



U.S. Navy Funded Marine Mammal Monitoring in the Gulf of Alaska 2011-2014

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INTRODUCTION

The U.S. Navy funds significant marine mammal research and monitoring projects within the Pacific Ocean including the Gulf of Alaska.

Starting in 2010, the U.S. National Marine Fisheries Service and Navy agreed to address specific marine mammal monitoring objectives within the Gulf of Alaska (Figure 1).

In support of this agreement, monitoring efforts are underway using a variety of research tools collecting data for site-specific monitoring, as well contribute to the overall body of marine mammal scientific knowledge.

METHODS

Bottom deployed high frequency acoustic recording packages (HARPs) are used to record marine mammal vocalizations and anthropogenic sounds from 10 Hz up to 100 kHz (Figure 1).

HARPs are designed, calibrated, deployed, and data analyzed by Scripps Institution of Oceanography: http://cet.uscd.edu/technologies_AutonomousRecorders.html

Two HARPs were initially deployed in July 2011 on the shelf and slope of northern Gulf of Alaska south of Seward, AK (Figure 1)

Initial HARP service and data retrieval was completed in May 2012. Field service involves release of HARP from the bottom, removal of deployed hard drives, installation of new fresh hard drives, and redeployment of the HARP to the same locations.

A third HARP was field deployed on the Pratt seamount within the Gulf of Alaska in September 2012 (Figure 1).

All three HARPs will be next serviced in May 2013 and redeployed at the same locations. Analysis from all three HARPs through May 2013 will be reported by the Navy in December 2013.

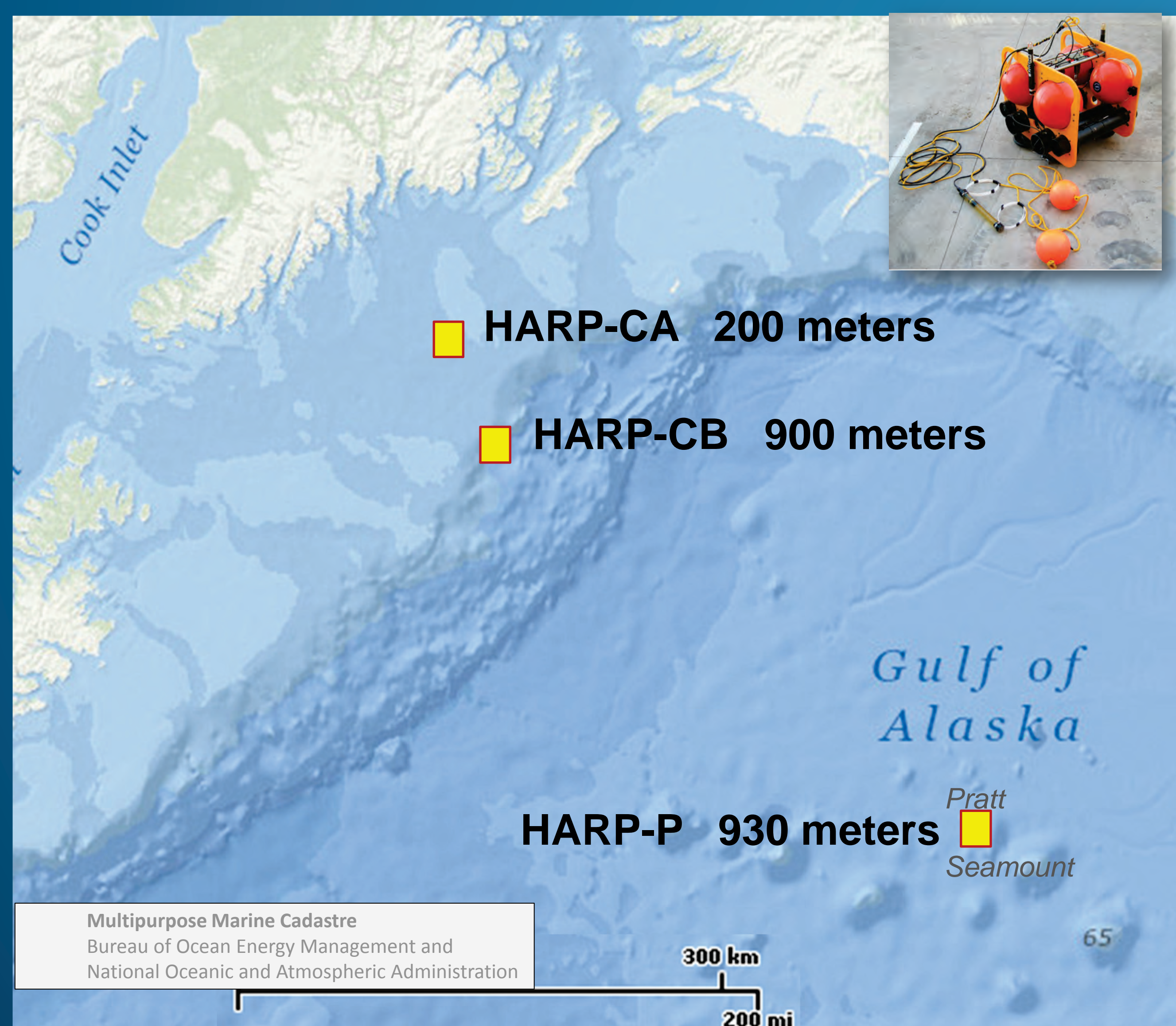


Figure 1. Locations of three Navy funded high frequency acoustic recording packages (HARP) within the Gulf of Alaska. Inset: picture of HARP *

RESULTS

Analysis of recordings from first two HARPs, HARPs "CA" and "CB" (Figure 1), were completed in December 2012.

A summary from the 2012 annual monitoring report includes:

- Over 5,756 hours of passive acoustic data collected
- Four baleen whale species detected (blue whales, fin whales, gray whales, and humpback whales)
- No North Pacific right whale or minke whale detections
- Six species of odontocetes detected (Baird's beaked whale, Cuvier's beaked whale, killer whale, sperm whale, Stejneger's beaked whale, and unidentified porpoise, likely Dall's porpoise)
- Ship noise more frequently heard at site HARP-CA than HARP-CB
- Overall, close ship noise not very common anthropogenic sound at either site
- No naval mid-frequency active (MFA) sonar events detected throughout monitoring period
- Underwater explosions heard with some regularity at site HARP-CB, only once at site HARP-CA

Full results are included in the Navy's annual reports to NMFS and public (see right). Additional results presented at this meeting in poster:

Širović et al 2012. Cetacean seasonality in the Gulf of Alaska from passive acoustic monitoring

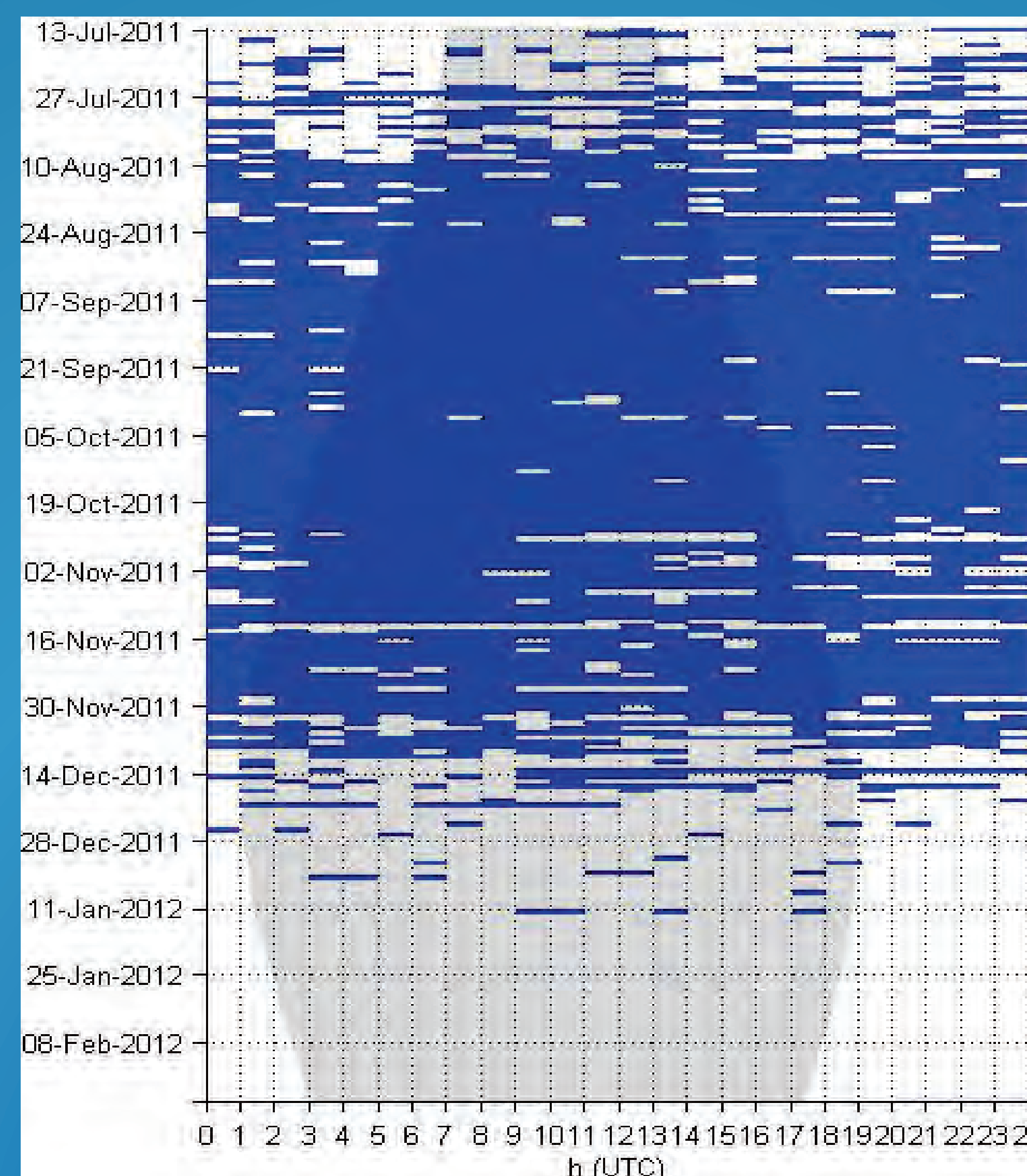


Figure 2. Northeast Pacific blue whale "B" calls in hourly bins at HARP-CB (shaded area local night) *

DISCUSSION AND UPCOMING 2013 EFFORTS

1) 2013-2014 PASSIVE ACOUSTIC

HARP field deployment scheduled to continue until end of 2014. Results will be presented to NMFS and public annually.

U.S. Navy's 2011 and 2012 Gulf of Alaska Annual Monitoring Reports available from NMFS Office of Protected Resources:

<http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>

...and from a new U.S. Navy Public monitoring website:

<http://www.navymarinespeciesmonitoring.us/reading-room>

(under "Pacific Monitoring Reports" then "Gulf of Alaska")

2) 2013 VESSEL SURVEY IN THE GULF OF ALASKA

Gulf of Alaska Line-Transect Survey (GOALS II)

In late spring and early summer of 2013, the Navy will fund a 30-day vessel survey for marine mammals within the Gulf of Alaska (Figure 3).

Objectives include:

- 1) Assess abundance, spatial distribution and density of marine mammals, with focus on beaked whales and ESA-listed cetacean species through visual line transect surveys and passive acoustics using towed hydrophone array and sonobuoys
- 2) Increase knowledge of species' vocal repertoire by linking visual sightings to vocally active cetaceans, in order to improve effectiveness of passive acoustic monitoring
- 3) Attempt to photo-identify and biopsy sample individual whales opportunistically for analysis of population structure, genetics, and habitat use
- 4) Attempt to locate whales for opportunistic satellite tagging using visual and passive acoustic methodology in order to provide information on both large- and fine-scale movements and habitat use

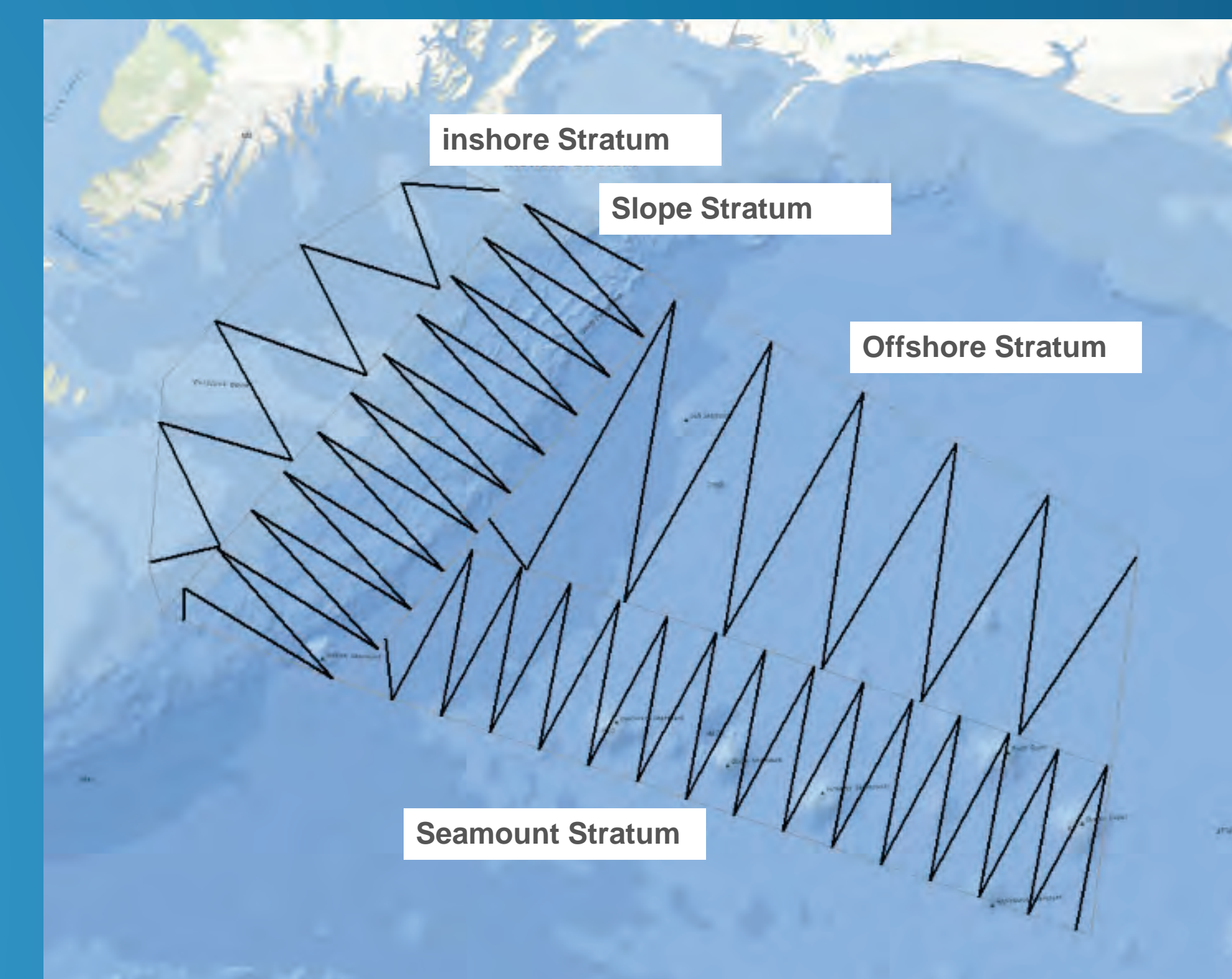
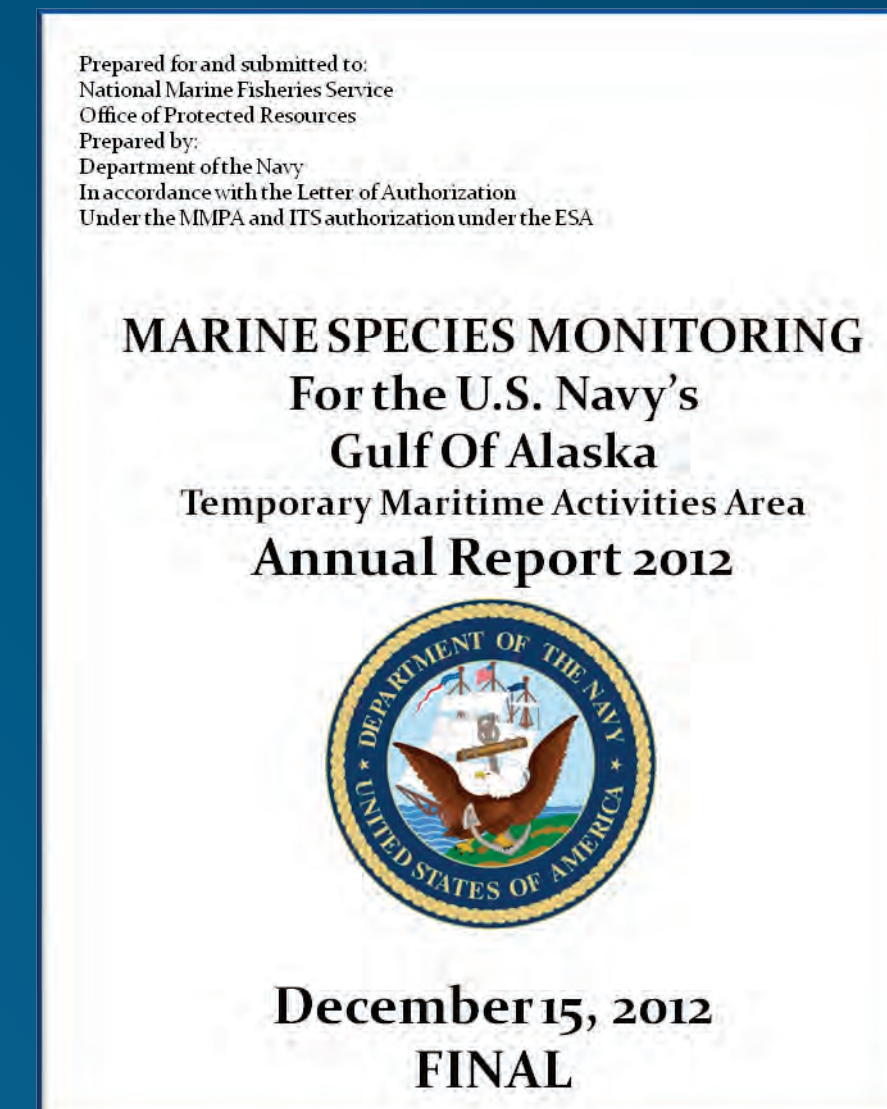


Figure 3. Proposed GOALS II tracks lines for 2013 survey.



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