# Gulf of Mexico Dolphin Identification System (GoMDIS)- A Collaborative Tool for Bottlenose Dolphin Conservation and Monitoring

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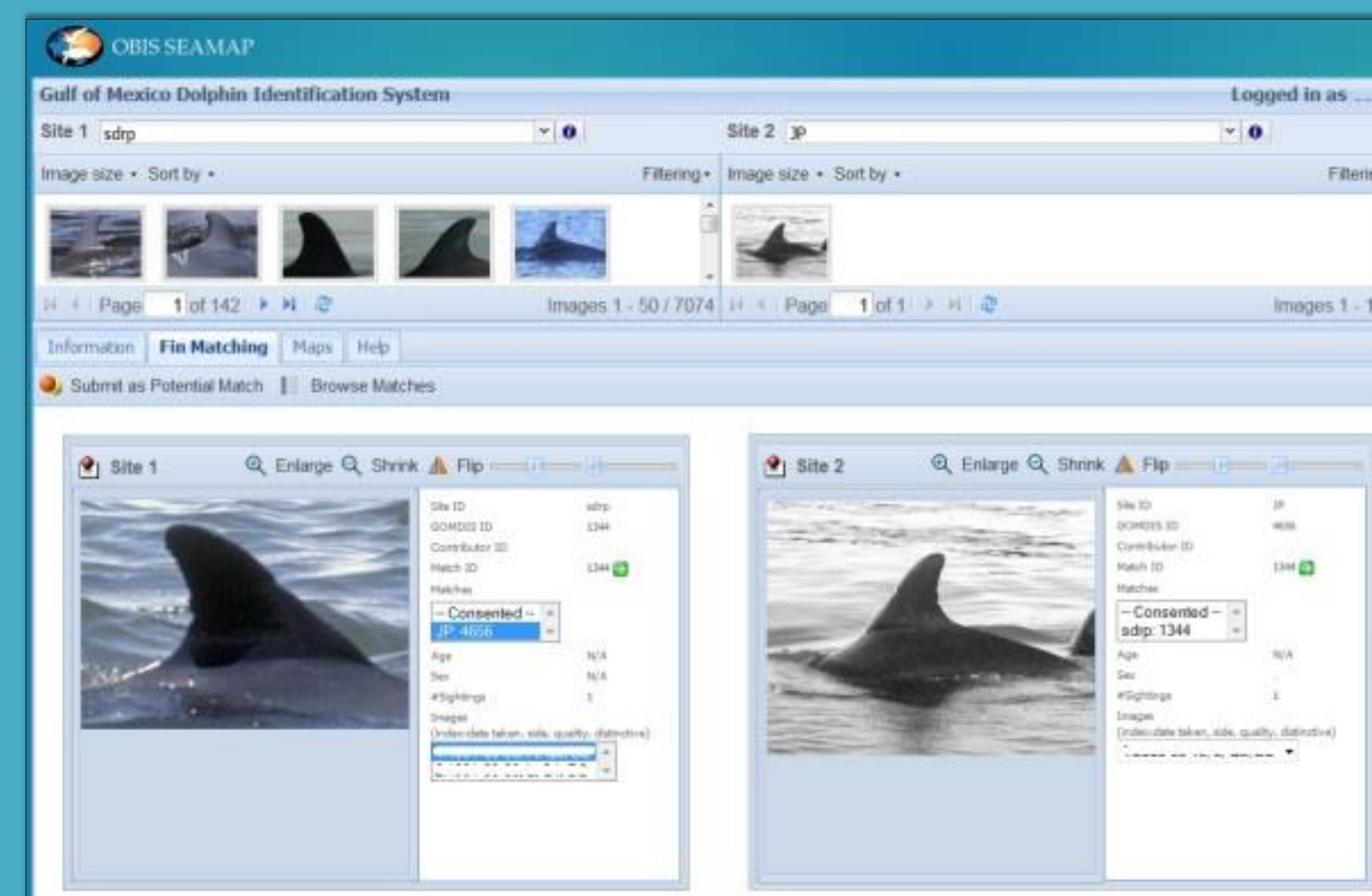*Sarasota Dolphin Research Program/Chicago Zoological Society*
In conjunction with Duke University Marine Geospatial Ecology Lab

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OBIS SEAMAP
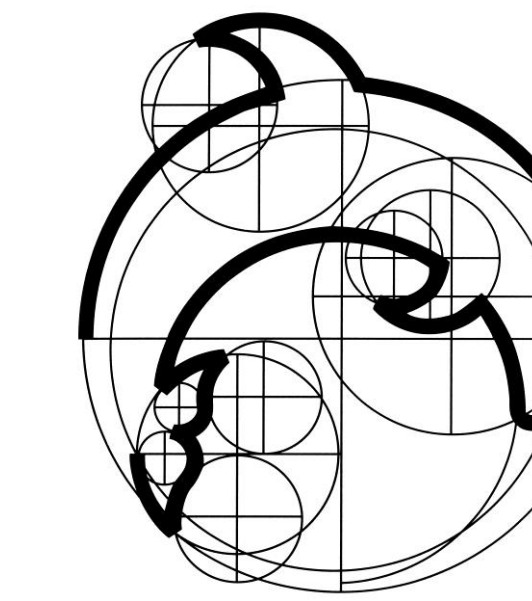
Introduction:

Following the 2010 *Deepwater Horizon* oil spill and several Unusual Mortality Events (UMEs) in the northern Gulf of Mexico, it was determined there was insufficient information in the Gulf region to protect bottlenose dolphins as mandated by the Marine Mammal Protection Act. Photographic-identification is a reliable tool to identify individuals over a long period of time. We are capitalizing on this tool by combining catalogs from a number of collaborating projects around the Gulf into a central database to better understand Gulf dolphins.

The Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations, otherwise known as OBIS-SEAMAP, is an online global database with advanced mapping and visualization tools for marine mammals, seabirds and sea turtles. We use the photo-identification application as an online workflow to browse catalogs, compare and circulate matches to contributors. Matches must be reviewed by both contributors and the curator for verification.
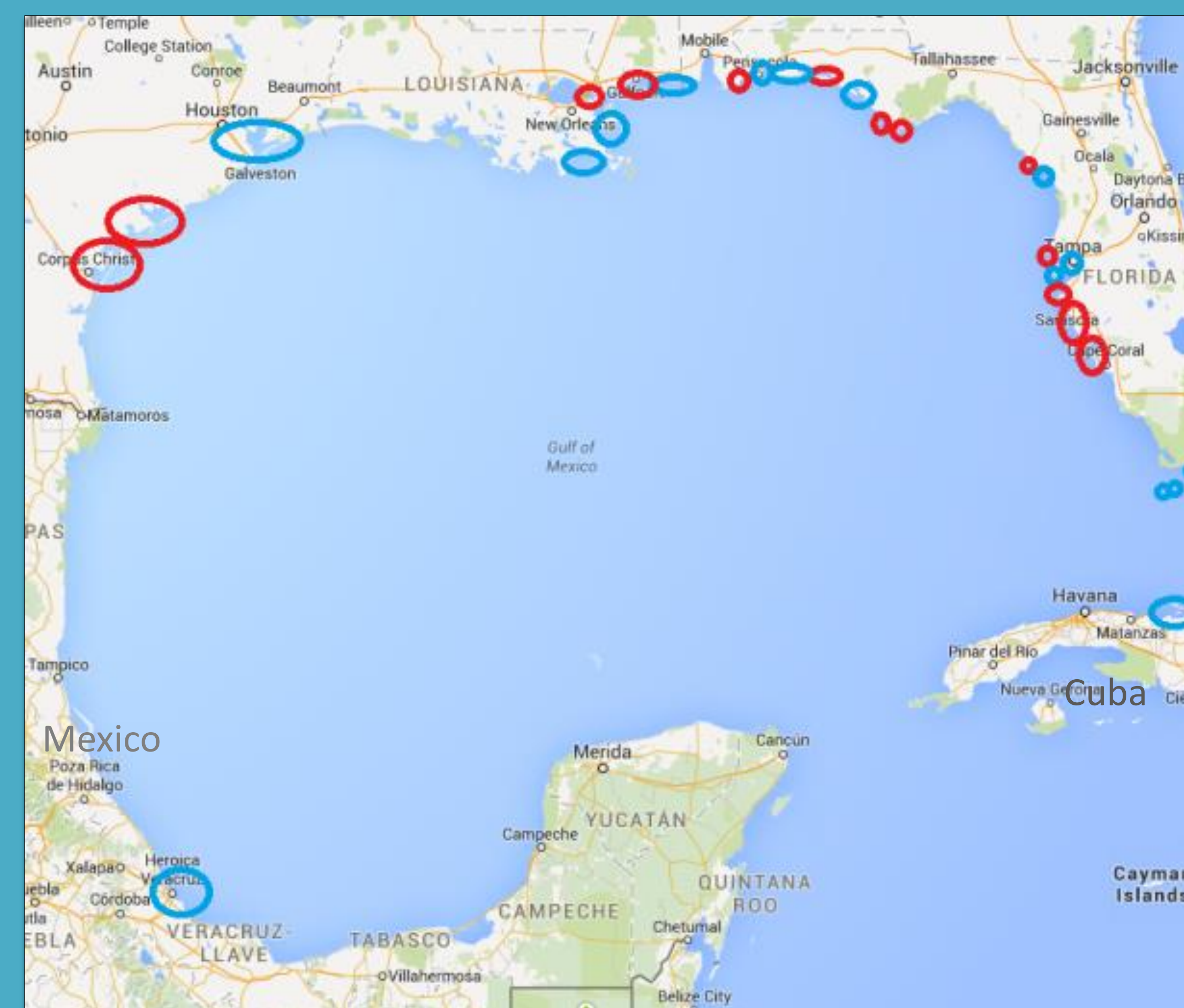
Primary Objectives:

- Develop and implement the first collaborative, comprehensive compilation of Gulf of Mexico dolphin identification data.
- Create a standardized and centralized repository for individual identification images.
- Facilitate matches among collaborating researchers to examine dolphin movement patterns through the Gulf.

Crunching the Numbers:

	Entire Database	Available on OBIS	Projected Totals
Catalogs	13	7	33
Animals	9,488	5,846	17,000
Images	15,504	9,510	20-25,000
Matches	~200	44	???

GoMDIS interface on OBIS-SEAMAP website (Halpin *et al.* 2009) (http://seamap.env.duke.edu) using the fin-matching application.

Currently compiled (red) and projected (blue) areas of coverage

Accomplishments and Interesting Findings:

- Open lines of communication to ensure effective collaboration.
- Truly Gulf-wide with international participants from Cuba and Mexico.
- Longest distance matches between catalogs: ~80 miles point-to-point.
- Longest span between sightings from two catalogs: 24 yrs. (1983-2007).

Incorporating Alternative Data Sources:

- Approaching other kinds of federally permitted organizations such as stranding, rehabilitation/release programs, and necropsy labs to provide fin images for comparisons.
- Given the expense and resources required to rehabilitate sick and injured dolphins, information on the fates of these animals post-release is very important but hard to obtain (Wells *et al.* 2013).
- Documented success of rehabilitation/release program - animal seen by another collaborator multiple times one year post-release, with calf.

Ensuring Success:

- Continue acquisition of funding for long-term operation and maintenance.
- Seek out other federally permitted bottlenose dolphin, stranding, necropsy and rehabilitation programs for inclusion in collaboration.
- Continue to receive, process and upload catalogs to OBIS-SEAMAP.
- **Communication among collaborators!**

Current Collaborating Organizations (n=22)

Argosy University * Chicago Zoological Society/Sarasota Dolphin Research Program * Clearwater Marine Aquarium * Dolphin Ecology Project * Dolphin Research Center * Duke University (**OBIS-SEAMAP**) * Eckerd College * Florida Department of Environmental Protection * Florida Aquarium * Florida Fish and Wildlife Conservation Commission * Florida State University * National Aquarium of Cuba * NOAA/National Ocean Service * NOAA/NCCOS Hollings Marine Laboratory * NOAA/NMFS/SEFSC * Texas A&M University-Corpus Christi and Galveston * Tropical Dolphin Research Foundation * University of Central Florida * University of Massachusetts- Boston and Dartmouth * University of South Florida * University of Southern Mississippi * University of Vera Cruz

Funding provided by:

Literature Cited: Halpin, P.N., A.J. Read, E. Fujioka, B.D. Best, B. Donnelly, L.J. Hazen, C. Kot, K. Urian, E. LaBrecque, A. Dimatteo, J. Cleary, C. Good, L.B. Crowder, and K.D. Hyrenbach. 2009. OBIS-SEAMAP: The world data center for marine mammal, sea bird, and sea turtle distributions. Oceanography 22(2):104-115.   Wells, R.S., D.A. Fauquier, F.M.D. Gulland, F.I. Townsend and R. DiGiovanni, Jr. 2013. Evaluating post-intervention survival of free-ranging odontocete cetaceans. Marine Mammal Science 29:E463-E483. DOI: 10.1111/mms.12007.