

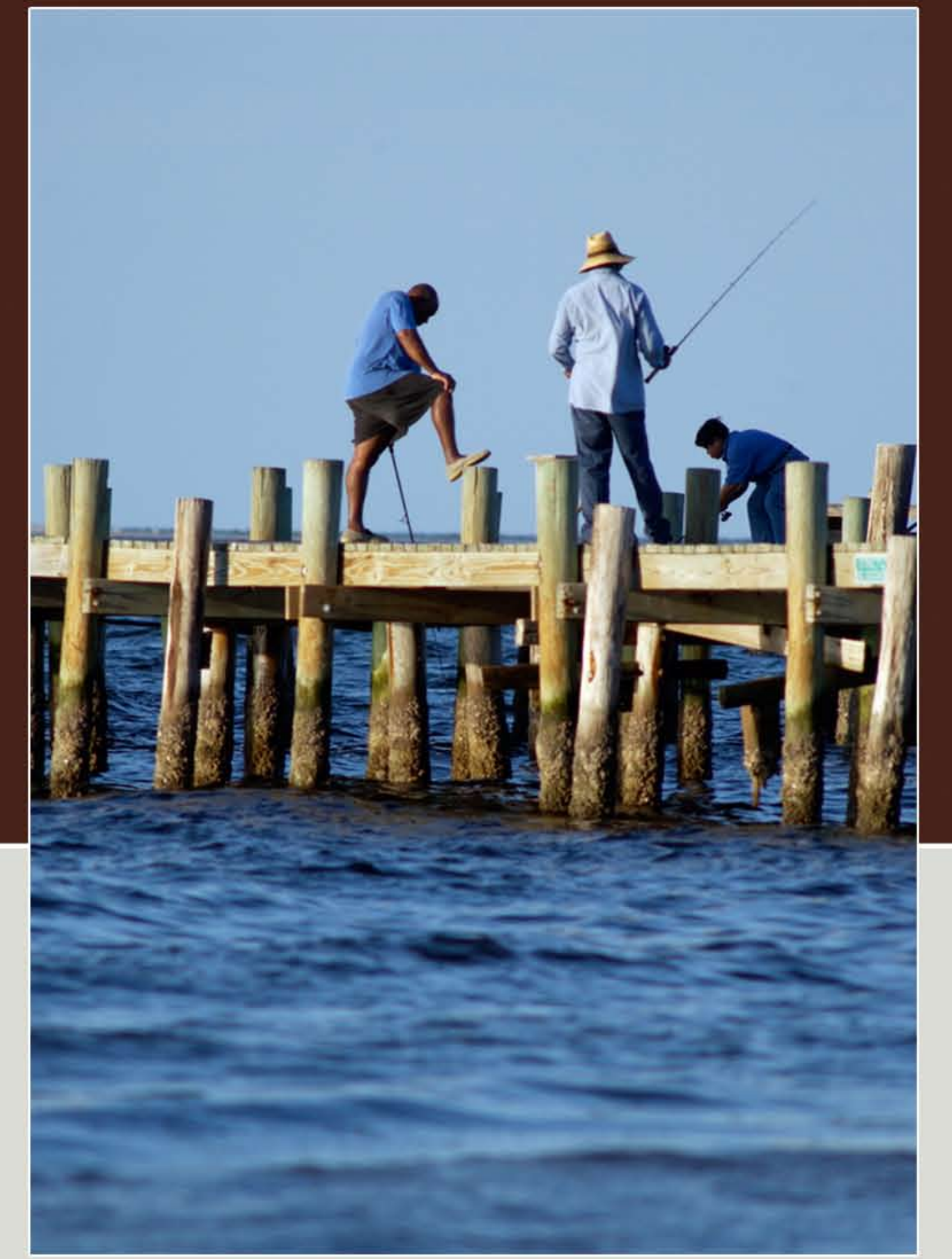
LAKE OKEECHOBEE

...revitalizing the lake and estuaries



Lake Okeechobee is the heart of the ecosystem

With an average depth of only 9 feet, the lake is at the center of a much larger ecosystem stretching from Orlando to Florida Bay and is a key piece of South Florida's water supply and flood control system. Over the past century, more than 2,000 tons of phosphorus accumulated in lake sediments due to excessive phosphorus loads from the lake's watershed. Large freshwater discharges from the lake harmed the ecological health of downstream estuaries. The Northern Everglades and Estuaries Protection Program, initiated in 2007, includes protection and restoration of the Lake Okeechobee watershed and the Caloosahatchee and St. Lucie rivers and estuaries.



Lake Okeechobee's recovery centers around a new U.S. Army Corps of Engineers water regulation schedule more conducive to the lake's ecological health, the rebirth of native vegetation like eel grass and spikerush, and plans to clean phosphorus-rich water before it enters the 730-square-mile lake.

► The Caloosahatchee River connects the lake to the Gulf of Mexico

Comprising part of the Great Calusa Blueway (190 mile canoe trail), the Caloosahatchee River is a water trail for dolphins, manatees and birds. Five national wildlife refuges depend on the river for water. Freshwater discharges from Lake Okeechobee send nutrient-rich water through the river, impacting native fish and wildlife. Plans are under way to restore and protect the river and estuary.

(Right) A spillway and navigational lock (S-78) control water levels on adjacent lands and salinity levels in the river. A proposed treatment facility upstream will reduce nitrogen and other nutrients flowing to the coast.



Lake Okeechobee during 2007 drought



Lake Okeechobee after 2007 drought

◀ A drought brings rare opportunity for planting trees

A historic drought in 2007 lowered Lake Okeechobee's water level to an all-time low of 8.82 feet mid-summer. Exposed shoreline and tree islands gave water managers the opportunity to plant thousands of trees. Pond apple, cypress, red maple, swamp bay, dahoon holly and willow trees were reestablished to help preserve the endangered gourd habitat, increase wading bird populations and lure back the endangered snail kite.



Water managers removed nearly 2 million cubic yards of muck containing more than 180 metric tons of phosphorus from the exposed shorelines of Lake Okeechobee during the historic 2007 drought.

▼ The Allapattah Ranch will store and treat water

The 98-acre parcel in western Martin County will capture and store stormwater before it flows east to the coast to improve the water quality, essential to restoring the Indian River Lagoon and St. Lucie Estuary.



Sabal palms create a tropical jungle along the St. Lucie River

▲ The St. Lucie River connects the lake to the Atlantic Ocean

As the St. Lucie River flows toward the sea, it becomes part of the Indian River Lagoon. Maintaining the delicate balance of salinity is key to the health of all estuarine species, so desired "salinity envelopes" are being developed. Home to more than 4,000 plant and animal species including manatees, dolphins, sea turtles and seahorses, the St. Lucie River was connected to Lake Okeechobee in the 1930s. This opened an avenue for the release of excess water, which often causes sediment to erode canal banks and pollutants in stormwater runoff to impact water quality. Restoration plans include a 3,400-acre above-ground reservoir approximately 15 feet deep to capture local runoff and 6,300 acres of stormwater treatment areas to allow sediment to settle and be filtered.



Torpedo Grass



Melaleuca



▲ Eradicating the exotics

Water managers used herbicides and fire to treat 32,000 acres of exotics and invasive plants from 2000 to 2008. Once infested with melaleuca, Lake Okeechobee now has only about 100 acres of this exotic tree, and coverage by torpedo grass has been reduced by half. Expansive meadows of native vegetation like bulrush and spikerush are returning and thriving in the shallow marshes.

The snowy egret has returned to Lake Okeechobee, an indicator that the lake has the ability to heal itself despite past impacts.



▲ Treating water before it enters Lake Okeechobee

Completed in 2006, the Taylor Creek Stormwater Treatment Area is a 170-acre constructed wetland north of Lake Okeechobee. It provides water quality benefits to the lake by retaining stormwater runoff and reducing nutrients before they enter the lake. Stormwater treatment areas use "green technology" and are planted with aquatic vegetation to remove excess phosphorus, which can harm sensitive downstream ecosystems.



Apple snails, which feed in spikerush habitat, are returning, and may attract snail kites – birds that were once abundant in and around Lake Okeechobee.