

Survey of Households in the Portage Lake Watershed

August 24, 2007

Prepared for
Portage Lake Watershed Forever Committee

Submitted by
Public Sector Consultants Inc.
Lansing, Michigan
www.pscinc.com

INTRODUCTION

Development of a watershed management plan for the Portage Lake watershed included a survey of residents located in the watershed to learn how residents use the watershed, how they want it to look in the future, perceptions of and priorities for improving water quality, and general information about the households that could impact the watershed. The purpose of the survey was also to help shape future public education efforts by understanding the perceived use and trustworthiness of different sources of information, uncovering false perceptions, identifying targets for outreach efforts, and establishing a baseline of information that can be used to evaluate the success of future watershed management activities.

METHODOLOGY

In August 2007, Public Sector Consultants conducted a telephone survey of 250 households in the Portage Lake watershed to learn about recreational activities within the watershed, perceptions of and priorities for improving water quality, and the perceived use and trustworthiness of different sources of information. The survey also provides general information about the households that could impact the watershed.

Because the Portage Lake watershed boundary does not directly correspond to established census boundaries, it is difficult to know exactly how many households are situated within the watershed boundary. Geographic Information System (GIS) software and data from the 2000 U.S. Census (Census 2000) were used to develop the telephone sample boundaries, estimate the total number of housing units in the watershed, and to determine margin of error for the survey results.

The boundary for the Portage Lake watershed was input into ArcMap GIS software and compared to the Census 2000 block boundaries. Census blocks within the watershed boundary or immediately bordering the watershed boundary were isolated to get an estimate for the population and number of households in the watershed. Using this approach, it was determined there were approximately 1,351 housing units, including 809 occupied housing units and 542 vacant units. Of the 542 vacant housing units, 474 were classified for occasional, seasonal, or recreational use. Because this survey was designed to include occasional, seasonal, or recreational residents, the total number of housing units (1,351) was used to calculate margin of error, which is ± 5 percent at the 95 percent confidence interval.

Unless otherwise noted, the response frequencies noted in this report only include respondents who answered the question; that is, those who said that they “Don’t know” are not included in this summary, but their answers are shown in the survey results provided in the Appendix.

ACTIVITIES AND CONFLICTS

When creating a watershed management plan, it is important to know how residents use the watershed and how they want it to look. This information is important because it helps guide and prioritize protection and restoration efforts. To identify how residents in the Portage Lake area use the watershed, respondents were asked to report how

frequently they participate in certain activities. These activities included land-based recreation, such as waterfowl hunting, snowmobiling, and ATV (all-terrain vehicle) riding, as well as activities resulting in direct contact with Portage Lake or a river or stream in the watershed, such as fishing, boating, swimming, canoeing, and kayaking.

The activities that respondents **most frequently** engage in are as follows:

- Boating: 45 percent participate once a week or more often
- Swimming, snorkeling, or scuba diving: 42 percent participate once a week or more often
- Fishing: 37 percent participate once a week or more often

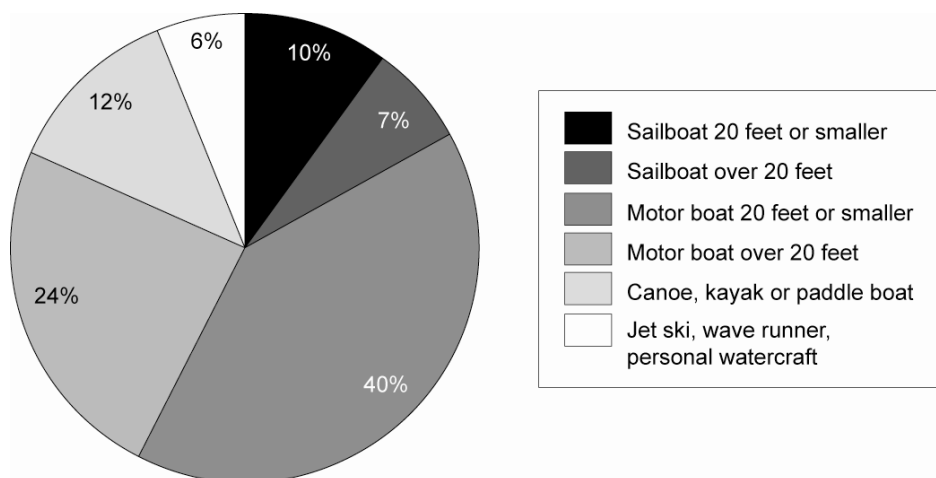
The activities that respondents report **never** participating in include:

- Waterfowl hunting (94 percent)
- Winter snowmobiling or ATV riding (84 percent)
- Water skiing, tubing, wake boarding or knee boarding (68 percent)
- Canoeing, kayaking or tubing on a river (58 percent)

Among respondents who report fishing, 66 percent rate the fishing as *excellent* (13 percent) or *good* (53 percent). Nearly half (46 percent) report that fishing has stayed *about the same* over the past few years.

As shown in Exhibit 1, among respondents who report boating, motor boats are the most frequent type of boat used. Within this category, 40 percent use a motor boat 20 feet in length or smaller, and 24 percent use a motor boat over 20 feet. Jet ski/wave runner/personal watercraft represent the least frequent type of boating among residents.

EXHIBIT 1
Types of Boat Used in Portage Lake



It appears that residents in the watershed equally utilize different boating access points to Portage Lake. One-third (33 percent) of respondents who report boating access Portage Lake by a dock, mooring or launch from their own property, 31 percent from a DNR (Department of Natural Resources) state public access site, and 23 percent from Village Park.

For watershed planning purposes, it is important to know if any of the ways in which residents use the watershed are in conflict. To answer this question, respondents were asked if they had personally observed any conflicts between users of Portage Lake, such as personal watercraft interfering with fishing, for example. About two-thirds (67 percent) of respondents say that they have not seen conflicts between various users of Portage Lake. Respondents who have personally observed conflicts most frequently mentioned jet skiers being involved (39 percent), despite jet skis representing just 6 percent of boating reported on Portage Lake by those surveyed. Other conflicts include issues involving access to the lake (19 percent), conflicts between those fishing and those boating on the lake (14 percent), and among boaters on the lake (10 percent). Half of those reporting conflicts (51 percent) say that the conflicts occur at peak times only (that is, summer and holiday weekends), 39 percent say both peak and non-peak times, and 10 percent say non-peak times only. Nearly half (47 percent) say that these conflicts are not very frequent.

WATER QUALITY PERCEPTIONS AND IMPROVEMENT ACTIONS

To begin to understand potential water quality problems in the watershed, survey respondents were asked about their perceptions of the water quality of Portage Lake. Overall, respondents give the water quality of the Portage Lake watershed high marks.

- 82 percent of respondents rate the overall water quality of Portage Lake as excellent (25 percent) or good (57 percent).
- The majority (64 percent) feel that the water quality of Portage Lake is somewhat (39 percent) or significantly (25 percent) better than the water in other inland lakes.
- About half (55 percent) say the water quality has stayed about the same over the past few years, with another 18 percent indicating that it is either somewhat (16 percent) or much (2 percent) better.

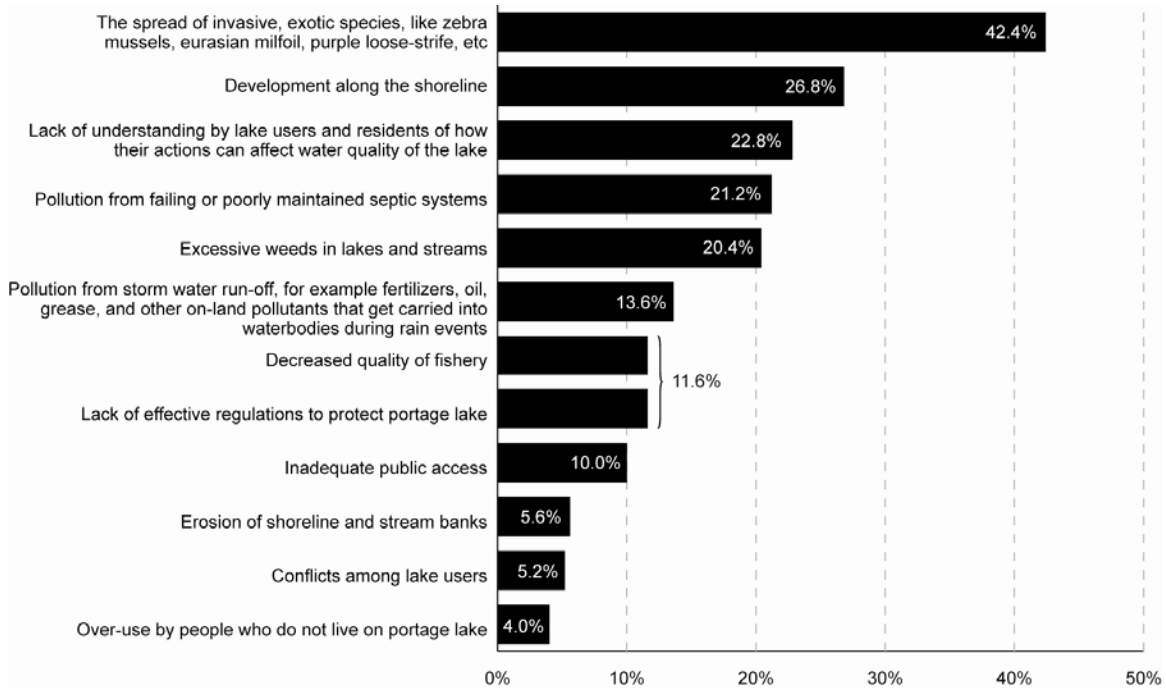
Respondents were also asked to indicate how much of a problem is posed by certain issues regarding water quality and recreational opportunities. As shown in Exhibit 2, the following were identified as **major problems** by respondents:

- The spread of invasive, exotic species (42 percent)
- Development along the shoreline (27 percent)
- Lack of understanding by lake users and residents of how their actions can affect water quality (23 percent)
- Pollution from failing or poorly maintained septic systems (22 percent)

Another telling statistic is the number of respondents who indicate they “don’t know” if the issues are a problem. 27 percent don’t know if the decreased quality of the fishery is a problem, 24 percent don’t know if lack of effective regulations on Portage Lake are a

problem, and 18 percent don't know if pollution from failing or poorly maintained septic systems are a problem.

EXHIBIT 2
Issues Considered Major Problems by Watershed Residents



Respondents were also asked to rate the priority for protection of certain places in the Portage Lake watershed. The issues most frequently cited as the **highest priority** for protection include:

- Lake Michigan sand dune areas and beach areas (74 percent)
- Natural features that help maintain water quality, such as wetlands and natural vegetation along lakes and streams that help filter pollution and prevent erosion (73 percent)
- Protecting scenic vistas (58 percent)

Protecting Native American cultural sites was rated a low priority among the choices offered, with 20 percent of respondents indicating that this is not a priority. Respondents were also given the opportunity to list other priorities that were not included in the provided list. Keeping the channel dredged is the most common issue according to respondents, followed by avoiding overdevelopment in the area and protecting wildlife habitat.

Respondents were also asked to rate how strongly they would support certain actions to improve water quality. Actions that respondents **strongly support** include:

- Addressing unplugged and abandoned oil, gas and mineral wells to prevent groundwater pollution (71 percent)
- Getting more students involved in watershed activities (68 percent)
- More effective planning for future growth by local leaders (60 percent)

SOURCES OF INFORMATION

To help inform future public education efforts, a series of questions were asked about where residents get their information about the watershed and which sources of information they trust. Respondents use a variety of sources for information about Portage Lake. Local newspapers, such as the *Manistee News Advocate* or *Traverse City Record Eagle*, were the most cited, with one out of three respondents (36 percent) saying they get most (22 percent) or a lot (16 percent) of their information there.

The top three sources from which respondents report getting **none** of their information included:

- Local cable access television (72 percent)
- Public service announcements on the radio (70 percent)
- Internet sources such as e-mails, newsletters, listservs, blogs, etc.(68 percent)

In addition, respondents were asked how much they would trust information from a variety of local, state, and federal sources. The sources of information considered the **most** trustworthy include:

- Neighborhood or lake associations: 67 percent (trust all of the time ,17 percent; trust most of the time, 50 percent)
- Manistee County Health Department: 67 percent (trust all of the time, 15 percent; trust most of the time, 52 percent)
- University Extension, professors, and scientists: 66 percent (trust all of the time, 19 percent; trust most of the time, 47 percent)

The sources of information considered **least** trustworthy include:

- U.S. Environmental Protection Agency: 61 percent (trust none of the time, 11 percent; some of the time, 50 percent)
- Local township, village, or tribal officials: 61 percent (trust none of the time, 7 percent; some of the time, 54 percent)

In addition, respondents were asked to list other organizations, people, or groups that they would trust or look to for information about the Portage Lake watershed. The Portage Lake Watershed Forever Committee was the most frequently mentioned group (37 percent), followed by homeowners or local businesses (23 percent) and the Nature Conservancy (12 percent).

PROPERTY CHARACTERISTICS

Respondents were also asked about different amenities they have on their property that could impact the Portage Lake watershed. These include a:

- Washing machine (93 percent)
- Grass lawn (81 percent)
- Dishwasher (71 percent)
- Garbage disposal (42 percent)

The majority of respondents (67 percent) have either two (47 percent) or three (20 percent) bathrooms at their residence.

Eighty-two percent of respondents are served by a septic system. As shown in Exhibit 3, nearly half (42 percent) of these septic systems are less than 10 years old. Regardless of the age of the septic system, the vast majority of respondents reported having had their system inspected and/or pumped out in the last five years. Overall, 85 percent of those served by a septic system report having had their system inspected and/or pumped out in the last five years.

EXHIBIT 3
Age and Maintenance of Septic Systems

Age	% of Respondents	% Maintained in last 5 years
1 to 5 years	20%	90%
6 to 10 years	22	84
11 to 20 years	25	80
20 years or older	33	85

More than one-third of respondents (38 percent) live on Portage Lake or on a river or stream flowing into Portage Lake. As shown in Exhibit 4, regardless of whether they live on the water, respondents' behavior is consistent, that is, three-quarters or more of each group report maintaining a lawn, being served by a septic system, and owning a dishwasher and washing machine.

EXHIBIT 4
Distribution of Amenities with Possible Impact on Watershed

		Is your property on portage lake or on a river or stream flowing into portage lake?	
		Yes	No
Do you maintain a grass lawn at your residence?	Yes	89.2%	76.1%
	No	10.8	23.9
Do you have a washing machine?	Yes	89.2	94.8
	No	10.8	5.2
Do you have a garbage disposal?	Yes	52.7	36.8
	No	47.3	63.2
Do you have a dishwasher?	Yes	66.7	72.9
	No	33.3	27.1
Is your residence served by a septic system?	Yes	76.3	85.2
	No	23.7	14.8

SEASONAL AND FULL-TIME RESIDENT DIFFERENCES

Three-fourths of respondents (74 percent) are full time residents, 26 percent are seasonal residents, and 1 percent are vacation renters of more than 30 days. Statistically significant differences between seasonal and full time residents occur in only a few instances.

- Seasonal residents are more likely **not** to have a washing machine or maintain a grass lawn.
- Seasonal residents are more likely to get only some or none of their information about the Portage Lake watershed from local newspapers.
- Seasonal residents tend to be older than full-time residents, with 55 percent 65 years or older and 83 percent 55 years or older.
- Seasonal residents are also much more likely to have completed college or postgraduate study (70 percent) than full-time residents (45 percent)

CONCLUSION

Boating, fishing, and swimming/snorkeling/scuba are the most frequent activities, with most respondents unable to recall observing any conflicts between users. Of those who had seen a conflict, conflicts mostly involved jet skiers or other boaters interfering with fishing and swimming at peak use times. As in other inland lakes in Michigan, jet skis are a source of tension between users of the lake and residents. This survey indicates that most jet skiers are day users and not residents of the watershed (only 6 percent of respondents say they use jet skis). Given the tension apparent in resident comments (included in the Appendix), communication and outreach for jet skiers should be considered. Motor boats were the most frequent type of boating, and respondents specifically mention the need to dredge the channel, indicating that Portage Lake is used as a means to access Lake Michigan.

Respondent's have a favorable opinion of the current water quality in the Portage Lake watershed and feel that it compares favorably to other inland lakes. Respondents consider the spread of invasive species and a lack of knowledge on the part of residents and users as to how their actions impact water quality to be the two biggest problems facing the watershed. These results indicate the need for education and coordinated dissemination of information to residents and users.

Another concern identified as a major problem by respondents was pollution from failing or poorly maintained septic systems. This concern could be alleviated by the percentage of respondents who report having their septic system inspected or pumped out in the last five years (85 percent), although the wording of the survey question may have caused a false positive response. With 82 percent reporting that they are served by a septic system, this issue could have an impact on water quality in the watershed, and warrants continued monitoring by the Portage Lake Watershed Forever Committee.

Respondents trust information from their neighborhood lake association, the Manistee County Health Department, and university extension personnel more than they trust local or federal government officials. At the same time, organizations like the Portage Lake Watershed Forever Committee, the Nature Conservancy, and other property owners or local business owners were specifically mentioned by respondents as trustworthy sources. This indicates that communication and coordination of information about the watershed could be served by grassroots organizations such as these, and that residents are likely to trust the information and efforts of these groups.

The vast majority of respondents have a washing machine and a dishwasher and maintain a grass lawn at their residence in the Portage Lake watershed. While the survey results provide baseline data for these property characteristics, the survey does not examine the frequency of use of these appliances or the specific types of fertilizers used to maintain lawns. PSC recommends additional follow-up with residents to communicate and educate them about the potential impact of these technologies and actions on the Portage Lake watershed.

Appendix

*Survey Instrument and Results**

Hello, my name is _____, and I'm calling on behalf of the Portage Lake Watershed Forever Committee. We're conducting a survey of residents in the Portage Lake Watershed to learn about activities and any problems that may be affecting the watershed.

Your responses to the survey are important and will help local governments, concerned citizens, and other interested parties address the most urgent priorities.

[IF RESPONDENT ASKS: The Portage Lake Watershed Forever Committee is a group of local residents, business owners, organizations, public officials, agencies, and other stakeholder who are guiding the development of the Portage Lake Watershed Forever Plan. Anyone who has an interest in the watershed is welcome to join the committee.]

1. Do you own property on Portage Lake or on a river or stream flowing into Portage Lake?

Yes	38%
No	62
Renter	0
Don't know	<1
Refused	0

2. Is this property used **solely** for business purposes?

Yes [END INTERVIEW AND THANK RESPONDENT]	
No [GO TO Q3]	[N = 250]
Don't know	
Refused	

ACTIVITIES

3. Season permitting, how often you or anyone else in your household participate in the following activities in *Portage Lake*? [CODE REFUSED=99; DON'T KNOW=88]

	Never	Daily	2 or 3 times per week	About once per week	About once per month	2 or 3 times per year	Don't know	Refused
Canoeing/kayaking/tubing on the river	58%	2%	5%	5%	13%	16%	<1%	0%
Waterfowl hunting	94	0	1	2	<1	4	0	0
Fishing [ALSO ASK RESPONDENT Q4 and Q5]	34	4	17	16	11	18	0	0
Winter snowmobiling or ATV riding	84	2	4	6	<1	3	<1	0
Swimming, snorkeling or scuba diving	34	11	16	14	7	17	<1	0
Water skiing, tubing, or knee boarding	67	2	6	6	6	12	<1	0
Boating [ASK Q6, Q7, Q8]	32	7	22	16	9	14	<1	0

* Percentages in tables may not = 100% due to rounding.

[ASK Q4–5 ONLY IF ANSWER TO ITEM ‘C’ ABOVE IS ANYTHING BUT “NEVER”.]

4. How would you rate the fishing in Portage Lake?

Excellent	12%
Good	49
Fair	26
Poor	5
Don't know	8
Refused	0

5. Over the past few years, would you say that the fishing has gotten better or worse, or stayed about the same? [IF BETTER/WORSE: Would that be much or somewhat (better/worse)?]

Much better	<1%
Somewhat better	7
About the same	39
Somewhat worse	30
Much worse	8
Don't know	15
Refused	0

[ASK Q6–8 ONLY IF ANSWER TO ITEM ‘G’ ABOVE IS ANYTHING BUT “NEVER”.]

6. Which of the following describes how you boat? [MAY RESPOND TO MORE THAN ONE]

Sailboat 20 feet or smaller	10%
Sailboat over 20 feet	7
Motor boat 20 feet or smaller	40
Motor boat over 20 feet	24
Canoe/kayak/paddle boat	12
Jet ski/personal watercraft	6
Other: (specify)	1
Don't know	<1
Refused	<1

7. How do you typically access Portage Lake? [CHECK ALL THAT APPLY]

DNR state public access site	31%
Dock, mooring or launching from your own property	33
Road end or dedicated easement	5
Village Park boating access site	23
Don't know	7
Refused	0

8. Overall, how would you rate the ease of access to Portage Lake?

Excellent	38%
Good	36
Fair	21
Poor	5
Don't know	0
Refused	0

9. Have you personally observed any conflicts between various users of Portage Lake, like personal water craft use interfering with those fishing on the lake, or motorized boating activity limiting use of non-motorized canoes or kayaks?

Yes [GO TO Q10–12]	30%
No [SKIP TO Q13]	60
Don't know	10
Refused	0

10. Can you briefly describe what type of conflicts between users of Portage Lake you have personally observed? [RECORD FREE RESPONSE]

11. When do these conflicts occur? Do they occur during peak times of usage, such as summer and holiday weekends, at non-peak times or both?

Peak use times	51%
Non-peak times	10
Both peak and non-peak times	39

12. How often do these conflicts occur? Are they...

Very frequent	19%
Somewhat frequent	33
Not very frequent	47
Rarely occur	0

WATER QUALITY

13. How would you rate the overall water quality of Portage Lake?

Excellent	23%
Good	53
Fair	16
Poor	2
Don't know	7
Refused	0

14. Compared to other inland lakes with which you are familiar, do you believe that water quality of Portage Lake is:

Significantly better	22%
Somewhat better	34
About the same	24
Somewhat worse	6
Significantly worse	1
Don't know	14
Refused	0

15. Over the past few years, do you feel that the water quality of Portage Lake has gotten better, stayed the same, or gotten worse? [IF BETTER/WORSE: Would that be much or somewhat (better/worse)?]

Much better	2%
Somewhat better	14
About the same	50
Somewhat worse	22
Much worse	1
Don't know	10
Refused	0

16. I am now going to read you a list of potential issues for the water quality and recreational opportunities on of Portage Lake. Based on your knowledge and use of Portage Lake, please indicate how much of a problem you feel each is for water quality and recreational opportunities of Portage Lake—Would you say it is a major problem, somewhat of a problem, or is not a problem at all?

	Major problem	Somewhat of a problem	Not a problem at all	Don't know	Refused
Pollution from failing or poorly maintained septic systems, polluted storm water runoff (e.g. fertilizers, pesticides, oil, grease, sediments), or other pollution sources	21%	35%	26%	18%	0%
Erosion of shoreline and stream banks	6	22	62	11	0
Pollution from storm water run-off, such as fertilizers, oil, grease, and other pollutants that are carried into the water during rain events	14	42	34	10	0
Lack of understanding by lake users and residents of how their actions can affect water quality of the lake	23	47	23	7	0
Development along the shoreline	27	34	36	2	0
The spread of invasive, exotic species (zebra mussels, Eurasian milfoil, purple loosestrife, etc)	42	38	13	7	0
Excessive weeds that limit lake uses during summer months	20	39	34	7	0
Conflicts among lake users	5	29	63	3	0
Overuse by people who do not live on Portage Lake	4	21	64	10	0
Decreased future use of lake due to restricted public access	10%	26%	61%	4%	0%
Decreased quality of fishery due to reduction in annual plantings of	12	38	24	27	0

	Major problem	Somewhat of a problem	Not a problem at all	Don't know	Refused
walleye, trout and salmon					
Lack of effective regulations to protect Portage Lake	12	36	29	24	0
Some other threat [RECORD FREE RESPONSE]					

17. I am now going to read a list of sites and resources in the Portage Lake area. Please tell me, using a scale from 1 to 5, where 1 means “not at all a priority” and 5 means “the highest priority” how much of a priority you feel should be given to protecting each of the following sites and resources?

	1	2	3	4	5	Don't know	Refused
Unique lands identified or owned by local land conservancies	4%	3%	17%	23%	45%	8%	0%
Centennial farms, orchards, and other unique agricultural lands	4	9	25	25	32	5	0
Lake Michigan sand dune areas and beach areas	4	1	6	16	73	1	0
Scenic vistas	3	3	16	18	56	4	0
Historic structures such as the Gazebo at Portage Point Beach, and Portage Point Inn	7	8	26	23	34	2	<1
Native American cultural sites	17	12	20	17	20	13	<1
Natural features that help maintain water quality, such as wetlands and natural vegetation along lakes and streams that help filter pollution and prevent erosion	2	2	9	14	71	2	0
Other [RECORD FREE RESPONSE]							

WATER IMPROVEMENT ACTIONS AND INFORMATION

18. From the following list of actions suggested by area residents to improve and protect the water quality of Portage Lake, please indicated whether you strongly support, support, somewhat support, oppose, or strongly oppose:

	Strongly support	Somewhat support	No opinion one way or the other	Somewhat oppose	Strongly oppose	Don't know	Refused
Getting more students involved in watershed activities	68%	26%	5%	2%	0%	0%	0%
More effective planning for future growth by local officials	60	27	9	3	<1	0	0
Improving roads to reduce erosion and sedimentation	40	36	16	6	3	0	0

	Strongly support	Somewhat support	No opinion one way or the other	Somewhat oppose	Strongly oppose	Don't know	Refused
Addressing unplugged and abandoned oil, gas and mineral wells to prevent groundwater pollution	71%	16%	9%	3%	<1%	0%	0%
Expanding use of storm water detention basins, rain gardens and other methods to reduce surface runoff pollution	50	34	12	4	<1	0	0
Protecting and expanding the natural vegetative strips along shoreline areas of rivers and streams	45	32	12	8	3	<1	0

19. I am now going to read a list of possible sources of information about the quality of the water in Portage Lake. Please **indicate** how much of your information *about Portage Lake* comes from each of the sources that I name:

	Most	A lot	Some	None	Don't know	Refused
Local newspapers (<i>Manistee News Advocate, Traverse City Record Eagle, Ludington Daily News, etc.</i> , either hard copy or electronic versions)	21%	16%	46%	16%	1%	0%
Local news on the television	7	10	49	34	1	0
Local cable access television station	1	4	23	68	3	0
Public meetings	8	14	39	36	2	0
Newsletter delivered to your home	10	17	42	32	0	0
Public service announcements on the radio	1	2	27	69	1	0
Information bulletin boards at grocery stores, the post office, and other public buildings	2	5	46	46	1	0
Internet sources such as e-mails, newsletters, listservs, blogs, etc.	1	4	26	68	1	<1

20. I will read a list of organizations, people, and groups. If you received information about the Portage Lake Watershed, its problems and proposed remedies from these individuals or organizations, please tell me if you would trust the information All of the time, Most of the time, some of the time, or none of the time?

	Trust				Don't know	Refused
	All of the time	Most of the time	Some of the time	None of the time		
Local township, village, or tribal officials	5%	33%	52%	6%	3%	0%
Manistee County Health Department	14	49	28	3	5	<1

	Trust				Don't know	Refused
	All of the time	Most of the time	Some of the time	None of the time		
Michigan Department of Environmental Quality	10	38	42	5	5	0
U.S. Environmental Protection Agency	8	29	48	11	5	0
Your neighborhood/lake association	17	49	30	2	3	0
Michigan Department of Natural Resources	12	44	38	4	1	<1
University Extension, professors and scientists	18	45	31	3	3	<1
Manistee Conservation District	14	42	32	3	8	<1
United States Department of Agriculture's Natural Resources Conservation Service	9	39	37	8	8	0
Other [RECORD FREE RESPONSE]						

INFORMATION ABOUT YOUR RESIDENCE

21. How long have you had a residence in Manistee County? [RECORD WHOLE NUMBER]

1 to 5 years	7%
6 to 10 years	12
11 to 20 years	25
21 to 30 years	18
31 to 40 years	14
41 to 50 years	10
51 years or more	14
Don't know	0
Refused	<1

22. Which of the following best describes the use of your property in Manistee County?

Year-round/Full-time resident	73%
Own property in the area but do not live there	0
Seasonal resident [NOTE: ALSO ASK RESPONDENTS Q23 BELOW]	26
Vacation renter	<1
Don't know	0
Refused	<1

[IF SEASONAL RESIDENT ASK Q23]

23. How many days a year do you spend at your property in Manistee County?

0–10 days	0%
11–30 days	5
31–90 days	30
More than 90 days	66
Don't know	0
Refused	0

24. How many people are in your household? _____ [RECORD WHOLE NUMBER]

One	16%
Two	55
Three	8
Four	6
Five	10
Six	2
Seven	1
Eight	<1
Nine	<1
Don't know	0
Refused	<1

25. Do you maintain a grass lawn at your residence?

Yes	80%
No	19
Don't know	0
Refused	<1

26. Do you have a seawall or bulk head on the lake side of your residence?

Yes	20%
No	57
Not applicable/Not on Lake	23
Don't know	0
Refused	<1

27. Do you have a washing machine?

Yes	92%
No	7
Don't know	0
Refused	<1

28. Do you have a garbage disposal?

Yes	42%
No	57
Don't know	0
Refused	<1

29. Do you have a dishwasher?

Yes	70%
No	29
Don't know	0
Refused	<1

30. How many bathrooms does your residence have? [RECORD NUMBER]

One	24%
Two	47
Three	20
Four	6
Five	2
Six	1
Don't know	0
Refused	0

31. Is your residence served by a septic system?

Yes [GO TO Q32]	82%
No [SKIP TO Q34]	18
Don't know	0
Refused	<1

32. How old is your septic system? [RECORD YEARS]

1 to 5 years	21%
6 to 10 years	24
11 to 20 years	26
21 to 30 years	16
31 to 40 years	8
41 to 50 years	5
51 years or more	1
Don't know	0
Refused	0

33. In the last five years, have you had your septic tank inspected and/or pumped out?

Yes	85%
No	15
Don't know	1
Refused	0

INFORMATION ABOUT YOU

34. Gender? [RECORD BY OBSERVATION]

Male	50%
Female	50
Don't know	0
Refused	0

35. What is your age? [RECORD AS YYYY; DON'T KNOW=8888; REFUSED=9999]

18 to 24 years	2%
25 to 34 years	5
35 to 44 years	6
45 to 54 years	16
55 to 64 years	30
65 years or more	41
Don't know	0
Refused	0

36. Describe your level of education:

Some high school	1%
High school graduate	14
Vocational/Technical school or associate's degree	11
Some college	21
College graduate	26
Postgraduate study or degree	26
Don't know	<1
Refused	<1

FREE RESPONSES

QUESTION 10

- About the Port Point Inn; the development on the marina occurring further out into the lake; boat rental safety issues; irresponsible people not training or knowing regulations well enough concerning public safety and common sense.
- Before they put the buoy in, the jet skiers were coming closer than they should to the swimmers. We had some safety concerns; still do, occasionally, but before the buoy the jet skiers were more of a problem than they are now.
- Between fishermen and boaters, charter captains and pleasure fisherman, rental fleets and the local people.
- Between general fishermen and jet skis. Jet skis should be banned, or their riders should be required to take training courses. Sometimes they're lewd, too. I've had several close calls. I don't like the risks to my grandchildren.
- Between sportsmen and recreation-minded, and private property owners who won't compromise. Naturalists vs. hunters. Only workable solution is a 3-way marriage between affluent summer-only property owners, sportsmen, and local residents.
- Between water skiers and fishing.
- Coming into the lake at night a troller didn't have their running light on; suddenly they flipped them on and before I knew it, I was right on top of him; this could have been a major collision; clearly a regulation issue unobserved.
- Development of Portage Point Inn in helter-skelter way; annoys summer residents.
- Fisherman slightly bothered by them. If you are slowly drifting they come too close and too fast where it is definitely an interruption. Personal watercraft is half the problem.

- Here's a personal gripe: visitors come and use my private dock. They bring trash down, but don't take it back. They drive over my lawns. They party at night. Actually, most people are very decent, but there are some careless ones.
- I know I was fishing, the skiers and jet skiers come entirely too close to my boat; obviously a safety factor as well as a consideration issue; the people seem to be, in a word, "inconsiderate."
- I know that sometimes it's hard for wind-surfers to find a good access or usable area that doesn't upset some people.
- I occasionally hear words exchanged between locals and down-staters.
- Indians nets...opposition hurting tourism. Got them spread all the way down south of Manistee, discouraging fishermen from going out on the big lake.
- I've seen arguments between recreational users and fishers where fisherman are active in a part of the lake where they shouldn't be.
- Jet ski and runabouts; my niece was out about 75 ft. from our cottage shore area on the lake when my niece was almost hit; jet ski came within 10 ft. of her while she was swimming; jet skis also encroached when we're fishing; it's terrible.
- Jet ski buzz the fisherman—early morning and evening—no time limit at Portage—should be.
- Jet skiers coming too close to boats and the kids swimming; also the noise and exhaust fumes from the jet skis.
- Jet skiers coming too close to the dock or the swimmers.
- Jet skiers coming too close to the swimming area; major problem.
- Jet skiers disturbing fishing areas as well as power boats once in awhile.
- Jet skiers go through fishing areas.
- Jet skiers traveling too close to boaters or people fishing causing wave wake issues.
- Jet skiers were rude; they don't keep their distance; they encroach on the swimming areas; the docks are getting longer illegally; illegal diving platforms being built/used.
- Jet skis coming too close to fishermen.
- Jet skis coming too close to the end of the dock; isn't there a regulation regarding the distance jet skis can approach the dock?
- Jet skis coming too close to the swimming area; last year I called the police to obtain the rules of lake use concerning this issue.
- Jet skis coming up on the beach endangering swimmers; jet skiers are inexperienced and inconsiderate; possibly too much to drink is a factor.
- Jet skis interfering with boating/fishing.
- Jet skis interfering with fishers.
- Moorings, use road ends, resent that unless you have property on the lake you don't belong.
- Mostly jet skis, excessive noise or they don't follow the rules of the lake going too close to the boats, but it has been handled properly by the authorities.
- Not much in the lake itself. More often at the road ends and such places.

- People don't want others crossing their property. Some people close off public access. Rulings have had to be made keeping them from keeping people off of areas designated for public access.
- People harassing other people.
- People swimming in the channel; this seemed to be a regulation violation issue to me.
- People think they own the whole lake—denying people access.
- People with watercraft and motorboat interfering with fishing.
- Personal watercraft coming too close to fishing boats and runabouts.
- Primarily the ones I've observed is when those with non-powered craft are trying to get into the dock, often those with powered craft will cut in and take over, particularly some of the commercial craft; the bass fishing is the worst.
- Private vs. public not always cooperative.
- Problem with a jet skier; I was standing on the dock and this jet skier came dangerously close to a fishing boat like it wasn't there; could be been a bad accident.
- Recently our neighbor almost got hit by wave runner while on a wave runner; could have been bad; the girl on the other wave runner never saw him at all.
- Sailboat races have a lot of boats, which conflict with other users.
- Scooters people and boating people don't know who has the right of way—don't have respect—makes fishing unsafe-too noisy.
- Snowmobiles skipping over the water from ice to ice; this occurs at the fairground creek which goes into the lake.
- Sometimes the crowd makes it hard to get in and out of boat launches. I'm spoiled, though, because I've lived here so long.
- Sometimes too many boats in the same area—plus hotel in area without any connection to the sewer.
- Speedboats coming too close to people fishing; creating high wakes.
- Summer hotel vs. others.
- The dredging; people objected to the dredging/the noise factor in the channel.
- The fishers and the jet skiers don't get along; there's only one ramp at the city park; not enough access, nowhere near enough; there's only two spots to launch boats.
- The guys on the wave runners interfering with people who fish; encroachment of the recreational space; my understanding was that the scale/space was a 100 yard window.
- The Indians have a right to do certain things that others can't do. Sometimes there is resentment over things like that.
- The only conflict I've witnessed is the swans—they're overrunning the lake and they're aggressive. They're a population out of control.
- The swans attack the jet skiers, and everybody cheers. It's a comedy, really, but the swans don't bother us in the small boats; they know the difference.
- The type of conflict is noise and disturbing the fishing experience.

- The water skiers and motorcraft users are inconsiderate of the swimmers, etc., and they violate the quiet areas at all hours making tons of noise.
- There are motorboats that take kids out from the camps and they zip by the fisherman.
- There are some sand bars that sunbathers use who are put at risk from jet skiers coming too close to the sand bars. There have been swimmers in danger because water skiers and speed boaters come too close.
- There is difficulty with unrigging your boats, and problems with launching. Amount of room to park, getting boat ready at same time as several others, no parking, blocking driveways. Tired of waiting. Only two public launches. Enlarge facilities.
- There was the "ends of the road" issue; people had appropriated them and were keeping other people from using them. The township had to get aggressive to make them available to the public.
- They got in your wake.
- They usually involve personal watercrafts. But the situation has gotten better as the public has become better informed about what they can and cannot do.
- This is applied to supervisors, gave them access to the lake to put in the docks. There is 400 feet where there is no deed there and people in the back come down with the docks, need a marina.
- To use the marinas and the increased traffic on the lake sometimes causes arguments. Operators of different types of boats disagree from time to time.
- Water skiers sometimes a problem.
- We had a guy yell at us in our sailboat, but that doesn't really mean we can't.
- We had a jet ski accident some time ago. It was an isolated incident, but once is too much where safety is concerned. These kinds of things happen maybe twice a year or so.
- We have been yelled at by people trying to use our dock. They don't know what is public and what is private.
- We were fishing and a big charter boat came speeding through the channel creating a big wake; there's no respect for the small fishing boats in Portage Lake outside of the channel.
- When I first came here, there was strong conflict between the shoreline people and the "backlot" people. Things have mellowed a lot since then, though.
- You're fishing; jet skis coming too close; they don't try to avoid you; I see jet skis and fishermen fighting for the use of "calm water."
- You would see ignorance and thoughtlessness between the pleasure user and the fisherman.

QUESTION 16

- Aggressive swan in their area—natural waterfowl have disappeared.
- Agricultural run off from fertilizers and other land pollutants.

- Allowing homes to be built in the wetlands; the whole overdevelopment issue; they are obstructing the view of the lake; who would want to build in the wetlands to begin with?
- As long as the marina is maintained—now digging up wetlands.
- At this moment no comments; things have changed in the number of years we've lived here; with population and growth comes problems.
- A virus in the lake.
- Can't think of any; you covered it all.
- Certainly the dredging of the channel—if it's not dredged.
- Channel needs to be dredged.
- Channels are too shallow.
- Concerned about the overrunning of the amount of jet skis in Portage Lake; they are noisy and they pollute; they should be banned from Portage Lake completely; in Lake Michigan they would not be such a problem.
- Development on streams and creeks—DEQ issued permit without reviewing issue—never visited site.
- DNR docking there is something at the end that is blocking the end of the dock.
- Drainage at the easy street location; the weeds are overgrown in that area; you can't get a boat in without backing it out; clogging the motor; propeller issues.
- Dredging of the channel—major problem, major issue-really needs to be address by us. Damage to Lake Michigan from the boating traffic of the Portage Point Inn; in reverse, there's damage to Portage Point from boating traffic from Lake Michigan.
- Dredging of the Portage Lake channel.
- Enforce the zoning; the building of housing and development is obstructing the view of the lake; all of these condos going up is destroying the view of the lake; it's a crowding issue.
- Exotic species is the biggest issue.
- Factories with pollution being pumped into Lake Michigan that spreads everywhere, including Portage Lake. I think federal action is needed.
- Filling in at the channel is a problem—need it to be cleared.
- From my lake property, I have observed wave runners disturbing the natural fish spanning cycle; they make noise and they pollute and disturb the wildlife as a whole; the shore life is gone or greatly reduced.
- From the Portage Lake Inn, they are offering a horse riding/trailing service which is along the shoreline and on the beach; the horse droppings are unbelievable; you can't walk along the beach without dodging 40 piles of it; major maintenance issue.
- Harbor needs dredging.
- I can think of no other issues of concern.
- If the people would respect each others' boating-, swimming-, jet skiing-related space; knowing the rules and regulations

- I guess my one little concern is with the streams that feed into the lake—I worry about what's coming into the lake. There's not as much salmon as there used to be.
- I guess not. The survey is quite detailed.
- I just think, I know there's some good access with the public access, I'm concerned that some of those are being contested and some residents are trying to cut those off in some ways. I see a need for more launching facilities.
- Inn getting too big, overdevelopment if they get sewers. Maybe septic-only will curtail the development.
- I think anything that's overused or too many people keyholding [sic] an area creates major problems; i.e., overbuilding, overaccess, overcrowding, overuse.
- I think the biggest problem is the village apathy toward the whole situation; the entire environmental mindset or vision needs improving; more village involvement.
- I think the lack of master planning with the Portage Inn at high seasonal use. Lacks the septic system to accommodate the marina and condo development issue is of major concern; the need of a pumping station; increased boat traffic; planning!!
- I think you covered the things in my mind; development issues and the septic tank infrastructure; use of fertilizers.
- I think you got it pretty well covered. I think the biggie is to get to get a sewer system.
- I think you have things pretty well covered.
- I think you've pretty well covered them.
- It may seem insignificant, but I don't like to see dogs running loose on the beach. Also, the e-coli outbreak we had a while ago should have been a wake-up call to keep sanitation and water quality as very high priorities.
- I've sometimes seen oil tankers take on water from places like little creek by the fairgrounds. When they'd leave, you could just smell the fuel or whatever product they were carrying. They had to be serious polluters.
- I would think you hit on the major ones; the mussels and the weeds; sometimes people get swimmer's itch.
- I wouldn't want to see our lake ruined by too much development like some lakes up north. I grew up on Lake Geneva in Wisconsin, and I saw the growth exceed the capacity of the lake to support it. Development should be carefully scrutinized.
- Jet skis, and any loud, obnoxious machines. Technology has improved them, but I still say, "get rid of 'em".
- Just carelessness from people. Just leaving their trash on the beach and glass.
- Last year whenever there was a wind from the north and south I witnessed what appeared to be suds on Portage Lake coming right up to the shore.
- Let's see...docking issues. Condo projects would like to run extensive dock out into length allowable dockage.
- Mainly pollution from boats; i.e., oil spills, garbage tossed out, inconsiderate people.
- Maybe the channel dredging. I don't know, the bottom of where we are used to be very sandy; now it's yucky mucky.

- More in the past, we had a problem with the oil drilling people who would dump oil in the water. B and R would do nothing about it. We don't have this problem so much anymore.
- My biggest thing is that with the water level going down, docks are expanding or people are expanding the docks further out into the lake.
- My friend was called, also, and we've talked. Our concerns are (1) visitors thinking they have no lasting responsibilities and (2) the condo development and related problems. We need some development for the economy, but we must plan it carefully.
- My only real concern is the water levels. They are historically low.
- New virus that has been introduced into the lake kills fish—lack of inspection for their ballast on boats—potentially harmful to humans.
- No.
- No. Concerned about the weeds.
- No. I can't add anything.
- No. I don't know how true it is, but the army engineers are not clearing out our channel anymore, we could use it. A friend of mine came with a 35-foot sailboat. He had to stay way south because the channel was not deep enough.
- No. I haven't been concerned.
- No, I think you got them all.
- No, just some of the crazy people that come to the lake—one guy points at you with his finger like a gun and acts like he's going to shoot you.
- None.
- None; I don't think so; the condition of the lake is better now and I've lived here 60 years.
- None other than the channel to Lake Michigan; it needs dredging; I believe that's where the boat got stuck; it's a safety issue.
- None that I can think of.
- None that I can think of at this time.
- None that I can think of not mentioned.
- None that I can think of presently.
- None; you seemed to have covered the issues; you mentioned a couple I hadn't thought of.
- No, none that come to mind.
- No, not offhand.
- No, not really.
- No, other than industrial development on shore.
- Nope. Well, second thought: one thing is that Crystal Lake is now trying to put a public sewer system completely around that lake. That might be the long-term answer here. Presently some have it and some don't.
- Nope. You've been very thorough.

- No, sorry.
- Not at the moment.
- Not that I know of.
- No, the survey is quite comprehensive.
- No. They have been well represented.
- Nothing comes to mind; the waterfowl numbers are down which is good; there were too many at one time in the area.
- Nothing I can think of.
- Nothing right now.
- Nothing staring right at me.
- Nothing that comes to mind off hand.
- Not now, no.
- Not off hand.
- Not off the top of the mind.
- Not on the water much anymore; that that I've seen basically there's been no real problems.
- Not really.
- Not really. Beautiful.
- Not really, except for the already-mentioned invasive species and inconsiderate usage. Also, I live right in the village across the marina, and losing the public space and open view in the area of highway N22 is a problem.
- Not right off.
- Not right off hand.
- Not sure.
- Not threats, but I would like to make a point here. We are limited by not having enough access for handicapped fishers. Also, a municipal marina would enhance the area for boaters and tourists.
- Not threats, exactly, but regarding the "forever" organization, I hope it has some real influence and clout. Reps should meet with the Onekema Township and village councils or whatever so that the organization is more than just a "feel good" committee.
- No. Well, the needs for dredging; but, as time goes on it will be rectified. Access to Lake Michigan from Portage needs to be kept up; also we have not had a harbor commission that could be spokesman or arbitrator for issues like these.
- One thing concerns me as we have no property rights on the lake—all the marinas are owned by the same people. They pretty much have a lock on everything. The channel has had some filling in. Low lake level is going to be a problem.
- One you can't handle. The water table seems to be going to hand [sic] all the time.
- On Lake Michigan there is a guy who takes people on horseback rides on the beach and he does not adequately clean up the horse droppings.

- Only development and wetness area and tightly contained spaces allowing high density in a small area.
- Our biggest concern about Portage Lake is the low water level and the need of dredging badly.
- Overdevelopment.
- Overdevelopment and overdensity; mindless development in pursuit of the almighty dollar; misuse of a person's land.
- Overdevelopment. There's a lot of development, it's way too close to the water, and it sometimes impedes public access.
- Overuse of motorcraft, especially jet skis. They should be limited and regulated. Roundup is a very dangerous chemical; case against it is growing. Hard on amphibians. As bad as DDT. Monsanto Corp. lobby suppresses risks, but truth will win out.
- People building houses; 15 years ago the area was a flood plain. Why are they building there?
- People leave waste on the lake when they're non-residents.
- Personal watercraft seem to pollute more. People might be careless with gas. This area can be improved. Trees are good to be planted by the water to filter out pollutants.
- Portage is a safe harbor. There will be a decrease in the lake usage without a Corps of Eng-planned scheduled maintenance of the channel, dredging. Major problem. They wrote Portage off this year. Any size boat can't come. Not a safe harbor then.
- Public accesses are not kept open for use—owners keep their boats on it. No septic systems on the lake—public sewage system is needed.
- Public access; illegal usage of the public access area; lack of law enforcement; the law obliges the use of public access illegally.
- Put a can there for people to put an honest voluntary donation. Right by where they launch the boats. Could help the launch areas.
- Regulation for sewer around the lake—community having an agenda.
- Right off hand I don't know.
- Run-off of gasoline spills. I'm concerned about marinas that have gas and sell gas.
- Run-off problem from watershed not on the lake but by it.
- Some do-it-yourselfers with machines tend to destroy the natural ecology, tearing out plants. The good duck hunting we once had has been hurt by development. Lake Michigan being connected helps keep things normal.
- Some things aren't under control of people—like the water levels in some areas. They're a problem, but not very controllable. Water in the big lakes was very high in 1986; level in Portage and other places is very low today. Varies.
- Some unwanted varieties of fish—gobi and others—come in off freighters to Lake Michigan. I only hope those trash fish don't get this far. Carp would be very undesirable.
- State of Michigan allowing Canada to dump garbage.

- The channel is filling up with sand going out into Lake Michigan. Portage Lake could become an inland lake. I see that as a very major, major problem.
- The condition of the water; is swimmer's itch a problem with the lake; the white foam coming south to the north coming up to the shoreline and up on the beach; what is it? Is it a health problem?
- The dredging. I agree that the channel does need to be dredged, but I fear it might adversely affect the lake. And they can dredge the channel, but I don't think they should dredge to accommodate another marina.
- The Indians are using nets more and more for commercial fishing on Lake Michigan. I fear that this activity could eventually grow to overfish the lake.
- The Indians putting the nets out on the lake that kill the trout.
- The inequality in regard to the decisions that are made—what is a wetland, what isn't—seems to be no continuity to the decisions that are made—including the DEQ. They need to give reasonable answers as to how they came to decisions.
- The lack of funds to maintain the channel.
- The major threat; the pending lawsuit that the Indians have against the government; 1800's Michigan signed treaty stating that the Indians have the lake land rights until it is required for settlement.
- The marinas. They're causing a hassle. They're always trying to build over the top of the brown trout habitat, among other things.
- The north wind that blows in seems to bring in a sort of foam; there's foaming on the water on the south shore; what is it? Seemed to be excessive compared to my observations in the past.
- The only other problem is the third marina—I don't think it's needed—and the channel needs to be dredged.
- The only thing is we are getting is an influx of sailboats that are moored off shore without the proper lighting at night—someone can get hurt—this is clearly a major collision factor.
- The public access—the boat launch part—it's a low water issue and there's only one dock—you should see the boats lined up to access the lake—this is a big problem.
- There are none that I can think of.
- There are public access issues all over the place, and Portage Lake has definitely had its share.
- There's a serious problem to the lake from the Portage Inn concerning the marina and condos being built; the septic system is inadequate and is a very imminent threat adding to the pollution of the lake in a serious way; need sewer system.
- There's heavy bass fishing tournament activity; the participants in this tournament are clearly not respecting the environment during this event.
- The road down by the pier is incomplete and ends in a pile of rocks; are they going to complete the project?
- The salting of the roads in Michigan. Millions of tons of salt poured on the road as they don't plow anymore, they salt the roads. This has to adversely affect the lakes, the groundwater, the ecosystem-system overall.

- The shoreline needs to be cleaned up.
- The swans and deer.
- The swans, ducks and geese—they receive [sic] a summer itch; the fact that these animals/birds use the lake as a bathroom; the sheer numbers involved and this includes the seagulls, make for a major lake pollution issue.
- The water has been going down which I really don't like. The water table is going down.
- The water level going down and staying down; by nature the level will naturally go up and down. I've seen this through the years but now it's staying down.
- The watershed; the organization I'm involved in provides education of what fertilizers to use to prevent weed growth in the watershed.
- They are building condos right on the lake. Big companies are doing this. Sometimes they block the views of existing cabins, etc.
- Things coming in on the ships are a big problem. Zebra mussels are just horrible. I worked at a historical museum and studied the tugs and their companies, and the ballast tanks give off pollution. When rinsing out the cargo the pollution goes in lake.
- Too many geese and swans; my son and I got a severe case of swimmer's itch.
- Too many swans. However, in the last two weeks, the number has seemed to decline.
- Unmaintained boat marinas. They're dirty. The charter boats particularly always let gas spill over the top.
- Wake level.
- Waterfowl droppings.
- We don't take care of public beaches on Lake Michigan. It's a shame. Please see that the sand is cleaned from ash and trash.
- We must watch the development and see that approvals are given with care and planning—the zoning they do is good, and I know they try to do things right.
- We need more clear info to us about water usage. Why is water lower? Global warming? How much fertilizer by measurement is getting into the water? We can't give good opinions without facts. Does toxic stuff last forever? Info like that.
- Wetland lands been getting overbuilt on. Public access availability—possible septic system around lake.
- When people get around filling the wetlands, there are only a few around here. They seem to be able to circumvent adhering to the regulations concerning the filling of the wetlands for environmental improvement.
- Where the garbage from dredging goes when dredged.
- Yes, boater pollution. Both from trash thrown overboard and from oil and exhaust materials from motors.
- Yes, I'm concerned about too many buildings being approved for the shoreline, cluttering things up and restricting the views.
- Yes. The noise pollution from those ski jets is a great annoyance. I think we have to be careful about increased marina development, and also about increased commercial boat docks or condo docks.

- You covered it.
- You didn't mention the swan pollution. There are an incredible number of swans at the east end of the lake, leading to droppings in the water that feeds the weed, leading to increasing the growth factor.
- You have the major ones. The two most significant for me would be runoff and development.
- You mentioned the zebra mussel. Going into the lake, you'd better have some sandals on. Those creatures are sharp. I think both the federal and state agencies are going to have to address the problem of these invasive species.
- You've already mentioned the fertilizer, but people living around the lake all need to be aware of possible pollutants, just the whole thing.

QUESTION 17

- Again, the public beach on Lake Michigan. Please rake it or strain it. There is ash from bonfires and residue from parties and so on. There's some conflict about cleaning up the beach with someone in the township. Why? People want it clean!
- Agricultural lands.
- Air quality. It was a major threat in a town nearby. They tried to put a coal-burning electric facility in place. But for the most part, federal and state guidelines have controlled emissions, and there is not usually any risk.
- All of the shoreline needs to be protected; this freshwater lake is a "jewel to be protected."
- Angel slide is one. And the beach by the channel is important to maintain—it's used a lot.
- Artesian well sites in the area. There are wells by Little Eden and by the park in town. This is the best water around and everybody uses it. It needs to be monitored or protected.
- Can think of nothing that you haven't covered.
- Can't think.
- Can't think of any. (2)
- Can we review the quality of ballast used on roads? Clean beaches are important for attracting tourists. Beach sands are dirtied from fires, charcoal, etc. Even cleaning the tables would be a good idea.
- Channels maintenance.
- Creeks flowing into portage need maintenance. Maintaining the beds and culverts should be a high priority. Right now they're not being maintained.
- Growth of Northwood's Corp. Too big. Hotel owners.
- Habitats of endangered species as identified in the watershed—here or on a state or national level. Any species not thriving should take precedence over everything, especially the almighty dollar.
- How about the walking trails, along the Manistee River—nature conservancies between Manistee and Onekema, sand dunes everywhere.

- I cannot. (2)
- I can't really. Haven't given it much thought until now.
- I can't think of anything. East end of Portage Lake, shallow, threatened water quality.
- I'd like to see senators and politicians of this state make sure that we don't divert any Great Lakes waters to anyone else for any reason! No water sold, period!!! The country sells jobs to overseas. Let's not sell our birthright to anybody!
- I don't think of any offhand.
- I guess the lake itself. Jet skiers drive too fast all the time and it becomes a serious public safety issue.
- I guess the one thing that's nice for people to walk and fish on is the south pier—that needs some work.
- I'm a bit concerned about pumping water out of the Great Lakes for things like the bottled water businesses and shipping it to say, Arizona. It has to lower groundwater levels. It's not right. It could become a serious concern for Michigan.
- I'm glad you mentioned the Portage Point Inn. That's worth a good effort.
- Include our local village park.
- Include the jetty or the pier at the point; the canal needs to be kept in good repair.
- In terms of development on the shoreline question, there's not a lot to roll back, we need to move forward to protect what we have.
- I really can't.
- I think they should be careful about putting a lot of marinas on the lake.
- I think you're pretty comprehensive on that too.
- I've read about the aggressive control and monitoring on the quality of the water.
- I wish I had known about this survey in advance. I'd have thought more about questions like this. I can't think of anything now, though.
- I would rate periodic dredging of the channel as the highest priority. Every time the channel develops inadequate clearance depths, it is a second thought, not a priority. Politicians have to suddenly scramble to find means to do it. Dredge more often.
- Local park. Boat launches frequently used, but don't always have easy access or maintained for fisherman, very shallow. City of Manistee just a beach sand screening/filter system. Why let it sit idle? Clear burnt campfire residue, diapers with it.
- Lot of people overlook the cemeteries. Don't even care about them. Upgrade. Maintain.
- Maintain the channel, do more dredging for the channel. There was a major accident in the channel recently where a 40-foot sailboat got stuck; during the rescue process, the boat was damaged majorly and then it was just left there in the way.
- More lake access to Lake Michigan—need better sign of access.
- Natural fountains that you can get natural spring water.
- No. (2)

- No additional comments. Bundle the information about lake preservation and environmental issues together in a cohesive package.
- No additional suggestions or sites to think of.
- No, afraid not right now.
- No. Hit it round about way. Not anti-development, I do feel that traditional public access should be a priority. Some want road endings to themselves. That is wrong. My grandkids and I do our part to clean up glass for beach.
- No, I cannot.
- No, I cannot think of anything.
- No, I don't.
- No, I don't think I can.
- No, I guess not.
- No, I really can't.
- No. I've been made aware of more issues than I even knew existed. Hard to add anything.
- No, I—you got it, covered it.
- None.
- None at this time to mention.
- None I can bring to mind.
- None I know of at this time.
- None, not offhand.
- None offhand.
- None really at this time.
- None that come to mind.
- None that come to mind that you didn't mention.
- None that I am aware of.
- None that I can think of.
- None that was not mentioned.
- None that you didn't seem to mention.
- None to think of.
- None we haven't talked about.
- None; you've covered them pretty much.
- No, not offhand.
- No, not really. (2)
- No, not really. However the portable toilets on the beach always seem to be tipped over by ignorant people or kids, the garbage cans seem to be always overflowing, this brings bugs. Need better clean-up, pick-up, and maintenance.
- No, not really, you covered the bases.
- No, not right off the top of my head. Sewer system will be necessary at some point to protect water purity, etc. We don't need more e-coli scares.

- No sites you didn't seem to mention.
- No suggestions to add.
- Not around Portage. Things stay remarkably the same, actually.
- Not at the moment.
- No. That's a pretty good list.
- Nothing comes to mind.
- Nothing comes to mind; you've covered it.
- Nothing that comes to mind at this point in time.
- Nothing to suggest at this time.
- No, those mentioned are sufficient.
- Not offhand.
- Not off the top of my head.
- Not really.
- Not really. If I lived right in Traverse City, I might bring up more. But in Onekema, preservation of specific sites is not a real problem yet.
- Not sure.
- Not that I can think of offhand.
- No. We are all just visitors. Nature is the one who does it.
- No. Well, if there is one, myself being a fisherman, sometimes I get irritated by wave action by big boats. More courtesy is in order on the water. Of course, you can't get away from having some of that, but users could be better educated on rules.
- No. You've covered them well.
- Oh boy, it's too late for a couple of sites. A very old stone house was recently torn down near my place. A developer is putting condominiums in its place. Sad. There are some historic churches that should definitely be preserved.
- Old barns, farm houses, windmills, I don't like getting rid of the old stuff. Wooden bridges, etc.
- Parks. Trees on shorelines.
- Piers.
- Portage Point turnaround vista.
- Preserving historic sites of all kinds is important.
- Public areas along the park, village areas, boat launch areas, nesting sites for swans and ducks. These all need to be watched.
- Quality control on development in the area; procedure and master plan monitoring, i.e. the Arcadia fiasco, the watershed and sea organizations finding common ground, better cooperation and coordination including direction of funding and accountability.
- Really isn't anything around here historically other than that you mentioned.
- Recreation facilities need improvement. There are things for the younger generation, but not for the older folks. Even the younger folks don't have the variety I had, I had roller skating. No rink now. Old Onekema fair pavilion is Lions Club building now.

- Sandbars, marshes, wildlife habitat.
- That's all I can think of for now.
- The birds, the eagles. Being a member of the garden club I would have to say the butterflies and the bees as well.
- The channel.
- The channel itself. The depth. The Corps of Engineers is limited by their yearly budget, so they're not doing ours this year.
- The channel leading to Lake Michigan.
- The channel needs to be dredged and maintained well.
- The channel that goes out to Lake Michigan needs dredging.
- The channel to Lake Michigan. Preserve or provide solid maintenance of the channel accessing Lake Michigan.
- The channels and how they're maintained...dredging, lighting, and so forth.
- The east end of lake has the most priorities—currents that keep the lake clean. I don't like seeing those houses right on the lake, not to mention the condos.
- The fairgrounds; no more housing or building along or across the shoreline in Portage at Route 22.
- The farmland should be protected from development.
- The farmlands; high taxes forcing the farmlands to be bought out by condo developers.
- The gill nets in the 1970s. Native Americans used gill nets. It was my impression that there was a regulation stating that only Native Americans could use gill nets.
- The park at the foot of the lake—it's valuable. We should monitor and protect the village park and boat launch areas. But the marinas should be regulated so as not to put out more boats than are necessary.
- The part of the channel the state owns; Lake Michigan should be better owned and maintained by the state; there is a serious dredging issue that's being ignored.
- The pier.
- The pier at Portage Lake. It seems like nothing gets done with it in terms of maintenance and safety.
- The public access at pier port leading to Lake Michigan. They are trying to sell the access rights.
- The quality of lake and the lands that are private should be addressed with preservation in mind.
- There are no others I can think of.
- There are none that I can think of.
- There is a little spring on portage point road. I would like to be assured that its water is monitored. A lot of people drink it, and it seems wonderful. But with septic tanks in the area, etc., can we be certain that it is really pure?
- The shoreline up in Arcadia; the north and/or south ends of Arcadia should be preserved.

- The south and north sides of the lake should be cleaned up. The obstruction of the view of the lake—the view is disappearing.
- The sport fish in Lake Michigan should be protected from the nets.
- The water level of Portage Lake and the silting of the Lake Michigan channel.
- The water routes go all the way to Lake Michigan. It all needs to be looked after.
- The wetlands have to be protected. They're disappearing around Portage Lake. They're building huge houses on what I consider to be wetlands.
- The woods. We don't have enough thriving woods in the Arcadia area and the other forest areas seem to be disappearing.
- They are doing a real good job on the maintenance of the local creeks. We have good flowing creeks, they doing a good job at the maintenance of the creeks. We have 6–8 creeks in the area.
- They are going to build a cement access at Crescent Beach Road. Why are they doing this? It seems to work as it is now. More concrete would create a runoff issue, why?
- To keep good access to the lake for future generations for landowners and outsiders.
- We need to get the fishing back and also to somehow regulate the boating, i.e., from 10 am–4 pm—no jet skis. Perhaps a schedule to accommodate all parties involved. A schedule for the fisherman that works—this is a safety issue that would affect all.
- We should maintain other historic things around the lake as well as those mentioned. For example, there are the bible camps. They have been here a long time and should be preserved.
- Wetlands by fairgrounds.
- Wetlands. I see some are being sold. It blows my mind. How can they be sold? What do we do when the high water comes?
- What about the artesian water wells on Portage Point Drive?
- You hit on the wetlands. They're disappearing. They use such huge equipment now, and it can quickly eat things up.
- Your list about covers them.
- You seem to have a good grasp on them.

QUESTION 20

- Actually, you'd get more honest information just by talking to our local neighbors one at a time—not just in organized groups. People are afraid to make formal complaints, but they have personal opinions.
- Any governmental agency providing information I would only believe some of the time.
- Audubon Society.
- Can't think of any; I trust myself as I belong to the park and recreation association.
- Can't think of any; my wife just joined some organization of this nature recently.
- College students who work in related fields. Indian tribes.
- Concerned homeowners.

- Conservation groups—such as Ducks Unlimited, MUCC, Spirit of the Woods, etc.
- Ducks Unlimited and local charter boat captains/fishermen; they would know what's going on with Portage Lake.
- Extension office a must.
- Fishermen in area.
- Getting the word out—getting the people to enforce the regulations that are already in place—organizations such as the Portage Point summer resort association, the Portage Point Yacht Club.
- Good question. Well, did you mention the charter fishing association? They're doing it for a living. They should have a valid or different perspective.
- Guess not.
- How about the 4-H? They should be active in this sort of thing.
- How about the Onekama High School? The students there are involved in various projects: water testing, cleaning of sites where they release fish, work at the hatcheries.
- I cannot. (3)
- I can think of none.
- I can think of none at this time.
- I don't believe I could.
- I don't follow that too well.
- I don't know, but I think we might listen to what the conservancies have to offer. Listen to them more.
- I get a lot of info from the museum...Manistee historical.
- I get information from the conservancies. Grand Traverse Nature Conservancy, and so forth.
- I think input from the Portage Lake Association is worthwhile. Their insights represent my feelings as a member. Some of the environmental issues we raise might seem to be minor stuff, but we want to keep Portage Lake clean and our quality of life high.
- I think there are small groups in the community trying to help the community and environment like Dave Miller, who has the champion tree project and looks at the quality of the lake and I would believe him before some big government agency.
- I trust my own judgment and observations.
- I trust my own observations as a concerned party, not what I hear or what I'm told.
- I would mainly trust the professors at the university and the DNR offices or officials.
- I would trust certain local citizens; business associates; people with a vested interest in the condition of the lake and the tourist environment
- I would trust my husband; he goes to the public meetings and brings the information updates to my attention.
- I would trust the locals; the old timers; people who been here for years with hands-on experience with experienced eyes; they have seen the change.

- Local businesses like the local marina.
- Local fisherman and groups.
- Local schools.
- Local watershed committee.
- Local watershed protection.
- Manistee County commissioners, the Onekama Township board: groups like that. But there is a category missed in this survey, and that is awareness of the conserve groups themselves. We all need involvement to make them effective, beyond good intentions.
- Maybe Ducks Unlimited; or how about the groups that oversee planting of fish.
- Maybe the Portage Lake watershed group and the Portage Lake environmental association.
- Michigan United Conservation Corps.
- Monthly newsletter from the Corps of Engineers; "Dept. of Army Detroit District Corps of Engineers," PO Box 1027, Detroit MI 48231, Attn: celre-hh-w [sic]; this is a major source of information concerning Portage Lake.
- My neighbors and my husband; especially the captains of local charter fishing boats in the area; they "can" tell you what's really happening.
- No. And I'm missing my supper. Please hurry.
- No. Articles in various papers and magazines are sometimes enlightening.
- No, as long as we get information from those existing sources it should be sufficient.
- No, but a point I want to make is we have a problem getting in and out of the wake at Lake Michigan. A 40-foot sailboat crashed and sunk there.
- No, just those we've discussed.
- No. Lake Michigan is accessed through a channel from here, and beach properties are used widely in the whole area. There should be groups that pertain to all these areas.
- None; again you've covered it.
- None besides those mentioned.
- None, but you didn't talk about the septic system.
- None come to mind.
- None I can think of; you've covered them.
- None off the top of my head at this time.
- None that come off the top of my head.
- None that we haven't discussed.
- None that you haven't mentioned; can't think of any.
- None to speak of but now I will pay more attention to local updates from this point on.
- None to think at all. No, not right now.
- No suggestions to offer.
- Not at the moment.

- Not offhand, no.
- Not really.
- Not that I'm really aware of, it's not really something that I spend a lot of time on.
- No, there are no other entities you didn't seem to cover.
- Nothing off top of my head.
- No. You've been very thorough.
- No, you've seemed to hit them all.
- Onekema student projects.
- Our state congressmen should provide us with more information. McManus, for example, does a terrible job of keeping us informed about what's going on.
- Our township association.
- Perhaps a state conservation officer.
- Perhaps the Manistee-Wexford soil conservation district.
- Plea organization.
- Portage Lake Association.
- Portage Lake Association; I get most of my information from this organization; I receive very detailed information about the Portage Lake watershed
- Portage Lake Association; there are Portage Lake quality survey groups; local student and university environmental study groups
- Portage Lake environmental association.
- Portage Lake Forever watershed best.
- Portage Point Association
- Portage Point Resort Corporation. It was in the July 6th meeting. Got a big follow-up letter. Today a lecture Mr. Millarch. [sic]
- Seems like it's been covered. But wouldn't the forest service have some information of value?
- Sports fishing association.
- The Farm Bureau.
- The fishermen's association in Manistee.
- The local landowners or seasonal owner will complain wanting to reserve access for themselves; they too have something to say.
- The Manistee Democratic Party.
- The Michigan Land Institute provides info of value. I've been to excellent meetings. The national conservancy, the National Wildlife Association are others.
- The Michigan Land Use Institute. I trust what they're into most of the time.
- The Michigan United Conservation Club. They're trying to do the right thing. Maybe the National Wildlife Federation, Nature Conservancy.
- The Nature Conservancies.
- The neighborhood coffee clutch. Just a bunch of friends that get together and drink coffee.

- The Northwest Michigan RCD (Resource Conservation and Development)—I think they have a different name now.
- The ones you're representing. Are you affiliated with Michigan State University?
- The only one I hear people talking about is the testing of the water that students do two or three times a year. That's a real good thing.
- The PLA, Portage Lake Association (2)
- The Portage Lake Association, I trust their info all of the time.
- The Portage Point summer recreation association.
- There are none that come to mind.
- There are none that I can recall at this time.
- There are none that you didn't seem to cover.
- There are other local groups, but I may not recall their names accurately. One is a Portage Lake environmental association. Another is a Michigan water usage and quality association. Or something like that. Those types of groups should have input.
- There are some organizations I wouldn't trust at all at the local level here, but I won't mention any names at this juncture
- There's Portage Lake environmental association.
- The water conservancy being developed for the Portage watershed [sic] association.
- The watershed committee.
- The watershed directly.
- Watershed committee.
- Watershed conservancy group.
- Well, how about your own group, the Portage Lake Watershed Forever committee. They seem very serious about all of this.
- Well, let me see. No, not right offhand.
- Well, our Portage Lake association and people around the lake.
- Yeah, informal social networking among professional friends, colleagues, and experts. But stop planning so much and doing so many repetitious studies. The needs are clear; just act.
- Yes. Let's include the planning department in Manistee County. They have been most helpful.
- Yes. The Boy Scouts are really involved as are high school students. They have interesting information to share, and they should be consulted.
- Yes, the Manistee sports fishermen association.
- Yes. The Onekama High School science dept. They have a good lake study program.
- You covered it all.
- You didn't mention the Portage Lake Association.
- You didn't mention the Portage Lake Environmental Association.
- You got it all.

- You might list local clubs like the Lions and the garden clubs. These people all take an interest in the quality of life here.
- Your group is doing good things.
- You've covered it a whole bunch.
- You've got quite a few there; you covered it all.