Thunder Bay National Marine Sanctuary
Socioeconomics: Impacts of On-water Recreation

Management Issue

The Thunder Bay NMS (TBNMS or Sanctuary) does not have reliable or consistent data on the quantity and distribution of recreational diving, snorkeling and kayaking in the sanctuary. This data is essential for determining both positive and negative impacts on sanctuary resources, as well positive impacts on the local and regional economy.

Description

The sanctuary is a popular destination for diving, snorkeling and kayaking. To foster awareness and stewardship, TBNMS encourages and facilities public access to sanctuary resources. Divers can have both positive impacts (i.e. conduct monitoring efforts, contribute imagery and other data, as proponents for preservation, etc.), and negative impacts (cause anchor damage on fragile sites, move artifacts, looting, etc.) on resources. Good data regarding human uses and activities is essential to understanding anthropogenic effects to the sanctuary as well as benefits gained from the utilization of marine and coastal resources.

A diver explores the wreck of the freighter Grecian *resting in 100 feet of water in the sanctuary. Divers can have both positive and negative influences on sanctuary resources.*

Understanding on-water recreational trends in the sanctuary will help TBNMS better target its marketing and measure local economic benefits. To better understand the relationship between human activities, the condition of sanctuary resources, and the effectiveness of sanctuary regulations, we need data on the level and location of various human activities that occur in and adjacent to the sanctuary.

Questions and Information Needs

1) What is the geographic distribution of human activities that influence the condition of sanctuary resources? What types of pressures does this put on sanctuary resources?

2) What are the most popular shipwrecks in the sanctuary?

3) Has the sanctuary installed moorings at all popular shipwrecks? Are there gaps?

4) How does recreational diving in and around the sanctuary affect the local and regional economy?

5) What are the projected future levels of human activity (diving, kayaking, snorkeling, etc.)?

6) How do use, non-market economic use values, and social values change with resource conditions?

7) What are the knowledge, attitudes, and perceptions of sanctuary management strategies and regulations?

Scientific Approach and Actions

- Building on a 2007 ONMS pilot study and a 2012 University of Michigan socioeconomic study for Alpena, conduct a detailed study of human activities in the sanctuary.
- Data mining from recreational dive operators.
- Create mechanisms for data acquisition (i.e. paper/digital forms for charter operators, encourage online submittals and "wiki" type entries for individual divers, self-addressed mailers at boat launches, etc.)
- Conduct online surveys regarding coastal and marine resource usage in order to gather data such as the economic impact and social significance of various human activities, and connect those activities to ecological and biological attributes of the marine environment
- Obtain information on knowledge, attitudes, and perceptions of sanctuary management strategies and regulations.

Potential Key Partners and Information Sources

Local charter operators; State of Michigan; University of Michigan; Michigan State University, Alpena Community College; Cities of Alpena, Harrisville, Presque Isle, Rogers City among others.

Management Support Products

- Data/report that characterizes diving and other recreational activity in the sanctuary.
- Publications, such as "Economic Assessment of the Monterey Bay National Marine Sanctuary Communities," which outline recommendations to Sanctuary managers regarding how they can help support local economic growth and improve resource protection at the same time
- Data to support next generation Thunder Bay NMS Condition Report

Planned Use of Products and Actions

- Data will help TBNMS measure the effectiveness of current and future shipwreck moorings and other preservation strategies.
- Data will help sanctuary determine which sites may be most impacted by diving, and consequently should be priorities for documentation.
- Data will help quantify the local and regional economic effects of recreation in and around the sanctuary.
- Data will contribute to community, regional and state efforts to market northeast Michigan as heritage tourism destination.
- Data will help quantify the net benefits of protection and restoration of sanctuary resources.
- Data on knowledge, attitudes, and perceptions will support education and outreach efforts.

Program References

TBNMS Management Plan,
- Activities 4.2, 4.3 and 4.4