Coastal and Marine Spatial Planning

RESEARCH

Project Summary

Massachusetts Ocean Partnership

2010 Massachusetts Recreational Boater Survey

The 2010 Massachusetts Recreational Boater Survey gathered spatial and economic data relating to recreational boating trips in Massachusetts coastal and ocean waters during the 2010 boating season. Using an innovative, online mapping tool designed specifically for the survey, boaters were able to plot their actual trips, which were then compiled into comprehensive maps depicting recreational boating patterns and density.

Results revealed recreational boating patterns in coastal waters and the economic contribution of this activity to the Massachusetts economy - an estimated $806 million in 2010.

The research findings will be incorporated into the Massachusetts Ocean Management Plan and can be used by resource managers, the boating industry and others in many ways, such as ensuring boating routes and destinations receive appropriate attention in ocean planning. The complete report is available through the Massachusetts Ocean Partnership.
STAKEHOLDER RESEARCH

The 2010 Massachusetts Recreational Boater Survey was the result of a broad partnership with Massachusetts boating organizations, coastal resource managers, and research professionals that together gathered spatial and economic data relating to recreational boating activity in Massachusetts coastal and ocean waters during the 2010 boating season.

With more than 1500 miles of coastline, Massachusetts supports a large, diverse population of recreational saltwater boaters. The Massachusetts Ocean Management Plan (Plan) completed in 2009 recognized recreational boating as an activity with “significant actual and prospective conflicts among multiple waterway uses in Massachusetts” and included the economic value of recreational boating as a key socio-economic indicator that will be used to inform coastal management. At the time of Plan completion, statistically robust recreational boating data were identified as an important need for comprehensive ocean planning.

To fill this data gap, the Massachusetts Ocean Partnership, with funding from the Gordon and Betty Moore Foundation, brought together a broad partnership of Massachusetts boating organizations, coastal resource managers, economists, statisticians, geographic information systems experts and software designers to develop a study of the recreational boating community. The 2010 Massachusetts Recreational Boater Survey gathered information on boating activity in Massachusetts’ coastal and ocean waters directly from recreational boaters. Researchers sent 10,000 surveys to owners of Massachusetts registered and documented vessels in the spring of 2010 asking for participation in the six-month study. Over 22% responded and provided detailed information through monthly surveys between May and October about their boating trips including expenditures, recreational activities, and routes. Boaters plotted their spatial data (routes and activity areas) using an innovative online open source mapping tool created by Ecotrust. Using statistical methods and economic models, the demographic and economic information from the sample of boaters was generalized to the population of Massachusetts boaters.

Because this effort was the first of its kind, some primary goals of the study were to create a method that (1) could be easily replicated for Massachusetts’ coastal and ocean waters; (2) could be adapted for use in future projects focused on other ocean uses and interests; and (3) was flexible enough to be used in other geographic areas, at a variety of scales, or to gather other spatial data. The open source nature of the mapping application also allows researchers to use the tool for other projects, including recreational boating studies in different regions.

Results from this study will supplement previous information on recreational boating, and will be incorporated into Plan updates. Specifically, study data can be utilized by resource managers, the boating industry, and others to reduce conflicts between ocean users, improve business planning, and ensure that favorite routes and destinations are considered during the decision-making process.

To facilitate coordinated interstate ocean planning, the methods and tools of this study could be applied on a regional scale to characterize New England boating patterns and regional economic impact.

“Recreational boating is a very important use of our coastal and ocean waters that must be considered in ocean planning efforts. This study helped to fill an identified need for more information on boating use, patterns, and economic linkages. We thank everyone responsible for this thorough survey and look forward to incorporating the results into the Massachusetts Ocean Management Plan.”

- Bruce Carlisle, Acting Director of the Massachusetts Coastal Zone Management Program

Power of Partners

The success of this study was largely due to the support and expertise of our project partners, comprised of Massachusetts boating organizations, coastal resource managers, economists, statisticians, geographic information systems experts and software designers. Our partners provided us with great insight on how to create and execute a successful survey. More specifically, the partners helped inform the study design, develop survey questions, encourage participation of boaters, review results, and in general, “spread the word” about the work. Some partners also donated cash prizes, which were used as an incentive to encourage boater participation throughout the entire boating season.

Partnering Organizations

• The Massachusetts Ocean Partnership
• The Urban Harbors Institute (University of Massachusetts Boston)
• The Massachusetts Office of Coastal Zone Management
• The Department of Environmental, Earth and Ocean Sciences (University of Massachusetts Boston)
• The Center for Survey Research (University of Massachusetts Boston)
• Marine Consulting Services
• Ecotrust
• Massachusetts Marine Trades Association
• Massachusetts Boating and Yacht Clubs Association
• Massachusetts Harbormasters Association
• National Oceanic and Atmospheric Administration’s Office of National Marine Sanctuaries
• Sailors for the Sea
The information used in these maps was collected through an innovative, online mapping tool created for this study that allowed boaters to easily document their routes and destinations from their own computers. This is an exciting research tool that can be used for other studies where direct stakeholder input is needed.

The highest intensity of boating in Massachusetts generally occurs close to shore. The most popular boating areas (shown in red) were Boston Harbor, Cape Ann, and Buzzards Bay. Common routes were Boston to Provincetown and Cape Cod Bay to Buzzards Bay via the Cape Cod Canal. Recreational boaters from Massachusetts often travel into the waters of neighboring states, however the maps do not show boating activity of out-of-state boaters as they were not participants in the survey.
Economic contribution estimates were also extracted for two of the five study regions that received sufficient responses for analysis: the Southeast region, consisting of Barnstable, Bristol, Nantucket, and Dukes counties, and the East Central region, consisting of Norfolk, Suffolk, and Plymouth counties. Based on the data collected by the survey, the 2010 economic contribution of recreational boating to the Southeast region was $172 million, supporting over 1,000 jobs; and the contribution to the East Central region was $135 million, supporting nearly 1,100 jobs.

It should be noted that these estimates are likely conservative, representing only the economic value and jobs attributed to boater trip-related spending, not the full value of the recreational boating industry in Massachusetts. During the 2010 boating season, the Massachusetts economy was beginning to recover from the severe 2008-2009 recession which may have dampened recreational boating. Boaters also reported that their 2010 boating activity was less active than normal. Finally, while expenditures made by out-of-state boaters and foreign-flagged vessels visiting Massachusetts are potentially substantive, the boating tourist population was beyond the scope of this survey and is not reflected in the economic impact estimate.

This research considered a wide range of trip-related spending to estimate recreational boating’s contribution to the Massachusetts economy. Based on the data gathered during this study, the contribution of coastal and ocean recreational boating expenditures to the Massachusetts economy in 2010 was at least $806 million. This estimate accounts for boaters' trip-related spending and yearly expenditures, such as maintenance fees, seasonal storage and boat insurance, as well as the impact of this spending on other economic activity.

The highest level of trip-related spending by boaters was on boat fuel and oil (Figure 1). Other spending paid for groceries and restaurant expenses; transient or guest dockage (marina fees); general recreation, entertainment and shopping; accommodations; and other trip-related expenditures. Spending for both trip-related and yearly expenditures supported over 4,730 jobs within the state, and the sectors most impacted included leisure and hospitality; other services; and trade, transportation and utilities.

**Boats**
- 52% of boats were between 16 and 26 feet in length, and the most common boat type was “open vessel” (63% were open vessels, 18% were sailboats, 15% were cabin cruisers, etc.)
- 85% of boats were powered by gas and 13% were powered by diesel
- Most boats registered in Massachusetts were stored at residential locations (e.g. private berth, mooring, trailer on land), while most documented vessels were stored at commercial facilities
- Over 75% of registered boats were powered by outboard engines; almost 95% of documented vessels were powered by inboard engines

**Boaters**
- Over 95% of participating boaters were male with an average age of 58 years
- Approximately 59% of boaters were employed full-time; 30% were retired
- 66% of boaters reported a household income of more than $100,000 in 2009
- 53% of boaters reported taking a boating safety course (e.g. Boat-Ed through the Massachusetts Environmental Police)

**Boating Activity**
- Cruising, entertaining family and friends, fishing, and sightseeing were ranked as the most popular activities while boating
- The average number of boating hours during the 2010 boating season was 72
- 16% of the reported boat visits did not include an “on-water” trip
- On average, boaters went out on the water six days per month during the 2010 boating season, with July and August as the most active boating months
- The mean number of miles traveled to launch or board a boat was approximately 17 miles

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*Vessels over five tons that are registered with the U.S. Coast Guard are called “documented vessels”. All other boats powered by a motor are registered with the state of Massachusetts and are called “registered boats”.

**Economics of Boating**

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**Figure 1: Categories for Trip-related Spending by Massachusetts Recreational Boaters in 2010**

- Boat and Auto Fuel and Oil
- Groceries and Restaurant Dining
- Accommodations
- Transient / guest dockage (marina fees)
- General recreation, entertainment and shopping
- Other trip-related expenditures

**Notes:**
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This word cloud is a visual representation of the frequency at which the terms appear in this publication.