



Science Needs Assessment Human Use

Conservation Issue

Human activities clearly influence the quantity and quality of Monterey Bay National Marine Sanctuary (MBNMS) resources, including water quality, habitat, living resources, and maritime archaeological resources. However, more data on the spatial distribution and intensity of human activities and how those activities change through time are necessary to assess the level of these impacts.

Description

MBNMS and surrounding communities are inherently linked. Many human activities influence the condition of sanctuary resources, with some activities having a positive impact and others having a negative impact. Because it is not feasible to manage natural or ecological processes, the management of human uses is vital to the protection of sanctuary resources. As such, good data regarding human uses and activities is critical to understanding anthropogenic impacts on the sanctuary as well as benefits gained from the utilization of marine and coastal resources. In addition, data are needed to gauge the effectiveness of management activity and investigate the costs and benefits of potential changes to sanctuary regulations. To better understand the relationship between human activities, the condition of sanctuary resources, and the effectiveness of sanctuary regulations, we need additional data on the level and location of various human activities that occur in and adjacent to the sanctuary.

Data and Analysis Needs

1. Human activities that influence the condition of sanctuary resources, their geographic distribution, and any hot spots
2. Past, current, and projected future levels of human activities and their projected impacts on sanctuary resources
3. Effects of sanctuary regulations on human activities in and around MBNMS
4. Overall impact (both negative and positive) of various human activities on sanctuary resources
5. Socioeconomic and demographic background of communities that interact with MBNMS
6. Effects of the sanctuary on businesses
7. Effects of changes in ecological status and trends within MBNMS on human well-being

Potential Products

- Publications that outline recommendations for sanctuary managers regarding how they can help support local economic growth and improve resource protection at the same time (e.g., *Economic Assessment of the Monterey Bay National Marine Sanctuary Communities*)
- Reports (e.g., System-Wide Monitoring [SWiM] Program reports outlining findings) that inform sanctuary managers of current conditions and trends, guiding them in decision making

- Web-based surveys to collect data regarding marine resource usage
- A website with graphs and maps of human use trends

Suggested Scientific Approach and Actions

- Analyze existing demographic (e.g., Current Population Surveys) and socioeconomic data for central California communities to determine the extent that these communities are affected by sanctuary activities and regulations
- Identify gaps in available data and methods to collect these data
- Understand and predict the level of human activity through space and time through programs such as the SWiM Program, which is designed to track natural and anthropogenic impacts on the sanctuary at specific spatial and temporal scales through collaborative monitoring efforts
- Facilitate graduate student seminars to better gauge the sanctuary's effectiveness at dealing with the negative and positive effects of human activity
- Conduct online surveys regarding coastal and marine resource usage in order to gather data on the economic impact and social significance of various human activities and connect those activities to ecological and biological attributes of the marine environment

Key Partners

Monterey Bay National Marine Sanctuary Foundation, Partnership for Interdisciplinary Studies of Coastal Oceans, Monterey Bay Aquarium Research Institute, California Sea Grant, National Center for Ecological Analysis and Synthesis, California State University Monterey Bay, Natural Equity, Monterey Institute of International Studies

Supplementary Information

[Socioeconomic Research and Monitoring Program for Monterey Bay](#)
[Economic Assessment of the Monterey Bay National Marine Sanctuary Communities](#)
[System-Wide Monitoring \(SWiM\) Program](#)



(Left) Cruise ships visit Monterey Bay several times per year and provide an economic boost to the local tourism industry. (Right) Monterey Bay area commercial fishers pull in their harvest with a net. Commercial and recreational fishing is an important economic force in Monterey Bay and is historically and culturally significant. Photos: Chad King/NOAA

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