

## **To Restore the Everglades, It Takes Teamwork**

Each year, agricultural production contributes billions to Florida's economy. That one state is the nation's chief source of citrus and provides about 70 percent of winter and spring vegetables. Sugarcane, rice, ornamentals, and other valuable crops also thrive there—especially in the south, where favorable weather, unique soils, and managed water supply make for especially high productivity.

But there has been a downside to this prodigious success. The extensive system of dikes, levees, and canals constructed earlier in the century to provide flood protection and regulate the water supply has also altered patterns of waterflow through south Florida's diverse ecosystems.

The health of Everglades National Park and other conservation and wildlife refuge areas, as well as of Florida Bay, is seen to be in serious trouble. Nutrient runoff from crop, livestock, and dairy operations into waterways has led to massive algae blooms and changed the composition of biological communities in affected areas. Subsidence, or disappearance of soil as a result of microbial action on the organic matter in drained wetlands, is another vexing problem.

Added to this mix of serious ecological threats are several non-native pest plants that have gained a foothold in south Florida. They are not subject to the natural controls present in their countries of origin.

The "Save Our Everglades" initiative enacted in 1983 by Florida policymakers was the first attempt to address problems over the entire Everglades ecosystem. The 1987 passage of the Surface Water Improvement and Management Act created five regional water management districts. 1991 saw the Florida legislature's Ev-

erglades Protection Act, which facilitated cooperation among regional, state, and local agencies.

The effort took on national importance in 1993. A 5-year agreement signed then by the federal Departments of Agriculture, Commerce, the Interior, Justice, and Transportation—along with the U.S. Army Corps of Engineers—established an inter-agency federal task force to coordinate consistent policies, plans, programs, and priorities in south Florida.

Next, the Florida legislature enacted the landmark Everglades Forever Act in May of 1994. It established new water quality and delivery goals and a mechanism for coordinating Everglades-related activities. The following year, the federal task force was expanded to include the state of Florida, Native American tribes, and the Governor's Commission for a Sustainable South Florida.

Now state and federal agencies with management and/or regulating responsibilities are working together, and with many private cooperators, to restore and maintain the ecological richness and species diversity of South Florida.

The goal of the U.S. Department of Agriculture's strategic plan for south Florida is to maintain a profitable agricultural economy while developing strategies that contribute to a healthy ecosystem and sustainable communities. The plan has five main elements: land and water management, science, infrastructure, land acquisition, and public information and education.

USDA believes that, properly managed, south Florida agriculture can contribute to the restoration and maintenance of the area ecosystem. Agriculture is a major source of support and revenue for restoration efforts. Agricultural lands also contribute to ground and surface water storage and recharge, filtration, nutrient uptake, buffer areas and wildlife habitat, noxious weed control, and more.

The Agricultural Research Service is an important component of the science element of USDA's strategic plan. The agency's scientific expertise plays a key role in developing technologies to achieve the ultimate goal of agricultural, economic, and ecological sustainability.

For example, ARS entomologists are cooperating in the search for means to stall the spread of melaleuca—a persistent woody plant pest aggressively invading Florida's wetlands. Since neither herbicidal controls nor field burning has proved to be effective, labor-intensive hand pulling and cutting have been the primary control methods. Now, ARS scientists have tested and released a promising biological control insect and are evaluating other candidates, as well as integrated weed management programs and revegetation with desirable plant species.

ARS plant breeders have a different role to play in shoring up both agriculture and natural Everglades ecosystems. Some are looking at modifying sugarcane so it needs less phosphorous fertilizer to thrive—or even develops a capacity to remove excess phosphorus from the soil. And breeding plants that will tolerate higher water tables might eventually reduce soil subsidence and make it possible to produce crops in a manner that actually enhances the environment.

A budgetary increase for fiscal year 1998 has been identified for both melaleuca and sugarcane projects, as well as for water quality and management research. A new ARS hydrologist will be working with federal and state agencies and the agricultural community to define the risk of flooding in Dade County and recommend improvements in the south Florida water delivery system to sustain agriculture and protect the Everglades National Park.

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