

Aquaculture & Aquatic Preserves

Technical Bulletin Number 6

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Preserve Facts

- Forty-one Aquatic Preserves are found along Florida's coasts and freshwater streams.
- Seven Aquatic Preserves are home to aquaculture activities: Alligator Harbor, Big Bend Seagrasses, Terra Ceia, Cape Haze, Pine Island Sound, Cape Romano-Ten Thousand Island, and Indian River-Malabar to Vero Beach Aquatic Preserves.
- Florida's Legislature designated these exceptional submerged resources to be preserved in natural conditions for future generations to enjoy.
- Rules and regulations that guide Aquatic Preserve management are adopted by the Board of Trustees of the Internal Improvement Trust Fund (Governor and Cabinet).
- Aquatic Preserves are managed by the Florida Department of Environmental Protection (DEP) Office of Coastal and Aquatic Managed Areas (CAMA).

Aquaculture within Aquatic Preserves

Nineteen of Florida's 22 Aquaculture Use Zones lie within Aquatic Preserve boundaries

Florida's rapid growth and land use changes have altered the quality of its coastal resources. Fortunately, maintaining clean and healthy coastal waters is a goal shared by the Aquatic Preserve managers and shellfish farmers. Aquatic Preserves were established to protect aquatic resources, including water quality. Their managers strive to keep the waters clean, making Preserves a perfect site for shellfish aquaculture. Shellfish farming is a natural fit for Aquatic Preserves since shellfish filter and remove organic nutrients in estuarine waters in the form of phytoplankton as food.



All Preserves are designated as "Outstanding Florida Waters" (OFW) which provides the highest level of protection. No activity may occur in an OFW water body that degrades the water quality below its existing conditions unless that activity is in the public's interest. The Florida Legislature has determined that aquaculture is in the public interest and aquaculture leases may be authorized in Aquatic Preserves.

Protections given and benefits provided to Aquatic Preserves include: buying conservation lands surrounding Preserves to filter out contaminants in surface water runoff; limiting the size and location of dock construction to protect seagrasses; and providing sewage pump-out facilities open to the public to keep the waters free of harmful bacteria.

Because of these protections, Preserves are able to keep their waters clean for the continued well-being of wildlife and farm-raised shellfish.

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What are Aquatic Preserves?

Aquatic Preserves are popular and environmentally important coastal and aquatic areas found throughout Florida. They hold value in their striking scenery; important, wildlife-supporting habitats; and natural features that scientists and residents wish to explore and preserve.

During the 1960s, rapid population growth began to threaten Florida's aquatic resources. To resolve this problem, the Florida Legislature began designating aquatic areas of exceptional value as Aquatic Preserves. The first Aquatic Preserve was created in 1966 at Estero Bay, and the most recent



at Oklawaha River in 1989. Today, 41 Aquatic Preserves line Florida's coasts and inland rivers, comprising over 2 million acres of protected waters.

Aquatic preserve staff conserve the natural resources entrusted to them *(continued on page 2)*

Best Management Practices Keep Preserves Healthy

The Best Management Practices that farmers implement protect Aquatic Preserves and critical coastal habitats.

A program requiring the use of aquaculture Best Management Practices (BMPs) was adopted in 1998 by the Florida Legislature to provide regulations to be used during aquaculture facility construction and operation. Best Management Practices were created to promote aquaculture while protecting Florida's aquatic environment. To ensure BMPs are followed, the Division of Aquaculture implements performance audits and site inspections.

Within Aquatic Preserves, the importance of BMPs cannot be overstressed. Best Management Practices outline the proper methods to control and prevent the erosion of shoreline, disturbance of bottom sands, filling of wetlands, and ge-



netic and disease problems for native species.

By conscientiously implementing BMPs, clam farmers help Aquatic Preserves meet their goal of maintaining a healthy environment. Limiting disturbance to coastal sands keeps shorelines intact to

provide habitat for sea turtle nesting, seagrass growth, and coastal vegetation. Minimizing sediment disturbance reduces the amount of floating particles in the water, allowing more sunlight to reach seagrasses. Properly disposing of shells ensures that they do not block waterways. Carefully selecting the clam species cultured and location from which they are obtained, prevents harmful species or diseased clams from entering Florida's coastal waters.

Mechanical devices for shellfish harvesting are regulated so bottom disturbance is reduced, and culture bags are rinsed over the grow-out

area to keep sediments at the lease site.

All culture equipment, bags, cover nets, and markers, placed on lease sites must be free of pollutants including petroleum based products in order to protect the health of the environment.

Shellfish nursery operators follow BMPs to prevent negative effects to water quality and wildlife. From the start, care must be taken during the construction and maintenance of their nursery. Farmers are educated on proper pumping, intake, and discharge systems so nursery cleaning operations minimize bottom disturbance.

Farmers working within Aquatic Preserves are both protecting and benefiting from vital resources that will serve the recreational, food, and job needs of future generations, and the habitat-quality needs for wildlife. Through their practices, farmers are working with Aquatic Preserve staff to ensure the continued environmental quality of the Preserves.

Overseeing Agencies

Aquatic Preserves are owned by all of the citizens of Florida, but decision making regarding their use is guided by law and implemented by the Governor and Cabinet acting as the Board of Trustees of the Internal Improvement Trust Fund. The Trustees granted authority to the Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas (CAMA)

to protect and manage Aquatic Preserves and selected coastal uplands. CAMA staff implement management plans and assess proposed activities within Aquatic Preserves.

Other agencies also contribute to the regulation of Aquatic Preserves. The enforcement of criminal and non-criminal violations against State rules and statutes concerning Preserves is held with the Florida Fish and Wildlife Con-

servation Commission law enforcement, and local law enforcement agencies. Regulation of submerged lands is made by the Florida Department of Environmental Protection Districts, Water Management Districts, and the Division of Aquaculture. These agencies grant permits and authorizations for public and private uses within the Aquatic Preserves. CAMA staff review and comment on these authorized uses.

What are Aquatic Preserves? *(continued from page 1)*

by performing a variety of tasks: monitoring water quality and survey habitat to track environmental changes; distributing boater guides to identify and warn mariners of seagrass beds; creating manatee and



seagrass protection areas; producing public education newsletters, kiosks, and broadcasts; organizing coastal clean-ups with community volunteers; and commenting on developments

to inform county zoning boards of potential effects to the Preserves.

By providing these services, along with many more, Aquatic Preserve staff are able to maintain the high water quality, species diversity, and scenic beauty that characterize these important areas.



My Aquatic Preserve

Of the 41 Aquatic Preserves that line Florida's coasts, seven are home to aquaculture leases.

Alligator Harbor, located in the Panhandle, is an estuary with low freshwater inflow. It covers 14,366 acres of mainly seagrass beds and salt marshes. This Preserve is among the world's largest feeding grounds for the most endangered of all sea turtles, the Kemp's Ridley.

Big Bend Seagrasses consists of over 945,000 acres of seagrasses and salt marshes. The state's largest Preserve, it stretches around the Big Bend from Wakulla to Levy County. Eleven conservation areas border this Preserve's protected coasts.

Terra Ceia is a 25,726 acre, urban-community-bordered Preserve south of Tampa. It has mangrove, seagrass, oyster reef, and hardbottom communities. The Preserve has set up a web-accessible, water quality

datalogger that provides salinity, dissolved oxygen, and turbidity readings every 15 minutes.

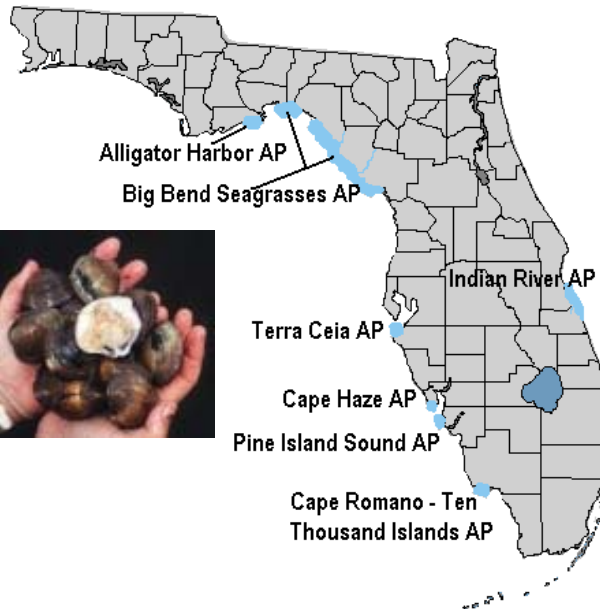
Cape Haze, east of Boca Grande in Charlotte Harbor, is 11,000 acres of mangrove forests, seagrass meadows, salt marshes, oyster beds, and tidal flats. Monthly water quality and annual seagrass monitoring looks for changes throughout Charlotte Harbor and Pine Island Sound.

Pine Island Sound in Lee County is

a 54,000 acre Preserve with extensive seagrass habitats, mangrove fringed islands, salt marshes, oyster communities, and tidal flats. Eighty-six of the Florida's endangered species are found in Charlotte Harbor, the location of Cape Haze and Pine Island Sound Aquatic Preserves.

Cape Romano-Ten Thousand Islands, within the Rookery Bay National Estuarine Research Reserve, is one of the largest mangrove forested areas in the Western Hemisphere. The Preserve consists of 110,000 acres of mangrove islands, oyster bars, seagrasses, and salt marshes, and runs along the edge of the Everglades.

Indian River-Malabar to Vero Beach is a 28,000 acre Preserve in Brevard County with mangrove marsh, salt marsh, seagrass bed, oyster bar, and spoil island habitats. It has the most wildlife diversity of any American estuary.



Preserving Aquatic Habitats

A function of Aquatic Preserves is habitat preservation. Many important natural systems lie within Aquatic Preserves. Seagrass beds, mangrove forests, and salt marshes name only a few of the habitats found within Preserves.

Estuaries are semi-enclosed water bodies where one or more rivers meet the open sea. Known as "the cradle of the ocean," estuaries house 95% of Florida's recreational and commercial marine species during some or all of their life cycle. Depending on their location, Floridian estuaries can have shallow brackish (mixed salt and fresh) waters, seagrasses, mangroves, and salt marshes.



Seagrasses are underwater flowering plants that inhabit marine (salty) and estuarine (less salty) waters. They serve many functions:

- 1) protect marine animals during development;
- 2) trap floating particles with their leaves, helping maintain water clarity;
- 3) stabilize bottoms to prevent erosion; and
- 4) produce dissolved oxygen, providing an essential element for all marine life.

Mangrove trees inhabit intertidal (occasionally underwater) salty environments. Mangroves contribute to the health of Florida's southern coasts by: 1) trapping pollutants and chemicals; 2) sheltering fish,

crustaceans, and shellfish; 3) providing nesting areas for coastal bird species; 4) protecting uplands from storm waters by providing wave-absorbing buffers; and 5) reducing shoreline erosion by securing coastal sands with their roots.

Salt marshes, composed mostly of grasses, rushes, and sedges, form along low wave-action coasts in North Florida estuaries. Salt marsh plants: 1) provide cover for important juvenile fish species; 2) supply a food source for young fish; and 3) improve water quality by filtering upland pollutants before they enter the estuary.

These vital habitats are prized ecosystems that Aquatic Preserves were created to manage and protect. Their protection ensures these habitats will be maintained for enjoyment and use by future generations.

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*Safeguarding the public, protecting the
environment, and supporting Florida's
aquacultural economy.*



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Visit <http://www.dep.state.fl.us/coastal/sites> for more information.

Getting Involved

Aquatic Preserve staff and aquaculture farmers have a common goal: to maintain clean water. To work toward this goal, farmers can help CAMA staff by serving as volunteers, acting as the eyes-and-ears for the Preserve, and by using their power as local citizens to deter potentially harmful development.

Community volunteer groups organize beach cleanups, turtle patrols, water quality monitoring, and species surveys that help Preserve staff manage important habitats. Farmers can be an important asset to volunteer groups, bringing their

knowledge of the activities occurring on the water and locations of certain habitats. Preserve staff will have lists of volunteer organizations that farmers can contact.

Farmers know the water bodies and the activities that go on there better than anyone else. When repeated activities (such as boaters damaging seagrass beds) are observed, farmers should contact local law enforcement, so they can police the area. If you are unsure who to contact, call your Aquatic Preserve, they will pro-



vide you with the proper information.

Local citizens demonstrating heightened public concern are an affective tool at preventing development with potentially negative impacts. Call your county commissioner when you hear of potentially harmful development near your Preserve to express your concern for water quality.

CAMA managers are interested in what farmers have to say. They want to discuss ideas and concerns farmers may have, and answer questions about Aquatic Preserves. Managers and Preserve staff would like to be invited to aquaculture meetings. Next time you organize a meeting, include the Aquatic Preserve staff on your invite list.