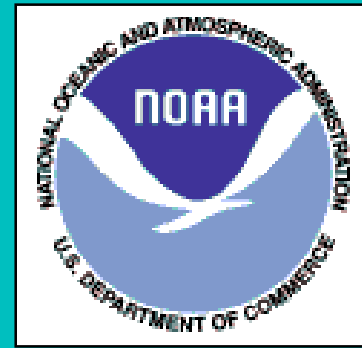
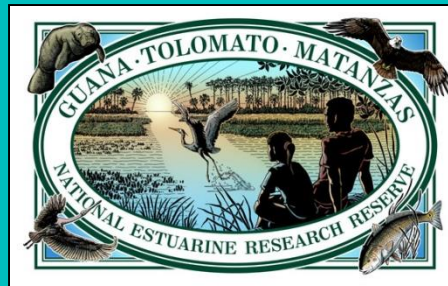


Promoting Sustainable Land Use Ethics in a Changing Landscape: Managing a National Estuarine Research Reserve

Michael Shirley, Ph.D.

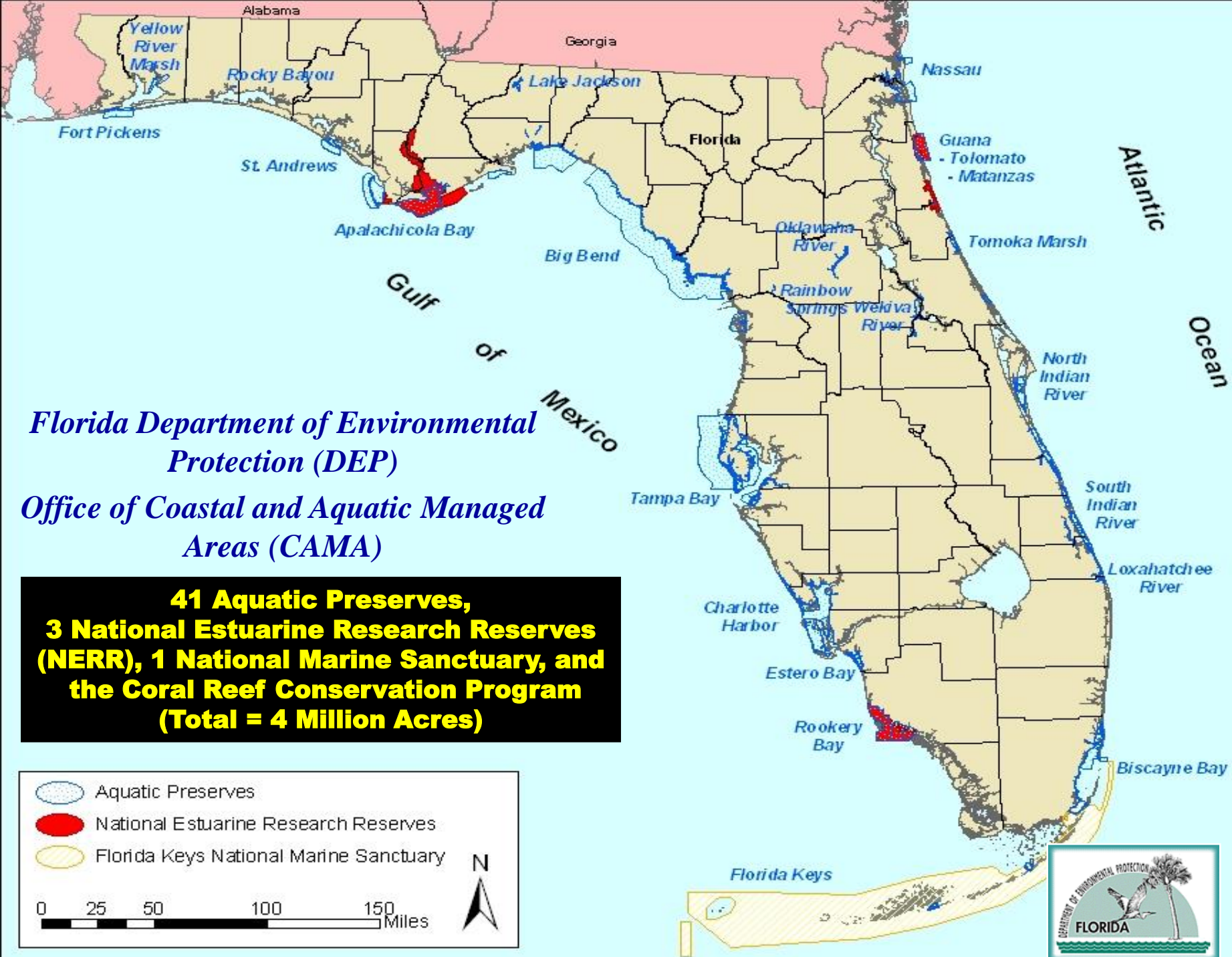
Director, GTM National Estuarine Research Reserve
East Coast Region Aquatic Preserves
Office of Coastal and Aquatic Managed Areas
Florida Department of Environmental Protection
505 Guana River Road
Ponte Vedra Beach, Florida 32082
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The National Estuarine Research Reserve System




Mission: To practice and promote coastal and estuarine stewardship through innovative research and education, using a system of protected areas.







Florida Department of Environmental Protection (DEP)
Office of Coastal and Aquatic Managed Areas (CAMA)

**41 Aquatic Preserves,
 3 National Estuarine Research Reserves (NERR), 1 National Marine Sanctuary, and
 the Coral Reef Conservation Program
 (Total = 4 Million Acres)**

 Aquatic Preserves
 National Estuarine Research Reserves
 Florida Keys National Marine Sanctuary







GUANA TOLOMATO MATANZAS NATIONAL ESTUARINE RESEARCH RESERVE



GTM NERR Programs

Scientific Research



Stewardship



*Environmental
Education*



GTM Research Reserve Mission Statement

To achieve the conservation of natural biodiversity and cultural resources by using the results of research to guide science-based stewardship and education strategies.



Adaptive Management

Performance Based = Accountability

- Management efforts are in direct response to, and designed for local and regional issues.
- Solutions integrate research, education and stewardship strategies.
- Objectives are measurable.
- Evaluate progress and, if needed, adaptively adjust strategies to achieve the desired objective.



SUSTAINABILITY

LOW IMPACT DEVELOPMENT



CARRYING CAPACITY



QUALITY OVER QUANTITY

GREEN SPACE

HABITAT RESILIENCE

“the ability to absorb shocks and disturbances”



POSITIVE ECONOMIC CONSEQUENCES

ECOLOGICAL GOODS AND SERVICES

“Goods”

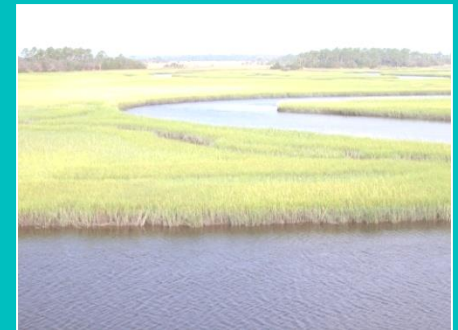
- Timber
- Fisheries
- Pharmaceuticals

“Services”

- Pollination of crops and vegetation
- Pest control
- Nutrient cycling
- Mitigation of droughts and floods
- Moderation of weather extremes
- Pest control
- Maintenance of biodiversity
- Contribute to climate stability
- Detoxification of wastes
- Purification of air and water



Cultural - “Services”: educational, aesthetic, and cultural heritage values, as well as recreation and tourism.



PROVIDE SOLUTIONS

BEST MANAGEMENT PRACTICES

Special Basin Designation

Riparian Buffers

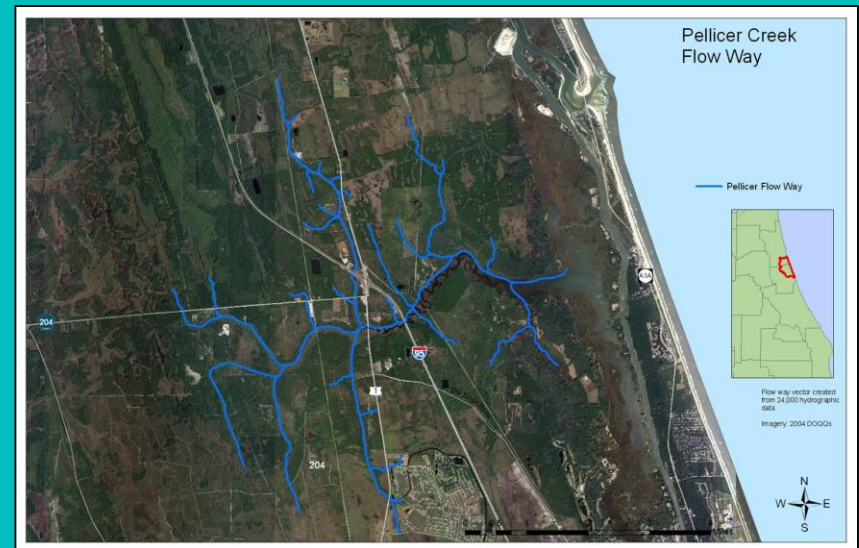
Minimize Impervious Surface

Florida Yards and Neighborhoods

Low Impact Development

Green Lodging Program

Green Marina Program



Shaping the Message for a New Decade of Conservation and Recreation

- **Science-Based**
- **Accountability**
- **Sustainability**
- **Quality > Quantity**
- **Positive Consequences**
- **Provide Solutions**



