McNeil's Pond, and Diego Pond (Figure 2). All the impoundments are freshwater except for Diego Pond which is brackish.

Water management schedules follow the seasonal chronology of migratory wildlife and natural vegetation dynamics. Impoundments are flooded in fall for the benefit of waterfowl. Gradual water level reductions continue in January or February to increase resource availability to wading birds and shorebirds. Drawdowns and burning activities are conducted during late winter and early spring (January through April) at which time reflooding with saline water is conducted as prescribed.

Native plants are maintained on man-modified wetlands to produce high-quality wintering waterfowl habitat.

### **III. Interpretation**

#### Interpretive Themes

Interpretive themes are categorized as primary and secondary. Primary themes are critical concepts that we want visitors to remember after they have left GRWMA. Primary themes help set visitor experience goals and priorities and are considered in the design of amenities offered to nature-based recreationists. Secondary themes are important but are not as significant as primary themes.

#### **Primary Interpretive Themes**

The coastal physiography of the area, with the proximity of salt and fresh water habitats and diverse mix of upland and wetland communities, results in a great diversity and density of wildlife.

FWC biologists actively manage plant communities on Guana River WMA to benefit wildlife utilizing techniques such as prescribed fire, mechanical management and water level manipulation in impoundments.

#### **Secondary Interpretive Themes**

Coastal areas like GRWMA provide critical habitat to migrating bird species such as black-throated blue warblers, oven birds, and orchard orioles during the fall and spring migration

Humans have made a living from the area dating back 6,000 years to the present. [Human timeline – hunting gathering societies (middens), Native American agriculture (Timucuan); Colonial agriculture (rice); U.S. territory (Minorcan farming); 20<sup>th</sup> century (logging, impoundments created for hunting)]

#### Visitor Experience Goals

At GRWMA, the FWC will provide opportunities for visitors to:

1. Become oriented to and participate in a range of recreational activities on GRWMA and adjoining natural areas while:
  - becoming acquainted with wildlife and natural plant communities on the GRWMA and
  - understanding GRWMA's natural, cultural and commercial history, in context with the history and prehistory of Florida.
2. Learn information and stories associated with major interpretive themes, and other related information, through interpretive materials accompanying welcome kiosks, and hiking and biking trails, and wildlife viewing facilities.

3. Have an enjoyable recreational experience without impairing the natural and cultural values of the site. In terms of wildlife viewing, FWC's goal will be to facilitate positive, memorable experiences that keep wildlife disturbances to a minimum.

4. Understand the management role and goals of the FWC on GRWMA.

## **IV. Recreation Assessment**

### Existing Recreational Use and Facilities

A map which locates existing site features and facilities is provided in Figure 2. All photographs referenced in this report are located in Appendix 5: Inventory Photographs. A recreation stakeholder meeting was conducted in Ponte Vedra, Florida on August 25<sup>th</sup>, 2005 to solicit comments from a variety of user group representatives regarding recreation needs, issues, and concerns. Their comments are summarized in Appendix 6.

### **Entrances:**

Designated entrances into Guana River WMA are located at the south and north ends of the area and at the boat ramp located on the east boundary along A1A.

#### South Entrances

The primary entrance is located on the south side of the property approximately one mile west of U.S Highway A1A. The entrance road crosses the Lake Ponte Vedra Dam and is shared with the GTM Reserve – Guana River Property. Visitors to GRWMA must first pass through the newly renovated, gated GTM Reserve trailhead.

The GTM Reserve trailhead does not contain information about the Guana River WMA. The map in the kiosk shows the management area entrance but the focus is primarily on the GTM Reserve property. Visitors to the area would be well served if recreational opportunities for both the GTM Reserve and GRWMA were presented at this location. If this option is not feasible, the water control structure south facing wall is a possible location for posting orientation information.

From the GTM Reserve trailhead parking lot visitors can hike or bike approximately ¼ mile to the north on the entrance road to the Guana River WMA gate (Photo 1). At that point there is a primary entrance sign (Photo 2), a small kiosk with hunt maps and regulatory information (Photo 3), and a visitor sign in box. The hunter check station and equipment storage facility is located approximately ¼ mile north of the primary entrance (Appendix Photo 4). There is one large information kiosk (two 42" x 42" panels) and one small kiosk at this site (Appendix Photos 5 and 6). Both kiosks are in relatively good condition but are not consistent with kiosk styles in the ORS design handbook. Most of the information posted on these kiosks is hunting related.

Other entrances include two pedestrian gates in the fence separating GRWMA and the NERR property (Photo 7). None of the entrances from the NERR property have information to orient and inform visitors.

### North Entrances

The Roscoe Blvd. Entrance on the north side is a secondary entrance (Photo 8). Facilities include a large parking area to accommodate horse trailers (Photo 9), one information kiosk with two 42" x 42" panels on the front side (Photo 10), and a visitor sign in box. The information displayed on the kiosk includes a hunt map, regulations, and interpretive posters.

An approach sign at the intersection of Roscoe Blvd. and County Road 210 is needed to direct visitors to the Roscoe Blvd. entrance. It is recommended that FWC coordinate with the St. John's County Road Department or Florida Department of Transportation to get such a sign installed.

A service road entrance is located on County Road 210 (Photo 11).

### Six-mile Landing

Six-mile Landing, located on A1A (Photo 12 ), is also a designated GRWMA entrance and check station. Facilities include signage for fishing and waterfowl hunting regulations and a concrete boat ramp.

### **Vehicles**

Vehicles are allowed on the area during hunts and scouting. They may be operated only on named or numbered roads.

### **Hunting**

GRWMA is well known for waterfowl hunting. The hog, squirrel, and deer populations are also healthy. Hunting is limited to 12 weekends per year from October through January. A maximum of 100 quota hunt permits are issued for each of the major hunts (archery, muzzleloading, and general gun). A maximum of 75 permits are offered to hunters on a daily basis for the small game hunt days. A maximum of 100 permits are offered on Wednesdays and Saturdays for the migratory waterfowl hunts on Lake Ponte Vedra.

Hunting is allowed on GRWMA one half hour before sunrise until one half hour after sunset. The exception to this rule is for waterfowl hunting which is allowed one half hour before sunrise to noon.

Except for horseback riding, the area is open to hiking, biking, and paddling during hunting. GRWMA's few hunting days and relatively low numbers of hunters makes offering other types of recreation feasible, however due to the narrow configuration of the uplands on the area,

conflicts between hunters and non-hunters occasionally occur. These are mostly limited to roads and trails. A few conflicts between recreational paddlers and waterfowl hunters on Lake Ponte Vedra have been reported. Clearly communicating hunting days and hours at all entrances to the property is essential to minimize potential hunter/non-hunter conflicts.

### **Fishing**

Fishing is excellent at times for redfish, seatrout, croaker, and black drum. Visitors fish at the dam and along the banks of the Lake Ponte Vedra and the interior ponds and impoundments. Lake Ponte Vedra is also a popular spot for crabbing. Boat ramps are located at the Lake Ponte Vedra Dam at the south end of the property and off A1A at Six Mile Landing. Boat engines larger than 10 horsepower are prohibited on the lake. Boats may not be operated within 50 yards of the water control structure.

At those times when concentrations of game fish move through the water control structure spillway, the dam can be very crowded with anglers. Recently completed improvements to the dam use area by the GTM Reserve, include paved parking, paved boat ramps, and an ADA accessible ramp to the shore of the lake. The spatial separation provided by the improvements should help prevent potential conflicts between fishermen, crabbers, paddlers, and boaters.

Area staff receive many questions from visitors to the dam about the management of water levels in the lake and the kinds of fish that can be caught there. Presently, there is very little information posted to address these kinds of questions. The large blank concrete wall of the water control structure would be a good location for interpreting these topics. Similar interpretive panels should also be developed and installed at all boat ramps.

### **Wildlife Viewing and Nature Study**

Guana River WMA is one of the premier spots on the Great Florida Birding Trail. This undeveloped coastal habitat is critical for migratory songbirds in fall and spring migrations. During April and October, especially with a west wind or after a cold front, this is the best place in northeast Florida to see peregrine falcons. Three to four thousand migratory ducks, American coots, common moorhens, common gallinules, and pied-billed grebes winter at Lake Ponte Vedra. White pelicans (January and February), ospreys, and bald eagles often fish at the impounded lake.



Figure 2. Existing Features and Facilities on GRWMA

When water levels are low, black-necked stilts, yellowlegs, dowitchers, and other shore birds can be observed at the lake's north end. At Big Savannah and other ponds, especially in May through September, wood storks and white and glossy ibis are commonly seen.

### Viewing/Interpretive Sites

The Guana Dam (Photo 13) and the Lake Ponte Vedra observation tower (Photo 14) are excellent spots to photograph and observe birds. Other viewing facilities include a second observation tower on Capo Creek (overlooking salt marshes and the Tolomato River) (Photo 15) and an observation platform on the southwest corner of the Big Savannah impoundment (Photo 16). These facilities need better directions and way finding signs so visitors can more easily find them.

Interpretive facilities on GRWMD include one 2'x3' panel at each of the observation towers (Photo 17 and 18). One set of scrub interpretive panels on Hammock Road just north of the check station (Photo 19) and another set just north of the Lake Ponte Vedra observation tower. Located at the Big Savannah viewing platform is a large interpretive structure with many panels that describe some of the area's habitats and wildlife (Photo 20, 21, and 22). The small information kiosk at Booth's Pond contains a freshwater fish identification poster (Photo 23).

Most of the interpretive structures are generally in good shape although some minor repairs may be necessary. Interpretive panels will be revised and relocated if necessary to fit into the interpretive themes and visitor experience goals presented in Section III of this report. As kiosks reach the end of their useful lives, they should be replaced with standard FWC structures.

### Hiking

Visitor sign in sheets indicated that 463 hikers used the area during FY 03/04.

Miles of well-maintained woods roads, improved roads, and firelines on the area provide hikers with a wide variety of hiking opportunities. There are currently more than 8 miles of roads which are designated as hiking trails. Some of these lead to viewing facilities with magnificent marsh views (Figure 2). The trails are delineated on the area hunt map but are not marked on the ground for use by hikers, cyclists, and equestrians. Presently, the trails are not linked in a systematic way.

A system of nested loop trails would provide diverse hiking opportunities through multiple habitats to accommodate a variety of wildlife viewing, nature study, and interpretive experiences. Providing a series of loops of different lengths accommodate hikers with different interests and abilities. A loop system could easily be created using existing roads and trails. Opportunities for developing a loop system exist on both the north and south ends of the property. Such a system would need to be illustrated on a map for distribution at both entrances and well marked on the ground. The loop system

of trails should be designed as multi-use to accommodate bikers and horseback riders as well.

### **Biking**

Biking is permitted on most named and numbered roads, established trails, and fire lines. Off road bicycles are most appropriate on the unpaved roads and trails (Photo 24). Bikers would benefit from the creation of a well-marked loop system as described in the hiking section above.

One hundred and ninety three (193) bikers signed in during FY 03/04.

### **Horseback Riding**

Horseback riding is permitted on most named and numbered roads, established trails and firelanes. Horses are prohibited during archery, muzzleloading gun, general gun, and small game hunting seasons. Presently, equestrian users can enter the property at both entrances. The Roscoe Blvd. entrance has a large parking area to accommodate horse trailers. Horses are not allowed at the dam on weekends or holidays. The Florida Department of Environmental Protection may change their rules in the future to prohibit the parking of horse trailers on the dam at anytime.

One popular destination for riders is the Lake Ponte Vedra observation tower where area staff recently installed a hitching rail and mounting/dismounting station (Photo 25 and 26).

Approximately 300 - 400 riders are reported to use the area each year. Equestrian users would benefit from a well-marked loop system as described in the hiking section above.

### **Paddling**

Kayaking on Lake Ponte Vedra is very popular. The numbers of kayakers has increased dramatically in the last few years. Boat landings exist at the dam (Photo 27) and at Six Mile Landing on Hwy A1A. Recently, concessionaires have begun to provide boat rentals and tours between the two landings.



One popular destination for paddlers is the Lake Ponte Vedra observation tower though access to the tower from the water is quite difficult due to the soft bottom and marshy conditions (at left). The installation of a canoe/kayak dock at this destination would be a significant enhancement for area paddlers and it

would help prevent the destruction of shoreline vegetation.

One hundred and four (104) paddlers signed visitor sign in sheet in FY 03/04. Paddlers would benefit from maps posted at boat launches that depict paddling distances and points of interest.

### **Picnicking:**

Currently, there is only one site on the property with picnic facilities. Located on the north side of the property, the Jones Creek site has one picnic table with a beautiful view of the adjacent salt marsh (at right). To enhance the quality of the visitor experience, picnic tables should be installed at all destination sites on the area including the viewing platform on Big Savannah, the Capo Creek and Lake Ponte Vedra observation towers, the Booth's Pond boat launch on Hammock Road, and the north and south entrances. One table at each site should be adequate.



### **Camping:**

Camping is not permitted on GRWMA. Some illegal camping does occur along the Tolomato River.

### Appropriate Recreational Uses on GRWMA

Based on the interpretive themes developed for the area, the analysis of existing resources and uses, and the approved uses and activities as stated in the 2002-2007 Conceptual Management Plan, the following activities should be continued and enhanced on AWMA:

- Hunting
- Fishing
- Wildlife viewing
- Nature study
- Photography
- Hiking
- Horseback riding
- Biking
- Paddling
- Picnicking

## Recreation Management Zones

Recreation studies demonstrate that visitors come to recreate on public lands with many different expectations (NPS, 1997). Providing a variety of settings allows visitors to select the type of experience they desire, simplifies management and reduces conflicts between visitors who are seeking different types of experiences. The zones delineated by the planning team are provided on Figure 3 and 4: Conceptual Site Plan. Each zone is described in terms of the type of experience it offers, the natural resources related to the experience and the level of management required.

### **Semi-primitive Zone**

The semi-primitive zone provides a sense of being immersed in a natural landscape with opportunities for solitude. Observation structures, boardwalks, interpretative signs, and unpaved trails are the types of recreational facilities that are appropriate in this zone. A moderate level of management is provided for resource protection and safety.

Within the semi-primitive zone on GRWMA, visitors will experience the major community types including maritime forest, scrub, flatwoods, basin marsh, and salt marsh. Here they can learn about the complex relationship of upland and wetland communities in providing critical habitat to many species of wildlife.

The majority of GRWMA is categorized as semi-primitive.

### **Developed Zone**

The developed zone is an area with visitor facilities such as parking, picnicking and toilets. The visitor's experience in this zone is highly social. Trails may be paved or hardened for access by people with disabilities. Visitors and facilities are intensively managed in this zone for resource protection and safety purposes. The most intensive interpretation is provided in the developed zone. This is the most appropriate zone for building construction.

There are two developed zones on GRWMA, one on the south side with the primary entrance, the check station, and the interpretive center on Savannah Pond and the other being the Roscoe Blvd. entrance area on the north side.

### **Sensitive Resource Protection Zone**

Sensitive resource protection zones encompass areas with fragile habitats, rare and endangered species, archaeological/historical sites, and steep slopes. This zone can support little visitor impact. Only limited and strictly controlled access should be allowed for interpretation purposes.

The sensitive zones on GRWMA are areas around wetland communities, bird rookeries, bald eagle nesting sites, and the shell ring site on Hammock Road.

## V. Recreation Prescriptions

### Proposed Visitor Experiences and Recreation Facilities

The following narrative describes the overall experience that is intended for visitors to GRWMA. A conceptual site plan for proposed recreation facilities is provided in Figure 3.

When visitors arrive at either entrance they can stop at an information kiosk to review a large map and learn about all of the recreational opportunities available on the area, including hiking, biking, horseback riding, paddling, and wildlife viewing opportunities. Area bird lists and recreational guides will also be located on this kiosk.

From the primary entrance on the south side, visitors can travel a short distance to the Big Savannah viewing platform and interpretive display. Here, depending on the season, they can observe a variety of waterfowl and wading birds feeding in the shallow waters of the impoundment. At the interpretive display, they can learn about the area's coastal physiography and the unique blend of plant communities and the wildlife that depend on them. Another feature of interpretation is the area impoundments and how they are managed for the benefit of wildlife.

From Big Savannah, visitors can travel north for approximately 1 ¼ miles through a stretch of flatwoods to the observation tower on Capo Creek. Here they can experience expansive views of salt marshes and tidal creeks. Interpretive panels on the tower will provide information about these dynamic habitats and the fish and wildlife that live here. Visitors can get an up close experience of a tidal creek as they rest on the boardwalk benches. Here, they can see armies of fiddler crabs marching through spartina grass at low tide or catch a glimpse of a wily red fish as it streaks through at high tide in search of a meal.

From the Capo Creek tower, visitors can choose to return, via a short loop between Big Savannah and Little Savannah, to the entrance or they can hike further north through an interesting strip of Florida's ancient scrub. Hikers may decide to rest awhile at a shady picnic site on Booth's Pond. Here they might throw in a fishing line to catch some bream or large-mouth bass. From the Lake Ponte Vedra observation tower, less than ¼ mile north of Booth's Pond, visitors can experience good birding and rewarding views of the lake and a long, unbroken stretch of the natural coastal dunes system. A canoe/kayak dock at the tower provides easy access for Lake Ponte Vedra paddlers who can enter the lake from the Six Mile Landing or from a boat ramp at the dam.

From the tower, visitors can head back to the entrance on the shady Hammock Road much of which runs through a beautiful canopy of maritime forest.

A similar experience can be achieved from the north entrance on Roscoe Blvd.. Visitors can travel on series of loop trails of increasing length through maritime forest and scrub with occasional spurs to the shore of Lake Ponte Vedra.

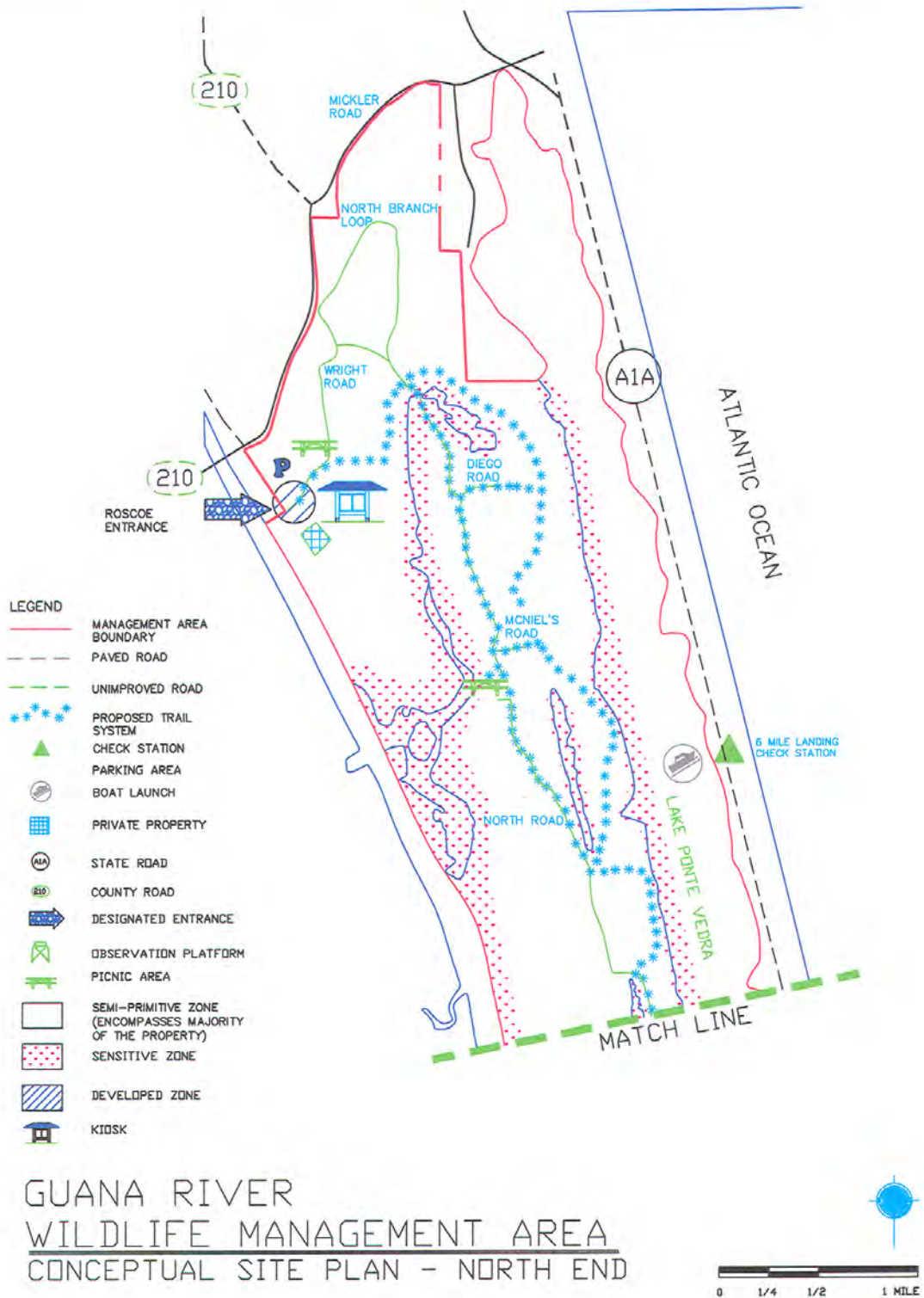
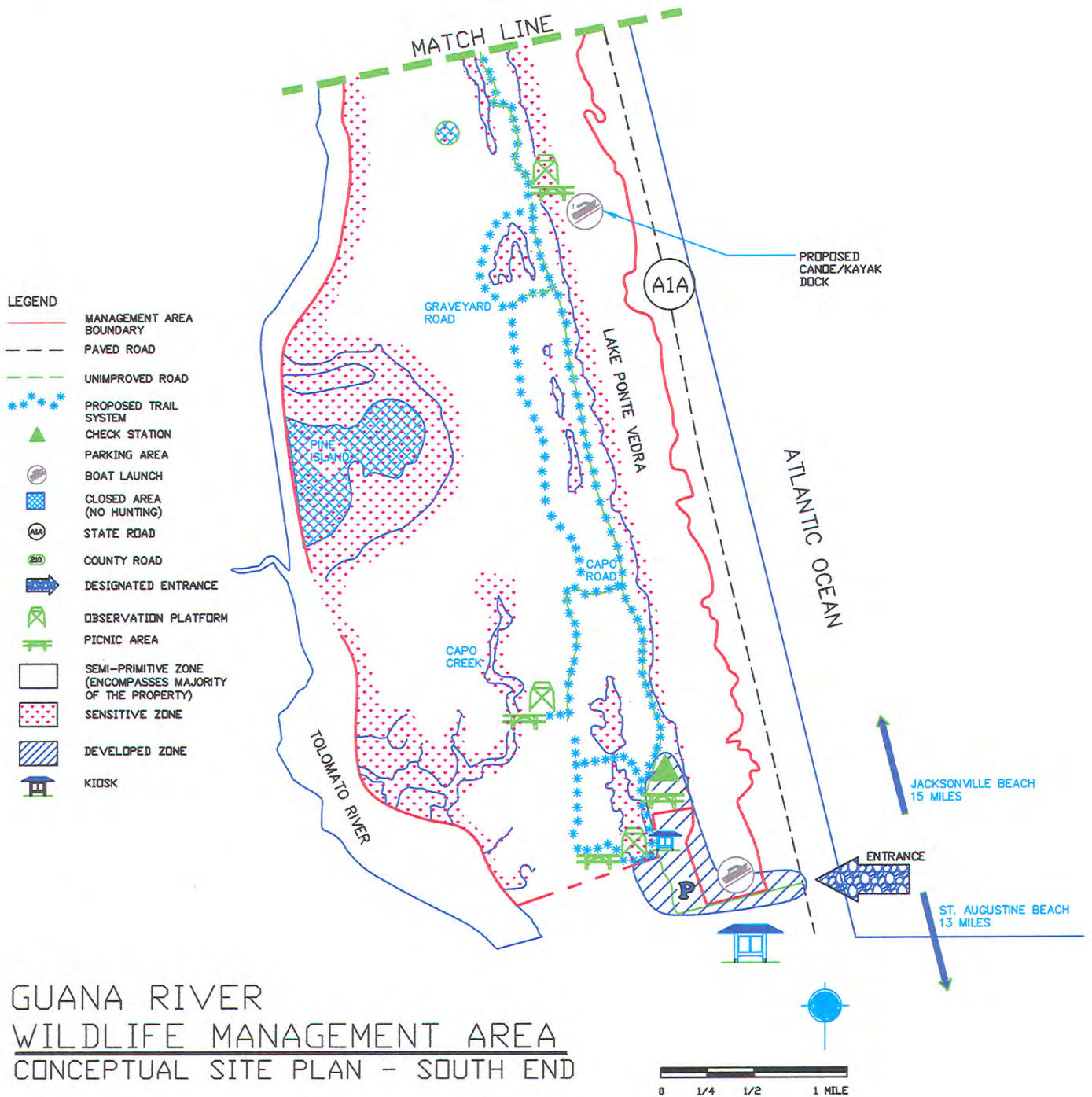


Figure 3. GRWMA Conceptual Site Plan – North End.



GUANA RIVER  
 WILDLIFE MANAGEMENT AREA  
 CONCEPTUAL SITE PLAN - SOUTH END

Figure 4. GRWMA Conceptual Site Plan – South End

## Recommended Nature-Based Recreation Goals and Objectives

Careful design and placement of recreational facilities can provide suitable visitor experiences and minimize impacts to the natural and cultural history of the area. All planning and implementation should be done in accordance with guidelines in Appendix 1. A conceptual site plan for proposed recreation facilities is provided in Figure 3.

### **Goal A. Orient visitors to the area and its recreation opportunities and provide interpretive information**

1. Develop and install new wayfinding signs at appropriate locations (as described in the Sign Plan, Appendix 3).
2. Install interpretive panels on the water control structure at the dam to orient visitors to the area, provide information about recreational opportunities (especially fishing, paddling and birding related activities) and explain FWC's management of the impoundment.
3. Improve the existing entrance kiosk at the Roscoe Blvd. entrance by installing interpretive panels and maps to establish the significance of the area, invite users in and orient them to the available recreational opportunities.
4. Explore the possibility for sharing the new NERR trailhead and providing GRWMA maps and interpretive information at their kiosk. If this is not possible, install a new information kiosks at south entrance with an area map and interpretive information.
5. Replace existing interpretive panels at viewing facilities with new panels that support interpretive themes.
6. Develop area recreation guide with a high quality map and information about available recreation opportunities.
7. Stock area recreation guide and bird list in brochure racks at entrance kiosks.
8. Maintain up-to-date information about the area on the FWC website.

### **Goal B: Design and Implement a Comprehensive Trail System for Hikers, Cyclists and Equestrians**

1. Redesign the trail system to enhance wildlife viewing opportunities and the overall interpretive program. Reroute existing trails to establish multi-use nested loops that reinforce interpretive concepts and provide trail opportunities from the north and south entrances.

2. Create spur trails from the main loop trails as necessary to features of interest.
3. Focus loops in the northern portion of the property on the maritime forest, scrub and basin marsh communities.
4. Focus loops in the southern portion of the property on the impoundments, flatwoods, scrub and maritime forests and the existing interpretive and viewing facilities.
5. Install kiosks with maps at south pedestrian entrance and if using the GTM Reserve trailhead facility is not feasible, build an entrance kiosk at the southern primary entrance.
6. Install trailside benches on loop trails (where appropriate) to enhance the hiking experience.

**Goal C. Renovate and provide new facilities to enhance recreation opportunities**

1. Make repairs and improvements to the observation towers as specified in the March 2004 engineering report. Repair railings at Big Savannah observation structure.
2. Construct a canoe/kayak dock at the Lake Ponte Vedra observation tower to accommodate area paddlers.
3. Install picnic tables at the north and south entrances, Big Savannah, Capo Creek tower, Lake Ponte Vedra tower, and Booth's Pond.
4. Install two benches on the boardwalk to the Capo Road observation tower.
5. Determine the feasibility of installing bike racks and hitching posts at destination points along the trails as appropriate.
6. Determine the feasibility of adding gates to secure the equestrian parking area at the Roscoe Blvd. entrance.
7. Construct a wildlife viewing blind on Diego Pond.

**Goal D: Direct and manage recreational use to minimize negative resource impacts and maximize visitor satisfaction**

1. Route trails away from sensitive zones and utilize trail structures to prevent soil damage in seasonally wet areas.
2. Use strategically placed signs, trail markers and high quality maps to assist visitors in navigating the area.

3. Implement a monitoring strategy to assess resource impacts and institute corrective management actions if indicators begin to approach standards.
4. Collect and evaluate information about visitor use and satisfaction:
  - Number of visitors to the area and patterns of visitation
  - User group conflicts
  - Origin and length of stay
  - Motivations for visiting and preferred experiences
  - What they already know about the area, and primary interpretive themes

**Goal E. Coordinate recreation activities with local, regional, state and federal agencies and organizations**

1. Communicate regularly with the local Tourist Development Council to ensure responsible and accurate promotion of nature-based recreation opportunities.
2. Communicate with the Guana-Tolomato-Matanzas Reserve to coordinate recreational opportunities and information for the benefit of area visitors.
3. Develop and maintain relationships with recreational user groups and encourage them to be involved in designing, developing, monitoring and maintaining recreation amenities and offering recreation or interpretive programs on the area.

## **B. Challenges and Strategies**

There are several challenges facing the effective implementation and management of nature-based recreation opportunities on the GRWMA. Challenges and proposed strategies to address them are discussed in this section.

### Challenges:

- Separating recreational uses is difficult given the narrow layout of the area.
- As recreational uses expand in scope and increase in volume, resource impacts may occur. Sensitive plant communities, wildlife habitats, and archaeological sites could be adversely affected from soil disturbances resulting from inappropriate hiking and biking activities.
- As recreational uses expand in scope and increase in volume conflicts among user groups may occur.
- The DEP has expressed a desire to close the south entrance to hunters. If this does occur the north entrance may need to be moved or expanded and redesigned to

accommodate more vehicle traffic. Neighbors at the north entrance may object to additional vehicle traffic.

- St. Johns County is seeking to widen Mickler Road along the northern boundary of the area. This widening will require developing several retention ponds along the border and will affect the interior road/trail system.

#### Strategies:

- Recreational use will be directed away from sensitive environments to the greatest degree possible. Environmental protection information will be provided in all interpretive materials. Recreational use will be monitored for environmental impacts and corrective actions will be implemented when and where necessary.
- A range of recreational opportunities will be provided in a variety of settings to allow users to disperse and avoid conflicts as much as possible.
- All entrances will have information posted to advise hikers, bikers, and horseback riders of hunting activity. Recreation guides will advise recreators who want to visit the area during hunts to stay on main roads and to use the area during the middle of the day to avoid disturbing hunters.
- All promotional materials will seek to differentiate the Guana River WMA from the GTM Reserve property and will accurately describe the mission of Guana River WMA and the type of experiences offered.
- The Roscoe Blvd. entrance and northern trail loops will be redesigned as necessary to accommodate increased vehicle traffic if hunter entrance is moved to the north.
- Work with St. Johns County and developer to maximize recreational amenities if road widening project must be accommodated.

### **C. Work Plans**

As annual work plans and budgets are developed for GRWMA, Recreation Services staff will provide cost estimates for developing nature-based recreation related construction and estimates of hours required for tasks such as trail maintenance. Recreation Services staff will be responsible for producing interpretive materials for the areas and for coordinating the design and construction of any recreational structures built on the area in cooperation with area staff.

### **D. Monitoring and Management of Recreation Facilities**

Measurable indicators for monitoring key aspects of the visitor's experience and resources at GRWMA are described in Appendix 2. Standards represent the point at which visitor experience and resource conditions become unacceptable. Indicators should be monitored for

each zone, and when necessary, management actions taken to ensure that visitor use and resource impacts remain within the established standards.

## References

Florida Fish and Wildlife Conservation Commission. 2001. A Conceptual Management Plan for Guana River Wildlife Management Area (2002-2007).

National Park Service. 1997. The Visitor Experience and Resource Protection (VERP) Framework: A Handbook for Planners and Managers.

# Appendix 1

## Recreation and Wildlife Viewing Facilities Design Guidelines

- **Entrances**  
Should welcome visitors to the area, identify the Commission, describe the range of potential experiences on the area, describe the wildlife viewing experiences by season, time of day or wildlife event.
- **Viewing structures**  
Structures should include wildlife identification or other interpretive information. The structure should be surrounded by and focused on wildlife and habitat, rather than being the focus itself. For towers, each level should focus visitor attention to a different habitat or feature.
- **Trails**  
Trails should be described at the trailhead with length or time required. If the focus is wildlife viewing include best seasons. Interpretive panels or brochure stops should be well-spaced and focused by season and should not exceed ½ to ¾ of a mile.

General considerations in developing facilities:

- Locate viewing facilities on previously disturbed properties wherever possible.
- Preserve a sense of solitude and limit impact on natural resources by concentrating recreation uses in small “developed” zones and along existing road/trail corridors.
- Site facilities and design trails to minimize user conflicts.
- Avoid sensitive areas such as wetlands and route trails to avoid fragmenting habitat.
- Consider physical characteristics and the historical and natural character of the location.
- Adapt parking lots, buildings, and other physical developments to existing topography.
- Retain on-site surface water run-off generated by development.
- Use porous pavements where surface hardening is required.
- Consider sewage disposal needs.
- Use native plants representative of the area for all landscaping.
- Design and build trails and observation structures to avoid disturbing wildlife and to minimize negative impacts such as erosion.
- Use elevated boardwalks in wet areas and swamps and walkovers to protect other sensitive areas.
- Incorporate wildlife viewing ethics into all interpretive materials.
- Incorporate interpretive themes into all brochures, trail guides and other materials produced to support recreation opportunities.
- Install interpretive signs and panels as appropriate at all recreation facilities.
- Route trails to interpret restoration and wildlife management activities.
- Insure interpretation of highly desired species viewable on the area.

## Universal Access

Nature-based recreation facilities and programs must be developed and implemented in compliance with the Americans with Disabilities Act. All facilities in developed zones should be universally accessible. Recreation facilities in semi-primitive or primitive zones should be planned to be accessible to the degree possible except where:

- compliance will cause harm to cultural, historic or religious sites or significant natural features or characteristics
- compliance will substantially alter the nature of the setting or purpose of the facility or portion of the facility
- compliance would require construction methods or materials prohibited by federal, state or local regulations or statutes, or compliance would not be feasible due to terrain or prevailing construction practices.

## Appendix 2

### Management and Monitoring

#### Provisional Resource Indicators and Standards

These indicators and standards are provisional and should be tested to ensure they are feasible to monitor and provide useful data. They should be revised as necessary after field-testing and then maintained. Indicators measure both resource and social conditions and should be measured annually. If indicators show that conditions are approaching or exceeding a standard, monitoring frequency may need to be increased to determine if corrective management actions are having the desired effect.

#### Social Indicators and Standards:

ZONE	INDICATORS	STANDARDS
Upland Mixed Use Trail	Conflicts between different groups	No conflicts
	Number of groups encountered per day	1 group of 2 to 4
Developed (wildlife viewing facilities, picnic areas)	People at one time (PAOT) per zone	3 – 4 groups of 3 each
	Parking congestion	Parking area at 75% capacity
Sensitive Resource Protection Zone	PAOT	0

#### Resource Indicators and Standards:

- Trail Widening
- Density of Social (unofficial) Trails
- Road Widening
- Ground Cover (percent cover)
- Frequency of Litter

**Trail Width** – Some variance in tread width is acceptable and even preferred. But, if sections of the trail seem to be widening due to use (such as hikers cutting corners, avoiding unfavorable tread, etc) document existing and potential problem areas and specify exact location so immediate corrective action can be taken.

Trail type	Tread Width (m)	Cleared Width (m)	Grade	Height (m)
Hiking Trails	0.6	1.2	Max. 10%	2.1
Biking	Desirable 2.4 Min. 1.5	Same	Max. 8%	2.1

Source: National Recreation and Park Association

- 1 = width is at standard
- 2 = width exceeds standard in a few spots
- 3 = trail widening and social trail observed in numerous areas

**Erosion** – Observers should visually estimate erosion based on the following criteria:

- 1 = Very Little
- 2 = Some: Tree roots or standing water evident
- 3 = Moderate: Exposed trees or rocks but little evidence of widening, some exposed soil
- 4 = Extensive: Tree roots exposed and damaged. Many exposed patches of soil. On trails, ruts formed and evidence of widening
- 5 = Very Extensive: Eroded to substrate or tree roots severely damaged. On trails, ruts

significant and significant evidence of widening. Extensive stretches of exposed soil.

**Litter** – Observers should estimate the amount of litter collected along trails or in developed areas based on the following criteria:

- 1 = None
- 2 = Very Little, <5 pieces.
- 3 = Some, 5 – 10 pieces
- 4 = Extensive, 10 – 15 pieces
- 5 = Very Extensive, 15 + pieces

**Sanitation** – To determine the need for toilet facilities, note the amount of litter associated with human waste.

## Monitoring

Resource and visitor data should be regularly collected in a consistent manner to determine if standards are being exceeded. This task should be incorporated into the work plan for the area. Monitoring data can demonstrate if visitor use is exceeding capacity and will support decisions to limit recreational access if necessary.

An initial survey should be conducted to serve as a baseline and monitoring should be conducted annually. Traffic counters can be installed as desired to generate data on vehicles entering the area. Photos stations should be set and photos taken each time the area is monitored.

## **Trail Maintenance**

Conditions should be inspected approximately once every 3 months. Ideally, volunteers can assist in checking trails and document litter, erosion, and trail widening, vandalism, trail obstructions, wet conditions and informal trails. A logbook may be placed near the trail for users to document any experiences on the trail, including species seen, obstructions or hazards, signage problems and general comments.

**Example Monitoring Form**

**Observer:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Site:** \_\_\_\_\_

**Litter Rank (circle one):**

- |                                 |                               |
|---------------------------------|-------------------------------|
| 1 = None                        | 2 = Very Little, < 5 pieces.  |
| 3 = Some, 5 – 10 pieces         | 4 = Extensive, 10 – 15 pieces |
| 5 = Very Extensive, 15 + pieces |                               |

**Comments:**

**Were there any erosion problems? Please note the exact location and rank according to following criteria:**

- 1 = Very Little
- 2 = Some: Tree roots or standing water evident
- 3 = Moderate: Exposed roots/rocks but little evidence of widening, some patches of exposed soil.
- 4 = Extensive: Many tree roots exposed, many spots of exposed soil, ruts and/or trail widening.

**Comments:**

**The hiking trail should be between about 3 and 4 feet wide. Please rank overall trail width.**

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1 = 3 ft. (OK)                  | 2 = 4 ft. (just about “normal”) |
| 3 = 5 ft. (exceeding standards) | 4 = 6 ft. (unacceptable)        |

**If there were problem areas, please describe condition and exact location:**

**How many other groups of hikers did you encounter along the trail? How many vehicles were in the parking lot?**

\_\_\_\_groups \_\_\_\_approx. # in the group \_\_\_\_\_vehicle in parking area

# **Appendix 3**

## **Guana River WMA Sign Plan**

### **Draft**

This sign plan contains locations for both wayfinding (directional) signs and interpretive panels. Wayfinding signs where they exist on the area are wooden, routed signs. It is suggested that these be replaced with aluminum or recycled plastic signs for a consistent look throughout the WMA system.

U.S A1A/Entrance Road – N/A

Water Control Structure – interpretive panel(s)

Southern entrance – medium kiosk (8' wide) with orientation and interpretive panels

Big Savannah interpretive facility – (3) 48" x 18" interpretive panels over existing angle boxes in shelter

Capo Creek Tower – (3) 30" x 9" interpretive panels – one on each tier of tower

Booth's Pond – (1) interpretive panel in existing kiosk

Lake Ponte Vedra Tower – (3) 30" x 9" interpretive panels – one on each tier of tower

Roscoe Blvd./CR 210 intersection – (1) DOT highway wayfinding sign

Roscoe Blvd. entrance – (2) 42" x 42" interpretive/orientation panels in existing kiosk

Install aluminum road signs – Hammock Road, Capo Road, Graveyard Road, North Road, McNeil's Road, Diego Road, Wright Road

## **Appendix 4**

### **Work Plan for Nature-Based Recreation Enhancements**

Based on the prioritization of the goals and objectives listed above, the following list of projects and tasks has been ordered in terms of short and long term completion timeframes.

#### **1. Tasks 2005-06**

- Install new wayfinding signs on area road system.
- Redesign the trail system and establish trailheads.
- Construct kiosks and install interpretive and informational signs.
- Develop area brochure with high quality map and information about available recreation opportunities.
- Install additional picnic tables.
- Install trailside benches
- Design canoe/kayak dock at the Lake Ponte Vedra tower.
- Construct two benches on Capo Creek boardwalk.

#### **2. Long Term Completion and Ongoing Tasks**

- Implement a monitoring strategy to assess resource impacts and institute corrective management actions if indicators begin to approach standards.
- Collect and evaluate information about visitor use and satisfaction.
- Permit and construct canoe/kayak dock at Lake Ponte Vedra tower (if funded).

## Appendix 5

### Inventory Photographs



Photo 1. Primary entrance into GRWMA on south side



Photo 3. Information kiosk at primary entrance



Photo 4. Check station



Photo 5. Large information kiosk at check station



Photo 6. Small information kiosk at check station



Photo 7. Pedestrian gate between GRWMA and the GTM Reserve



Photo 8. Secondary entrance on Roscoe Rd.



Photo 9. Equestrian parking area at the Roscoe Rd. entrance



Photo 10. Information kiosk at Roscoe Rd entrance



Photo 11. Gated service road on CR 210



Photo 12. Six Mile Landing on U.S. Highway A1A



Photo 13. Northerly view from Lake Ponte Vedra dam



Photo 14. Observation tower on Lake Ponte Vedra



Photo 15. Observation tower on Capo Creek



Photo 16. Viewing platform on Big Savannah



Photo 17. Interpretive panel at Lk. Ponte Vedra tower



Photo 18. Interpretive panel at Capo Creek tower



Photo 19. Scrub interpretive panels



Photo 20. Interpretive shelter at Big Savannah



Photo 21. Interpretive panels at Big Savannah



Photo 22. Interpretive panels at Big Savannah



Photo 23. Kiosk at Booth's Pond



Photo 24. Off-road cyclist taking a break at Booth's Pond



Photo 25. Equestrian mounting station at Lk. Ponte Vedra tower



Photo 26. Hitching rail at Lk. Ponte Vedra tower



Photo 27. Boat ramp at Lk. Ponte Vedra dam

## Appendix VI

### Comments from the Guana River WMA Recreation Stakeholder Meeting Ponte Vedra Public Library 8/25/2005

Michael Haney, Hunter, United Waterfowlers of Florida  
Paula Snellgrove, Hiker, Florida Trail Chapter Chair  
Kim Frawley, Off-road cyclist, Suwannee Bike Association  
Forrest Penny, GTMNERR  
John Veal, Waterfowl hunter  
Alex Limbaugh, Hunter/angler  
Robert Burks, Paddling outfitter, Gecko Latitudes  
Marcy Silkebaken, adjacent homeowner  
Roger Van Ghent, Birder, Audubon Society representative  
Ken Berk, GTMNERR  
Mark Middlebrook, LAMP Board, Consultant for land acquisition  
Sue Burdan, Equestrian, St. John's Co. Horse Council  
Pam Murphy, Equestrian  
Sarah W. Bailey, LAMP Board, Florida Wildlife Federation

The Guana River WMA Recreation Stakeholder Meeting was held in the Ponte Vedra Public Library with 13 stakeholders as listed above representing a variety of interest groups. A synopsis of concerns, comments, and issues raised by those present is summarized below and coded as follows:

- **Will be incorporated into the 2005 plan and implemented.**
- **Will be considered for implementation in future plans.**
- **Outside the scope of this plan.**

#### Signage Comments:

Post public hunting calendars at visitor contact points.

Develop more kiosks to inform public about the interrelationships between animals and ecosystem and the economic benefits provided by conservation lands.

Provide more highway, entrance and boundary signs to improve public knowledge about the area and improve perception that it is 'just another pine plantation'.

### **Boating / Fishing Comments:**

Develop boat launch at Mickler Road. Possibly acquire 'Oar House' property that is currently for sale.

Install a dock or some sort of public access near Jenk's Landing – a scenic point and ideal fishing location.

Develop the launch a 6 Mile Landing area. Clear cattails along shoreline to improve access for paddlers.

Improve bank fishing conditions at Booth's Pond.

Allow more auto access days for anglers.

Differentiate in the rules between outboard motors and 'mud motors' or 'go-devils'. Allow higher horsepower mud motors / go-devils than on outboards.

Develop paddling guide that describes the different vegetative patterns and changes as visible from the water.

### **Hunting Comments:**

Improve waterfowl habitat at north end of Lake Ponte Vedra and area near 6 Mile Landing to encourage duck hunters to disperse to different areas of the lake during duck season.

Add several hours per-day, during waterfowl hunting season, for hunters to scout in the afternoon following the close of the morning hunting session.

Consider an alligator harvest. Many duck hunters expressed concerns over the numbers and tenacity of the alligators on Lake Ponte Vedra. Some cited cases where alligators have taken shot fowl before the hunters could get to them.

### **Recreation Comments:**

Consider providing more vehicle access days or provide a golf cart concession for rental to visitors as it is difficult for some birders (and others) to walk more than 2-2.5 miles from the trailheads on a given outing.

Install more benches along trails for the benefit of all hikers/wildlife watchers (especially elder visitors).

Develop a containment area (fence) and improve the parking area surface at the equestrian parking area on the north side.

Develop and implement an equitable WMA user fee. All users should pay the same.

Post trail etiquette information at entrance kiosks. Concerns were expressed over multi-use trails (hikers sharing same pathways with bikers and equestrians).

**Public Education / Relations Comments:**

The Guana WMA is not known by many locals as a managed area for habitat and species conservation. Explain that area is there for hunters, anglers and wildlife watcher for today and tomorrow. It is NOT a park. Neighbors should not be surprised by the presence of hunters.

Further clarify to local planners and regional governments that the 9,000 acres that is Guana, is not all dry land (approximately half of the property consists of wetlands).

Organize and implement a Citizen's Support Organization for the WMA.

Develop ways for the public to interact with and help the WMA. Build connections with local educational and civic groups to foster a connection to the landscape. Offer an annual open house and fishing days or kids fishing days.

**Other Comments:**

Implement a recreational use 'carrying capacity' study for the WMA.

Improve access at north end of the property.

FWC and Guana WMA staff should consider participating in the 'A1A Scenic Highway Master Plan' process.

Install a restroom at 6 Mile Landing.

Concerns over fees imposed by FWC and DEP at the new DEP gate and concerns over nighttime access to the WMA after the DEP gate closes at night. Work out an equitable system with DEP for entrance fees/passes.