

## GULF COUNTY RESTORE ACT PROJECT PRE-PROPOSAL FORM

Project Name: Florida Panhandle Bottlenose Dolphin Longitudinal Health Assessment Plan

Submitting Entity: Gulf World Marine Institute (GWMI)

**I. Please select one or more eligible activity that the project is classified under:**

- Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.
- Mitigation of damage to fish, wildlife and natural resources.
- Implementation of a federally approved marine, coastal or comprehensive conservation management plan, including fisheries monitoring.
- Workforce development and job creation.
- Improvements to or on State parks located in coastal areas affected by the Deepwater Horizon oil spill.
- Infrastructure projects benefitting the economy or ecological resources, including port infrastructure.
- Coastal flood protection and related infrastructure.
- Planning assistance.
- Promotion of tourism and seafood in the Gulf Coast region.

**II. Please provide an executive summary of the project. Describe/quantify the economic (jobs, infrastructure, tourism, etc.) and environmental benefits (habitat, quality, knowledge, long-term sustainability, etc.).**

Wild Dolphin health assessments are conducted through the southeast coastal areas. The most noted of these projects is the long running program being conducted by Dr Randy Wells in Sarasota Bay, FL. These projects give an excellent overview of the health of the general population in a particular water way. By conducting projects like this one we will have a better understanding of the overall health of the dolphins in Gulf County. The last health assessment that was conducted in this area was 7 years ago. To make the data collected from that assessment more valuable and to establish the existing health status, it is crucial that more health assessments are

conducted on regular basis to see how the health of the dolphin population changes over time due to different environmental conditions.

GWMI is a Florida and Federal 501C3 non-profit organization that permitted by Florida Wildlife Commission and National Marine Fisheries Services. The proposal is for:

#### Florida Panhandle Bottlenose Dolphin Longitudinal Health Assessment Plan

Bottlenose dolphins are considered sentinels of their environment because they are long-lived mammals, susceptible to contamination by lipophilic pollutants, and many stocks are considered resident to inshore estuaries making them good indicators of local environmental conditions. As apex predators, bottlenose dolphins are sensitive to ecological perturbations that occur even at lower levels of the food chain. Recent studies of PCB contamination in coastal GA estuaries identified a unique mixture of PCBs in both bottlenose dolphins and prey species, indicating broad-spectrum exposure to these hazardous chemicals among multiple trophic levels of the ecosystem (Balmer et al. 2011, Kucklick et al. 2011)

In the Florida panhandle, bottlenose dolphins are subjected to a variety of threats including physical hazards resulting from interaction with human users of coastal waters (i.e. fisheries and boating traffic), marine and freshwater harmful algal biotoxins (Twiner et al. 2012), and toxins pollutants from human/industrial run-off. These hazards impact the health of Gulf of Mexico bottlenose dolphin stocks, evidenced by frequent marine mammal unusual mortality events in the Gulf of Mexico (Twiner et al. 2012) and abnormal immune function (i.e. eosinophilia syndrome, (Schwacke et al. 2010)). To address these concerns, a multifaceted research plan is proposed to gauge the general health status of FL panhandle inshore dolphin stocks, identify and prioritize specific health hazards and quantify potential stock impacts. A tiered approach of photo-identification (photo-id), remote biopsy, capture-release methods, and prey sampling will be employed to document the health status of these stocks and their local environment. Photo-id and remote biopsy methods will serve as a first tier to provide preliminary information on stock abundance, dolphin movement and priority stressors. The second tier, longitudinal capture-release projects, will provide an opportunity to sample animals in a particular stock to assess potential health effects resulting from exposure to these stressors. Finally, prey sampling will provide an opportunity to examine exposure at lower levels of the food chain and predict the severity of broader ecosystem effects. Ultimately, the identification of

bottlenose dolphin ecosystem stressors and resulting health impacts will facilitate the optimization of management actions and/or conservation plans in order to mitigate future risks and ameliorate stock declines.

Balmer B, Schwacke L, Wells R, George R, Hoguet J, al. e (2011) Patterns of persistent organochlorine contaminants in relation to sighting patterns of bottlenose dolphins from coastal Georgia, USA. *Science of the Total Environment* 409:2094-2101

Kucklick J, Schwacke L, Wells R, Hohn A, Guichard A, al. e (2011) Bottlenose dolphins as indicators of persistent organic pollutants in the Western North Atlantic Ocean and Northern Gulf of Mexico. *Environmental Science & Technology* 45:4270-4277

Schwacke LH, De Guise S, Twiner M, Rotstein D, Townsend FI, Balmer BC, Wells RS, Hansen LJ, Spradlin TR, Rowles TK (2010) Eosinophilia and biotoxin exposure in bottlenose dolphins (*Tursiops truncatus*) from a population impacted by repeated mass mortality events. *Environmental Research* 110:548-555

Twiner M, Flewelling LJ, Fire SE, Bowen-Stevens SR, Gaydos JK, Johnson CK, Landsberg JH, Leighfield TA, Mase-Guthrie B, Schwacke L, Van Dolah FM, Wang Z, Rowles TK (2012) Comparative analysis of three brevetoxin-associated bottlenose dolphin (*Tursiops truncatus*) mortality events in the Florida panhandle region (USA). *PLoS ONE* 7:e42974

**III. Please provide a cost summary/budget. Detail any matching/cooperative funds available for use, and any cooperative support from governmental or other agencies.**

This is a 3yr budget proposal:  
See attached

**IV. Please provide a timeline for project completion. Explain the technical and environmental feasibility (including any permitting considerations) of the project.**

From date of inception this could be operation within 30 days but full scale operation could take 6-12 months.

The permits required to operate this operation would come from FWC and NMFS, in which Gulf World Marine Institute is operating under these permits. A separate Institutional Animal Care and Use Committee (IACUC) permit is required to collect tissue biopsy and wild health assessment.

**V. Please provide the qualifications of the Submitting Entity, the financial feasibility/sustainability and the economic feasibility and sustainability of the project (probability of success, etc.).**

Gulf World Marine Institute has been responding to stranding events in the Florida Panhandle which includes Gulf County for over 30 years. This includes Bottlenose Dolphins, mass strandings of rough-toothed dolphins, and several species of whales. We respond to many single stranding events that have occurred in Gulf County these have been concentrated in Cape San Blas and St Joe Bay. Also, member of GWMI have participated in wild dolphin health assessments in the past including one that was conducted 7 years ago in St Joe Bay. GWMI is funded through donations and grants. Gulf World Marine Park in Panama City subsidizes any short fall in GWMI's operational budget.

**VI. Please provide the anticipated results of the project, and whether it is included in a City of Port St. Joe, City of Wewahitchka or Gulf County Comprehensive and Mitigation Plan?**

A tiered approach of photo-identification (photo-id), remote biopsy, capture-release methods, and dolphin sampling will be employed to document the health status of these stocks and their local environment. Ultimately, the identification of bottlenose dolphin ecosystem stressors and resulting health impacts will facilitate the optimization of management actions and/or conservation plans in order to mitigate future risks and ameliorate stock declines.

Submitted By:

  
Signature

2-27-2013  
Date

Gulf World Marine Institute \_\_\_\_\_  
Company Name

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Address

Panama City Beach, FL 32413 \_\_\_\_\_  
Address

850-258-0949 \_\_\_\_\_  
Telephone Number

ron@gulfworldmarinepark.com  
E-mail Address (if applicable)

**Project Information:**

1. Photo-id Surveys
  - a. Monthly (4 days per month), conducted by 2 graduate students and voluntary intern
2. Remote Biopsy Surveys
  - a. Annual remote biopsy sampling, encompassing 2 weeks
  - b. Two staff provided by NOAA + 1-2 graduate students for additional field assistance
  - c. 30 samples targeted
  - d. Analyses performed by NIST, HML, etc.
3. Capture-Release Health Assessment
  - a. Annual capture-release health assessments, encompassing 2 weeks
  - b. Staff provided by multi-agencies including NOAA, NMMF, NIST, etc.
  - c. 30 animals targeted
  - d. Analyses performed by Cornell, UConn, NIST, HML, etc.

**Budget/Cost Estimates:**

Item	Item #	Description	Frequency (Duration)	Personnel/ Equipment	Description / Estimated Cost per Item	Number of Items	Total Cost	Project Total
<b>Photo-id</b>	1	Field Sampling	Monthly (1 week)	Graduate Student (x2)	\$25,000 stipend per year	2	\$50,000	\$64,800
	2	Field Sampling	Monthly (1 week)	Boat	\$100 per day	48 (4 days per month)	\$4,800	
	3	Field Sampling	NA	Supplies	\$5,000 (camera, computer, software)	1	\$5,000	
	4	Photo-Analysis	Monthly	Graduate Student (x2)	See #1 above	See #1 above	See #1 above	
	5	Results Dissemination	NA	Graduate Students	\$5,000 (Publication costs and travel for conference presentation)	1	\$5,000	
<b>Remote Biopsy</b>	6	Field Sampling	Annually (2 weeks)	Personnel Travel	\$94 hotel room (14 nights); 15 days per diem (@\$51 per day); travel (\$1,500)	2 people <sup>+</sup>	\$7,162	\$59,162
	7	Field Sampling	Annually (2 weeks)	Personnel Time	\$50 / person/ hour	2 people, 150 hours*	\$15,000	
	8	Field Sampling	NA	Supplies	\$1,000 (ethanol, vials, scalpels, etc.)	1	\$1,000	
<b>Health Assessment</b>	9	Laboratory Analysis	Annually	Multiple Laboratories	\$1200 per sample	30	\$36,000	
	7	Field Sampling	Annually (2 weeks)	Personnel Travel	\$94 hotel room (11 nights) <sup>#</sup> ; 12 days per diem (@\$51 per day); airfare, rental car or mileage (\$1000)	50	\$106,450	\$458,950
	8	Field Sampling	Annually (2 weeks)	Personnel Contracts	Govt. contractors, overtime, NOAA contracts, paramedic, catcher	NA	\$142,800	
	8	Field Sampling	Annually (2 weeks)	Boats	For fuel, oil, transport, maintenance	NA	\$17,000	
	9	Field Sampling	NA	Supplies	Collection, shipping, tags, etc.	For 30 animals	\$100,000	
10	Laboratory Analysis	Annually	Multiple Laboratories	\$3090 per dolphin	30	\$92,700		

<sup>+</sup> Additional personnel could include photo-id graduate students

\* 10 hours per day for 15 days

<sup>#</sup> Includes 25 rooms (2 people per room)

BOARD OF COUNTY COMMISSIONERS  
GULF COUNTY, FLORIDA

**RESTORE ACT COMMITTEE (R.A.C.)**

1000 CECIL G. COSTIN SR. BLVD., ROOM 312, PORT ST. JOE, FLORIDA 32456  
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**PUBLIC RECORDS POLICY AND PUBLIC ACCESS ACKNOWLEDGMENT FOR  
GULF COUNTY RESTORE ACT APPLICANTS**

I, RONALD HARDY the undersigned authority and/or representative of the entity GULF WORLD MARINE INSTITUTE and or the individual who has submitted the Gulf County RESTORE Act Proposal/Pre-Proposal titled FLORIDA PANHANDLE BITTENCOURT DOLPHIN LONGITUDINAL HEALTH ASSESSMENT PLAN hereby acknowledge, consent and accept the following representations that coincide with my/our submission for consideration, evaluation and possible recommendation and approval by the Gulf County Board of County Commissioners for funding from the RESTORE Act distribution that strictly complies with the guidelines and regulations set forth under the Restoration and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act of 2012:

1. I/We am the authorized representative of the application/pre-proposal referenced above.
2. I/We have thoroughly reviewed and familiarized myself and/or my entity on which I have submitted the application/pre-proposal on behalf of with the entirety of the Gulf County Public Records policy.
3. I/We have thoroughly reviewed and familiarized myself and/or my entity on which I have submitted the application/pre-proposal on behalf of with the entirety of the Florida Statute Chapter 119 which controls and permits public access to information.
4. I/We hereby acknowledge, consent and agree to the controlling policies and statutes above as well as the free and open exchange of any and all submissions provided hereunder this application/pre-proposal and all information exchanged hereafter including but not limited to further amendments to these proposals as well as surveys, studies, research, data production, books, drawings, property records, work papers, county owner lists, files, forms, reports, accounts, documents, manuals, handbooks, instructions, printouts relating in any manner for the production of the application. In addition, all papers, notes, data, reference material, documentation, programs, printouts, and all other media and forms of expression that in any way include, incorporate or reflect any confidential information of what ultimately shall become the Gulf County plans for use and application of the RESTORE Act funding.
5. I/We acknowledge, agree and fully consent to cooperate with the appointed Gulf County RESTORE ACT committee, county officials and staff as a continuing obligation and condition of final review for this RESTORE Act application/pre-proposal.
6. I/We have submitted this acknowledgment to Gulf County RESTORE Act Committee and the Gulf County Board of County Commissioners for the purpose and intent of receiving an evaluation, review and possible recommendations for anticipated funding from the Restoration and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act of 2012.

Ronald Hardy President  
Signature of RESTORE Act Applicant

Date: 2-27-2013

Ronald Hardy  
Printed Name