

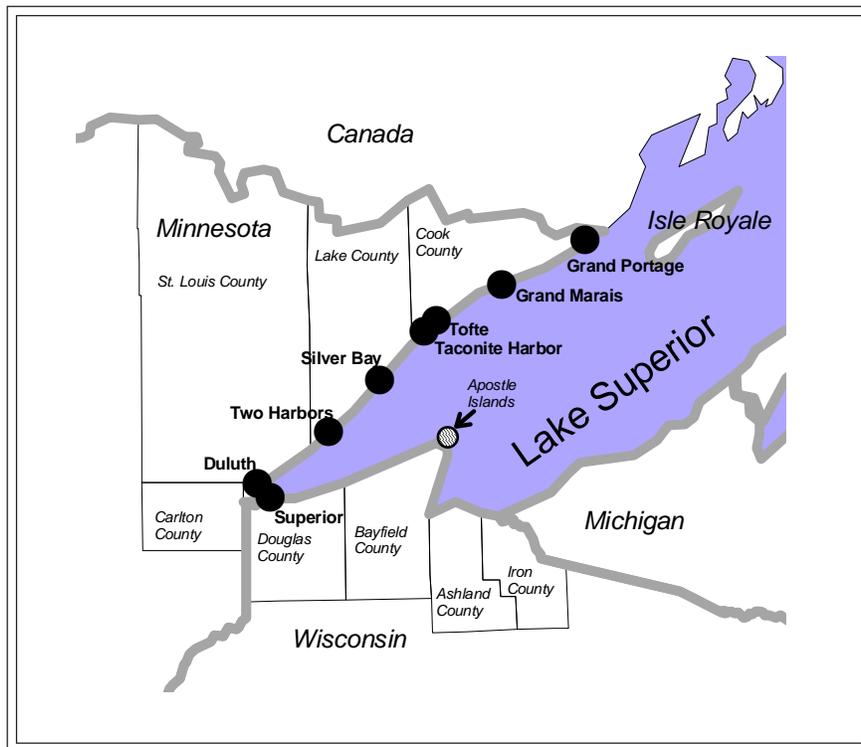
2011 LAKE SUPERIOR BOATING STUDY

Results of survey of seasonal-slip renters at
marinas located in and near the
Minnesota portion of Lake Superior



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*An electronic copy of this report can be found on the MN DNR's website:
www.mndnr.gov/aboutdnr/reports/index.html#boating*

Cover photos: Top—Palisade Head on Lake Superior, USFS; Bottom—Silver Bay Safe Harbor, Marina and Access, MN DNR.

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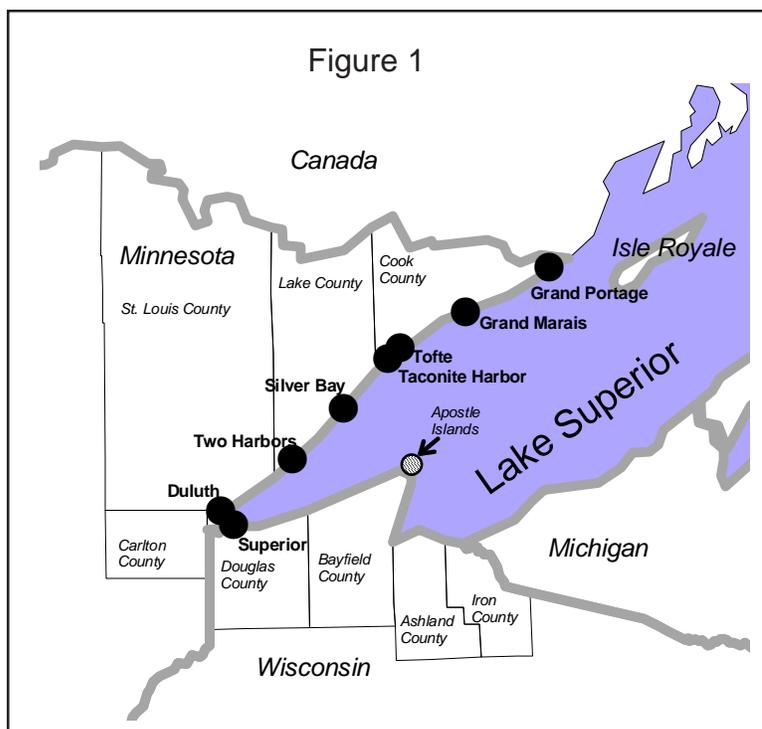
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INTRODUCTION

Minnesota's Lake Superior shoreline—rugged and scenic—has for decades been a recreational destination for travelers from throughout the Upper Midwest (Figure 1). Numerous parks, trails, forests, resorts and related tourist facilities have been developed along the shore to serve the recreating public. Traditionally, most of these facilities have been land-based, with the Lake largely appreciated from shore.

Over the last two decades, attention has focused on more fully opening up the Lake to recreational boating, from sea kayaking to sailing to multi-day trips from port to port. Providing for recreational boating on the Minnesota portion of Lake Superior (often referred to as the North Shore) is more challenging than on Minnesota's numerous inland lakes and streams. The rugged shore, coupled with occasional large waves,

means that launch facilities and marinas need protection from the Lake. In addition, Lake Superior waters are quite cold and the weather can be unpredictable. At times, boaters need sheltered places to get off the Lake in an emergency due to weather or other boating-related problems. To address these boating challenges, Minnesota currently provides a series of ten safe harbors (small craft harbors and protected accesses) along the North Shore from Duluth-Superior to the Canadian border (Reference 1).



2002-03 Boating studies

About ten years ago the Minnesota DNR conducted two studies to improve agency understanding of Lake Superior boating so Minnesota recreational boating programs could be operated more effectively. During the summer of 2002 a

recreational boater study was conducted on the Minnesota portion of Lake Superior (Reference 2). That study examined the quantity and characteristics of boating on the Lake, and boaters were queried about their experiences on the Lake. A companion market study was conducted in 2003 (Reference 3). It placed boating on the Minnesota portion of Lake Superior in a larger context of boating among alternative places. The study looked at use of Lake Superior compared with other places, and the use of the Minnesota portion of the Lake compared with the rest of the Lake. Boaters were queried about barriers to the use of the Minnesota portion of Lake Superior and about their awareness of programs designed to remove some of the known barriers. Safety was one known boater issue for Lake Superior, and safety issues were examined in the study. The needs of one boating market segment—transient boaters who travel overnight from place to place—were assessed in the study. Transient boaters represent a market segment that was—and still is—being targeted along the Minnesota portion of the Lake.

2011 Boating studies

The decision was made in 2011 to gather fresh information from boaters by redoing the 2003 market study referenced above. The 2011 effort is broken into two tasks: (i) replicate the 2003 study, so trends in the use and perceptions of the Lake could be assessed; and (ii) examine more closely the big-boat market on the Lake. Results from the first task are presented in a separate report (Reference 4), while results from the second task are reported here.

The big-boat market was examined in the 2003 study, but the results were of a general nature, and more specificity was desired in 2011 from owners of big boats who use Lake Superior. To achieve that specificity, all boaters who rent marina slips along or near the Minnesota portion of the Lake were targeted for a survey. The study area included marinas along the North Shore of the Lake in Minnesota, in Duluth-Superior, and in the Apostle Islands and vicinity. Cooperating marinas distributed mail-back surveys to slip renters, and over 700 surveys were returned (see methodology section for more detail). The survey instrument used in the study is in Appendix A.

After a brief description of methodology, a summary of the results of the 2011 marina survey will be presented as follows:

- Characteristics of seasonal-slip renters at Lake Superior marinas, including geographic origin, boating experience, and demographic characteristics.
- Characteristics of and use of boats kept at marinas.
- Facilities and services boaters want at, and nearby, a marina at which they rent a seasonal slip.
- Overnight boating trips, including prevalence of, interest in, desirable destinations for, and important marina facilities/services for such trips.
- Safe harbors, including awareness of Minnesota's program, effect on boating use of Lake Superior, and perceived need for more harbors.

For those who would like greater detail on methodology and survey results, please contact the Minnesota DNR.

METHODOLOGY

Boaters coming from marinas (and other private facilities) have always been a challenge to survey. Many facility owners are hesitant to provide mailing lists of customers and, in addition, do not feel comfortable having their customers recruited for a survey in person at the facility. Customers, too, frequently have objected to being recruited in person when launching or landing.

The technique used in this study was developed to deal with this situation. Survey packets—for a self-administered mail survey—are delivered to cooperating marina owners. The packets are stamped both outgoing and return, and need only a mailing label. Cooperating marina owners attach mailing labels and drop the surveys in the mail.

This technique does not permit a second mailing to non-respondents. When it has been used in the past with marina boaters in the Minneapolis-St. Paul metropolitan area, return rates have ranged from 40 to 50 percent.

For this study, nearly all the marinas in the study area agreed to cooperate, but a few did not appear to fully follow procedures. For those that are believed to have followed procedures (mailed to all seasonal slip renters), the return rate is 47 percent. If those that appear to have *not* mailed to all renters are included in the computations, the return rate is 40 percent. For this latter group of marinas, some appear to have done nothing (result: got no returns) and others appear to have

distributed the survey to customers they came in contact with, say, at the marina office (result: got a very low number of returns). Regardless, however, the return rate of 40 to 47 percent is within expectations. The return rate is not high enough to claim the results are representative of marina seasonal-slip renters, because non-response bias may exist. But the return rate and number of returns provide substantial information on a market segment that is otherwise difficult to obtain.

The number of survey returns is 728 in total (Table 1). It varies from 125 to 345 for the three marina locations used for breaking down survey results.

<u>Marina Location*</u>	<u>Number of surveys</u>
North Shore in Minnesota	125
Duluth-Superior	250
Apostle Islands and vicinity	345
Indeterminate from survey	<u>8</u>
Total	728

* Marinas in study at locations:
 North shore: Grand Marais, Grand Portage, Knife River, Silver Bay.
 Duluth-Superior: Barkers, Harbor Cove, Lakehead, Spirit Lake.
 Apostle Islands and vicinity: Apostle Islands Marina, Ashland Marina, Bayfield City Dock, Madeline Island Yacht Club, Pike's Bay, Port Superior, Roys Point Marina, Washburn.

CHARACTERISTICS OF SEASONAL-SLIP RENTERS AT LAKE SUPERIOR MARINAS

Geographic origin

In the study area, about half the seasonal slips are in the Apostle Islands and vicinity (e.g., Bayfield, Washburn, Ashland), with most of the rest in Duluth-Superior (38%)(see Table 2).

The North Shore in Minnesota has 12 percent of seasonal slips.

The marinas serve both a local and a distant market, with the distant market being the largest. A majority of seasonal-slip renters (54%) live over 100 miles from the marina (Table 3), and many of these come from the Twin Cities seven-county metropolitan area in Minnesota (also known as the Minneapolis-St. Paul metropolitan area)(see Table 4). Long-distance renters are most prevalent at the marinas in the Apostle Islands and vicinity, to which nearly three-fourths of renters (72%) travel over 100 miles from home.

Local renters who live within ten miles of the marina make up just over a quarter (26%) of the market for seasonal slips. They are a sizable segment at Duluth-Superior marinas (40%), and North Shore marinas (29%).

The counties fronting Lake Superior are important origins of marina seasonal-slip renters. These counties provide over half of renters at North Shore (58%) and Duluth-Superior marinas (62% = 51% + 11%).

Table 2

Seasonal slips for rent at Lake Superior marinas in study area

<u>Marina Location*</u>	<u>Percent of seasonal slips**</u>
North Shore in Minnesota	12%
Duluth-Superior	38%
Apostle Islands and vicinity	<u>50%</u>
Total	100%

* Marinas in study at locations:

North shore: Grand Marais, Grand Portage, Knife River, Silver Bay.

Duluth-Superior: Barkers, Harbor Cove, Lakehead, Spirit Lake.

Apostle Islands and vicinity: Apostle Islands Marina, Ashland Marina, Bayfield City Dock, Madeline Island Yacht Club, Pike's Bay, Port Superior, Roys Point Marina, Washburn.

** Total seasonal slips for rent is estimated at 1835.

Table 3

How far is your permanent home from this Lake Superior marina?
(percent of seasonal-slip renters)

<u>Miles</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
10 or less	26%	29%	40%	16%
10.1 to 50	13%	22%	20%	4%
50.1 to 100	7%	7%	5%	9%
100.1 to 200	29%	24%	31%	29%
200.1 or greater	<u>25%</u>	<u>19%</u>	<u>4%</u>	<u>43%</u>
Total	100%	100%	100%	100%
<i>Median miles</i>	<i>126</i>	<i>50</i>	<i>20</i>	<i>200</i>
<i>Mean miles</i>	<i>156</i>	<i>119</i>	<i>88</i>	<i>220</i>

Table 4

Where is your permanent home?
(percent of seasonal-slip renters)

<u>Origin of permanent home</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
MN Lake Superior counties *	31%	58%	51%	6%
Twin Cities seven-county area	31%	25%	23%	38%
Rest of MN	<u>10%</u>	<u>13%</u>	<u>9%</u>	<u>10%</u>
<i>MN Subtotal</i>	<i>72%</i>	<i>96%</i>	<i>83%</i>	<i>54%</i>
WI Lake Superior counties **	13%	0%	11%	20%
Rest of WI	<u>9%</u>	<u>0%</u>	<u>3%</u>	<u>17%</u>
<i>WI Subtotal</i>	<i>22%</i>	<i>0%</i>	<i>14%</i>	<i>37%</i>
All other states	<u>6%</u>	<u>4%</u>	<u>3%</u>	<u>9%</u>
Total	100%	100%	100%	100%

* Cook, Lake, St. Louis, and Carlton

** Douglas, Bayfield, Ashland, and Iron

Boating experience on Lake Superior

Seasonal-slip renters as a group have boated for many years on the Lake (Table 5). Half of boaters have nearly 20 years of experience (median is 19 years). Not all boaters, however, have long histories on the Lake. Nearly one-third (32%) have boated for 10 years or less, and 16% for 5 years or less. Renters at North Shore and Duluth-Superior marinas tend to have less experience than those at marinas in the Apostle Islands and vicinity.

<u>Years</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
5 or less	16%	22%	18%	12%
5.1 to 10	16%	16%	18%	14%
10.1 to 20	25%	24%	22%	28%
20.1 to 30	19%	18%	18%	20%
30.1 or greater	<u>24%</u>	<u>21%</u>	<u>24%</u>	<u>26%</u>
Total	100%	100%	100%	100%
<i>Median years</i>	<i>19</i>	<i>15</i>	<i>17</i>	<i>20</i>
<i>Mean years</i>	<i>21</i>	<i>18</i>	<i>20</i>	<i>22</i>

Demographic characteristics

Seasonal-slip renters are an older population, with a median age of 60 (Table 6). Few (5%) are 40 or younger, and less than one-quarter (21%) are 50 or younger. And virtually all renters (99%) are non-Hispanic whites in terms of ethnicity and race (Table 7). In contrast, 83 percent of the Minnesota population is non-Hispanic white (Reference 5).

Table 6

How old are you?
(percent of seasonal-slip renters)

<u>Age class</u>	<u>Overall</u>	----- Marina location -----		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
40 or younger	5%	11%	5%	3%
41 to 50	16%	16%	17%	15%
51 to 60	31%	27%	33%	32%
61 to 70	38%	38%	36%	39%
71 or older	<u>10%</u>	<u>8%</u>	<u>9%</u>	<u>11%</u>
Total	100%	100%	100%	100%
<i>Median age</i>	60	59	60	60

Table 7

What best describes your race and ethnicity?
(percent of seasonal-slip renters)

<u>Group</u>	<u>Overall</u>	----- Marina location -----		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
White, non-Hispanic	99%	99%	98%	99%
Hispanic and/or non-white	<u>1%</u>	<u>1%</u>	<u>2%</u>	<u>1%</u>
Total	100%	100%	100%	100%

Compared with the general population, seasonal-slip renters are well educated and have high incomes. Some two-thirds have college degrees (with nearly one-third having a postgraduate degree), and they have a median household income over \$100,000 (Table 8 and 9). The prevalence of college degrees and size of median household income are about double those in the Minnesota population (Reference 5). Education levels and incomes are highest at marinas in the Apostle Islands and vicinity and lowest along the North Shore.

Table 8

What is the highest level of education you have completed?
(percent of seasonal-slip renters)

<u>Education level</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
Some high school	0%	1%	0%	0%
Graduated from high school or more	6%	8%	6%	5%
Some vocational or technical school	3%	5%	3%	3%
Graduated from vocational or technical school	7%	13%	7%	6%
Some college	17%	21%	20%	13%
Graduated from college	25%	22%	25%	27%
Some postgraduate study	10%	7%	11%	10%
Postgraduate degree(s)	<u>31%</u>	<u>23%</u>	<u>27%</u>	<u>36%</u>
Total	100%	100%	100%	100%

Table 9

What is your household income before taxes last year?
(percent of seasonal-slip renters)

<u>Income level</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
Under \$19,999	1%	1%	0%	1%
\$20,000 to \$29,999	2%	5%	2%	1%
\$30,000 to \$39,999	2%	4%	2%	2%
\$40,000 to \$49,999	3%	3%	3%	3%
\$50,000 to \$59,999	7%	11%	8%	6%
\$60,000 to \$74,999	12%	16%	10%	13%
\$75,000 to \$99,999	18%	21%	20%	15%
Over \$100,000	<u>55%</u>	<u>40%</u>	<u>54%</u>	<u>60%</u>
Total	100%	100%	100%	100%

CHARACTERISTICS AND USE OF BOATS KEPT AT MARINAS

Renters of seasonal slips have substantial craft. Typical boat lengths are 30 feet or more (Table 10). Nearly 30 percent of boats (29%) are 36 feet or longer. Marinas at the Apostle Islands and vicinity have the largest craft.

<u>Length in feet</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
25.9 or less	18%	25%	21%	14%
26 to 35.9	53%	58%	56%	49%
36 or greater	<u>29%</u>	<u>18%</u>	<u>23%</u>	<u>37%</u>
Total	100%	100%	100%	100%
<i>Median feet</i>	31	29	30	33
<i>Mean feet</i>	32	30	31	33

Craft are of two main types: cruisers and sailboats (Table 11). Cruisers are more common at North Shore marinas—where they comprise 73 percent of craft—while sailboats less common (23% of craft). At other marinas, cruisers and sailboats are more equal in numbers.

<u>Boat type</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
Cruiser (has cabin or superstructure)	50%	73%	47%	45%
Sailboat	45%	23%	47%	51%
Other	<u>5%</u>	<u>4%</u>	<u>7%</u>	<u>4%</u>
Total	100%	100%	100%	100%

Since cruisers generally have larger engine sizes than sailboats, typical engine sizes are greater (especially median horsepower) at the North Shore marinas, which are dominated by cruisers (Table 12).

Table 12				
What is the horsepower of the motor on your primary boat?				
(99.6% of primary boats have a motor)				
A. By boat type				
<u>Horsepower</u>	<u>Overall</u>	----- <i>Boat type</i> -----		
		<u>Cruiser</u>	<u>Sailboat</u>	<u>Other</u>
Median horsepower	120	420	25	140
Mean horsepower	244	455	27	161
B. By marina location				
<u>Horsepower</u>	<u>Overall</u>	----- <i>Marina location</i> -----		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
Median horsepower	120	260	60	56
Mean horsepower	244	288	233	234

Boats are well equipped. Most commonly have a wide range of equipment on board (Table 13).

Seasonal slip renters frequently use their boats like vacation homes. They visit their boat some 40 to 50 days per year on average, but take the boat onto the water only about half of those days, around 20 to 25 days per year (Table 14).

When boats are taken onto the water, the most common activities are cruising (boat ride) and sailing, followed by fishing and swimming (Table 15). Cruising is more prevalent at North Shore marinas, and sailing more prevalent elsewhere, consistent with type of craft at those locations. North Shore boaters are far more likely to fish than other boaters, and this makes North Shore boaters distinctive. Swimming, transportation, and kayaking are more frequent activities in the Apostle Islands and vicinity than elsewhere.

Table 13

Which of the following do you have on your primary boat?

(percent of seasonal-slip renters that have item on primary boat)

<u>Boat item</u>	<u>Overall</u>	<i>----- Marina location -----</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
life vests/personal flotation devices	100%	100%	100%	100%
lights	100%	99%	100%	100%
fire extinguisher	99%	98%	99%	100%
marine radio	99%	99%	98%	99%
throwable lifesaver/buoyant cushion	98%	98%	99%	98%
horn	98%	98%	98%	99%
visual distress signal (flag, flares)	98%	96%	98%	99%
depth finder	96%	98%	93%	97%
GPS unit	92%	97%	89%	93%
cell phone	92%	95%	94%	90%
toilet, with holding tank	82%	79%	77%	87%
radar	52%	59%	50%	50%
port-a-potty	16%	17%	19%	14%

Table 14

In the last 12 months, how many total days did you visit your boat at this marina, including days you did not take you boat out onto the water?

(percent of seasonal-slip renters)

<u>Days</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
10 or less	7%	9%	8%	6%
10.1 to 25	23%	23%	20%	26%
25.1 to 50	41%	39%	36%	45%
50.1 to 100	22%	23%	24%	19%
100.1 or greater	<u>7%</u>	<u>6%</u>	<u>11%</u>	<u>4%</u>
Total	100%	100%	100%	100%
<i>Median days</i>	40	40	40	35
<i>Mean days</i>	47	47	53	42

Of these total days, how many days did you have your boat out of the slip and on the water?

(percent of seasonal-slip renters)

<u>Days</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
10 or less	22%	19%	24%	21%
10.1 to 25	42%	35%	39%	47%
25.1 to 50	28%	36%	29%	25%
50.1 to 100	6%	6%	7%	6%
100.1 or greater	<u>1%</u>	<u>3%</u>	<u>1%</u>	<u>1%</u>
Total	100%	100%	100%	100%
<i>Median days</i>	20	25	20	20
<i>Mean days</i>	25	28	25	24

Table 15

When you boat on Lake Superior, what are your most important activities?
 (percent of seasonal-slip renters that indicated activity)

Activity	Overall	----- Marina location -----		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
cruising/boat ride	52%	58%	52%	51%
sailing	48%	26%	50%	55%
fishing	39%	70%	37%	29%
swimming	22%	7%	17%	30%
transportation to/from	15%	10%	11%	19%
kayaking	9%	6%	6%	12%
scuba diving	5%	6%	5%	4%
canoeing	2%	1%	1%	2%
jet skiing	1%	0%	1%	1%
sail-boarding	0%	0%	0%	0%
other	11%	4%	9%	15%

FACILITIES AND SERVICES BOATERS WANT AT—AND NEARBY—A MARINA AT WHICH THEY RENT A SEASONAL SLIP

Boaters desire certain facilities and services at the marina where they rent a slip, and the important of these facilities and services is widely shared across marina locations. The most important items are security, electricity, parking, fuel, restrooms/showers, sewage pumpout, and drinking water (Table 16). Much less important are items such as cable TV connections, laundry facilities, indoor places to relax, and internet access.

Boaters also desire facilities and services near the marina. None of these nearby items has the importance as the top-ranked at-marina items, but some are more important than others. Leading in importance is food, both in the form of places to shop for groceries and restaurants. Next in importance is outdoor recreation opportunities, including opportunities for sightseeing and visiting historic sites. Not surprisingly, fishing opportunities are ranked much higher by North Shore marina boaters, who are (as noted above) far more likely to fish than boaters at the other locations.

Table 16

How important is it to have the following facilities and services available to you at a marina where you rent a seasonal slip?

(mean importance value based on scale : 1=not important, 2=slightly important, 3=moderately important, 4=very important)

Facility/service	Overall	----- Marina location -----		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
<i>AT THE MARINA</i>				
● adequate security for me and my boat	3.8	3.9	3.8	3.8
● electricity connection dockside	3.7	3.7	3.8	3.7
● adequate parking for me and my guests	3.7	3.8	3.7	3.7
● fuel pumps	3.6	3.7	3.4	3.8
● private restrooms and showers for marina patrons	3.5	3.5	3.5	3.5
● sewage pumpout services	3.5	3.4	3.4	3.7
● drinking water connection dockside	3.4	3.2	3.4	3.5
● haul-out service	3.4	3.0	3.3	3.5
● cell phone access	3.3	3.3	3.2	3.4
● knowledgeable marina operator(s) with whom to discuss boats and boating topics	3.3	3.3	3.2	3.3
● winter storage capability	3.3	2.9	3.2	3.4
● boat repair services	3.2	3.0	3.1	3.3
● ability to contact marina staff by radio with questions	3.1	3.4	2.8	3.3
● ship store	2.8	2.4	2.7	3.0
● internet access	2.5	2.3	2.4	2.7
● indoor place for boaters to relax	2.3	2.4	2.1	2.4
● laundry facilities	2.0	2.2	2.0	2.0
● cable TV connections	1.4	1.6	1.3	1.4
<i>NEAR THE MARINA</i>				
● places to shop for groceries	3.0	2.8	2.9	3.2
● restaurant opportunities	3.0	2.8	2.8	3.1
● outdoor recreation opportunities	2.5	2.4	2.3	2.6
● fishing opportunities	2.4	3.2	2.3	2.2
● opportunities for sightseeing, visiting historic sites	2.3	2.3	2.1	2.5
● retail shopping opportunities	2.2	2.1	2.1	2.4
● entertainment opportunities	2.1	1.9	2.2	2.2
● lodging opportunities	2.1	2.0	1.9	2.2
● shuttle or transportation service for shopping, restaurants and entertainment outings	1.7	1.7	1.7	1.7
● bicycle rental opportunity	1.5	1.5	1.3	1.6

OVERNIGHT BOATING TRIPS

A common activity of seasonal-slip renters is taking an overnight boating trip away from the marina. Just over two-thirds (68%) took such a trip in the last 12 months (Table 17). Boaters from marinas in the Apostle Islands and vicinity are more likely than boaters elsewhere to engage in overnight trips. When they do take overnight trips, the number of nights away from the marina is typically 10 to 15 in the last 12 months.

Table 17

In the last 12 months, did you take any overnight trips in your boat away from this Lake Superior marina?

(percent of seasonal-slip renters)

Response	Overall	Marina location		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Yes	68%	58%	62%	76%
No	32%	42%	38%	24%
Total	100%	100%	100%	100%
<i>(IF YES) number of nights in last 12 months:</i>				
median	10	8	9	10
mean	13	10	11	14

(IF NO to overnight response above) Do you have any interest in taking overnight boating trips on Lake Superior?

(percent of seasonal-slip renters who responded "no" above)

Response	Overall	Marina location		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Yes	25%	31%	31%	19%
No	4%	6%	4%	4%
Not sure/don't know	3%	5%	3%	2%
Total "no" above	32%	42%	38%	24%

The idea of overnight boating trips is popular even among those who have not taken such a trip in the last year. Most of those who had not taken an overnight trip indicate they have an interest in such a trip (Table 17). When combined with boaters who did take an overnight trip, fully 93 percent of boaters either took a trip or showed interest in doing so.

Boaters who take overnights or have an interest in doing so ranked the desirability of trip destinations. The most desirable destination is the Apostle Islands, followed by Isle Royale, and the Minnesota portion of the North Shore (Table 18). These three destinations are the top three for each marina location. Of lower desirability are Lake Michigan, Duluth-Superior Harbor, Michigan waters of Lake Superior, and Canadian waters of Lake Superior.

Boaters at each marina location showed their chauvinism in their rankings of their home location. Apostle Island marina boaters ranked the Apostle Islands as higher desirability than other boaters, and the same is true for Minnesota North Shore and Duluth-Superior marina boaters and their respective ranking of their home locations (Table 18).

Table 18

In your opinion, how desirable are the following destinations for an overnight boating trip?

(responses of seasonal-slip renters who either have taken an overnight trip in the last 12 months or have an interest in taking an overnight trip)

(mean desirability value based on scale : 1=not desirable, 2=slightly desirable, 3=moderately desirable, 4=very desirable)

<u>Destination for overnight trips</u>	<u>Overall</u>	<i>Marina location</i>		
		<u>North Shore</u>	<u>Duluth-Superior</u>	<u>Apostle Islands and vicinity</u>
Apostle Islands area of Lake Superior in Wisconsin	3.9	3.7	3.9	4.0
Isle Royale in Lake Superior	3.5	3.6	3.4	3.5
Minnesota North Shore waters of Lake Superior	3.4	3.7	3.4	3.3
Canadian waters of Lake Superior	3.1	2.9	3.0	3.3
Michigan waters of Lake Superior	3.1	2.9	2.9	3.2
Duluth-Superior Harbor	2.7	2.9	3.0	2.5
Lake Michigan	2.5	2.3	2.5	2.5

When marina boaters take an overnight, they commonly travel to another marina that offers transient accommodations. What they are looking for in terms of facilities and services at the destination marina is similar to the facilities and services at their home marina. Top ranked are security, fuel, electricity, and other items of high importance at their home marina (Table 19).

Additionally important to transient boaters are the ability to make advanced registrations and ask questions of marina staff.

What overnight boaters desire near the destination marina is also similar to what they desire at their home marina. Opportunities for food (groceries and restaurants) are ranked of highest importance, followed by outdoor recreation opportunities. Again, boaters from North Shore marinas rank fishing opportunities as far more important than boaters from other locations.

Table 19

When you take an overnight boating trip, how important is it to have the following facilities and services available to you at a marina where you spend the night?

(responses of seasonal-slip renters who either have taken an overnight trip in the last 12 months or have an interest in taking an overnight trip)

(mean importance value based on scale : 1=not important, 2=slightly important, 3=moderately important, 4=very important)

Facility/service	Overall	----- Marina location -----		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
<i>AT THE MARINA</i>				
● adequate security for me and my boat	3.6	3.7	3.6	3.5
● fuel pumps	3.5	3.7	3.6	3.3
● electricity connection dockside	3.4	3.5	3.5	3.3
● ability to make advance reservations for my boat	3.3	3.4	3.3	3.3
● ability to contact marina staff by radio with questions	3.2	3.5	3.2	3.2
● private restrooms and showers for marina patrons	3.2	3.3	3.3	3.0
● drinking water connection dockside	3.2	3.1	3.3	3.1
● cell phone access	3.0	3.0	3.1	3.0
● sewage pumpout services	3.0	3.0	3.0	3.0
● knowledgeable marina operator(s) with whom to discuss boats and boating topics	2.8	3.1	2.9	2.7
● boat repair services	2.7	2.9	2.7	2.6
● ship store	2.4	2.5	2.4	2.4
● internet access	2.3	2.2	2.3	2.4
● laundry facilities	2.0	2.2	2.1	1.9
● indoor place for boaters to relax	2.0	2.3	1.9	2.0
● cable TV connections	1.3	1.5	1.3	1.3
<i>NEAR THE MARINA</i>				
● places to shop for groceries	3.0	3.0	3.0	2.9
● restaurant opportunities	2.9	2.9	2.9	2.8
● opportunities for sightseeing, visiting historic sites	2.6	2.6	2.5	2.6
● outdoor recreation opportunities	2.5	2.5	2.4	2.5
● shuttle or transportation service for shopping, restaurants and entertainment outings	2.3	2.2	2.3	2.4
● fishing opportunities	2.2	3.0	2.2	2.0
● retail shopping opportunities	2.1	2.2	2.1	2.1
● entertainment opportunities	2.0	2.0	2.1	2.0
● lodging opportunities	1.8	2.0	1.9	1.8
● bicycle rental opportunity	1.7	1.7	1.7	1.8

SAFE HARBORS

Lake Superior can be an intimidating place to boat. The Lake is large and water cold. And traveling too away from shore can be risky if the weather changes. This view of the Lake is well expressed by marina boaters when asked if they are concerned about being caught out on the Lake without a safe harbor nearby. Some 40 percent are “very” concerned about this situation and another 34 percent are “somewhat” concerned (Table 20). The least concern is expressed by Duluth-Superior boaters, perhaps because of their location in the large Duluth-Superior Harbor.

Response	Overall	----- Marina location -----		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Not concerned	8%	7%	13%	5%
Slightly concerned	17%	16%	17%	18%
Somewhat concerned	34%	30%	39%	32%
Very concerned	40%	46%	31%	44%
Don't know	1%	2%	0%	1%
Total	100%	100%	100%	100%

To facilitate recreational boating on Lake Superior, Minnesota provides a series of ten safe harbors (small craft harbors and protected accesses) along the North Shore from just north of the Duluth-Superior Harbor to the Canadian border (Reference 1). Most marina boaters (74%) are aware of Minnesota’s effort with regards to safe harbors (Table 21). Awareness is highest (not surprisingly) for boaters in North Shore marinas, and is lowest for boaters at marinas farthest away in the Apostle Islands and vicinity.

Overall, boaters who are aware of the safe harbors are roughly split on whether the harbors permit them to boat more often on the Lake (Table 21). North Shore and

Apostle Island marina boaters are about evenly split, while Duluth-Superior boaters are less likely to indicate that the harbors permit them to boat more.

Table 21

Are you aware of the MN DNR's Safe Harbors Program on MN's North Shore of Lake Superior?

(percent of seasonal-slip renters)

Response	Overall	Marina location		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Yes	74%	90%	85%	61%
No	19%	6%	9%	32%
Not sure/don't know	6%	5%	6%	8%
Total	100%	100%	100%	100%

(IF YES to "aware" above) Have the Safe Harbors permitted you to boat more often on Lake Superior?

(percent of seasonal-slip renters who responded "yes" above)

Response	Overall	Marina location		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Yes	30%	41%	28%	27%
No	37%	38%	50%	27%
Not sure/don't know	8%	11%	8%	7%
Total "yes" above	74%	90%	85%	61%

A majority of marina seasonal-slip renters (58%) believe additional safe harbors are need on Lake Superior (Table 22). When asked where an additional harbor(s) should be constructed, a sizable number of boaters (155) wrote in locations specific enough to analyze geographically. Before describing these results, some background is necessary on how these written open-ended responses are compiled and should be interpreted.

Table 22

Do you think additional safe harbors are needed on Lake Superior?
(percent of seasonal-slip renters)

Response	Overall	----- Marina location -----		
		North Shore	Duluth-Superior	Apostle Islands and vicinity
Yes	58%	58%	61%	56%
No	15%	18%	22%	9%
Don't know	<u>27%</u>	<u>24%</u>	<u>17%</u>	<u>34%</u>
Total	100%	100%	100%	100%

Some of the written responses are general and not very useful (e.g., North Shore, South Shore, Upper Peninsula, Canada, every 30 miles). Other responses, however, indicate a particular place or limited section of shoreline (about 50 miles or less in length). These latter responses are compiled. They are from 155 boaters, and represent 37 percent of boaters who indicated that more safe harbors are needed.

Boater responses to the “where needed” question are a mix of locations for new safe harbors and for improvements to existing harbors to make them more useable. This mix cannot be effectively separated. In the written comments, it is common for a boater to respond that they want an improvement to a harbor because it does not meet their needs. The harbor entrance might be too shallow, for example. It is good to remember that these written responses are coming from marina seasonal-slip renters, many of whom have large boats that require deep water.

With this in mind, the results should be interpreted as the locations where marina boaters indicate safe harbors issues exist, whether the issue is a new harbor or an improvement to existing harbor to make it more useable.

The most common location indicated by boaters is from Silver Bay to Grand Marais, with many indicating Grand Marais specifically (Table 23). This location is top ranked by boaters from North Shore and Apostle Island marinas. Boaters from Duluth-Superior marinas ranked two near-by locations higher: Duluth-Superior to Two Harbors, and Duluth-Superior to Cornucopia.

Table 23

Where are more safe harbors needed?

(percent of responses from seasonal-slip renters who indicated that more safe harbors are needed)

Location	Response	Overall	----- Marina location -----		
			North Shore	Duluth- Superior	Apostle Islands and vicinity
Silver Bay to Grand Marais					
	Silver Bay to Grand Marais	15%	20%	14%	13%
	Grand Marais, MN	15%	16%	7%	24%
	Tofte	2%	7%	1%	1%
	Taconite Harbor to Grand Marais	1%	5%	1%	0%
	Taconite Harbor	1%	2%	1%	0%
	Lutsen	0%	2%	0%	0%
	Silver Bay to Taconite Harbor	0%	2%	0%	0%
	Silver Bay to Tofte	<u>0%</u>	<u>2%</u>	<u>0%</u>	<u>0%</u>
	<i>Subtotal</i>	37%	57%	25%	39%
Duluth-Superior to Silver Bay					
	Two Harbors	7%	16%	10%	0%
	Two Harbors to Silver Bay	5%	9%	6%	1%
	Duluth-Superior	1%	5%	1%	0%
	McQuade Road	1%	0%	4%	0%
	Twin Points	1%	0%	2%	1%
	Gooseberry/Split Rock SP	1%	0%	4%	0%
	Duluth-Superior to Knife River	1%	0%	4%	0%
	Duluth-Superior to Silver Bay	1%	2%	1%	0%
	Lester River area	0%	0%	1%	0%
	Knife River	0%	0%	1%	0%
	McQuade to Knife River	0%	0%	1%	0%
	Silver Bay	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>
	<i>Subtotal</i>	22%	32%	35%	3%
Grand Marais to Grand Portage					
	Grand Portage	7%	5%	4%	13%
	Grand Marais to Grand Portage	3%	2%	4%	4%
	Isle Royale	1%	5%	0%	1%
	Horseshoe Bay	<u>0%</u>	<u>0%</u>	<u>1%</u>	<u>0%</u>
	<i>Subtotal</i>	13%	11%	8%	19%
Duluth-Superior to Cornucopia					
	Duluth-Superior to Port Wing	6%	0%	14%	1%
	Duluth-Superior to Cornucopia	4%	0%	5%	5%
	Port Wing	3%	0%	4%	5%
	Amnicon River area	1%	0%	4%	0%
	Cornucopia	1%	0%	1%	3%
	Brule River area	1%	0%	2%	0%
	Duluth-Superior to Brule River	<u>0%</u>	<u>0%</u>	<u>1%</u>	<u>0%</u>
	<i>Subtotal</i>	18%	0%	31%	15%
Apostle Islands to Sault Ste. Marie					
	Apostle Islands	7%	0%	0%	20%
	Ontonagon, MI	0%	0%	0%	1%
	Grand Marais, MI	0%	0%	0%	1%
	Sault Ste. Marie	0%	0%	0%	1%
	Apostle Islands to Black River Harbor (between Apostles and Ontonagon, MI)	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>1%</u>
	<i>Subtotal</i>	9%	0%	0%	25%
	Grand total percent	100%	100%	100%	100%
	Surveys with written responses used in this table	155	38	57	60

REFERENCES

1. Minnesota Department of Natural Resources (MN DNR). The safe harbor program is described on the MN DNR website at: http://www.dnr.state.mn.us/water_access/harbors/index.html .
2. Minnesota Department of Natural Resources (MN DNR). 2002. Boating on the Minnesota portion of Lake Superior, Summer 2002. MN DNR, Office of Management and Budget Services. See MN DNR website at: http://www.dnr.state.mn.us/aboutdnr/reports/boating_lakesuperior.html .
3. Minnesota Department of Natural Resources (MN DNR). 2003. Market study for boating on the Minnesota waters of Lake Superior. MN DNR, Office of Management and Budget Services. See MN DNR website at: http://www.dnr.state.mn.us/aboutdnr/reports/boating_marketstudylksup2003.html .
4. Minnesota Department of Natural Resources (MN DNR). 2011 (in progress). Update of 2003 market study for boating on the Minnesota waters of Lake Superior. MN DNR, Division of Operations Services.
5. All population information comes from the U.S. Census Bureau: <http://www.census.gov/> . Minnesota race/ethnicity information is from 2010 Census. Minnesota education information is from 2009; percent of population 25 or older with bachelor's degree or more is estimated at 31.5%. Minnesota median household income information is from 2010 and is estimated at \$52,554.

APPENDIX A

Survey instrument for seasonal-slip renters at marinas
(five pages)

SEASONAL-SLIP RENTERS AT MARINAS

2011 Lake Superior Recreational Boating Study

SECTION ONE — Your Boating Experience on Lake Superior

1. At what Lake Superior marina do you rent a seasonal slip? (please write marina name)

2. How far is your permanent home from this Lake Superior marina? ____ miles
3. How many years have you been boating on Lake Superior? ____ years
4. a. In the last 12 months, how many total days did you visit your boat at this marina, including days you did not take you boat out onto the water? ____ days

b. Of these total days, how many days did you have your boat out of the slip and on the water?
____ days
5. What type of boat is your *primary* boat at the marina (if in doubt, select your largest boat as your *primary* boat)? (check one)
____ cruiser (has cabin or superstructure) ____ jetski ____ canoe ____ pontoon
____ runabout (has windshield) ____ sailboat ____ sail-board ____ kayak
____ fishing (no windshield) ____ other (please specify) _____
6. What is the length of your primary boat? ____ feet
7. a. What is the principal type of motor on your primary boat? (check one)
____ gas/diesel ____ electric ____ no motor ____ don't know

b. IF GAS/DIESEL MOTOR, fill in the horsepower: ____ horsepower
8. Which of the following do you have on your primary boat? (check all that apply)
____ fire extinguisher ____ horn ____ toilet, with holding tank
____ GPS unit ____ depth finder ____ port-a-potty
____ marine radio ____ lights ____ life vests/personal flotation devices
____ cell phone ____ radar ____ throwable lifesaver/buoyant cushion
____ visual distress signal (flag, flares) ____ none of these items
9. When you boat on Lake Superior, what are your most important activities? (check all that apply)
____ sailing ____ sail-boarding ____ cruising/boat ride ____ scuba diving
____ canoeing ____ kayaking ____ jet skiing ____ transportation to/from
____ swimming
____ fishing (if check fishing, what type(s) of fish are you after? _____)
____ other (please specify) _____

10. How important is it to have the following facilities and services available to you at a marina where you rent a seasonal slip? (circle one response for each facility/service)

	Not important	Slightly important	Moderately important	Very important	Don't know
<u>Facility/service at the marina</u>					
sewage pumpout services	NI	SI	MI	VI	DK
boat repair services	NI	SI	MI	VI	DK
private restrooms and showers for marina patrons	NI	SI	MI	VI	DK
laundry facilities	NI	SI	MI	VI	DK
fuel pumps	NI	SI	MI	VI	DK
indoor place for boaters to relax	NI	SI	MI	VI	DK
drinking water connection dockside	NI	SI	MI	VI	DK
electricity connection dockside	NI	SI	MI	VI	DK
ship store	NI	SI	MI	VI	DK
knowledgeable marina operator(s) with whom to discuss boats and boating topics	NI	SI	MI	VI	DK
adequate security for me and my boat	NI	SI	MI	VI	DK
adequate parking for me and my guests	NI	SI	MI	VI	DK
ability to contact marina staff by radio with questions	NI	SI	MI	VI	DK
cell phone access	NI	SI	MI	VI	DK
cable TV connections	NI	SI	MI	VI	DK
internet access	NI	SI	MI	VI	DK
haul-out service	NI	SI	MI	VI	DK
winter storage capability	NI	SI	MI	VI	DK
<u>Facility/service near the marina</u>					
places to shop for groceries	NI	SI	MI	VI	DK
retail shopping opportunities	NI	SI	MI	VI	DK
outdoor recreation opportunities	NI	SI	MI	VI	DK
entertainment opportunities	NI	SI	MI	VI	DK
lodging opportunities	NI	SI	MI	VI	DK
bicycle rental opportunity	NI	SI	MI	VI	DK
opportunities for sightseeing, visiting historic sites	NI	SI	MI	VI	DK
fishing opportunities	NI	SI	MI	VI	DK
restaurant opportunities	NI	SI	MI	VI	DK
shuttle or transportation service for shopping, restaurants and entertainment outings	NI	SI	MI	VI	DK

other important facility/service? (please describe)

SECTION TWO — Safe Harbors on Lake Superior

(a “safe harbor” is a protected location where boaters can safely retrieve a boat or be sheltered from a storm)

11. a. Are you aware of the MN DNR’s Safe Harbors Program on MN’s North Shore of Lake Superior?
 yes no not sure/don’t know
- b. (IF YES) Have the Safe Harbors permitted you to boat more often on Lake Superior?
 yes no not sure/don’t know
12. How concerned are you about being caught out on Lake Superior without a safe harbor nearby?
 (check one)
 not concerned slightly concerned somewhat concerned very concerned
 don’t know
13. Do you think additional safe harbors are needed on Lake Superior? (check one)
 yes no don’t know
- 13a. (IF YES) Where are they needed? (describe locations)

SECTION THREE — Overnight boating trips on Lake Superior

14. In the last 12 months, did you take any overnight trips in your boat away from this Lake Superior marina? (check “yes” or “no”, and answer follow-up question)
 yes IF YES, How many nights in the last 12 months were you away from the marina in your boat? nights
 no IF NO, Do you have any interest in taking overnight boating trips on Lake Superior?
 (check one) yes no not sure/don’t know
15. In your opinion, how desirable are the following destinations for an overnight boating trip?
 (circle one response for each destination)

	Not desirable Slightly desirable Moderately desirable Very desirable				Don't know
<u>Destinations for overnight trips</u>					
Apostle Islands area of Lake Superior in Wisconsin	ND	SD	MD	VD	DK
Duluth-Superior Harbor	ND	SD	MD	VD	DK
Minnesota North Shore waters of Lake Superior	ND	SD	MD	VD	DK
Michigan waters of Lake Superior	ND	SD	MD	VD	DK
Canadian waters of Lake Superior	ND	SD	MD	VD	DK
Isle Royale in Lake Superior	ND	SD	MD	VD	DK
Lake Michigan	ND	SD	MD	VD	DK
Other desirable locations? (please describe) _____					

16. When you take an overnight boating trip, how important is it to have the following facilities and services available to you at a marina where you spend the night? (circle one response for each facility/service)

	Not important	Slightly important	Moderately important	Very important	Don't know
<u>Facility/service at the marina</u>					
sewage pumpout services	NI	SI	MI	VI	DK
boat repair services	NI	SI	MI	VI	DK
private restrooms and showers for marina patrons	NI	SI	MI	VI	DK
laundry facilities	NI	SI	MI	VI	DK
fuel pumps	NI	SI	MI	VI	DK
indoor place for boaters to relax	NI	SI	MI	VI	DK
drinking water connection dockside	NI	SI	MI	VI	DK
electricity connection dockside	NI	SI	MI	VI	DK
ship store	NI	SI	MI	VI	DK
knowledgeable marina operator(s) with whom to discuss boats and boating topics	NI	SI	MI	VI	DK
adequate security for me and my boat	NI	SI	MI	VI	DK
ability to make advance reservations for my boat	NI	SI	MI	VI	DK
ability to contact marina staff by radio with questions	NI	SI	MI	VI	DK
cell phone access	NI	SI	MI	VI	DK
cable TV connections	NI	SI	MI	VI	DK
internet access	NI	SI	MI	VI	DK
<u>Facility/service near the marina</u>					
places to shop for groceries	NI	SI	MI	VI	DK
retail shopping opportunities	NI	SI	MI	VI	DK
outdoor recreation opportunities	NI	SI	MI	VI	DK
entertainment opportunities	NI	SI	MI	VI	DK
lodging opportunities	NI	SI	MI	VI	DK
bicycle rental opportunity	NI	SI	MI	VI	DK
opportunities for sightseeing, visiting historic sites	NI	SI	MI	VI	DK
fishing opportunities	NI	SI	MI	VI	DK
restaurant opportunities	NI	SI	MI	VI	DK
shuttle or transportation service for shopping, restaurants and entertainment outings	NI	SI	MI	VI	DK

other important facility/service? (please describe) _____

SECTION FOUR — This section asks questions about you so we can better understand Lake Superior boaters.

17. What is the zip code of your permanent home? _____
18. Are you () Male or () Female
19. How old are you? ____ Years
20. Which of the following best describes your race? (check all that apply)
- | | |
|---|---|
| <input type="checkbox"/> African American/black | <input type="checkbox"/> Caucasian/white |
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Pacific Islander |
| <input type="checkbox"/> Asian | |
21. Do you consider yourself Hispanic/Latino/Spanish? (check one) ____ Yes ____ No
22. What is the highest level of education you have completed? (check one)
- | | |
|--|--|
| <input type="checkbox"/> Some high school | <input type="checkbox"/> Some college |
| <input type="checkbox"/> Graduated from high school or GED | <input type="checkbox"/> Graduated from college |
| <input type="checkbox"/> Some vocational or technical school | <input type="checkbox"/> Some postgraduate study |
| <input type="checkbox"/> Graduated from vocational or technical school | <input type="checkbox"/> Postgraduate degree(s) |
23. Including you, how many adults, teens, and children live in your household?
- ____ Adults (over 18) ____ Teens (13 to 18 years) ____ Children (12 or under)
24. Please indicate below your total household income before taxes last year. (check one)
- | | |
|---|---|
| <input type="checkbox"/> Under \$19,999 | <input type="checkbox"/> \$50,000 to \$59,999 |
| <input type="checkbox"/> \$20,000 to \$29,999 | <input type="checkbox"/> \$60,000 to \$74,999 |
| <input type="checkbox"/> \$30,000 to \$39,999 | <input type="checkbox"/> \$75,000 to \$99,999 |
| <input type="checkbox"/> \$40,000 to \$49,999 | <input type="checkbox"/> Over \$100,000 |
25. Is there anything else you would like to tell us about boating on Lake Superior?

THAT’S THE END OF THE QUESTIONS. THANK YOU VERY MUCH