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APPLICATION FOR POLLUTION RECOVERY FUND ASSISTANCE

DATE OF APPLICATION: April 30, 2006

A. BASIC ASSISTANCE

1. Applicant: The legal name of the applicant/organization, the organizational unit and the complete mailing address of the applicant.

   Name: Ann B. Hodgson, Ph.D., P. W. S.
   Organization: National Audubon Society dba Audubon of Florida
   Address: 410 Ware Boulevard, Suite 702, Tampa, FL 33619

2. Project Manager Information: Give name and title of the representative of the applicant who will be the Environmental Protection Commission's principle contact concerning this application

   Name: Ann B. Hodgson, Ph.D., P. W. S.
   Title: Gulf Coast Ecosystem Science Coordinator
   Address: National Audubon Society dba Audubon of Florida, 410 Ware Boulevard, Suite 702, Tampa, FL 33619
   Phone Number: 813/623-6826
   Project Title: Erosion Control/Oysterbar Habitat Creation Project, Phase 1
   Project Time Start: October 2006 End: October 2011
   Total Cost of Project $ 294,400
   Total EPC share requested $ 237,000

3. Assistance Type: **New or Renewal** (check one)

☒ New - Award of funds for initial request within the project period.

☐ Renewal - Award of funds for a project beyond the current project period.

4. Project Location: The specific location(s) of the project. (Attach Site Map)

South side of Bird Island, Richard T. Paul Alafia Bank Bird Sanctuary, Hillsborough Bay, FL

5. Is the Project for:

☒ Restoration of a polluted area

☒ Mitigation of the effects of pollution

☒ Pollution Control Activity to prevent or minimize pollution

☒ Educational

6. Is the Project directed toward restoring an identified "polluted area" (a geographic area destroyed or altered by dredging or filling or contaminated by an emission or discharge), or toward terminating an identified pollution source? Identify and explain:

The Richard T. Paul Alafia Bank Bird Sanctuary is comprised of two spoil islands, Bird Island to the east, and Sunken Island to the west, located in Hillsborough Bay south of the dredged Alafia Channel. The islands were created when the channel was dredged in the 1920s-30s, and material was added to them during subsequent channel deepening projects. During the same era and later, extensive oyster shell deposits and live oyster reefs were dredged and mined to provide roadbed construction base material in the Riverview/Gibsonton/Adamsville region. Over time, the islands have become vegetated, and now support an important bird nesting colony and provide a migratory bird habitat site. Significant pollution was introduced to Hillsborough Bay during the 1950s-1980s. Bay waters are slowly recovering from wastewater, stormwater, and industrial pollution. Accumulated erosion from storm-generated wave action and ship boat wakes is threatening the long-term existence of the islands. To stabilize the southeastern shoreline of Bird Island, and partially replace the historically mined oyster reefs, we propose to create a linear oysterbar feature. This constructed oysterbar will (1) stabilize the island shoreline using the saltmarsh cordgrass (*Spartina alterniflora*) salt marsh and mangrove community model, (2) facilitate sediment accretion and reduction of

suspended sediment (TSS), (3) enhance the coastal habitat mosaic (c.f. "Restoring the Balance", Tampa Bay Estuary Program 1996), and (4) provide estuarine water filtration, fisheries habitat, and bird foraging and wildlife habitat on the Richard T. Paul Alafia Bank Bird Sanctuary.

7. Is the harm or potential harm to health, safety or welfare of the public or wildlife actual or potential? Does the project seek to alleviate actual or potential harm and what is the severity of the harm and the causal relationship between the "pollution" and the harm?

Identify and explain:

The harm is actual. The project proposes to alleviate actual harm. The severity of the harm is very great and has resulted in broad scale impairment of the Hillsborough Bay estuarine ecosystem. The causal relationship between the "pollution" and the harm is (1) the long-term reduction in the Bay's coastal habitat mosaic; (2) pervasive effects of historical dredging and mining oyster reefs in Hillsborough Bay; (3) long-term generalized water pollution of Hillsborough Bay from wastewater, stormwater, and industrial sources. The project will create stable oysterbar habitat along the shoreline of Bird Island, reducing the erosion that is threatening the bird nesting, foraging, and migratory habitat. Oysters will filter stormwater and industrial pollutant discharges to Hillsborough Bay from multiple sources including, but not limited to, the Alafia River, the Archie Creek system, and Bullfrog Creek. Accreting oysterbars, and an expanded estuarine habitat mosaic, will provide important fisheries, bird foraging, and wildlife habitats. The oysterbar project will create a quiet water lagoon and intertidal channel, facilitate accretion of suspended sediments, reduce local TSS, expand the coastal habitat mosaic with additional saltmarsh cordgrass and mangrove seedling recruitment, and provide habitat for nesting colonial waterbirds.

8. How long has the pollution existed or how long before any harm will be evident?

The Richard T. Paul Alafia Bank Bird Sanctuary has been eroding intermittently for several decades; however, erosion has been exacerbated recently by intensive onshore storms and commercial and recreational onshore boat waves. Photographic analysis indicates the island's sand is moving eastward to such an extent that the south "arm" that creates the eastern Bird Island Cove is now only one mangrove tree wide. If this sandbar "arm" is breached, then the Bird Island Cove, which provides a significant refuge for birds (especially Mottled Ducks and Lesser Scaup in winter, and Roseate Spoonbills and Reddish Egrets in spring and summer), diamondback terrapins, fish, and other wildlife, will not be protected and fish and wildlife habitat functions will be lost.

9. Identify and describe how the project proposes to alleviate the pollution (addressing technical, practical, and cost effectiveness issues):

Oyster reef construction is a broadly supported program in Tampa Bay to restore the historical degradation of oyster communities. This project provides multiple practical benefits: erosion control; water filtration; TSS reduction; restoration of estuarine habitat mosaic; enhancement of essential fishery habitat (EFH); construction of foraging habitat for listed and migratory shorebirds including American Oystercatcher, Red Knots, Willets, various Charadriiformes and Scolopaciformes; other taxa; horseshoe crabs nesting habitat; and diamondback terrapin refugium. Oysters occur naturally in Hillsborough Bay and are annually reproductive so that the population is not veliger limited; veliger attachment substrate is limited due to the historic removal of oyster shell from Hillsborough Bay; oyster reef construction methods are an effective technology; oyster reefs have been widely constructed in Hillsborough Bay; examples of recently constructed and colonized reef projects are: Fantasy Island; 2D test project; Green Key, and Whiskey Stump Key. Oyster reef construction is practicable, particularly in the shallow water surrounding the Sanctuary. The reef will provide water resource management benefits cost-effectively through ongoing, long-term water quality improvement benefits without future development, operation, maintenance and replacement (DOM&R) costs attendant to public works infrastructure projects.

10. Is the polluted area one which has previously been subject to commission enforcement and, if so, when and what was the result?

No

11. If no actual pollution exists and no prior commission enforcement action has

occurred, does the project otherwise enhance pollution control activities within the County?

Restoration and stabilization of the Bird Island shoreline will enhance pollution control activities within Hillsborough County by replacing a linear oyster reef in the approximate location of historically existing oyster reef communities.

12. Can this Project be divided into separate and independent parts, and if so,

a) what are they? The project cannot be divided into separate parts. The total linear length and alignment of the proposed oyster reef is expected to be slightly modified pending project design planning and evaluation.

b) how would the costs be allocated between them? N/A

c) would the applicant be willing to accept only partial funding? Yes, contingent on the amount of the award. If funding is insufficient, the project may need to be delayed until the necessary funding can be obtained and the Bird Island coastline will be at risk of breaching during upcoming hurricane seasons.

13. Are other funding sources committed to the project? AoF matching funds: 1) FCISP restricted gifts; 2) FCISP general funds: 3) volunteer labor.

How much and for what? AoF matching funds: 1) FCISP restricted gifts – personnel $5,000, contractual $10,000; 2) FCISP general funds – administrative $47,400: 3) volunteer labor.

14. What other funding sources may be available and how much? Other federal and/or state grant programs; unknown amounts.

15. Why do you believe that this Project is of sufficient importance to justify the expenditure of Pollution Recovery Funds? The Richard T. Paul Alafia Bank Bird Sanctuary is a state-recognized "Important Bird Area"; it supports the largest aggregation and breeding colony of colonial nesting waterbirds and shorebirds in Tampa Bay, provides habitat for numerous federally and state-listed bird species; plus diamondback terrapins and horseshoe crabs (two reportedly declining species in the Tampa Bay ecosystem), and provides habitat for 90% of the regional breeding population of Roseate Spoonbills. The Sanctuary's unique ecological importance in Tampa Bay is widely reported.

16. Will the project enhance the value of private property, and if so, whose? _____

The Richard T. Paul Alafia Bank Bird Sanctuary is managed by Audubon of Florida's Florida Coastal Islands Sanctuaries Program pursuant to a long-term lease from Mosaic Fertilizer, L. L. C. The Sanctuary was re-dedicated in memoriam to Richard T. Paul on December 1, 2005.

B. ATTACHMENTS

All applicants must submit responses to the following as attachments corresponding to the indicated numbers:

1. Please provide a detailed map of the project site. **Attachment 1. Map of the Richard T. Paul Alafia Bank Bird Sanctuary, Hillsborough Bay, Florida.**
2. Principal Investigator and Key Personnel - Present a biographical sketch of the principal Investigator incorporating the following information: Name, Address, Phone Number, Education, Background and other qualifying experience for the project. **CVs of Dr. Ann B. Hodgson, P. I., and Ms. Ann F. Paul, Key Personnel, are attached**
3. Project Narrative - Please provide a narrative statement describing the project that includes the following:
   a) Objectives of this Project - Describe the principal and subordinate environmental objectives of the project. Pinpoint any relevant physical, economic, social, financial, institutional or other problems requiring solution.

b) Results and/or Benefits Expected - Identify specific environmental results and/or benefits to be derived from the project. Include all primary and secondary benefits accruing to the grantee, to the pollution served, and in general, to the public and environment.

c) General Project Information - Discuss the criteria that will be used to evaluate the results and successes of the project as well its relationship to other work planned, anticipated or underway.

4. Scope of Work – Provide a detailed scope of work for the proposed project. List in chronological order a schedule of accomplishments, progress, or milestones that are anticipated over the length of the project.

5. Budget Information – Please itemize expenditures necessary to perform project using the following format:

BUDGET CATEGORIES

	PRF Funds	Federal	Applicant	State	Other
a. Personnel	$15,000	$0	$0	$0	$0
1. A. Hodgson	$7,500	$0	$2,550[1]	$0	$0
2. A. Paul	$7,500	$0	$2,550[1]	$0	$0
b. Administrative	$0	$0	$47,400[2]	$0	$0
c. Materials	$192,500[3]	$0	$0	$0	$0
d. Contractual	$10,000[4]	$0	$10,000[4]	$0	$0
e. Construction	$15,000[5]	$0	$0	$0	$0
f. Other	$5,000[6]	$0	$0	$0	$0
g. Total Direct Charges (Sum of a. to f.)	$237,000	$0	$57,400	$0	$0

Notes: 1) fringe benefits (34%); 2) project administration (10% AoF; 10% NAS); 3) perforated polygonal habitat protection devices (PPHPDs), oystershell ($22,500), saltmarsh cordgrass sprigs (proposed cooperation with Tampa BayWatch); 4) contract labor to place PPHPDs – ADACs or other contractor to be selected plus volunteer labor (500 volunteer hours); 5) material placement, 6) five years annual monitoring reports.

C. SUBMITTAL OF APPLICATION

Please submit a total of five (5) applications (one original and four (4) copies / one of which must be in electronic format as a CD) to:

Environmental Protection Commission of Hillsborough County
Environmental Resources Management Division
Attn: Tom Ash / Pollution Recovery Fund
3629 Queen Palm Dr., Tampa, Florida 33619

Completed applications must be received at the above address by 5:00pm (EDT), May 1, 2006.
Late applications and email applications will not be considered.

www.epchc.org

E-Mail: epcinfo@epchc.org

AN AFFIRMATIVE ACTION – EQUAL OPPORTUNITY EMPLOYER

PRF APPLICATION PROCESS

Instructions

The Hillsborough County Environmental Protection Act (Chapter 84-446, Laws of Florida) has created a pollution recovery fund which is to be supervised and used by the commission to restore polluted areas of the county, as defined by the commission, to the condition they were in before pollution occurred, to mitigate the effects of pollution, or to otherwise enhance pollution control activities within the county.

Application Forms must be submitted on or before the May 1, 2006 deadline.

- There will be a newspaper advertisement, and possibly press releases, specifying the deadline for submitting applications.
- Application forms and instructions can be obtained from Tom Ash, phone 813-627-2600 x1011 or from our website at:: www.epchc.org
- Except under special circumstances, applications submitted earlier than the deadline will be held until the next processing period, and then processed with the others.

Following the deadline, applications will be distributed to staff appropriate to the project for review and recommendation to the Executive Director.

- Staff may contact the applicant upon beginning review, and if a meeting to discuss details is requested or advisable, will schedule it.
- Staff will meet with the Executive Director to discuss all applications in the group and to prioritize and determine recommendations.

A summary of the Executive Director's recommendations will be forwarded to CEAC along with copies of all applications.

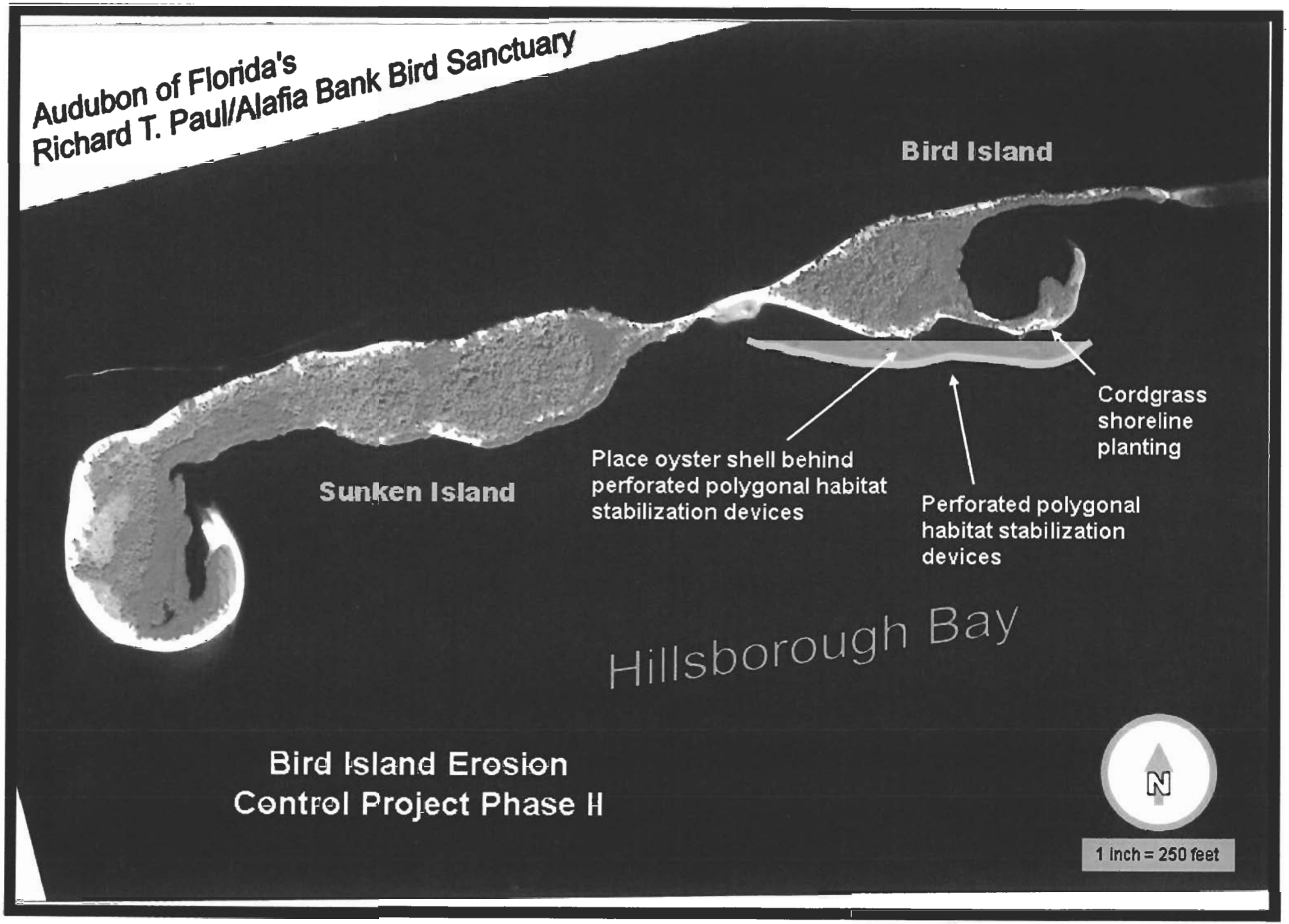
- Staff will send a copy of the Executive Director's recommendations to each applicant along with a notice of the meeting date at which CEAC will discuss the applications and its recommendations to the EPC Board.
- Applicants are invited to attend the CEAC meeting and make a brief presentation in support of their project.

Staff and CEAC recommendations will be presented to the Commission for decision.

- The EPC Board meeting will likely be the second meeting following the CEAC meeting so that the information can be properly placed on the agenda.
- The Applicant may attend the EPC meeting and request to speak.

If the project is approved, the applicant must sign a contract before monies will be available.

- EPC Legal will draft the contract with standard terms and conditions, and provide it to the applicant for review and execution.
- EPC Legal will arrange for execution of the contract by the EPC Chair after it is executed by the applicant, and will then forward final copies to the Applicant's Project Manager and the EPC Project Manager.
- The EPC Project Manager will be responsible for ensuring the applicant's compliance with the contract.


Audubon of Florida's
Richard T. Paul/Alafia Bank Bird Sanctuary
Bird Island
Sunken Island
Place oyster shell behind perforated polygonal habitat stabilization devices
Perforated polygonal habitat stabilization devices
Cordgrass shoreline planting
Hillsborough Bay
Bird Island Erosion Control Project Phase II
N
1 inch = 250 feet

ANN B. HODGSON, Ph.D.

Ph.D. Agronomy (Soil and Water Science) 2001, University of Nebraska
Negotiation and Mediation, 1995
Program of Instruction for Lawyers, Harvard University
M. A. Wildland Recreation 1978, University of Northern Colorado
B. S. Wildlife Science 1974, Cornell University

CONTACT INFORMATION

Audubon of Florida's Florida Coastal Islands Sanctuaries Program
410 Ware Blvd., Ste. 702
Tampa, FL 33619
813 623-6826
ahodgson@audubon.org

PROFESSIONAL CERTIFICATION

Professional Wetland Scientist #1109 (1997)
Certified Wildlife Biologist (1983)

EXPERIENCE

2006 Program Manager, Audubon of Florida's Gulf Coast Ecosystem/Florida Coastal Islands Sanctuaries Program, Tampa, FL

2006 Assistant Professor (Courtesy), Department of Chemistry, Institute for Environmental Studies, University of South Florida, Tampa, FL

2005 Chief Field Biologist, Audubon of Florida's Florida Coastal Islands Sanctuaries Program, Tampa, FL

2002 Adjunct Professor of Biology, Hillsborough Community College, Tampa, FL

1992-2006 President & Principal Ecologist, Resource Designs, Inc., Tampa, FL (2000-2005; Omaha, NE 1995-2000; San Francisco, CA 1992-1994)

1990–1991 Assistant Endangered Species Program Manager, U. S. Forest Service, San Francisco, CA

PUBLICATIONS

Lewis III, R. R., A. B. Hodgson, and G. S. Mauseth. 2005. Project facilitates mangrove forest restoration without planting in west central Florida, USA. Ecological Restoration 23: 4. http//www.mangroverestoration.com /LEWISH_1.PDF

Lewis III, R. R., A. B. Hodgson, and G. S. Mauseth. Revising the paradigm for propagule abundant mangrove forest restoration in west central Florida, USA. In prep.

Lewis III, R. R., A. B. Hodgson, and G. S. Mauseth. 2005. Mangrove forest restoration without mangrove planting in west central Florida, USA. Page 88 *in* Proceedings: Society of Wetland Scientists 26th Annual Meeting. Charleston, SC, USA. 5-10 June 2005.

Lewis III, R. R., A. B. Hodgson, P. L. McNeese, and C. R. Kruer. 2005. Final Report: Rapid Ecological Assessment (REA) (Phase I) for Mangroves Within the Runway 07-25 Clear Zone, Boca Chica Field Naval Air Station Key West (NASKW), Monroe County, Florida. Prepared for Geo-Marine, Inc., Plano, TX (Project No. 17097.00.55) and the U. S. Department of the Navy, Key West, FL. 40 pages.

Lewis III, R. R., A. B. Hodgson, and M. Tooze. 2005. Quantifying seagrass meadow prop scar restoration resulting from an internal combustion engine exclusion zone, Tampa Bay, Florida. *In* Proceedings of 5th Workshop on Salt Marsh Management & Research and the 4th Biennial Mosquito Lagoon Conference, Cocoa Beach, FL, USA. 14-17 February 2005.

Hodgson, A. B. and C. L.. Westergaard. 2004. Literature Review: Estuarine effects of low dissolved oxygen. HSW Engineering, Inc., Tampa, FL, USA. Prepared for the Southwest Florida Water Management District, Brooksville, FL, USA.

Watson, K., S. Emery, A. B. Hodgson, A. Smith and G. Eliason. 2004. Evaluation of the effects of the proposed minimum flows and levels regime on water resource values on the St. Johns river between SR528 and SR46. HSW Engineering, Inc., Tampa, FL, USA. Prepared for the St. Johns River Water Management District, Palatka, FL, USA.

24-Feb-06

EDUCATION

A. A. St. Mary's Junior College, Raleigh NC (Liberal Arts)
B. S. Cornell University, Ithaca NY (Biology)
M. S. Trinity University, San Antonio TX (Biology)

EMPLOYMENT

2002-present Tampa Bay Regional Coordinator; Florida Coastal Islands Sanctuaries; National Audubon Society/Audubon of Florida, Tampa, FL

1991-2002 Assistant Manager, Florida Coastal Islands Sanctuaries; Restoration Biologist, Alafia Watershed Area Restoration Effort; National Audubon Society/Audubon of Florida, Tampa, FL

1992-93 Environmental Scientist, Resource Management; Hillsborough County Parks & Recreation Department, Tampa, FL

1990 Editorial Assistant, Science Curriculum, Project 2061; Northside Independent School District, San Antonio, TX

CERTIFICATIONS

State of Florida Prescribed Fire Certificate, #932191
American Red Cross, Community CPR and First Aid

AWARDS

Audubon ACE (Audubon Cares about Excellence) "NEW STAR" Award, for development of Alafia Watershed Area Restoration Effort (AWARE Program), November 1995.

Tampa Bay Regional Planning Council, 1996 Environmental Excellence Award: Outstanding Individual of the Year.

Biff Lampton Conservation Award, 1997 (Fla. Outdoor Writers Association); co-recipient with Rich Paul

PROFESSIONAL AND COMMUNITY ACTIVITIES

Florida Institute of Phosphate Research, Board of Directors 2001-present
Agency on Bay Management, 2004-present
Tampa Bay Estuary Program, various committees, 1992-present
Southwest Florida Water Management District Water Conservation Task Force, 2001-2003
Suncoast Greenways Project Steering Committee, 1993-94

REPORTS AND PUBLICATIONS

Paul, R., and **A. Schnapf**. 1999. Bird populations. Pp. 12-1 to 12-7, *in* Pribble, R. J., A. J. Janicki, and H. S. Greening, eds. Baywide Environmental Monitoring Report 1993-1998. Technical Report #07-99 of the Tampa Bay Estuary Program. Prepared by the Tampa Bay environmental monitoring groups.

Paul, R. T., and **A. F. Schnapf**. 1999. The nesting season (Florida Region). North American Birds 53: 377-379.

Paul, R. T., and **A. F. Schnapf**. 2000. The nesting season (Florida Region). North American Birds 54: ____.

Paul, R. T., B. Pranty, **A. F. Paul**, and A. B. Hodgson. 2003 *in press*. Elegant Tern nests in west-central Florida. Birding.

Paul, R. T., and **A. F. Paul**. May 2003. Bird populations. Chapter 17, *in* Pribble, R. J., A. J. Janicki, and H. S. Greening, eds. Baywide Environmental Monitoring Report 1993-2002. Technical Report of the Tampa Bay Estuary Program.

Stangel, Peter, and **Ann Paul**. March/April 2004. Soak up Sunshine and Species. Wild Bird Magazine 18 (2): 36-41.

Audubon OF FLORIDA

Audubon of Florida's activities include the protection and preservation of Florida's diverse ecosystems, including the establishment and maintenance of nature sanctuaries. The Society owns over 70 properties in 27 different counties across Florida. Audubon is proud of the number, variety, and richness of its sanctuaries. The properties are widely distributed throughout the state, and represent a high diversity of different ecosystems and habitat types. Audubon's Alafia Bank Bird Sanctuary is ranked by the Florida Fish and Wildlife Conservation Commission as the most important wading bird colony in Florida. It hosts between 10,000-16,000 pairs of colonial waterbirds each spring, including 16-20 species. This colony equals the highest species diversity of any colony in the continental United States. The Alafia Bank supports the largest colony of Roseate Spoonbills in Florida, with over 300 pairs (represents about 30% of the state's Roseate Spoonbills) and one of the largest White Ibis colonies in Florida, with over 8,000 pairs nesting here each year. About 10% of the state's Reddish Egrets also nest on the Alafia Bank (40+ pairs). State-listed species (Species of Special Concern) nesting at the Alafia Bank include Brown Pelican, Snowy Egret, Little Blue Heron, Tricolored Heron, Reddish Egret, White Ibis, Roseate Spoonbill, and American Oystercatcher. About 15 pairs of American Oystercatchers nest on the islands' shorelines.

Fledgling Roseate Spoonbills

The two islands, Sunken Island to the west, and Bird Island to the east, are owned by Mosaic Fertilizer, Inc., a phosphate and potash mining and processing company with a major facility located at the mouth of the Alafia River. The islands are leased to the National Audubon Society for conservation, protection, habitat restoration, and management.

The Society posts the islands, works on habitat projects, including an upland habitat enhancement project currently in progress on Bird Island, conducts surveys, studies the bird species nesting on the islands, and patrols the colony to prevent human disturbance during the nesting season.


Approximately 10,000 pairs of White Ibis nest on the Alafia Bank annually

Florida Coastal Islands Sanctuaries
Alafia Bank Bird Sanctuary

Species	Listing	2000	2001	2002	2003	2004	2005
Brown Pelican	SSC	397	310	535	310	310	304
Double-crested Cormorant		100	80	115	120	110	100
Great Blue Heron		33	34	40	55	24	75
Great Egret		96	120	150	160	130	175
Snowy Egret	SSC	159	80	300	210	240	120
Little Blue Heron	SSC	36	30	115	120	18	50
Tricolored Heron	SSC	84	190	270	220	126	50
Reddish Egret	SSC/WL	50	45	36	30	48	60
Cattle Egret		342	850	930	300	125	90
Green Heron		present	present	present	present	present	present
Black-crowned Night Heron		50	50	50	50	50	30
Yellow-crowned Night Heron		50	50	50	6	50	20
White Ibis	SSC	5,500	4,560	6,050	16,540	7,750	10,475
Glossy Ibis		255	205	150	345	300	325
Roseate Spoonbill	SSC	145	125	230	230	330	345
American Oystercatcher	SSC	18	16	15	14	13	14
Willet	WL						3
Laughing Gull		-0-	-0-	-0-	-0-	100	-0-
Total nests		**7,315**	**6,745**	**9,036**	**18,710**	**9,724**	**12,236**

- Note: These numbers represent estimates of numbers of nesting pairs based on flight-line surveys and direct counts/observations.
- SSC = Florida Fish and Wildlife Conservation Commission listing: "Species of Special Concern"
- WL = Partners in Flight/National Audubon Society "WatchList" species

Fledgling Roseate Spoonbill in flight

Audubon of Florida's Tavernier Science Center and Florida Coastal Island Sanctuaries are banding roseate spoonbill chicks in Florida Bay and Tampa Bay to learn more about this mysterious wading bird. Scientists rely on volunteers' reports of their sightings of these banded spoonbills to fuel what could be groundbreaking discoveries. For the fourth year in a row, the Audubon Society of Florida is asking outdoor enthusiasts across the Southeast to "**think pink**". The population of one of Florida's most striking, rare, and unusual birds, the roseate spoonbill, is growing in numbers in Tampa Bay while sharply declining in Florida Bay, and researchers want to know why. By banding spoonbill chicks in both Tampa and Florida Bay, Audubon hopes to answer questions not only about the causes of success and failure of the populations in these areas, but also about the basic biology of the roseate spoonbill. Public reports of banded spoonbills will help researchers learn at what age spoonbills raise their first chicks, where the birds go when not breeding and even what roseate spoonbills look like at different ages.

Reg. Coordinator Ann Paul retrieves a spoonbill chick for banding

Colonial waterbirds are birds that nest in groups or colonies, typically on coastal islands. They include pelicans, cormorants, Anhingas, herons, egrets, ibis, spoonbills, storks, gulls, terns, and skimmers. In all, 23 species nest in colonies, with another six species which often nest in or near bird colonies but are not colonial themselves. Twelve of these 29 species are listed by the Wildlife Commission as "endangered", "threatened", or "species of special concern".

Florida's Colonially Nesting Species

Species	FWC Listing*	WatchList^
Brown Pelican	SSC	
Double-crested Cormorant		
Anhinga		
Least Bittern		
Great Blue Heron		
Great Egret		
Snowy Egret	SSC	
Little Blue Heron	SSC	
Tricolored Heron	SSC	
Reddish Egret	SSC	WL
Cattle Egret		
Green Heron		
Black-crowned Night-Heron		
Yellow-crowned Night-Heron		
White Ibis	SSC	
Glossy Ibis		
Roseate Spoonbill	SSC	
Wood Stork	E	
Snowy Plover	T	WL
Wilson's Plover		
American Oystercatcher	SSC	
Willet		WL
Laughing Gull		
Gull-billed Tern		
Caspian Tern		
Royal Tern		
Sandwich Tern		
Least Tern	T	
Black Skimmer	SSC	

*Florida Fish & Wildlife Conservation Commission: E = Endangered, T = Threatened, SSC = Species of Special Concern; ^Partners in Flight "WatchList" species

The Tampa Bay area is home to a population of colonial waterbirds totaling as many as 50,000 breeding pairs at nearly 30 sites. Up to half breed in Hillsborough Bay, on the Alafia Bank Bird Sanctuary and spoil islands managed by the Tampa Port Authority. Some of the rarer species have currently stable or increasing populations locally (Reddish Egret, Roseate Spoonbill, American Oystercatcher), but more common species including those that rely on freshwater foraging areas are declining (Snowy Egret, Little Blue Heron, Tricolored Heron, White Ibis, possibly others).

Adult Reddish Egret, in high color

Erosion Control/Oysterbar Habitat Creation Project, Phase 2

Objectives of this Project - Describe the principal and subordinate environmental objectives of the project. Pinpoint any relevant physical, economic, social, financial, institutional or other problems requiring solution.

The principal objective of the project is to control shoreline erosion on the south side of Bird Island. The subordinate objectives are to replace aquatic oysterbar habitat structure in Hillsborough Bay, facilitate creation of additional salt marsh and mangrove habitat mosaic on the Richard T. Paul Alafia Bank Bird Sanctuary shoreline, and provide expanded foraging habitat for listed and migratory bird species.

Erosion from storm wave action and ship boat wakes is threatening the long-term existence of the Richard T. Paul Alafia Bank Bird Sanctuary islands. This project would be Phase I of a multi-year effort to provide erosion control structures along the shoreline of Bird and Sunken Islands. Phase I would place 80-pound perforated polygonal habitat protection devices (PPHPDs) linearly in shallow water offshore the south side of Bird Island. Shoreward of the devices, oyster shell would be added to provide additional substrate for oyster spat to attach, cementing the shell material and creating a heavy erosion control structure.

Results and/or Benefits Expected - Identify specific environmental results and/or benefits to be derived from the project. Include all primary and secondary benefits accruing to the grantee, to the pollution served, and in general, to the public and environment.

Boat wakes and wave action associated with tropical depressions/hurricanes are causing severe erosion on the Alafia Bank Bird Sanctuary, a state-recognized 'Important Bird Area' and important colonial waterbird colony in Tampa Bay, Florida. Primary benefits include: oyster colony replacement, saltmarsh and mangrove habitat mosaic restoration, and estuarine water filtration. Secondary benefits include: provision of foraging habitat for listed and migratory shorebird species, and stabilization of horseshoe crab nesting areas. Habitat benefits of this structure include:

- protection of erosion of the nesting colony island.
- oyster substrate, additional oysterbar habitat.
- foraging sites for American Oystercatchers, a state-listed "Species of Special Concern", wading birds, and migratory and wintering shorebirds, including Long-billed Curlew, Whimbrel, Red Knots, sandpipers, Marbled Godwits, Willets, and Short-billed Dowitchers.
- habitat Essential Fish Habitat for fishes, habitat for crabs, and other marine invertebrates.
- a shallow water "lagoon" area, allowing an opportunity for salt marsh planting and mangrove seedling/propagule recruitment.

About 15 pairs of American Oystercatchers nest on the Alafia Bank Bird Sanctuary's shorelines, and another 75 pairs nest on the shorelines of other islands in Hillsborough Bay, approximately 20% of the state's population. Providing additional oysterbar foraging habitat for this species would benefit the state-wide population of this listed species.

The protected area shoreward of the perforated polygonal habitat protection devices will provide erosion control by reducing wave amplitude, allowing sediment to accrete landward

of the devices, and facilitating saltmarsh cordgrass (planted and/or naturally recruited) to expand, trapping mangrove propagules for recruitment of mangrove seedlings, consistent with the saltmarsh / mangrove community development model widely demonstrated in Hillsborough and Tampa Bays. Mangroves are not propagule limited in this area. Currently the wave energy is too high to allow sustained presence of marsh grass or mangroves, and trees and shoreline are progressively eroding.

General Project Information - Discuss the criteria that will be used to evaluate the results and successes of the project as well its relationship to other work planned, anticipated or underway.

The project will be monitored pursuant to a monitoring plan to be approved during permitting. Monitoring criteria will include stratified random sampling of oyster colonization and rate of growth, fishery utilization (to be conducted in cooperation with Hillsborough County Environmental Protection Commission or others), target bird species utilization, rate of colonization by saltmarsh cordgrass, and mangrove forest growth metrics. Bird utilization will be combined with the annual ongoing surveys of The Richard T. Paul Alafia Bank Bird Sanctuary for species diversity and nesting success. Future phases of the project will be proposed to protect the north shores of Bird Island and Sunken Island.

Provide a detailed scope of work for the proposed project. List in chronological order a schedule of accomplishments, progress, or milestones that are anticipated over the length of the project.

Proposed Project Schedule – assumes expedited permitting schedule.

Task #	Task Description	Schedule (Months)	Accomplishments
1	Project Design	3	Detailed project design during summer 2006.
2	Presentation to Agency on Bay Management	2	Presentation of proposed project to Agency on Bay Management Technical Advisory Committee during summer 2006.
3	Permitting	6	Permit review by U. S. Army Corps of Engineers, U. S. Coast Guard, Florida Department of Environmental Protection, Tampa Port Authority, Hillsborough County Environmental Protection Commission, others – 180 days.
4	Construction	6	Placement of protection devices, oyster shell, saltmarsh planting in late winter/early spring before March 15, 2007, to avoid the bird nesting season and allow optimal opportunity for oyster spat attachment.
5	Monitoring	60	Incremental project monitoring for five years pursuant to permits.
6	Research Publication	12	Preparation and publication of technical research publication in regionally appropriate journal or conference proceedings.

Approximately 2000 linear feet of erosion control structure is needed to protect the south shore of Bird Island. PPHPDs are made of concrete tetrahedrons in blocky structures (PPHPDs will be an alternative shape of hemispherical reef balls poured to emulate limestone rock), with holes like "Swiss cheese". Water and animals can move through them and they can dissipate wave activity. They can also provide habitat for small fish to hide from predators and barnacles, oysters, and other marine invertebrates to colonize. They are made by pouring concrete into fiberglass molds. Devices would be used as the outermost

wave break structure because the Hillsborough Bay bottom south of Bird Island is very shallow, averaging about three feet in depth. Even at the highest tide, it is not possible to move a barge close to the island, for placement of rock or other rip-rap type material in the intertidal zone. Concrete devices, weighing about 80 pounds each, can be moved with planks by four energetic people using the holes in their structures. Rock of similar weight would be impossible to move and place in this shallow water site. Structures of this weight are believed to be necessary to withstand the powerful storm waves and boat wakes that occur here, causing the significant erosion on the shores of the Alafia Bank Bird Sanctuary. Oyster shell can be transported in buckets and spread shoreward of the devices. Without the use of the devices to dissipate the wave energy, the oyster shell will be dispersed by the wave action. Elevations of the final project will be from depths of less than three feet and will be "intertidal", i.e., exposed during low tides.

Oysters are well distributed throughout Tampa Bay, occurring in Hillsborough Bay, and the veliger larvae released during spawning by these oysters move pelagically until they contact hard surfaces upon which they can attach and colonize. The devices and the oyster shell will provide suitable substrate for oyster spat colonization.