Mapping Marine Mammal Activity In and Near U.S. Navy Training Areas

U.S. Navy Marine Species Monitoring (MSM) Program

The U.S. Navy conducts monitoring of protected marine species, including marine mammals and sea turtles, in order to:

- Assess potential effects from at-sea activities
- Improve data on regional animal distribution
- Support basic science for environmental assessments

Marine species monitoring surveys are conducted in the Atlantic, Gulf of Mexico, Gulf of Alaska, Pacific Northwest, Hawaii, Southern California, and the Mariana Islands.

Monk Seal Surveys at Niihau, Hawaii

- The island of Niihau is adjacent to the U.S. Navy’s Pacific Range Missile Facility, and supports a population of Hawaiian monk seals.
- Project objectives:
  - Assess the relative detectability of stranded animals, using hauled-out seals as “proxies”, from aerial vs. ground-based surveys.
  - Assess the feasibility of circumnavigating stranded animals, using hauled-out seals as “proxies”, from aerial vs. ground-based surveys.
- The island of Niihau is monitored by the U.S. Navy Marine Species Monitoring Program.
- The total number of monk seal sightings observed from aircraft vs. ground were compared.
- A total of 21 monk seal sightings were observed from aircraft, vs. 17 from the ground.
- No seal sightings were observed from aerial surveys.

Compass Observation & Marine Protected Animal Survey Software

- Field Data Collection
  - Field Data Collection
    - iPad-based native app, fully functional offline
    - Supports many simultaneous surveys and multiple configurations
    - Detailed basemaps and base layers that can be independently overlayed and edited
    - Data forms specific to each survey type for efficient data collection and reporting
    - Secure authentication against COMPASS web portal

- Standardized MSM Data Model
  - Standardization of multiple data types collected by multiple Navy-funded performers using a variety of protocols
  - Allows comparison and meta-analysis of multiple datasets
  - Provides a common structure for delivery of Navy-funded data to various data repositories (EIMS, OBIS-SEAMAP)

- Web Portal
  - Secure portal accessible from any internet connection
  - Manage surveys, data, and users
  - Initiate and configure new surveys
  - View/Query collected data on a web map
  - Export survey data to multiple formats and as a deliverables compatible with the Navy Environmental Information Management System (EIMS)

Marine Mammal Monitoring during Pile Driving at Naval Base Kitsap Bangor, Washington

- In-water construction using pile driving creates underwater noise that may affect marine life.
- Project objectives:
  - Monitored the occurrence of cetaceans and seabirds in conjunction with pile driving activities.
  - Marine mammal sighting locations were categorized by time relative to pile driving activities.

Humpback Whale Tagging off Virginia Beach, Virginia

- Migrating humpback whales can occur in the vicinity of training areas and Navy training areas.
- Project objectives:
  - Collect data on the occurrence and behavior of humpback whales in the region.
  - Investigate whether humpback whales can be used as biological “proxies” for assessing Navy impacts.

Medusa Survey Locations:

- White Point
- North Point
- Tang Rd
- Beach Rd
- Sugar Plantation
- Leava Rd
- Keananaki Point
- Wewak Rd
- Kawaihoa Point
- Flora Rd
- Escolar Rd
- Lehua Rd
- Tang Rd
- Flora Rd
- Kawaihoa Point
- Wewak Rd
- Keananaki Point
- Leava Rd
- Sugar Plantation
- North Point
- White Point

MSM Data Model

- Fully functional offline connection
- Multiple sites
- Details
- Basemaps
- Base layers
- Data forms
- Configurations
- Survey types
- Data collection
- Reporting
- Authentication
- Secure portal
- Management
- Surveys
- Users
- New surveys
- View/Query
- Data delivery
- Deliverables
- Navy Environmental Information Management System (EIMS)
- OBIS-SEAMAP