

Portage Creek Watershed Survey

*A study of public attitudes toward
fresh water resources, protection policies,
and pollution prevention.*

Huron River Watershed Council, November 1, 2013



PORTAGE CREEK WATERSHED

The Portage Creek watershed, located at the intersection of four counties (Ingham, Jackson, Livingston and Washtenaw), is one of the healthiest and most scenic freshwater systems in Southeast Michigan. Land uses are 35% agriculture, 15% built, and 50% undeveloped.

In 2010, watershed partners, led by the Huron River Watershed Council (HRWC), completed a two-year management planning effort that resulted in the Portage Creek Watershed Management Plan (June 15, 2010). HRWC is now working with communities in the watershed to implement priority measures identified by the Plan to protect the creek, lakes and wetlands from new inputs of phosphorus, sediment, and stormwater runoff. The current project's goals include: (1) improving local ordinances and community policies to both accommodate development and protect the creek, and (2) increasing resident awareness about the creek and use of water-friendly residential practices.

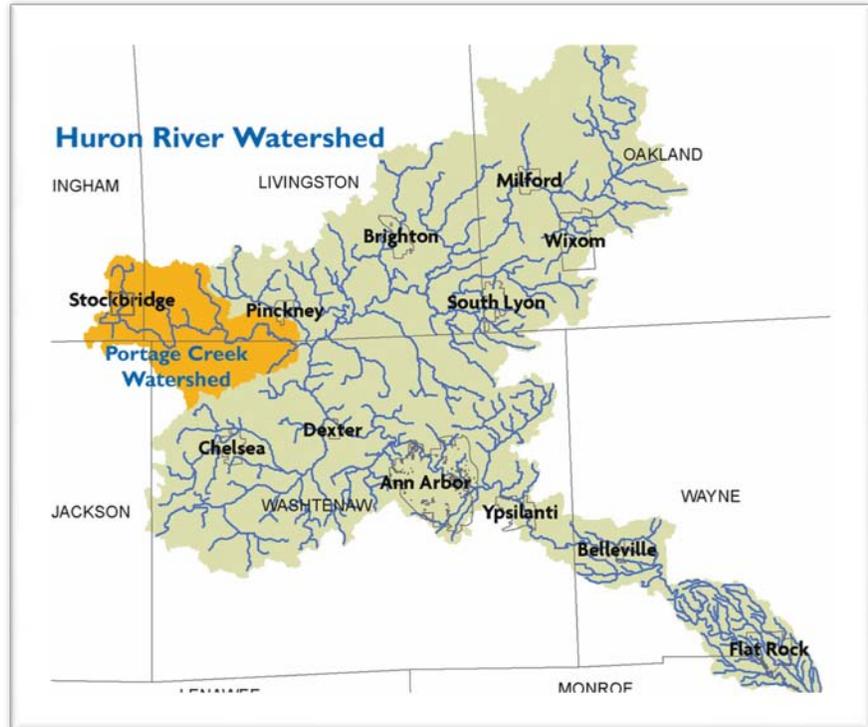
Riparian residents are the largest percent of landowners in the Portage Creek watershed and contribute nonpoint source pollution to the water bodies nearest their homes. Target audiences for the education and outreach part of the project include all households, but there is a concerted effort to reach riparian homeowners specifically.

In 2013, a survey was sent to 800 randomly chosen riparian households in the Portage Creek watershed. These targeted riparian landowners were identified through a geographic information systems (GIS) process to select addresses within the watershed that are near water bodies. Names, addresses and phone numbers were obtained through the purchase of an Experian consumer-by name list from Burnett Direct, Inc., a targeted mailing list company. The purchased consumer mailing list covers approximately 95% of the residences in the geographically selected area.

The results of this baseline survey are presented here. They provide a snapshot of attitudes and behaviors of riparian landowners in the Portage Creek watershed as of spring 2013. These results will both inform the project's outreach strategy and provide a benchmark for evaluating its success by comparing them to the results of a survey conducted upon project completion.

HRWC would like to thank each of the residents who took the time to complete the survey.

Note: Percentages throughout the report are rounded for easier reading.



RESPONDENT PROFILE

Of the 800 surveys mailed, 218 (27.25%) were returned that were sufficient enough to include in compiled results (Quality Assurance Project Plan). Although this falls short of the 316 responses needed to reach a 95% confidence level with a 5% margin of error, the respondent profiles match the demographics in the survey area sufficiently enough to indicate that the respondents are representative of the sample area.

69.9% of respondents identified as male and 30.1% as female (*compared to 52% male and 48% female 2011 census statistics*)

Age groups of respondents:
65 and older (33%)
55-64 (24%)
35-54 (29%)
35 and under (5%)
Not provided (9%)

Highest grade in school completed by respondents:
Some formal schooling (1%)
High school diploma/GED (16%)
Some college (24%)
2 year college degree (12%)
4 year college degree (22%)
Post-graduate degree (25%)

Total household income last year by respondents:
Less than \$24,999 (10%)
\$25,000 to \$49,999 (22%)
\$50,000 to \$74,999 (25%)
\$75,000 to \$99,999 (16%)
\$100,000 or more (28%)

Approximate size of residential lot:
¼ acre or less (22%)
More than ¼ acre but less than 1 acre (24%)
1 acre to less than 5 acres (25%)
5 acres or more (30%)

98% of respondents owned their home (*compared to 88.1% 2011 census statistics*)

The average age that a respondent lived at their current resident was 20.44 years.

Description of where respondents live:
In a town, village, or city (9%)
In an isolated, rural, non-farm resident (47%)
Rural subdivision or development (37%)
On a farm (7%)

88% of respondents did not use a professional lawn care service.

Where respondents were likely to seek information about water quality issues:
Newsletters/brochure/fact sheet (46%)
Internet (51%)
Radio (16%)
Newspapers/magazines (30%)
Workshops/demonstrations/meetings (14%)
Conversations with others (37%)
None of the above (10%)

Septic Systems

Respondents that have a septic system:
Yes (61%)
No (38%)
Don't know (0%)

Of those that have a septic system, in what year was it installed:

2000 or after (23.8%)
1980-1999 (52.5%)
1960-1979 (22.8%)
1940-1959 (1%)

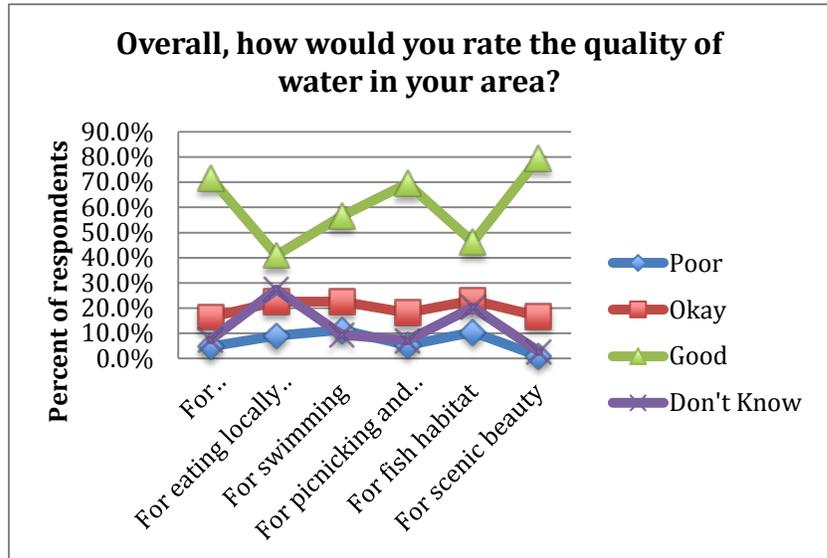
**To estimate how well the surveys received represented the surveyed group as a whole, survey data was compared with data from the United States Census Bureau's American Community Survey 5-year estimates from 2011. Overall, the survey respondents reflect the demographics of the area as a whole.*

SURVEY RESULTS

Rating of Water Quality

What is most important to respondents:

- For scenic beauty – 34%
- For canoeing / kayaking / other boating – 21%
- For fish habitat – 15%
- For eating locally caught fish – 14%
- For swimming – 10%
- For picnicking and family activities – 6%



The above percentages ranked what was important to respondents. Respondents were also asked how they would rate the water quality pertaining to each of these activities. Water quality for scenic beauty and for canoeing / kayaking / other boating ranked highest with over 70% of respondents ranking the water quality as “good.” Water quality for fish habitat and for eating locally caught fish ranked lowest with 40-50% of respondents rating the water quality as “good” or admitting that they don’t know (20-28%). This could indicate a lack of specific knowledge regarding best fish habitat and/or information from the Michigan Fish Advisory resulting in respondents less comfortable in making these personal observations.

Your Water Resources

Do respondents believe they know where the rain water goes when it runs off of their property:

- 84% Yes
- 16% No

For respondents that answered “yes” above, some of the top areas that they believe the runoff drains to are:

- Hiland Lake (11 responses)
- North Lake (10 responses)
- Patterson Lake (6 responses)
- Lowe Lake (6 responses)
- Joslin Lake (5 responses)

- Hell Creek (5 responses)
- Williamsville Lake (5 responses)
- Halfmoon Lake (4 responses)
- Little Portage (4 responses)
- Silver Lake (4 responses)

Your Opinions

Respondents indicated their level of agreement or disagreement with various opinions towards water quality. The respondents most strongly agreed with statements that reflected a personal responsibility to protect water quality and a feeling that their actions impact water quality. Respondents had the most disagreement with statements of changing the way to care for their lawn to improve water quality and a willingness to pay more to improve water quality.

Below is the list of opinions ranked from highest to lowest agreement (using the mean) in respondents' opinions.

1. It is my personal responsibility to help protect water quality.
2. The way that I care for my lawn and yard can influence water quality in local streams and lakes.
3. My actions have an impact on water quality.
4. The quality of life in my community depends on good water quality in local streams, rivers and lakes.
5. It is important to protect water quality even if it slows economic development.
6. I would be willing to change the way I care for my lawn and yard to improve water quality.
7. I would be willing to pay more to improve water quality (for example: through local taxes or fees)

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 a highest of "severe problem" to the low of "not a problem."

1. Algae in the water
2. Pesticides
3. Phosphorus
4. Sedimentation (dirt and soil) in the water
5. Bacteria and viruses in the water (such as *E. coli* / coliform)
6. Flow Alteration
7. Oil and grease

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

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 excessive use of lawn fertilizers and/or pesticides and droppings from geese, ducks and other waterfowl. Respondents considered waste material from pets and upstream impoundment of water as the least severe of 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. Excessive use of lawn fertilizers and/or pesticides
2. Droppings from geese, ducks and other waterfowl
3. Land development or redevelopment
4. Excessive use of fertilizers for crop production
5. Removal of riparian vegetation
6. Soil erosion from shorelines and/or streambanks
7. Residential stormwater runoff
8. Fueling of boats
9. Yard maintenance
10. Improperly maintained septic systems
11. Shoreline erosion from boat wakes
12. Boat maintenance
13. Grass clippings and leaves entering water bodies
14. Soil erosion from farm fields
15. Streambank or shorelines modification/destabilization
16. Septic disposal
17. Waste material from pets
18. Upstream impoundment of water

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

Consequences of Poor Water Quality

The survey listed nine consequences of poor water quality. Below the consequences are listed from highest to lowest percentage of respondents that consider the consequence to be “not a problem.” The consequence that ranked highest was excessive aquatic plants or algae. The consequence perceived most to not be a problem was reduced opportunities for water recreation.

1. Reduced opportunities for water recreation (45%)
2. Contaminated drinking water (43%)
3. Reduced quality of water recreation activities (41%)
4. Reduced beauty of lakes or streams (41%)
5. Polluted swimming areas (37%)
6. Lower property values (35%)
7. Contaminated fish (30%)
8. Loss of desirable fish species (26%)
9. Excessive aquatic plants or algae (13%)

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

Practices to Improve Water Quality

Surveys listed eight different practices that can be used to improve water quality and asked the respondents’ level of experience and familiarity with these. Keeping grass clippings and leaves out of roads, ditches, and gutters (54%) and regularly servicing of their septic system (51%) were the top two relevant practices respondents were using.

Some notes of concern were the practice of creating a rain garden, which 36% of respondents had never heard of.

Specific Constraints of Practices: Vegetated Riparian Buffer

Are respondents familiar with this practice:

- Somewhat familiar with it (26%)
- Currently use it (25%)
- Never heard of it (24%)
- Not relevant (16%)
- Know how to use it; not using it (9%)



The above results indicate that only 50% of respondents know enough about the practice of vegetated riparian buffers to indicate that the practice is not relevant, that they are currently using it, or that they know how to use it and are not using it. This indicates that 50% of respondents are at least somewhat unfamiliar with the practice and would support the need for education on this practice.

Are respondents willing to try this practice:

- Yes or already do (48%)
- Maybe (36%)
- No (17%)

Respondents were asked to indicate how nine different factors limit their ability to implement the practice on a scale from “not at all” to “a lot.” For each of the nine factors, 47% or more of respondents answered “not at all”. These results could indicate that there is a barrier that was not represented in the question.

Using the mean, the features of my property make it difficult was perceived to be the largest limiting factor and insufficient proof of water quality benefit to be the least limiting factor. The survey also included the factors of physical health or heal limitations, hard to use with my yard maintenance system or property, lack of equipment, desire to keep things the way they are, time required, cost, and don’t know how to do it.

Specific Constraints of Practices: Riparian Buffer Maintenance

Are respondents familiar with this practice:

- Currently use it (33%)
- Somewhat familiar with it (25%)
- Never heard of it (21%)
- Not relevant (14%)
- Know how to use it; not using it (8%)

The above results indicate that only 55% of respondents know enough about the practice of vegetated riparian buffers to indicate that the practice is not relevant, that they are currently using it, or that they know how to use it and are not using it. This indicates that 45% of respondents are at least somewhat

unfamiliar with the practice and would support the need for education on this practice.

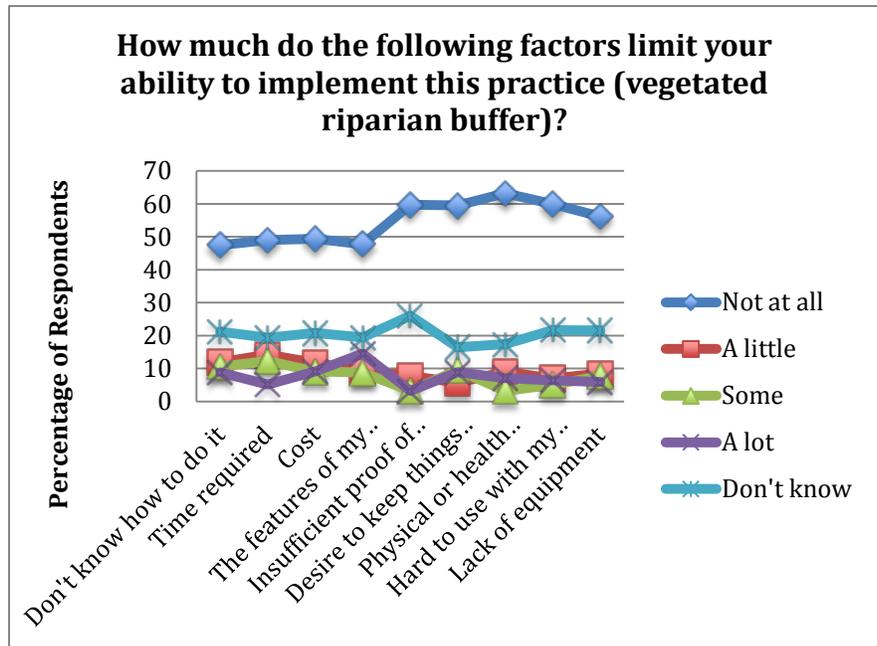
Are respondents willing to try this practice:

Yes or already do (55%)
 Maybe (32%)
 No (14%)

Respondents were asked to indicate how nine different factors limit their ability to implement the practice on a scale from “not at all” to “a lot.” For each of the nine factors, 50% or more of respondents answered “not at all.” These results could indicate that there is a barrier that was not represented in the question.

Using the mean, cost was perceived to be the largest limiting factor and insufficient

proof of water quality benefit to be the least limiting factor. The survey also included the factors of physical health or health limitations, hard to use with my yard maintenance system or property, lack of equipment, desire to keep things the way they are, time required, the features of my property make it difficult, and don’t know how to do it.



Personal Limitations in Improving Water Quality

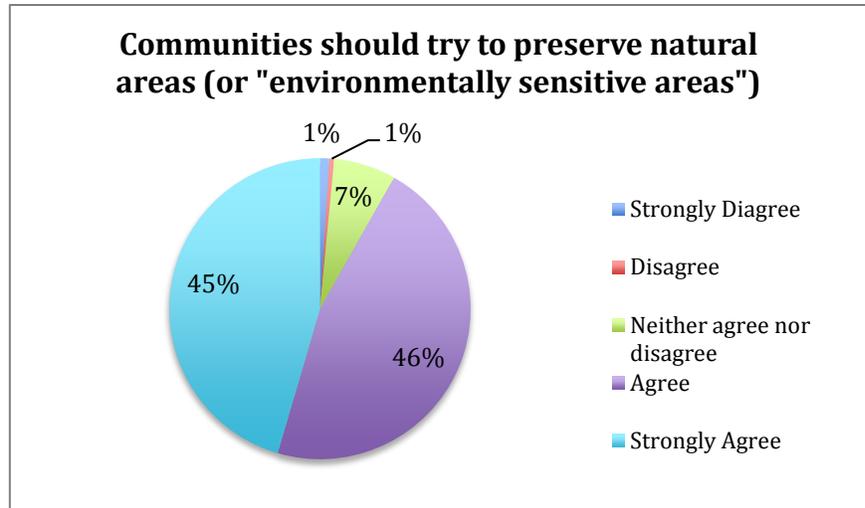
Some factors prevent or restrict landowners to implement property management practice, which improve water quality. A survey section was devoted to these concerns.

In order, highest to lowest, respondents felt their highest personal limitations were:

1. Personal out-of-pocket expense
2. Not having access to the equipment that I need
3. Lack of available information about a practice
4. Don't know where to get information and/or assistance about those practices
5. My own physical abilities
6. Not being able to see a demonstration of the practice before I decide
7. The need to learn new skills or techniques
8. No one else I know is implementing the practice
9. Concerns about resale value
10. Environmental damage caused by practice
11. Legal restrictions on my property
12. Approval of my neighbors

Stewardship

Respondents were asked to indicate their opinions about stewardship (caring for and improving your land) by indicating their level of agreement or disagreement with various statements. Respondents were asked to answer on a range from “strongly disagree” to “strongly agree.”

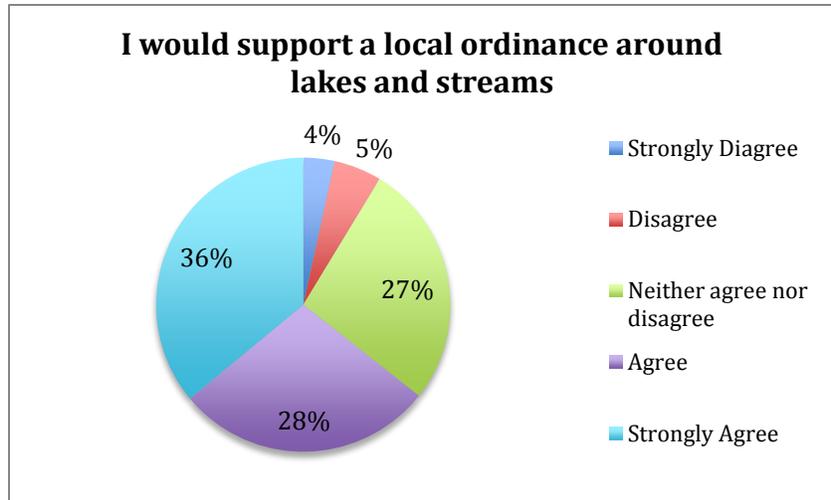


- 1: I need more information in order to be confident about caring for my land
41% of respondents answered that they agree, or strongly agree with this statement.
28% strongly disagree or disagree and 31% neither agree nor disagree.
- 2: I would like to do more stewardship, if financial assistance is available
36% of respondents answered that they agree, or strongly agree with this statement.
31% strongly disagree or disagree and 34% neither agree nor disagree.
- 3: Mother Nature will determine what happens on my land, regardless of what I do
23% of respondents answered that they agree, or strongly agree with this statement.
39% strongly disagree or disagree and 28% neither agree nor disagree.
- 4: Stewardship is not a priority for me
8% of respondents answered that they agree, or strongly agree with this statement.
69% strongly disagree or disagree and 23% neither agree nor disagree.
- 5: When possible land development should occur away from environmentally sensitive areas
88% of respondents answered that they agree, or strongly agree with this statement.
2% strongly disagree or disagree and 11% neither agree nor disagree.
- 6: Communities should try to preserve natural areas (or “environmentally sensitive areas”)
92% of respondents answered that they agree, or strongly agree with this statement.
2% strongly disagree or disagree and 7% neither agree nor disagree.
- 7: Communities should concentrate well-designed compact neighborhood away from sensitive areas to reduce land consumption and minimize impervious surfaces
65% of respondents answered that they agree, or strongly agree with this statement.
8% strongly disagree or disagree and 26% neither agree nor disagree.

8: I would support a local ordinance to protect vegetated buffers around lakes and streams

64% of respondents answered that they agree, or strongly agree with this statement.

10% strongly disagree or disagree and 27% neither agree nor disagree.



Conclusion

The majority of respondents feel a personal responsibility to care for their water quality (91.2%), as well as understand that their personal actions can influence water quality (89%). However, respondents often viewed consequences of poor water quality as not being a problem in their area (which is consistent with the conditions generally found in the Portage Creek watershed as reported by the Watershed Management Plan). The exception to this was the consequence of excessive aquatic plants or algae, for which 42% of respondents agreed was a problem in their area. This suggests that providing residents with information on the specific relationship between personal actions, poor water quality and excessive aquatic plants and algae would help encourage them to adopt practices that prevent runoff.

Of the specific practices of vegetated riparian buffers and riparian buffer maintenance, many respondents were not familiar with the practices. 24% of respondents had never heard of the practice of vegetated riparian buffers and 26% were somewhat familiar with it. Only 9% of respondents answered that they know how to use it, but are not using it, suggesting that most respondents are open to the practice. This is also supported for the practice of riparian buffer maintenance. 55% of respondents answered that they already use this practice or are willing to try and 32% respondent that they may be willing to try this practice. This suggests that more education and outreach regarding vegetated riparian buffers is needed to inform landowners why this practice would be beneficial in their area.

This report does not contain the entire results from the survey.

For additional information or supporting data:

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