



Eastern Region

State Partnership Program - FY 2004

The Eastern Region State Partnership Program (SPP) is a USGS funding initiative that each year promotes new collaborations among scientists and resource managers from USGS and State/Tribal institutions. The SPP identifies, and helps solve, important environmental issues through a competitive proposal process that emphasizes priority information needs and scientific excellence. The research theme for this Fiscal Year 2004 funding opportunity is "Reef Ecosystems."

Funding Cooperative Studies on Priority Environmental Issues

The **State Partnership Program (SPP)** is a competitive grant process managed by the USGS Eastern Region Executive for Biology. The **SPP** enables cooperative studies among scientists and resource managers from USGS and State/Tribal governments. The goals of the **SPP** are to:

- ◆ Identify high-priority environmental issues that are shared by States/Tribes and the Department of the Interior;
- ◆ Encourage technical and scientific collaborations among States/Tribes, USGS Centers and Cooperative Research Units through joint project planning, data collection, analyses, interpretation and application of results;
- ◆ Ensure the effective management and dissemination of natural resource information among scientists, resource managers, environmental policy makers, and the public.

The Funding Process

The **SPP** is highly competitive. Proposal requests always exceed available funds. Only the highest ranking projects secure support. The process involves the submission of complementary (paired) proposals by both the USGS Center/Unit and the State/Tribal institution. The criteria used for selection of the most outstanding proposals include:

- ◆ Relevance of the goals and objectives to a priority issue;
- ◆ Suitability and validity of the technical and scientific methods;
- ◆ Experience of the investigators;
- ◆ Demonstrated support by the State/Tribe

through the commitment of matching funds or in-kind services

- ◆ Proposals showing strong support from multiple Federal and State agencies and non-governmental organizations are viewed favorably.

Project activities and available funding are shared between USGS and State/Tribal participants. Projects funded by the **SPP** must be completed within 24 months.

Current Opportunities

The Eastern Region has adopted the theme **"Reef Ecosystems,"** for Fiscal Year (FY) 2004. Detailed instructions and requirements for submission of pre-proposals by the **30 September 2003 deadline** are available from the Office of the Eastern Regional Executive for Biology (contact: gary_brewer@usgs.gov). Proposals must address priority scientific and resource management issues dealing with the biology/ecology of coral or non-coral reef species or habitats - including the Great Lakes. As a minimum, proposals must involve at least one scientist from a USGS Eastern Region Biological Science Center or Cooperative Research Unit and at least one scientific collaborator/contributor from a State/Tribal institution.

Recent SPP Project Support

A total of nine **SPP** projects are currently funded. USGS support for each of these studies, generally between \$30,000 and \$50,000, has been leveraged against matching state contributions that are often in excess of 50% of the total effort.

Projects supported during FY 2003 under the **SPP** theme **"Adaptive Resource Management "** included:

- ◆ **"Understanding, measuring, and breaking down barriers to implementation of a broad scale adaptive management program"**

Investigators from the **Florida Fish and Wildlife Conservation Commission, University of Florida, USGS Center for Aquatic Resources Studies, and USGS Florida Cooperative Fish and Wildlife Research Unit** are exploring alternative management approaches and innovative communication strategies to more effectively implement and evaluate "Objective-based Vegetation Management" of 26 wildlife areas in Florida. Each of the wildlife areas are being tested sequentially as experimental treatments. Local biologists and managers from each area are surveyed as part of the resource planning and negotiation process. Human perceptions and barriers are identified, and possible solutions are tested in an iterative fashion. The goal is to minimize disparities between the planning and the successful implementation of adaptive approaches to resource management.

- ◆ **"Adaptive decision support for landscape-level conservation of birds in early successional habitats on private lands in Georgia"**

Declines, during the past 40 years, in the abundance of northern bobwhite (*Colinus virginianus*) and other birds that depend on early successional and grassland habitats in Georgia have prompted this research partnership that includes the **University of Georgia, Georgia**



Department of Natural Resources, USGS Patuxent Wildlife Research Center and USGS Georgia Cooperative Fish and Wildlife Research Unit. While a

conservation initiative was launched by the State of Georgia, providing incentives to private landowners to help reverse the decline of bobwhite habitat, many questions remain about the objectives and effectiveness of the existing conservation program. This study will use an adaptive approach to explore alternative management options.

Enhancements will be gleaned from ongoing monitoring data and a formalized decision support system developed to improve management performance and cost effectiveness over time.

◆ **“Adaptive harvest management of age-structured goose populations”**

The goal of this project is development of an adaptive harvest management protocol for the sport harvest of the Atlantic population of Canada geese. Investigators from the USGS Patuxent Wildlife Research Center and the Maryland Department of Natural Resources (representing the Atlantic Flyway Council, which includes 20 eastern states and Canadian provinces) are working to ensure that the goose population is sustained by management policy, despite uncertainties related, for example to environmental variability, age-specific differences in hunting vulnerability, and monitoring data.

◆ **“Estimation of components of detection probability in manatee aerial surveys”**

Reliable estimates of manatee abundance are critical to the development of predictive models and to effective adaptive management methods. While aerial surveys have been the mainstay of manatee management, statistical flaws related to perception bias suggest that count data from past surveys may be unreliable.



Investigations of perception bias and other methods of improving manatee aerial survey designs are the goals of this cooperative study between the Florida Fish and Wildlife Commission, the USGS Florida Cooperative Fish and Wildlife Research Unit, and the USGS Patuxent Wildlife Research Center.

For FY 2002, five projects were supported under the theme of “Restoration,” including:

◆ **“Restoration techniques for *Thalassia testudinum* in Tampa Bay”**

Turtle grass (*Thalassia testudinum*), the dominant seagrass in Florida, provides food and habitat for hundreds of invertebrates, fishes, turtles, and birds. Turtle grass is declining in abundance, primarily from human-induced disturbances. Scientists from the University of South Florida and the USGS Center for Coastal and Regional Marine Studies are developing growth enhancement procedures for damaged turtle grass beds. A variety of experimental treatments are being used to evaluate transplanting techniques, including variable sediment textures, containerized plantings, and fertilizer additions.

◆ **“Ecological costs and benefits of restoring reed canary grass wetlands to native vegetation”**

Reed canary grass (*Phalaris arundinacea*) has invaded thousands of acres of wetlands in the Upper Midwest and dramatically reduced the biodiversity of native plants. As a result, resource managers are faced with difficult decisions relating to the control of canary grass. Managers need to know if and how the canary grass has changed basic ecosystem functions in the wetlands such as the trapping of nutrients and support of wildlife. To address these information needs, the University of Wisconsin-Madison and the USGS Upper Midwest Environmental Sciences Center are conducting field and mesocosm experiments to learn how canary grass and native wetland vegetation vary in their role in 1) improving water quality and 2) supporting insect and bird use.

◆ **“Restoring ecosystem structure and productivity to Appalachian streams impacted by acid precipitation”**

More than 300 miles of trout streams in WV are degraded from acid precipitation. As a result, brook trout and other sensitive species have been eliminated or reduced from about 25% of the state’s brook trout streams. Limestone treatments have been used to neutralize stream acidity, but many questions have been raised about the effectiveness of this practice in restoring normal ecosystem functions. The WV Department of Natural Resources has teamed with the USGS WV Cooperative Fish and Wildlife Research Unit to study 1) how acid precipitation effects water chemistry, 2) how the productivity of post-treatment streams compares with un-impacted streams, and 3) if the ecosystem

structure of acid-treated streams can be fully restored with additional mitigation efforts, including the addition of nutrients and cations.

◆ **“Application of underwater acoustics to determine the effect of beach restoration on nearshore habitat, distribution, and movement of spawning horseshoe crabs”**

Beach restoration and sand replenishment of Delaware Bay beaches has been ongoing for 40 years, but how these practices affect the



habitat of key species such as horseshoe crab is poorly understood. Each spring, thousands of horseshoe crabs spawn on the beaches of Delaware Bay where their eggs supply essential nourishment for migrating shorebirds. To better manage and protect horseshoe crabs, the Delaware Division of Fish and Wildlife has partnered with the USGS Leetown Science Center to understand the crab’s nearshore distribution and movements as influenced by beach nourishment. Innovative tagging and acoustic techniques are being used to understand the habitat needs of the crabs.

◆ **“Fish hosts, population structure, and landscape control of the distribution of two rare Atlantic slope freshwater mussels in Maine”**

Declines in the distribution and abundance of freshwater mussels has been severe, and more than half of the remaining species in the U.S. are threatened with extinction. This important study, dealing with the conservation biology of mussels, is being conducted in partnership between the University of Maine, Department of Wildlife Ecology and the USGS Maine Cooperative Fish and Wildlife Research Unit. The research focuses on two rare species, the yellow lampmussel (*Lampsilis cariosa* and tidewater mucket (*Leptodea ochracea*) to 1) increase knowledge of their genetic structure, 2) identify host fish species and their interactions, 3) evaluate landscape and demographic factors that are indicative of mussel habitat. The results of the study are expected to aid decisionmakers responsible for dam re-licensing, water withdrawal, water quality management, and riparian land use regulation.