

SUPERINTENDENT'S ANNUAL REPORT

South Florida Research Center 1987

Several resource management issues in 1987 were of such public interest that much of the research staff's time was spent in public meetings and devoted to presentations and interviews. The Florida Panther recovery effort, the water quality problems in Lake Okeechobee, and the siting of a future public wellfield in western Dade County required the formation of standing committees. Gary Hendrix, William Robertson, Daniel Scheidt, and Robert Johnson were assigned to the various committees to represent Everglades National Park. In addition, James Tilmant was appointed as a regular member of the technical sub-committee for the Marine Fishery Council on Red Fish.

The staff was also called upon frequently to give interviews for television and newspaper stories. Several major TV stories about the Everglades were built upon research staff interviews. The National Audubon series featured a program on the Wood Stork which included interviews with John Ogden and Gary Hendrix, and a public television story on the Florida Panther used several scenes of the park research staff at work during a panther capture.

Last year, 1987, was the first year that the South Florida Research Center focused its program entirely on Everglades National Park. The research programs in Big Cypress and at Biscayne National Park were established as separate programs reporting to those park's superintendents. This has happened in large part because the water issues in the Everglades have increased not only geographically but also in their complexity requiring almost the total attention of the Everglades research staff.

Even though the park has had to focus more than ever on water related issues, it has become increasingly apparent that the resource issues effecting Everglades National Park require a regional solution beyond the limits of the Everglades. It is necessary to achieve some balance

of interests that includes not only Everglades National Park, but also the parks and refuges in south Florida, the water management areas, agricultural interests, urban water supply, and increasing public use of marine areas in south Florida. For this reason, the Superintendent and Research Director began preliminary inquiries into the possibility of the Everglades Biosphere concept as a working model to include additional partners into the protection of the park resources while still allowing for a sustainable regional economy. This work will continue into future years.

Hydrology Program:

Work continued on the development and testing of alternative water delivery plans for Shark River Slough. The Army Corps of Engineers convened a special workshop of experts on the Everglades to prepare a series of "White papers" presenting professional opinion on the likely biological response of various restoration proposals to reflood portions of the southern Everglades and adjust water deliveries to a formula reflecting rainfall and water storage conditions.

There were several severe algal blooms in Lake Okeechobee in 1987 which prompted the public and the State Legislature to establish a program to clean up the water quality of the Lake. The Legislature established a committee, LOTAC II, to make recommendations to the State on long-term solutions for the Lake. The Superintendent and Dan Scheidt, park hydrologist, worked directly with the committee to inform them of water quality studies in the park and its implications for upstream water management in Lake Okeechobee and the Everglades Agricultural Area. Dan Scheidt put in extra time to expedite the completion of the reports on the parks water quality research as well as preparing a poster of the work and several presentations for professional audiences. The urgencies of the water quality issues prompted the park to reestablish, in October, a park program of water quality studies.

Dade County announced its intention to develop a new wellfield for drinking water supplies in the western part of the county. The volume of the proposed pumping, 140 million gallons/day, would have a dramatic local effect on surface water during the dry season and in dry years. The county proposed placing the new wellfield in the east Everglades which would influence water levels in the southern Everglades and water deliveries to the Park. The county formed advisory technical committees and a Citizens Policy Committee. Robert Johnson, a park hydrologist, was appointed to the technical committee and the Superintendent and Gary Hendrix, Research Director, were appointed to the Citizens Policy Committee.

The winter drawdown of water levels in the Frog Pond area adjacent to the Park continued to require research staff efforts. Even though the Water Management District adopted a three-year phase-out of the drawdown procedures starting in October, the park continued its monitoring of the effects of lowering canal L-31W on water tables inside the park. In addition, the park, in cooperation with a Florida International University hydrologist, began a study to measure changes in groundwater flow direction and velocity as a result of lowering L-31W. Bob Johnson spent considerable time in preparing a technical report on the effects of Frog Pond Water Management on Park water conditions over the last three years.

The hydrology staff put in extensive overtime in 1987 because of the number of water management issues. Joel Wagner took a leave-of-absence which increased the workload on the staff, but the hiring of Bob Johnson to the permanent staff, the addition of Virginia Stern to the staff, and the excellent guidance of Dan Scheidt as acting Hydrology Program Manager kept the park current on water management concerns.

Wildlife Program:

The main focus in the wildlife program in 1987 was the initiation of the Florida Panther Population Study and concurrent Panther Prey (Deer) Study. Six panthers were captured and collared and two additional animals were seen. The six panthers consisted of two family

groups: one female with two 1-year-old young, male and female; and another female with two young female cubs. The panthers were in good health, but did not have the same physical characteristics as the Big Cypress cats. Shortly after capture, the year-old cubs left their mother and one, the male, took up residence in the east Everglades, while the young female moved back-and-forth in the corridor between the park's east entrance and the Card Sound Road. This young female has repeatedly crossed a very busy highway. One of the young females of the other family became separated from her mother and sister in the spring and repeated attempts to reunite the family were abandoned with the beginning of the hot weather. The separated female was re-captured and relocated to a temporary rearing facility in White Oak Plantation, Florida. The recovery team plans to bring her back to the park for release in the spring of 1988. Oron Bass and Deborah Jansen tracked the cats daily with an airplane and identified their habitat choices, movement patterns, and located several kills they made.

In cooperation with University of Florida biologist Dr. Tom Smith, the park began a study of deer in the panther habitat. After testing several methods of capturing, Dr. Smith adopted a technique using a net-gun fired from a helicopter and he captured and collared over 20 deer. Daily monitoring of the deer will reveal habitat and forage preferences of the deer, movement patterns, and reproductive behavior. Two of the collared deer were captured and killed by two of the collared panthers by the end of the year.

The park re-established a long-term endangered species monitoring program in 1987. Bill Robertson and John Ladley monitored Cape Sable Sparrows, southern Bald Eagles, American crocodiles, and Colonial wading bird nesting. An unusually late rainy season allowed for one small Wood Stork colony to fledge approximately 70 young in the summer. Cape Sable Sparrow and crocodile populations seem to be steady, but southern Bald Eagle nesting in northeastern Florida Bay was disappointingly lower than in previous years.

Park biologists continued a series of studies designed to evaluate the influence of water conditions on wildlife. Biologists Bill Loftus and Roxanne Conrow studied the differences in

aquatic invertebrates and small fish at sites with different periods of inundation. Marty Fleming and Natasha Kline continued a third year of a study of the abundance and distribution of wading birds, alligator nests, and white-tailed deer with different inundation patterns. Thus far, every year of the study has produced very different water patterns, so no clear picture of effects on wildlife of water conditions is possible.

Following an October 1986 wading bird meeting at Everglades National Park, researchers from the park, National Audubon, and the University of Florida formed a work group to summarize what is now known about wading bird ecology in the Everglades and what additional research is now required to determine how to restore wading bird populations in south Florida. Their work continues and they have authored one of the "White papers" prepared for the Corps water delivery proposals.

Marine Program:

The main effort in 1987 by the marine research staff was to organize and hold a symposium on Florida Bay. The Symposium was a joint effort with the University of Miami. James Tilmant, marine research biologist with the park, was the organizer. The Symposium objectives were to bring together all research in all fields that had been done in Florida Bay and publish the proceedings as a reference work in the Bulletin of Marine Science. Symposium sessions covered geology, fisheries, wildlife, and benthic ecology. The sessions were very successful and the proceedings should be available in early 1989.

Computer Program:

The park made a major decision in 1987 to purchase a GIS computer. Large complex data files were accumulating and needed integration with one another, the water delivery experiments required some way to compute and display inundation patterns geographically, as did the fire management burns and exotic plant locations. The research staff and resource management staff, as a team, made several site visits to other agency GIS facilities before deciding to

purchase a MASSCOMP computer and graphics terminals and to adopt ELAS and GRASS software for their GIS work. The total GIS hardware package cost \$169,000. This will eventually include network capabilities between two buildings (the Research Center and the Daniel Beard Center) and a network with all office microcomputers in those buildings.

In addition, the park upgraded its research report preparation with the addition of a laser printer and an additional four microcomputers for research analysis (\$19,000).