



# Guana Tolomato Matanzas National Estuarine Research Reserve

Management Plan • July 2009 - June 2014  
*Executive Summary*



Florida Department of Environmental Protection  
Coastal and Aquatic Managed Areas  
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# Executive Summary

In 1999, the Guana Tolomato Matanzas National Estuarine Research Reserve (GTM Research Reserve) was designated in St. Johns and Flagler counties, Florida as a part of the National Oceanic and Atmospheric Administration (NOAA) National Estuarine Research Reserve (NERR) system because of its outstanding representation of the east Florida sub-region of the Carolinian bioregion and its unique combination of natural and cultural resources. The hallmark of the NERR program is that each reserve's management efforts are in direct response to, and designed for unique local and regional issues. The purpose of this plan is to incorporate, evaluate, and prioritize all relevant information about the GTM Research Reserve into management strategies, allowing for compatible public access to the managed areas while sustaining the long-term quality of its ecosystems and cultural resources.

This management plan is an update to the previous five-year GTM Research Reserve plan approved on November 10, 1998. In addition to the existing NERR plan, both aquatic preserves managed by the GTM Research Reserve previously had individual management plans. The Guana River Marsh Aquatic Preserve (GRMAP) management plan was approved December 17, 1991 and the Pellicer Creek Aquatic Preserve (PCAP) management plan was approved July 9, 1991. Uplands along the Guana River that are currently managed as part of the GTM Research Reserve were previously managed as the Guana River State Park (management plan approved March 26, 1999). The inclusive management of these sites as the GTM Research Reserve represents a significant enhancement of the purpose of the property as a platform for research and education.

A species list recently compiled for the GRMAP indicates the presence of at least 44 mammal, 358 bird, 41 reptile, 21 amphibian, 303 fish, and 580 plant species. Many more species are expected to occur in the entire GTM Research Reserve. These habitats are essential to many protected species (eight plants and forty-eight animals) including the Anastasia Island beach mouse (*Peromyscus polionotus phasma*), gopher tortoise (*Gopherus polyphemus*), least tern (*Sterna antillarum*), marine turtles: loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and green turtle (*Chelonia mydas*), and North Atlantic right whale (*Eubalaena glacialis*). In addition, the striped newt (*Notopthalmus perstriatus*), one of Florida's rarest vertebrate species, occurs within the GTM Research Reserve. Some of the many rare listed birds of the GTM Research Reserve include: great egret (*Ardea alba*), white ibis (*Eudocimus albus*), black-crowned night heron (*Nycticorax nycticorax*), least tern (*Sterna antillarum*), bald eagle (*Haliaeetus leucocephalus*), tricolored heron (*Egretta tricolor*), wood stork (*Mycteria americana*) and roseate spoonbill (*Ajaia ajaja*). The rare Atlantic geoduck (*Panopea bitruncata*) has also been recorded in the GTM Research Reserve. With this plan the GTM Research Reserve will continue to expand its role to facilitate and conduct research and monitoring, stewardship and education strategies designed to enhance our ability to monitor the condition of these species and to conserve their habitats.

Many species of commercial value are also known to use the GTM Research Reserve's estuaries for all or part of their life cycle. These species include oysters (*Crassostrea virginica*), quahog clams (*Mercenaria spp.*), blue crabs (*Callinectes sapidus*), stone crabs (*Menippe mercenaria*), white shrimp (*Penaeus setiferus*), brown shrimp (*Penaeus aztecus*), striped and white mullet (*Mugil cephalus* and *M. curema*), gag grouper (*Myctoperca microlepis*), black sea bass (*Centropristis striata*), gray snapper (*Lutjanus griseus*), lane snapper (*L. synagris*), flounder (*Paralichthys lethostigma* and *P. dentatus*), bluefish (*Pomatomus saltatrix*), menhaden (*Brevoortia tyrannus*) and thread herring (*Opisthonema oglinum*). Management strategies to conserve and restore natural habitats supporting sustainable populations of these species are an important management priority for the GTM Research Reserve.

Recreationally valuable species provide a valuable economic incentive for long-term conservation of the GTM Research Reserve's natural resources. Species important to the local sports fishery that are found in the GTM Research Reserve include tarpon (*Tarpon atlanticus*), spotted sea trout (*Cynoscion nebulosus*), weakfish (*C. regalis*), snook (*Centropomus undecimalis*), red drum (*Sciaenops ocellata*), black drum (*Pogonias cromis*), spot (*Leiostomous xanthurus*), croaker (*Micropogon undulatus*), sheepshead (*Archosargus probatocephalus*), crevalle jack (*Carynx hippos*), gag grouper (*Myctoperca microlepis*), black sea bass (*Centropristis striata*), gray snapper (*Lutjanus griseus*), lane snapper (*L. synagris*), Florida pompano (*Trachinotus carolinus*), flounder (*Paralichthys sp.*), striped mullet (*Mugil cephalus*), and sailor's choice (*Haemulon parri*). Habitat and species management based on the best available scientific information is required to sustain this valuable resource.

In addition to these natural resources the GTM Research Reserve contains a unique array of cultural resources. This ecosystem has been used by humans for over 5,000 years. Artifacts found in the GTM Research Reserve area range from an arrowhead from the late Archaic (2500-1000 BC) to pottery from

the 19th century. There are currently 115 recorded archaeological sites within its boundary. Known sites include a burial mound, numerous shell middens, a Spanish mission, and homestead sites from the British, Second Spanish and Territorial time periods. Culture resource interpretation and protection is given special consideration in this plan.

The GTM Research Reserve also contains extensive public use amenities directly managed by the reserve staff including an extensive trail system, beaches with parking access and dune boardwalks, the Guana Lake Dam, and an Environmental Education Center that welcomes approximately 20,000 visitors per year including 2,500 students and teachers. Public use of the beaches and trail system is estimated to accommodate an additional 170,000 visitors per year. Based on local community support and public input, this management plan's public use strategies emphasize high quality and sustainable natural resource experiences.

Included in the boundary of the GTM Research Reserve are numerous conservation areas including the Guana River Wildlife Management Area, Deep Creek State Forest, Stokes Landing Conservation Area, Fort Matanzas National Monument, Washington Oaks Gardens State Park, Faver-Dykes State Park, Moses Creek Conservation, Pellicer Creek Conservation Area, Princess Place Preserve, and the River to Sea Preserve. Following the designation of the GTM Research Reserve a twenty-one member Management Advisory Group (MAG) was established. Representation consists of citizens, local government officials, managers of the public lands included in the boundary, private property owners, scientists and environmental educators. This advisory group provides a unique opportunity to enhance cooperative management for the conservation of this ecosystem.

This revised management plan also identifies additional facilities, staffing, and boundary expansions compatible and needed for the GTM Research Reserve to continue its mission. The proposed boundary expansion includes the addition of 4,166 acres within Faver Dykes State Park and the 4,699 acre Matanzas State Forest which will bring the acreage within the research reserve boundary from 64,487 to 73,352 acres. Future acquisitions would include approximately sixty-one acres of fee-simple acquisition within or immediately adjacent to the GTM Research Reserve's existing boundary. There are no plans to change the management authority of the annexed properties. The proposed expanded boundary will enhance the GTM Research Reserve's partnerships with key stakeholders and provide additional opportunities to restore or maintain cultural resources, natural biodiversity, and important watershed water-quality buffers and flow-ways.

The management challenges affecting the GTM Research Reserve can be categorized within the following topics: Public Use, Habitat and Species Management, Watershed Landuse, Cultural Resource Preservation and Interpretation, and Global Processes. Incompatible public use and lack of a scientifically defined carrying capacity, habitat fragmentation and loss, point and non-point source pollution, protection and interpretation of cultural resources and assessing the impact of global processes are management priorities. These issues can be indirectly or directly linked to anthropogenic landuse of increasing population densities accompanied by increasing development, recreation, and economic pressures. These potential impacts to resources can affect the productivity and function of coastal ecosystems, requiring active management to restore and sustain the condition of these resources.

## **GTM Research Reserve Management Goals**

### **Public Use**

Ensure user experiences are sustainable and consistent with natural and cultural resource protection for the benefit of existing and future generations.

### **Habitat and Species Management**

Improve the conservation of natural biodiversity by implementing the principles of adaptive management and ecosystem science.

### **Watershed Landuse**

Reduce the impact of watershed landuse on coastal resources by identifying priority pollutants and encouraging best management practices.

### **Cultural Resource Preservation and Interpretation**

Enhance understanding, interpretation, and preservation of the GTM Research Reserve's cultural resources.

### **Global Processes**

Serve as a clearinghouse of information concerning global and meteorological processes and as a demonstration site for green building technologies and practices.



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