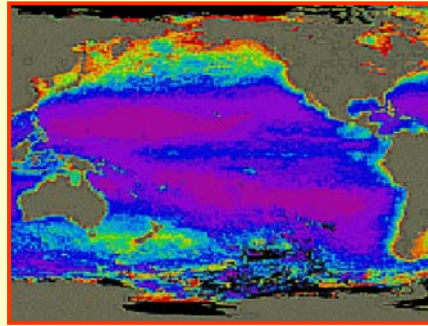


Overview of the Digital Archive of Marine Mammal, Seabird, and Sea Turtle Data for OBIS



A. Read, P. Halpin, L. Crowder, D. Hyrenbach
Duke University



Census of Marine Life (CoML)

➤ **Funding:** Sloan Foundation and National Oceanographic Partnership Program

➤ **Objectives:**

- Quantify the global patterns of marine species distribution and biodiversity
- Design and implement standard databases and innovative sampling techniques
- Emphasize time series / comparative studies



Ocean Biogeographic Information System (OBIS)

➤ Concept:

OBIS is the geographical information system designed to assimilate historic, contemporary and future information on marine animal populations, and to integrate these observations with environmental data.

➤ Development:

- In 2000, CoML funded eight initial database and research OBIS initiatives.
- In 2001, funding for development of digital dataset of marine mammal, sea turtle, and seabird data for OBIS.

Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ Partners:

- **Non-profit Organizations:**
Cascadia Research
- **Governmental Agencies:**
NE and SE Laboratories, National Marine Fisheries Service
- **Educational Institutions:**
College of the Atlantic, Duke University, University of California San Diego, University of Southern California, University of St. Andrews
- **Businesses:**
Clymene Enterprises, Environmental Systems Research Institute, System Science Applications

**Digital Archive of Marine
Mammal / Bird / Turtle Data for OBIS**

➤ **Data Providers:**

California Cooperative Oceanic Fisheries Investigations
Department of Fisheries and Oceans – Canada
International Pacific Halibut Commission
International Whaling Commission
Minerals Management Service
Point Reyes Bird Observatory

...

➤ **Working Collaborations:**

Commission for Environmental Cooperation (CEC)
North Pacific Pelagic Seabird Database (USFWS)
Albatross Telemetry Dataset (IOC)

...

**Digital Archive of Marine
Mammal / Bird / Turtle Data for OBIS**

➤ **Steering Committee:**

Sonia Batten: Zooplankton Biogeography / Oceanography
Sir Alistair Hardy Foundation for Ocean Science

Dee Boersma: Ecology and Conservation of Marine Birds
Zoology Department, University of Washington

John Croxall: Ecology and Conservation of Antarctic Food Webs
British Antarctic Survey

Paul Dayton: Biological Oceanography
Scripps Institution of Oceanography

Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ **Objectives:**

Augment our understanding of the distribution and the ecology of marine mammals, birds and turtles:

- (1) Facilitate study of status and impacts on threatened species
- (2) Enhance ability to test hypothesis about biogeographic and biodiversity models
- (3) Support modeling of shifting species distributions in response to environmental change



Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

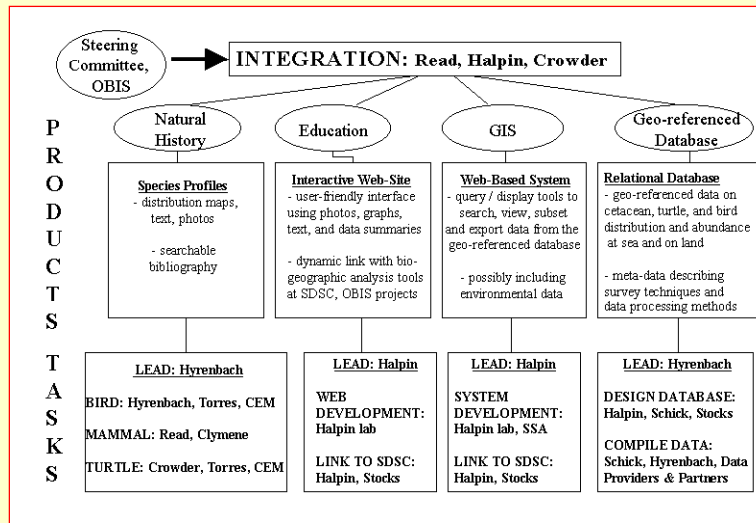
➤ **Products:**

Flexible architecture will appeal to a broad audience:

- (1) Geo-referenced digital database
- (2) Relational database including natural history and other biogeographic information
- (3) Web-based GIS framework for displaying, querying, and exporting geo-referenced data
- (4) Web-based outreach and education program

Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ Project Architecture:



Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ Data Types:

- Any existing data useful to understand the spatial and temporal patterns of species distribution and diversity.
- Data sources include at-sea surveys, stranding data, fisheries bycatch information, land-based counts, museum specimens, and data on individual movements.
- Focusing our efforts on three data types:
 - (1) Geo-referenced at-sea distribution data
 - (2) Land-based observations of breeding / hauling sites
 - (3) Information on individual movements

Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ **Habitat Linkages:**

Seamounts on Line



➤ **Spatial Linkages:**

Gulf of Maine OBIS



➤ **Trophic Linkages:**

CephBase



Digital Archive of Marine Mammal / Bird / Turtle Data for OBIS

➤ **Timeline:**

- **Project Start / End:** May 1, 2002 / April 30, 2005
- **Kick-off Meeting:** June 30 – July 2, 2002
- **Database Design (2002 – 2003):**
 - Engage additional data providers
 - Design data structure / architecture
 - Publish database description
- **Populate Database (2003 – 2004):**
 - Incorporate additional data sources
 - Integrate with OBIS initiatives
- **Outreach (2004 – 2005):**
 - Design web-based educational products
 - Implement publicly-available data server

**Digital Archive of Marine
Mammal / Bird / Turtle Data for OBIS**

➤ **Next Steps:**

- **Outreach:**
Seabird Biogeography Symposium: February 2003
- **Coordination:**
Regional / Topical Meetings of Partners

**PLEASE ADD MORE
IDEAS TO THIS SLIDE**

