February 2013

A Special Report

Upper Muskegon River Watershed Survey Results

Respondent Profile

Of the 933 surveys mailed, 379 (41%) were returned with 347 (37%) completed sufficiently for compiling (Quality Assurance Project Plan compliance).

Age groups of recipients:
- 65 and older (44%)
- 55-64 (32%)
- 35 and under (3%)
- Not provided (21%)

51% of respondents had a college degree *(compared to 25% in state*).*

The average time respondents owned their property was 22 years. 40% of respondents lived year-round in the area with 60% using their property seasonally.

Location of respondents:
- Town or village (33%)
- Non-farm along lake/river (32%)
- Non-farm not along lake/river (32%)
- Farm (3%)

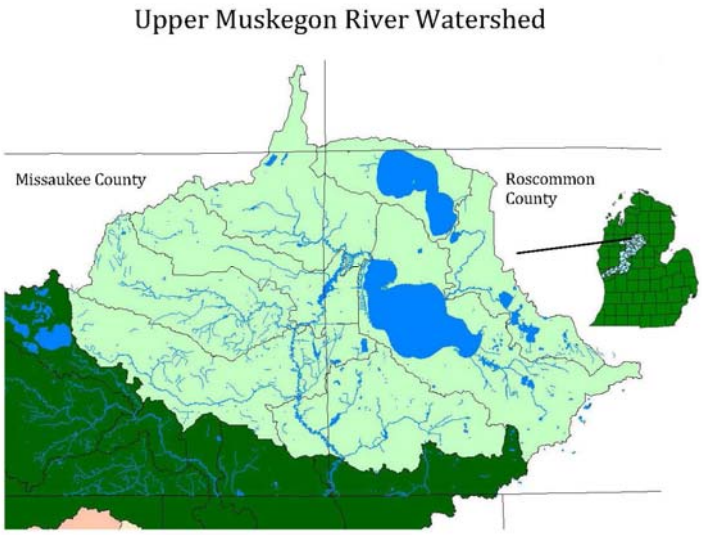
42% of respondents lived on a quarter acre or less of property.

Recreational property accounted for 54% of landowners *(6% for state*).*

Over 79% of respondents made the management decisions for their property with almost 95% making home and lawn care decisions. Only 14% of respondents used professional lawn care services *(36% nationally-Consumer Reports 2009).*

We can conclude that our responders are older and higher educated than the average state and national homeowner, with a much higher level of seasonal landowners.

**2010 census statistics*



The Upper Muskegon River Watershed is a 603 square mile area in central Michigan mainly located in Missaukee and Roscommon Counties.

In 2011, the Muskegon River Watershed Assembly (MRWA) was awarded a grant from the Michigan Department of Environmental Quality (MDEQ) to develop a comprehensive watershed management plan for the area. The management plan will integrate local concerns for Houghton Lake and the Upper Muskegon River Watershed, and address implementation activities outlined in the management plan for the entire Muskegon River Watershed, approved in 2002.

Identifying social indicators of the area was required to complete the Upper Muskegon River Watershed Management Plan. Social indicators are measures used to describe “capacity, skills, awareness, knowledge, values, beliefs, and behaviors of individuals, households, organizations, and communities”.

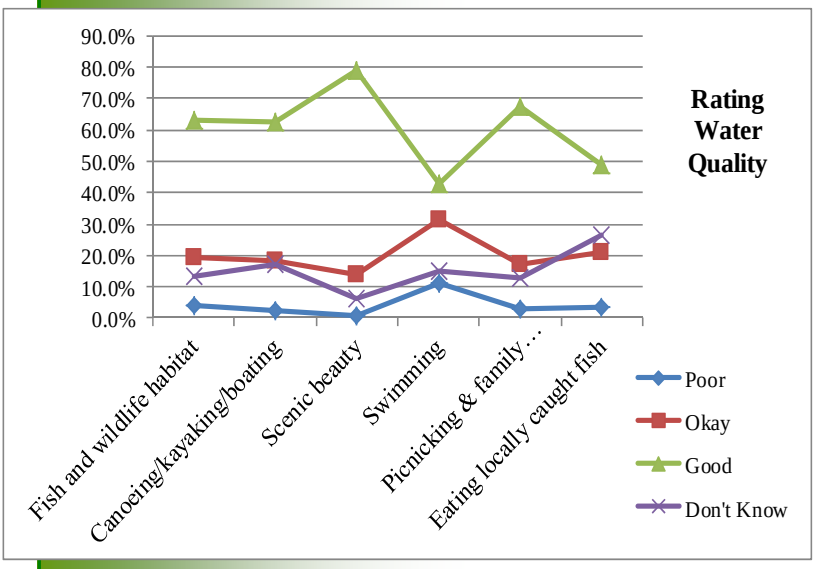
In 2012, a survey was sent to 993 randomly chosen households in the Upper Muskegon River Watershed to attain these social indicators (60 surveys were not deliverable due to incorrect addresses). Landowners in this area were the targeted households as names and addresses were easiest to obtain from county tax rolls. The survey mailing was accomplished according to a Quality Assurance Project Plan approved by the MDEQ.

This survey has created a snapshot of landowner perceptions and can be used to suggest actions residents may be willing to undertake for improving water quality in the upper Muskegon River Watershed. This report will convey some of the perceptions of the landowners.

Appreciation is extended to those who took the time to complete their survey and return it to the MRWA.

Note: Percentages are rounded for easier reading.

Rating Water Quality



What is most important to respondents:
Healthy fish and wildlife habitat—34%
Canoeing/kayaking/boating—21%
Scenic beauty—20%
Swimming—15%
Picnicking and family activities—6%
Eating locally caught fish—5%

The above percentages ranked what was important to respondents but they were also asked how they would rate the water quality pertaining to these activities. Water quality for scenic beauty, and picnicking and family activities ranked highest (see graph left). Water quality for swimming and eating locally caught fish were ranked lowest. This may indicate a perceived need to improve water quality specifically for fish and wildlife habitat.

Sources of Water Pollution

Respondents ranked a list of water pollution sources to the degree they perceived the severity of the problem in their area. The respondents perceived the most severe problems were waterfowl droppings, and excessive use of lawn fertilizers/herbicides/pesticides. Respondents also considered discharges from industry and recreational/tourism activities (non-boating) as the least of the area's problems.

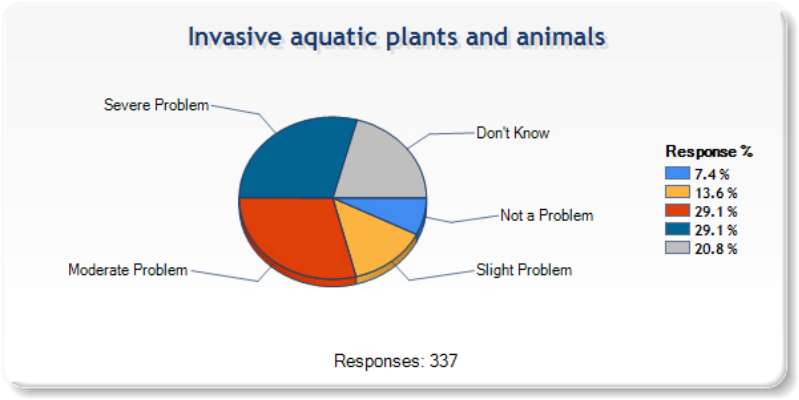
Below is the list of sources ranked from highest to lowest (using the mean) in respondents' opinion to the source of water pollution in our project area.

1. Droppings from geese, ducks, and other waterfowl
2. Excessive use of lawn fertilizers and/or pesticides
3. Improperly maintained septic systems
4. Littering/illegal dumping of trash
5. Excessive use of fertilizers for crop production
6. Stormwater runoff from streets and/or highways
7. Soil erosion from shorelines and/or streambanks
8. Drainage/filling of wetlands
9. Grass clippings and leaves entering storm drains
10. Streambank or shoreline modification/destabilization
11. Manure from farm animals
12. Waste material from pets
13. Discharges from sewage treatment plants
14. Discharges from industry into streams and lakes
15. Soil erosion from farm fields
16. Recreational and tourism activities (non-boating)

Many respondents marked "don't know" in this survey section, an indication more education is needed to help residents identify water pollution sources.

Water Impairments

Respondents were provided a list of water pollutants and conditions that are generally present in water bodies to some extent. They were asked how severe a problem the water impairments were in their area. Below is a list of their responses ranking from "most severe" to "not a problem".



1. Invasive aquatic plants and animals
2. Algae in the water
3. Habitat alteration harming local fish
4. Bacteria and viruses in the water (such as *E.coli*)
5. Trash and debris in the water
6. High water temperature
7. Sedimentation (dirt and soil) in the water
8. Cloudiness of the water

Consequences of Poor Water Quality

The survey listed eight consequences of poor water quality. Respondents identified the following as NOT a problem:

- Contaminated drinking water (32%)
- Beach closures (29%)
- Contaminated fish (24%)
- Loss of desirable fish & wildlife species (17%)
- Reduced beauty of lakes/streams (27%)
- Reduced quality of water recreation activities (22%)
- Excessive aquatic plants or algae (7%)

A large number of respondents marked "don't know" when answering this question, indicating more education is needed to inform residents of the consequences of poor water quality.

Improving Water Quality

Surveys listed different practices that can be used to improve water quality and asked the respondents' level of experience and familiarity with these. Regularly servicing their septic system (68%) and properly disposing pet waste (64%) were the top two relevant practices respondents were using.

Some notes of concern were the practices of composting grass clippings and leaves, and testing soils for fertilizer needs, which ranked 40% and 49% respectfully, from respondents who said they knew how to use these practices but were not using them. Creating a rain garden is a practice requiring more education. Almost 61% of respondents had never heard of rain gardens.

Personal Limitations in Improving Water Quality

Some factors prevent or restrict landowners to implement property management practices which improve water quality. A survey section was devoted to these concerns.

In order, highest to lowest, respondents felt their highest personal limitations were personal out-of-pocket expense, lack of government funds for cost share, lack of available information about a practice, and requirements or restrictions of government programs.

More education on cost sharing and other available funding is needed.

Respondent Opinions

As expected, respondents overwhelmingly agreed that the way they care for their yard can influence water quality in local streams and lakes (87%) but only 69% were willing to change the way they care for their yards to improve water quality.

Respondents also agreed that the quality of life in their communities depends upon good water quality (94%) as well as agreeing that it is their responsibility to help protect water quality (96%).

Only 31% of respondents agreed, though, that they would be willing to pay more to improve water quality. More education is needed to inform residents that many actions to improve water quality have a minimal cost, along with cost sharing opportunities.

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Central Michigan District Health Dept.

Other interesting survey findings…

- The gender of respondents were 69% male and 31% female.
- Almost 98% of respondents had a high school diploma or higher level of education.
- 68% of respondents read a local newspaper.
- 85% of respondents trust local government as a source of soil and water information.
- Of the respondents who had farm operations, the average tillable acreage of their property was just over 9 acres.
- 32% of respondents were likely to seek information on the internet about water quality issues.
- Only about 37% of the respondents were not familiar with the MRWA.

This report does not contain the entire results from the survey. If you would like to receive all the statistics resulting from the report, please contact the MRWA (contact information above).

Michigan's Nonpoint Source Program

This Nonpoint Source Pollution Control project has been funded in part through the Michigan Nonpoint Source Program by the United States Environmental Protection Agency under assistance agreement C9975474-11 to the Muskegon River Watershed Assembly for the Houghton lake E.coli Reduction Project.