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Management of Boating in Minnesota: Problems and Actions

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Introduction

Minnesota boat owners expect a high degree of boating quality in the state's lakes and rivers. But do they get it? What kinds of problems do boaters encounter? How should Minnesota's water resources be managed in the future to offer safe and rewarding boating opportunities?

To obtain answers to these and other questions related to the quality of boating in Minnesota, a statewide survey of registered Minnesota boat owners was conducted in 1988 by the University of Minnesota and the Minnesota Department of Natural Resources (DNR), funded by the DNR.

Nearly 700,000 boats were registered in Minnesota in 1989—about one boat for every 6.3 people living in the state. The research summarized in this report is based on a survey of 2,490 boat owners, projected to the entire population of Minnesota registered boat owners.

A description of the study design and methods appears at the end of this report.

Boating Problems in Minnesota

Minnesota boat owners use the state's lakes and rivers extensively for boating and boat-related recreation, and they have many years of boating experience. The average respondent boat owner in this survey has been operating a boat for 22 years. Owners who most frequently boat within 49 miles of home spent an average of 28 days during 1987 on the lake or river they visit most often; and those who travel more than 50 miles from home to boat spent an average of 20 days on their most frequently used lake or river. So, if frequency and duration of use are a helpful measure of satisfaction, one would assume boat owners are satisfied.

Nevertheless, there are problems. Boat owners were asked to indicate their opinion of the overall quality of recreational boating in Minnesota. Although only 3% of the statewide boat-owning population indicated there were "serious" problems with boating quality, 47% believe there are some problems. The level of dissatisfaction with overall quality was highest in the metro region (53%), followed by the south region (48%) and the north region (35%).

Figure 1 illustrates the boat owners' opinions about the severity of 11 problems concerning recreational boating in Minnesota. Three problems were identified as being particularly severe: more than 80% viewed the boating behavior of others as a problem, followed by stream bank and lakeshore erosion (68%), and the number of boaters on water surfaces (68%). The next three problems were all identified by over half of the boat owners: enforcement of boating rules and regulations (58%), design of parking lots at public water access sites (57%), and design of boat launch ramps at public water access sites (53%).

Overall quality. Issues related to the quality of recreational boating include the enforcement of boating rules and regulations, boating behaviors by others, and the number of boaters on Minnesota's lakes and rivers. The study suggests that, even though the overall quality of recreational boating in the state is not identified as a serious problem, there apparently is a widespread perception among boat owners that the other issues in this group are problems.

The problems listed in Figure 1 were examined to see if they were perceived as more severe by people who live in certain parts of the state or by certain types of boat owners. On the whole, boat owners in the metro region perceived boating behavior

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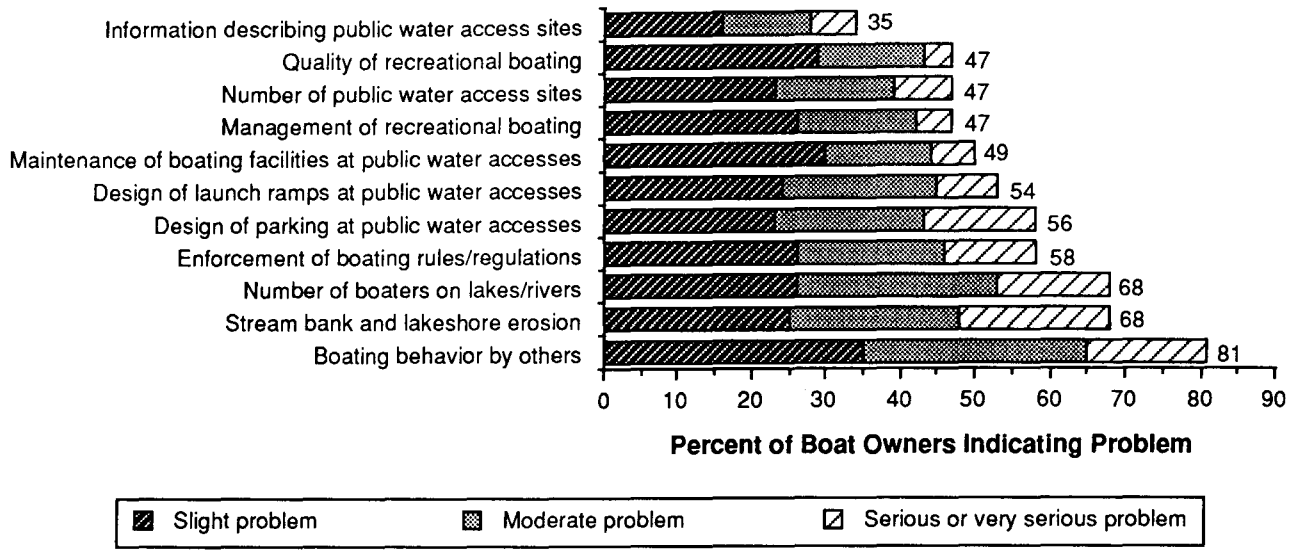
Figure 1. Boat owners' perception of problems on Minnesota's lakes and rivers



problems as being more severe than owners in the other regions. Metro region boaters were only slightly more likely to view boating behavior by others as a more serious problem, indicating that this is a pervasive statewide problem. But metro region boaters were much more likely than boat owners in either the north or south regions to view boating numbers and enforcement of regulations as problems (See "Boating Safety in Minnesota," *Tourism Research Summaries* No. 8 [CD-FO-3895] for detailed regional comparisons).

The problems were also studied to see if there were differences in the perception of the problems between those who owned waterfront property in Minnesota and those who did not. No significant differences were found. There also were few differences when the responses were analyzed according to the type of boat used most often, although some differences were noted. Boat owners who used sailboats of 20 feet or more were more likely to indicate problems with the number of boaters, boating management, and the overall quality of boating. Owners who used 14-to-20-foot motorized craft were less likely to perceive problems with the number of boaters and with the overall management of recreational boating.

Public water access sites. Some of the problems shown in Figure 1 relate to public water access sites. About 55% of the public water access sites in Minnesota are managed by the Minnesota Department of Natural Resources. The other 45% are managed by federal, state, county, and local governments.

The problems at public water access sites, and the percentage of respondents indicating such a problem, included: design of parking lots at public water access sites (56%); design of boat launch ramps at public water access sites (54%); overall maintenance of boating facilities at public water access sites (49%); and the available pamphlets, brochures, and maps describing public water access sites (35%).

Boat owners in the metro and south regions were more likely to indicate problems with public water access sites than owners in the north region. However, the differences in opinions across regions were small (never more than a 10% difference). There were also few differences in the perception of water access site problems when the responses were analyzed according to the type of boat used most often. The only difference noted was that owners of sailboats of 20 feet or more were more likely to indicate problems with the design and overall maintenance of public water access sites. This isn't surprising, since most of the public water access sites were not designed to accommodate the water depth required by large sailboats with deep keels.

Responses regarding public access sites were analyzed according to the number of times the respondents used a public water access site during 1987. This was done to see if there was a difference in the perception of problems between non-users, light users (1 to 6 times), low users (7 to 14 times), medium users (15 to 23 times), and high users (25 to 98 or more times). This is important because the high users make up only 10% of the respondent boat owners, but they account for 50% of the use at public water access sites.

The heavy users of public access sites were more likely than non-users or light users to perceive a problem with: the design of parking lots (71% for heavy users vs. 65% for light and non-users); the design of boat launch ramps (74% heavy users, 68% non-users, 62% light users); and the number of public access sites (67% heavy users, 60% non-users, 54% light users). The non-users and light users were slightly more likely to perceive problems with the overall maintenance of public water access sites and the available pamphlets describing such sites. (A forthcoming issue of *Tourism Research Summaries* will provide more specific findings regarding facilities and programs at free public water access sites.)

Management Actions to Improve Boating

What management actions to address the above group of problems do boat owners prefer? In general, Minnesota's boat owners support stricter enforcement of current boating rules and regulations, some direct controls on the use of boats on heavily used lakes and rivers, and upgraded boating facilities.

Figure 2 shows the percentage of boat owners supporting individual management steps. The management actions preferred by at least 50% of the state boat owners are: restrict the speed of boats on heavily used lakes and rivers (80% support, 10% oppose, 10% no opinion); restrict certain types of boating to specific parts of heavily used lakes and rivers (64% support, 18% oppose); enforce safety regulations more aggressively (58% support, 15% oppose); increase penalties for safety violations (58% support, 17% oppose); and provide protected harbors on large lakes like Superior and Mille Lacs (52% support, 10% oppose).

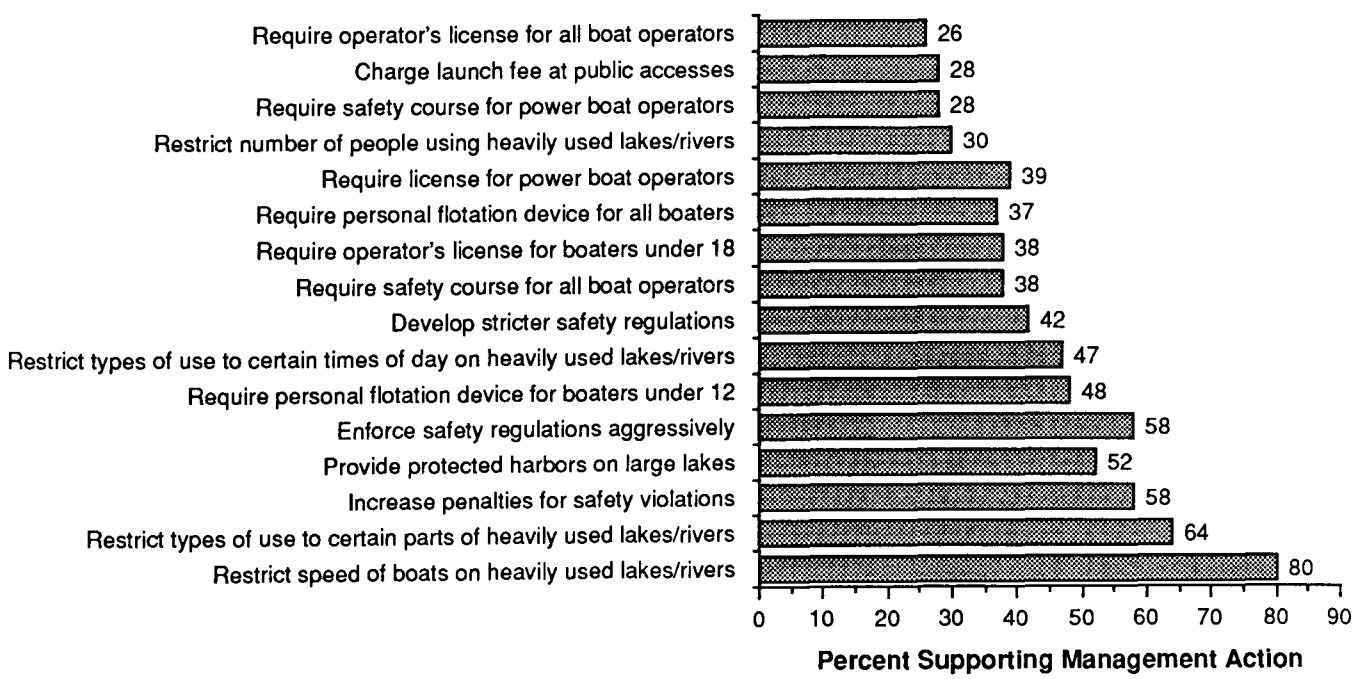
Heavily used lakes and rivers. Minnesota boat owners are in favor of management actions to improve boating on heavily used lakes and rivers, but they are generally not supportive of regulations that would restrict their overall opportunity to boat. The boat owners in this study favored restricting the speed of boats on heavily used lakes and rivers (80% support) and restricting certain types of boating to specific parts of heavily used lakes and rivers (64% support). A sizeable proportion (47%) favored restricting certain types of boating to specific times of the day on heavily used lakes and rivers. But only 30% of the owners favored restricting the number of people using the lake or river at any one time on heavily used lakes and rivers, and 44% opposed this measure.

While regional differences were rather small (seldom more than 10%), the metro region boat owners were slightly more supportive of increased management actions for heavily used lakes and rivers. Metro region owners were more in favor of restricting numbers of people using heavily used lakes and rivers (37% of metro region owners favored this action, compared to only 22% of owners in the north and south regions). This lack of substantial regional differences regarding most of the management actions for heavily used lakes and rivers indicates a general statewide concern about such heavy use and agreement on the preferred management actions to address this use.

Safety regulations. The primary safety-related management actions preferred by boat owners are: restrict the speed of boats on heavily used lakes and rivers (80% support, 10% oppose); enforce safety regulations aggressively (58% support, 15% oppose); increase penalties for violating boating rules and regulations (58% support, 17% oppose); require boaters under 12 years of age to wear a personal flotation device (PFD) (48% support, 36% oppose); and develop stricter safety regulations (42% support, 25% oppose).

Metro region boat owners generally were the most supportive of increased safety regulation and enforcement on Minnesota lakes and rivers. Eighty-four percent of the metro respondents supported restricting the speed of boats, compared to 76% in the north and 76% in the south. Metro respondents were also more supportive of: increased penalties for boating law infractions (64% metro, 52% north, 55% south); more aggressive enforcement of boating regulations (65% metro, 50% north, 54% south); requiring operators of power boats to have an operator's license (46% metro, 28% north, 38% south); and the development of stricter

Figure 2. Boat owners' opinions about management actions to improve boating



boating regulations (49% metro, 39% north, 45% south). Metro region boat owners apparently see a more serious set of problems on lakes and rivers than do outstate owners, and they are more willing to impose stricter safety regulations on boating behavior to help solve those problems. One exception was noted regarding requiring all boaters to wear a life jacket. This was supported by 47% of north region boat owners, but by only 32% of owners in the metro region and 35% of owners in the south region.

Another segment of the boat owners supportive of stricter regulation were those who had completed a boating safety course. These boat owners seem to expect a higher level of safe behavior by others and they are willing to accept a higher level of management to ensure that safety. Those who have completed a boating safety course (regardless of who offered it) are more likely to support management actions such as requiring boating safety courses, more law enforcement, and increased penalties for boating infractions.

Protected harbors and launch fees. Minnesota boat owners support the development of protected harbors on large lakes and the placement of buoys indicating water depths and hazards as means of enhancing boating safety. Protected harbors were supported by 52% of the boat owners (and opposed by only 10%). These protected harbors on larger lakes would include a breakwater, launching facility, and tie-up spots. Protected harbors received a higher degree of support in the north region (56%) than in the metro (52%) or south (43%) regions. This is not surprising, since large lakes (Superior, Red, Lake of the Woods, Mille Lacs, etc.) are located in the northern part of the state. The owners of boats over 20 feet were more likely to favor protected harbors.

One management step—"charge boaters launching at public accesses a fee to improve boating on water where they launch"—was opposed by a majority of respondents (54%). However, there was less opposition to this management action in the metro region (36% support, 47% oppose, 18% neither support nor oppose). This measure had more opposition and less support in the north and south regions. This measure also received more support from riparian landowners than nonriparian landowners.

Conclusions

The responses regarding the management actions listed in Figure 2 were analyzed for correlations among the various actions. These correlations revealed three clusters of management actions that tended to be grouped together in addressing common problems. These clusters, or groups, of management actions include:

- *Group 1—Problems on heavily used lakes and rivers:* Restrict the speed of boats on heavily used lakes and rivers; restrict certain types of boating to specific times of the day on heavily used lakes and rivers.

- *Group 2—Problems in safety and enforcement:* Develop stricter safety regulations; be more aggressive in the enforcement of safety regulations; increase penalties for violating boating rules and regulations.

- *Group 3—Problems in regulations:* Require all boat operators to complete a boating safety course; require all boat operators to have a boat operator's license; require operators of power boats to have a license.

It is reasonable to infer that respondents perceive these groups of "solutions" as addressing the same or closely related problems. If managers deem any of these solutions necessary, they should select the ones which are least opposed by boaters. In this case, the steps in Group 1 and Group 2 received the most support and less opposition than those in Group 3. The management actions in Group 1 and Group 2 address the problems indicated by most boat owners, and these actions received a substantial amount of support from the statewide sample of owners.

Summary

Minnesota boat owners are discerning when it comes to the quality of boating available in the state. They expect a high degree of boating quality, they believe some problems exist with certain aspects of boating, and they have strong opinions about management steps that should be taken to improve the quality of boating.

Minnesota boat owners perceive problems with recreational boating, including boating behaviors of others, stream bank and lakeshore erosion, the number of boaters on water surfaces, design of parking lots and launch ramps at public water access sites, and the level of enforcement of boating rules and regulations.

Boat owners support management actions to maintain and improve the quality of recreational boating in Minnesota. They support stronger enforcement of boating rules and regulations and increased penalties for violators. Boat owners also support regulations that would restrict the speed of boats and certain types of use on parts of heavily used lakes and rivers. They are somewhat supportive of some stricter regulations and of restricting certain types of boating to specific times of day on heavily used lakes and rivers. However, they are generally not supportive of regulations that would restrict their boating convenience.

Boat owners in the metro region generally perceive more boating-related problems than boat owners in the north and south regions; they are also the most supportive of increased regulations to improve the quality of boating on Minnesota's water surfaces.

Boating on Minnesota's lakes and rivers is a major outdoor recreation activity that has impact upon a number of elements of Minnesota's quality of life (recreation, economics, aesthetics, environment, etc.). The continued quality of recreational boating is a major concern of many resource management agencies in the state. The management actions indicated in this report may become increasingly necessary in order to preserve the quality of boating in Minnesota.

1988 Survey of Minnesota Boat Owners—Study Design and Method

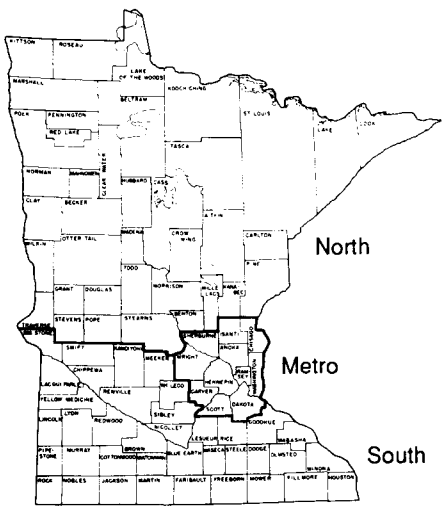
Access to Minnesota's lakes and streams is provided through many private and commercial facilities as well as through innumerable public canoe launches, beaches, and open stretches of shoreline. More than 2,200 free public water access sites are managed by federal, state, county, and local governments. Minnesota's Department of Natural Resources (DNR) manages nearly 1,200 of these sites.

Although a primary DNR activity is acquiring access to water bodies statewide, recent discussions have focused on managing these resources to better serve the boating public. What should the future direction be for managing the state's water resources to offer safe and rewarding boating opportunities?

In 1987, the authors, the University of Minnesota, and five units of the DNR (Boat and Water Safety, Fisheries, Planning, Trails and Waterways, and Waters) entered into a partnership to conduct a statewide survey of registered boat owners to determine how boaters use their pleasure boats on Minnesota waters and what they think about problems and issues related to boating. The study investigated these concerns for the state's waters as a whole and with specific reference to two of our largest water resources—the North Shore of Lake Superior and the Mississippi River downstream from the Twin Cities.

In March and April, 1988, a mail-back questionnaire was sent to a representative sample of 3,200 registered boat owners drawn from the pool of 286,000 pleasure boat owners in the state licensed through the DNR. The survey sample was selected to enable comparisons to be made among the three regions of the state displayed in Figure 3, and among six major types of licensed pleasure boats: canoes and kayaks, other boats under 14 feet in length, sailboats 14 to 20 feet, sailboats more than 20 feet, other boats 14 to 20 feet, and other boats more than 20 feet in length. Other comparisons, such as those between boat owners who own or do not own riparian property, are also possible.

Figure 3. Study regions



The questionnaire was comprised of 45 questions and took about 15 minutes to complete. The initial mailing and two follow-up reminders resulted in 2,490 owners returning the survey. About 100 surveys were eliminated from the original sample of 3,200, resulting in an overall adjusted response rate of 80 percent. This excellent response reflects Minnesota boat owners' strong interest in expressing their views, as well as the importance they place on the state's free public water accesses to achieve quality boating experiences.

Survey respondents may not be representative of the typical boat owner. The survey questionnaire requested the individual in the household "who goes boating most frequently" to respond to the survey. Therefore, the typical survey respondent may be somewhat older and a more experienced boater than the state's typical boat owner or boater.

Details about the study design and methods, the raw data, and the data summary tables are available from the authors and from the DNR's Office of Planning, 500 Lafayette Rd., St. Paul, MN 55155-4010 (612-296-0565).

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