

Cordell Bank National Marine Sanctuary

Whales and Shipstrikes

Management Issue

Large vessel traffic in the San Francisco Bay region overlaps with hotspots for large whales in Cordell Bank National Marine Sanctuary (CBNMS or Sanctuary). Understanding factors related to vessel traffic and the ecology and behavior of whales is needed for effective management actions to protect whales.

Description

Large vessel traffic inbound and outbound from San Francisco Bay travels through a traffic separation scheme (TSS) that directs traffic in lanes to the north, south, and west of the bay entrance. The northbound lane crosses through CBNMS. Coastal traffic may also bypass the TSS and transit through other parts of the sanctuary on the way to ports north or south of San Francisco. Endangered blue, fin, and humpback whales transit and feed within CBNMS. The co-occurrence of whales and ships creates an elevated risk of vessel strikes, and thus mortality, to whales. Protecting these animals and helping the populations to recover is a priority for CBNMS. Although the sanctuary has been addressing this issue since 2007, there are still information needs to assist managers in reducing ship strikes on whales. Information about the spatial and temporal variability of ships and whales, and the response of ships to different management strategies will assist managers in developing effective strategies to protect whales.

Questions and Information Needs

- 1) What is the best method to acquire and analyze Automated Information System (AIS) data in a timely manner?
- 2) Using AIS data, what are the spatial and temporal patterns of vessel activity within the Sanctuary?
- 3) How have shipping patterns changed over time and how are they projected to change in the future?
- 4) How do shipping patterns change in response to emissions regulations?
- 5) What are the spatial and temporal patterns of overlap between ships and all whale species and what factors influence this?
- 6) How does ship strike risk to whales in CBNMS compare to other areas along the west coast?
- 7) How well do current management schemes reduce the risk of shipstrikes to whales?
- 8) How do other risks to marine mammals such as entanglement affect whale populations and health?



Large vessels such as this cargo vessel transit through habitat for endangered whales. Photo: Bob Wilson

Scientific Approach and Actions

- Compile AIS data to determine spatial and temporal patterns of vessel activity within the Sanctuary
- Evaluate spatial and temporal overlap of vessels and whales
- Determine relative risk of shipstrikes to whales along the west coast
- Compare ship strikes to other threats such as entanglement

Potential Key Partners and Information Sources

NOAA Fisheries, Point Blue Conservation Science, United States Coast Guard, International Fund for Animal Welfare, Scripps Institution of Oceanography, Gulf of the Farallones National Marine Sanctuary, Monterey Bay National Marine Sanctuary, University of California Davis-Bodega Marine Laboratory

Management Support Products

- Methods for AIS acquisition and analysis
- Integrated maps of vessel activity, persistent physical features and areas of biological concentration
- Information on risk to each whale species and biological, physical, regulatory, and socioeconomic factors that influence risk
- Maps of relative risk along the west coast

Updated: 12/3/2014

For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>

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Planned Use of Products and Actions

- Policies, procedures and regulations to minimize the effects of vessel activities on Sanctuary resources
- Use research results to develop educational products that will inform the public about potential impacts of vessels on the Sanctuary and practices that can be undertaken to minimize these impacts

Program References

CBNMS Management Plan

- Resource Protection Action Plan, strategy RP-1, RP-2, RP-4,
- Conservation Science Action Plan, strategy CS-7

CBNMS Condition Report

- Status of key species (question 12)
- Levels of human activities that may influence living resource quality (question 14)

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