



# The Florida Legislature

## OFFICE OF PROGRAM POLICY ANALYSIS AND GOVERNMENT ACCOUNTABILITY



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### RESEARCH MEMORANDUM

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Report No. 07-S19

## Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute

December 12, 2007

### *Summary*

OPPAGA analyzed the Fish and Wildlife Research Institute's research activities and addressed three questions:

- Where does institute focus its research efforts?
- How are the institute's research efforts coordinated with other research entities?
- How is the institute using its red tide research funding?

We concluded that the institute

- focuses its activities on providing information needed by commission resource managers in the areas of marine fisheries, freshwater fisheries, and wildlife;
- coordinates its efforts with other research entities by establishing partnerships and actively participating on numerous advisory panels and committees; and
- uses its red tide research funding to implement red tide monitoring and control and mitigation activities.

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## Background

The Fish and Wildlife Research Institute is a division of the Florida Fish and Wildlife Conservation Commission that conducts research to provide science-based information to managers of Florida's natural resources. The Legislature created the institute in 2004 by combining the biological research and support staffs of the commission's Division of Wildlife, Division of Freshwater Fisheries, and the Florida Marine Research Institute.<sup>1</sup>

The institute is composed of five sections that implement or support its scientific research programs (Marine Fisheries Research, Freshwater Fisheries Research, Wildlife Research, Ecosystem Assessment and Restoration, and Information Science and Management) and an operational unit.

Resources. The Legislature appropriated \$53.1 million in trust funds and general revenue and 316.5 positions for the Fish and Wildlife Research Institute in Fiscal Year 2007-08 (see Exhibit 1). The institute's general revenue appropriation of approximately \$10 million was primarily for funding general research operations; conducting marine fisheries research, such as assessing the biology of fish populations and marine fisheries stock enhancement; and ecosystem assessment and restoration, particularly for research involving harmful algal blooms such as red tide.<sup>2</sup>

### Exhibit 1

#### The Legislature Appropriated \$53.1 Million to the Fish and Wildlife Research Institute for Fiscal Year 2007-08

Program	General Revenue	Trust Funds	Total	FTE
Research Operations	\$ 1,473,088	\$ 3,817,249	\$ 5,290,337	28.0
Marine Fisheries Research	1,602,098	17,500,278	19,102,376	129.5
Freshwater Fisheries Research	9,292	2,183,274	2,192,566	30.0
Wildlife Research	215,858	9,109,263	9,325,121	53.0
Ecosystem Assessment and Restoration	6,136,874	6,024,042	12,160,916	39.0
Information Science and Management	646,590	4,403,014	5,049,604	37.0
<b>Total Funds</b>	<b>\$10,083,800</b>	<b>\$43,037,120</b>	<b>\$53,120,920</b>	<b>316.5</b>

Source: Florida Fish and Wildlife Conservation Commission.

### Where does the institute focus its research efforts?

The Fish and Wildlife Research Institute primarily focuses its activities on providing information needed by commission resource managers in three broad areas: marine fisheries, freshwater fisheries, and wildlife.

- **Marine Fisheries Research.** In this area, institute researchers monitor trends in commercial and recreational marine fisheries by collecting and analyzing biological and harvest information on marine recreational and commercial fish and invertebrate species. They also examine the

<sup>1</sup> The Florida Marine Research Institute was founded in 1955, while the research efforts of the commission's Division of Wildlife and Division of Freshwater Fisheries were initiated in the 1940s.

<sup>2</sup> In Florida, red tide is caused by microscopic algae (plant-like microorganism) known as *Karenia brevis* or *K. brevis*. The organism produces a toxin that can kill fish, birds, and other marine mammals, and may also cause health problems in humans, including neurotoxic shellfish poisoning and eye, skin, and respiratory irritation. *K. brevis* is found almost exclusively in the Gulf of Mexico, but has occasionally been found on the east coast of Florida.

genetic characteristics, population structure, ecology, and stock enhancement potential of these species.<sup>3</sup> Examples of recent institute activities include monitoring the relative abundance and age characteristics of juvenile and adult fish in six estuarine systems around the state and collecting catch-and-effort data from commercial fishing boats.<sup>4</sup>

- **Freshwater Fisheries Research.** In this area, institute researchers collect and analyze data on freshwater fisheries and invertebrates, and provide the results to commission managers; federal, state, county, and local government entities; and the public. Examples of recent research activities include long-term monitoring of fish populations and evaluations of the impact of freshwater flows and levels on fish and invertebrate populations throughout the state.
- **Wildlife Research.** In this area, institute researchers acquire and distribute scientifically based information on the management, conservation, restoration, and use of Florida's wildlife resources, including reptiles and amphibians, birds, marine turtles, and marine mammals. Examples of recent activities include conducting research on remote camera techniques, using global positioning system equipment to monitor Florida panther populations, and conducting research on the ecology and behavior of bears in the urban-wildland interface.

Other activities conducted by institute staff include assessing the ecological status of habitats and plant and animal communities; conducting field and laboratory experiments to obtain information on specific concerns such as harmful algal blooms; working with the commission managers to develop best management practices for protecting and improving upland habitat quality and wildlife diversity on state-managed lands; and creating digital maps of fish and wildlife distributions.

*How are the institute's research activities coordinated with other research entities?*

The Fish and Wildlife Research Institute primarily coordinates its efforts with other research entities by establishing partnerships and actively participating on numerous advisory panels and technical committees.

The institute has established 66 collaborative partnerships with other entities, including regional and federal government entities (water management districts, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the National Oceanic and Atmospheric Administration), universities (the University of Florida and the University of South Florida), private fish and wildlife research institutions (Mote Marine Laboratory, Harbor Branch Oceanographic Institution, and the Florida Institute of Oceanography). In many cases, these partnerships involve arrangements in which the institute contracts with such entities to perform specific research activities. Department officials report that during Fiscal Year 2006-07, the institute had contracts totaling \$15.4 million (or 30% of its total budget) with universities, nonprofit organizations, and private firms for conducting research activities.

As an example, the institute partners with the Mote Marine Laboratory, a private, non-profit organization, to conduct research on enhancing marine stocks. Under this collaborative effort, Mote

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<sup>3</sup> The Marine Fisheries section also includes the Keys Marine Laboratory, a facility jointly operated with the Florida Institute of Oceanography that promotes and supports research and educational programs.

<sup>4</sup> Catch-and-effort information is used to estimate stock abundance and is based on the number of fish landed relative to the amount of effort expended to land them.

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Marine Laboratory scientists provide expertise and assistance in designing fish stock release experiments and evaluating their results. The experiments' results are used to improve the effectiveness of the commission's marine stock enhancement projects.

Further, institute scientists participate in numerous state, regional, and national councils, such as the Atlantic States Marine Fisheries Commission and the Gulf of Mexico Fishery Management Council.<sup>5</sup> While the primary goal of these organizations is to coordinate policy and manage resources, they also provide a means for coordinating scientific research efforts to maximize resources and avoid duplication. For example, institute scientists serve on the Atlantic Marine Fisheries Commission's Coastal Sharks Technical Committee and the Horseshoe Crab Technical Subcommittee. The purpose of the Horseshoe Crab Technical Subcommittee is to evaluate horseshoe crab research used for stock assessments and management actions, and to provide scientific expertise to the commission's Horseshoe Crab Management Board. Institute scientists also actively participate in the Gulf of Mexico Fishery Management Council's Shrimp Stock Assessment Panel and the Special Dolphin Scientific Committee. By participating in such committees, institute researchers can seek to coordinate their work with other researchers and reduce the likelihood of conducting duplicative research activities.

Institute scientists also participate in numerous scientific groups and advisory organizations such as the interagency Manatee Population Status Working Group, the Manatee Warm Water Task Force, the Florida Grasshopper Sparrow Working Group, and the Florida Scrub Jay Recovery Team. By actively participating in such groups, institute scientists remain up to date on recent developments and stay informed about research activities conducted by scientists working for other entities. This, in turn, helps institute scientists determine how well their research dovetails with that of other scientists and avoid duplication.

### *How is the Fish and Wildlife Research Institute using its red tide research funding?*

In Fiscal Year 2006-07, the Florida Fish and Wildlife Institute received a total of approximately \$6.6 million for red tide research (\$5 million in general revenue and \$1.6 million in grants).<sup>6,7</sup> Of the \$6.6 million total, \$3.8 million (57%) was used to contract with 26 scientists at 14 institutions to conduct research on red tide. Such research included developing and testing new red tide detection technologies, monitoring red tide events, and assessing red tide's effects on fisheries. This contracting allowed the institute to take advantage of the specialized equipment and expertise of other organizations. For example, the institute contracted with the University of South Florida, which has a supercomputer, to model and track red tide events. In addition, the institute contracted with the Florida Institute of Oceanography to coordinate and implement an ocean observation system as well as to conduct an historical analysis of red tide incidents in southwest Florida.

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<sup>5</sup> The Atlantic States Marine Fisheries Commission, formed by the 15 Atlantic coast states, coordinates the conservation and management of the states shared near shore fishery resources. The Gulf of Mexico Fishery Management Council is one of eight regional fishery management councils established by the federal Magnuson-Stevens Fishery Conservation and Management Act for the purpose of managing fisheries in the Exclusive Economic Zone of the Gulf of Mexico. States with voting representation on the council include Alabama, Florida, Louisiana, Mississippi, and Texas.

<sup>6</sup> Of the total Fiscal Year 2006-07 grants, \$1.4 million (88%) was from the U.S. National Oceanic and Atmospheric Administration.

<sup>7</sup> The institute was awarded two multi-year grants from the U.S. National Oceanic and Atmospheric Administration. One grant is a five-year \$4.7 million grant to study the biology of red tide, particularly its movement in response to environmental variables on the continental shelf. The other grant is a six-year \$3 million grant for enhancing monitoring and response capabilities for red tide in the Eastern Gulf of Mexico. The institute reports that no federal funding is available for the control and mitigation of red tide in Florida.