

Views on Root-Pike Water Resources: Responses from Urban/Suburban Residents

Summary Report



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Introduction

This report presents results of a survey of urban and suburban residents in the Wisconsin portion of the Root-Pike Watershed (HUC 04040002) in the southeastern part of the state. The study was conducted through a joint effort between the Root-Pike Watershed Initiative Network (Root-Pike WIN) and University of Wisconsin-Extension for use by local government partners. The information is intended to help focus water quality outreach and education efforts and provide a baseline for future comparison. The survey and analytical approach were developed as part of a multi-state project addressing social dimensions of nonpoint source water quality issues.

Methodology

Root-Pike WIN conducted a stratified, mailed survey of randomly selected urban and suburban residents in partner communities in the Root-Pike Watershed. Partner communities included: Village of Wind Point, Village of Silver Lake, Village of Sturtevant, Town of Bristol, Village of Hales Corners, Town of Somers, Town of Salem, Village of Pleasant Prairie, Village of Greendale, Village of Caledonia, Village of Mt. Pleasant, City of Franklin, City of Oak Creek, City of New Berlin, City of Racine, and City of Kenosha. These communities were grouped into six strata by community size, as organizing by demographic traits examined (education, age, income, and homeownership) did not show to have any advantage. Due to its outlier status for the demographics examined, however, Wind Point served as a stand-alone stratum. Each stratum (except Wind Point) was then surveyed with a base number of 50 randomly selected households, with an additional number based proportionally on the number of households in that community (see Appendix 2).

Local government partners within the watershed provided names and addresses for the mailing, with some not submitting databases. The sampling frame, therefore, included all urban and suburban households in a local government partner community that provided an address database. Addresses for the mailing were then reviewed for duplicates and out-of-town mailing addresses to ensure a greater likelihood of an owner occupied unit. The initial survey mailing was to 500 households.

Survey administration followed standard practices for generating acceptable response rate (and reducing non-response bias). Administration of the survey began with a pre-survey letter and was followed by the 12 page questionnaire. A reminder letter was sent a week after the questionnaire, followed by a second survey approximately two weeks later to those not yet responding. Of the original 500, 120 surveys were successfully completed and returned amounting to a response rate of 24%. Surveys were entered into Qualtrics and coded according to SIPES; some analysis was also done using SPSS 18.0.

The demographics of the returned surveys indicates that more than fifty percent of respondents have a college education and that one-third have a household income of more than \$100,000. These are higher than the area population as a whole but less so for those owning their homes. The relatively low response rate indicates a possible non-response bias in which those who responded are somehow different from those who did not. In order to better determine the types of potential biases introduced, a telephone survey of non-respondents was conducted. Thirty nine non-responding households were reached by telephone and asked a brief set of questions about why they did not respond. Ten households stated the timing was poor or a general lack of interest; six said the questionnaire looked too long or the questions were confusing. Twenty two of those reached by phone stated that they did not recall receiving the survey at all. It is possible the responses over-represent those with a higher interest in water quality issues. *If there were no response bias*, the final sample size of 120 households, would yield data that has a statistical reliability of ± 10 percentage points at the 95% confidence level. This means that 95 out of 100 times, the results of this survey should differ by no more than 10 percent, in either direction, from what would have been obtained by interviewing all households in the partner communities.

Results

The survey design included ten sections measuring demographics and yard and household practices as well as knowledge, attitudes and beliefs regarding water resource issues for the Root Pike watershed. Detailed responses are included in Appendix 1.

1. Rating of Water Quality

This section asked respondents to rate local water quality for six separate purposes. Respondents generally perceived the water quality in their local rivers, streams, and lakes to be ‘okay’ to ‘good,’ with only two categories having more than a quarter of the respondents rating the water quality as ‘poor’ for that activity. The category with the most ‘poor’ responses was *swimming*, followed by *eating locally caught fish*. More than 50 percent of the respondents thought that the water was ‘good’ for *picnicking and family activities*, and 35-40 percent thought that it was ‘good’ for both *canoeing/boating* and *fish habitat*.

2. Your Water Use

The Your Water Use section of the questionnaire sought to understand the values associated with the relationship that people have with their local water resources. In the first section they were asked to identify water-related activities of import to them. With 40 percent of respondents choosing it, *scenic beauty/enjoyment* was by far the most commonly identified water-related activity. Other responses, *fishing*, *picnicking*, *canoeing*, were between 16 and 11 percent, and *swimming* was the lowest at nine percent. The second part of this section asked respondents if they knew where the water goes when it runs off of their property. Thirty percent of the respondents indicated that they did not know.

3. General Water Quality Attitudes

Section three of the questionnaire measured respondents’ agreement with a battery of statements regarding water quality and local and personal actions. In general, respondents expressed strongly positive attitudes toward water resource protection. Several highlights are:

- Most respondents ‘agree’ or ‘strongly agree’ that *economic stability* (72%) and *community quality of life* (75%) depend on good water quality. Consistently, these respondents also ‘agree’ or ‘strongly agree’ (78%) that it is *important to protect water quality even if it slows economic development*, but when it was personalized to *I would be willing to pay more to improve lakes, rivers, or streams*, the percent of ‘agree’ and ‘strongly agree’ drops significantly (32%).

- When it came to assessing expense, respondents primarily (80%) ‘neither agree nor disagree’ or ‘disagree’ that *Taking action to improve water quality is too expensive for me*. Roughly 11 percent ‘agree’ and none ‘strongly agree’ with the statement.
- A strong majority ‘agree’ to ‘strongly agree’ that it is their *personal responsibility to help protect water quality* (87%) and that the way that they *care for their yard can influence water quality* (88%).

While there is a significant majority in agreement that they have a role in water quality, a smaller number would be willing to pay more to improve water quality. This does not necessarily call into question commitment, as some respondents may feel that there are yard care actions they can implement that do not cost anything. This is supported by a large percentage of respondents (79%) stating that they ‘agree’ or ‘strongly agree’ that they would be willing to change the way they care for their yard to improve water quality.

4.Types of Water Pollutants

Respondents were asked to identify which pollutants were problematic in their area. Available choices on the questionnaire for each ranged from ‘not a problem’ to ‘severe problem,’ and ‘don’t know’ as an additional option for each. Respondents showed a high degree of uncertainty regarding problems in their area, with most of the types of water pollutants having *don’t know* as their most common response. Over forty percent of respondents indicated that they did not know how much of a problem *phosphorus, salt, PCBs, and oxygen deficiency* were in their area. This was the highest percentage of response for all of these categories. For those respondents that did not answer ‘don’t know’, the following pollutants were most frequently identified as a ‘severe problem’: *nutrients, bacteria, PCBs, invasive species, oil/antifreeze, and trash*. Of least concern was *organic matter* followed by *dirt and soil* in local streams.

5. Sources of Water Pollution

This section queried the perceived severity of the problem of eighteen potential sources of water pollution. Again, available choices on the questionnaire for each ranged from ‘not a problem’ to ‘severe problem,’ and ‘don’t know’ as an additional option for each.

For each of the following categories, respondents most commonly indicated that they ‘don’t know’ how much of a problem it is for their area: *Discharges from industry* (28%); *Soil erosion from farm fields* (31%); *Soil erosion from farm fields* (39%); *Improper disposal of household waste* (24%); *Manure from farm animals* (33%); *Land development* (31%); and *Large turf-grass areas* (39%). Others with a high degree of uncertainty (more than 25% of respondents indicated that they ‘don’t know’ how much of a problem the source is) include: *Discharges from sewage treatment plants* (26%); *Pet waste* (26%); and *Agricultural fertilizers and pesticides* (30%).

Only one pollutant, *Discharges from sewage treatment plants*, was most commonly identified as a ‘severe problem’ (33%). Respondents most commonly identified the following seven sources as a ‘moderate problem’: *Lawn fertilizers and pesticides* (33%); *Discharges from storm sewers* (29%); *Improper disposal of motor oil and anti-freeze* (24%); *Stormwater runoff* (32%); *Street salt and sand* (33%); *Droppings from waterfowl* (26%); and *Agricultural fertilizers and pesticides* (33%).

Combining ‘moderate problem’ and ‘severe problem’ categories, the following were rated the highest by respondents: *Lawn fertilizers and pesticides* (55%); *Discharges from sewage treatment plants* (54%); *Agricultural fertilizers and pesticides* (53%); *Stormwater runoff* (52%); *Street salt and sand* (52%); and *Droppings from waterfowl* (49%); The three sources with the highest percentages in the ‘not a problem’ and ‘slight problem’ categories combined were: *Grass clippings* (52%); *Pet waste* (51%); and *Large turf-grass areas* (42%).

6. Consequences of Poor Water quality

Respondents were asked to rate the severity of the consequences of poor water quality in their area. Available choices again ranged from ‘not a problem’ to ‘severe problem,’ with ‘don’t know’ as an additional option for each.

Several of the consequences listed in the survey were perceived as a ‘moderate’ to ‘severe’ problems by respondents. These were: *Polluted/closed swimming areas* (52%); *Contaminated fish* (50%); *Increase in water/sewage bill* (56%); *Loss of desirable species* (49%); and *Excessive aquatic plants or algae* (48%). A couple of categories had nearly an equal percentage of

respondents that considered it ‘not a problem’ to a ‘slight problem’ as considered it a ‘moderate’ to ‘severe’ problem: *Reduced beauty* (44% and 44%); *Reduced opportunities for water activities* (42% and 41%); *Fish kills* (36% and 34%); and *Odor* (46% and 45%). One of these sources also stood out in the ‘don’t know’ responses; respondents expressed by far the greatest level of uncertainty regarding their knowledge of the severity of *Fish kills* (30%) as a problem. Those consequences most commonly considered ‘not a problem’ to ‘slight problem’ were: *Contaminated drinking water* (57%); *Reduced quality of water activities* (45%); and *Lower property values* (45%).

7. Practices to Improve Water Quality

Section seven asked respondents to provide their level of familiarity with seven practices designed to improve water quality. Choices ranged from ‘never heard of it’ to ‘currently use it.’

Respondents most commonly chose ‘currently use it’ for the following practices:

- Direct gutter downspouts away from paved surfaces (71%)
- Recycle motor oil (67%)
- Properly dispose of pet waste (48%)
- Apply lawn fertilizer at manufacturer’s guidelines (45%)

The most common response for the following practices was ‘Know how to use it; not using it’:

- Use rain barrels (56%)
- Apply pesticides and herbicides at manufacturer’s guidelines for your garden (48%)
- Use phosphate free fertilizer (33%); This practice also had the highest ‘Never heard of it’ responses (21%).

8. Making Management Decisions

This section was designed to determine which factors (constraints) most strongly limit respondents’ general ability to change runoff management and lawn care practices. Options ranged from ‘not at all’ to ‘a lot’ and included a ‘don’t know’ choice.

Grouping the ‘some’ to ‘a lot’ together, respondents most commonly identified *Cost* (52%), *My own views* (48%), and *How easily practice fits* (45%) as the most influential constraints limiting their ability to change. These constraints were the least influential in changing practices (responses of ‘not at all’ and ‘a little’): *Approval of my neighbors* (66%); *Not having access to equipment* (61%); *No one else I know is implementing the practice* (56%); *My own physical abilities* (55%); and *Don’t know where to get information* (55%). The two related categories related to social influences: *No one else I know is implementing the practice* and *Approval of my neighbors* were strongly ‘Not at all’ important changing of practices (56% and 66% respectively). Other constraints did not fall strongly on one side or the other on the continuum.

9. Constraints for Specific Practices

This section asked for more detailed information regarding awareness, use, and constraints related to three specific practices: rain gardens, yard waste management, and managing lawn fertilizer.

Rain gardens. A rain garden was defined as ‘a garden that is designed to absorb and filter stormwater.’ Most people (82%) have never used a rain garden. Though only 41% of the respondents had ‘Never heard of it,’ with about an equal proportion indicating they were ‘Somewhat familiar with it.’ Over 80% of the respondents indicated ‘Maybe’ or ‘Yes,’ they were willing to use a rain garden. Roughly one-third of the respondents weren’t sure that their property would support a rain garden, and nearly one-third indicated that cost limited their ability to build a rain garden ‘A lot.’ *Physical limitations* and *Desire to keep things the way they are* were the least important constraints (52% and 47% respectively), where as *Cost* and *Lack of information or skills* were the most important (31% and 20% respectively).

Yard Waste Management. The definition provided for this practice was ‘keeping grass clippings and leaves out of the roads, ditches, and gutters.’ Although 64% of the respondents state that they are currently managing yard waste, one-third of them are either ‘Somewhat familiar with it’ or ‘Never heard of it.’ Over 95% of the respondents indicated ‘Maybe’ or ‘Yes,’ they were willing to manage their yard waste. This is an opportunity for over a 30% change for a simple practice. The least important constraints were *Physical limitations*, *Desire to keep things*

the way they are and *Lack of information or skills*, as they limited the ability to do the practice ‘Not at all’ and ‘A little’ at high rates (74%, 74%, 71% respectively). The most important constraints were *Cost* and *Time required*, as they limited the ability to do the practice ‘Some’ and ‘A lot’ (28% and 26% respectively for the practices). Over 20% of the respondents did not know whether the features of their property supported yard waste management, which is almost twice as high as the ‘don’t know’ response for the other constraints.

Managing Lawn Fertilizer. This practice involves applying lawn fertilizers according to manufacturers guidelines. More than 75% of respondents say they currently manage the use of lawn fertilizer. Oddly, only 55% said that they are currently managing their lawn fertilizer in the following question regarding familiarity. *Lack of information*, *Cost* and *Time* are cited as the most influential constraints to managing lawn fertilizer. None of the constraints were very influential, however, as between 50 to 89% of the respondents said that factors limited the ability to manage fertilizer ‘Not at all.’

10. About You and Your Property

A series of questions was asked regarding the respondent and his or her property.

Information about respondents and their property:

- 96 percent of respondents said that they made the lawn care decisions for their household; this had a greater representation of male and female respondents (65% and 35%, respectively).
- Only two percent have an education below high school graduate level, with 22 percent having a HS diploma. Respondents to the survey were well educated, with 54 percent have a four-year degree or higher and a large number of graduate degrees (20%).
- Roughly one-third of the respondents have a household income of over \$100,000. Less than one third (30%) have a household income below \$49,999. The most common response category for income was ‘\$100,000 or more.’
- Nearly all respondents (98%) own their home. Curb and gutter drainage (47%) and ditch swale (44%) were almost split. Almost half (49%) of the respondents have a lot that is $\frac{1}{4}$ acre or smaller.

- A large majority (79%) do not use a professional lawn service. Although 68% fertilize their lawn, 82% have never tested their soil. The most common reason given for not having soil tested was ‘I didn’t know that soil testing was important’ (48%).
- Over half of the respondents have heard about local water quality problems from newsletters (61%) and newspapers/magazines (60%). Following those, the significant sources of information for such problems were TV or billboards (42%), conversations with others (35%), and radio (25%). Workshops, schools, and the internet were not common sources of information.

11. Information and Activities

Respondents were asked to rate how much they trust ten different organizations as a source of information about water quality.

Most respondents were unfamiliar with the Root-Pike Watershed Initiative Network (50%) and the local political organizations (37%). The most trusted groups (for water quality information) are: the Wisconsin DNR (65% moderately to very trustworthy), local government (64%), US EPA (62%), and UW Extension (51%). Of those respondents familiar with the organizations, local home and garden centers and county government were tied (47% either trusting ‘not at all’ or ‘slightly’) for the least well-trusted, with political organizations (45%) coming close behind.

Closing Comments

These results can influence outreach, education, and technical assistance efforts provided by local water quality partners by clarifying assumptions about “target audiences” within the Root Pike watershed. Consistent with other studies, respondents to this survey connected most directly with the scenic and aesthetic aspects of water, and most value the importance of clean water for their communities. Trash and debris (aesthetically unpleasant) was considered one of the most severe water quality problems in the area. There was low awareness of most pollutants of concern to resource managers.

As expected, cost and personal opinion about residential lawn practices were the most significant general considerations about using new practices. It is somewhat surprising that approval of neighbors was not. The information about specific practices is helpful, although the responses left some questions about how the definitions of practices may have been interpreted. For example, it is surprising that 91 percent of respondents report that they keep the grass clippings and leaves out of the roads, ditches, and gutters (Yard Waste Management) or that 76 percent actually apply lawn fertilizer according to manufacturer guidelines (Managing Lawn Fertilizer).

Responses for trusted sources of information were also interesting. The relatively high level of trust for water quality information from Wisconsin Department of Natural Resources and the US Environmental Protection Agency suggest value in emphasizing statements and data from those sources. Relatively low levels of trust for information from political organizations and land and garden centers suggests limited roles for those organizations.

The study results provide insights for shaping program efforts, and they establish a point of comparison for future assessment.

APPENDIX 1

Your Views on Local Water Resources: RESULTS



University of Wisconsin Cooperative Extension is conducting this survey in coordination with local government partners in order to identify the needs and concerns in your community regarding water quality for the Root-Pike Watershed.

We ask that this survey be completed by the person in your home that makes most of the yard care decisions and is at least 18 years old. Your participation in this survey is voluntary. Your answers will be kept confidential and will be released only as summaries where individual answers cannot be identified.

Unless otherwise instructed, **please check the circle that corresponds to the answer category that best describes you and your situation or opinion.** The survey should take approximately 15-20 minutes to complete. Please read each question carefully.

1. Water Quality

Overall, how would you rate the quality of the water in your local rivers, streams, and lakes?

	Poor	Okay	Good	Don't Know	Mean (n)
a. For canoeing / kayaking / other boating	10%	32%	36%	22%	2.3 (88)
b. For eating locally caught fish	26%	34%	21%	19%	1.9 (93)
c. For swimming	33%	38%	18%	11%	1.8 (102)
d. For picnicking and family activities near water	8%	34%	52%	6%	2.47 (107)
e. For fish habitat	17%	36%	28%	19%	2.1 (91)
g. For wildlife habitat	11%	33%	38%	18%	2.3 (93)

2. Your Water Use

a. Of these activities, which is the most important to you?

- 11% Canoeing / kayaking / other boating
- 11% Eating fish caught locally
- 9% Swimming
- 13% Picnicking and family activities near water
- 16% Fish habitat / fishing
- 40% Scenic beauty / enjoyment

b. Do you know where the rain water goes when it runs off of your property?

- 30% No, I don't know
- 70% Yes, it goes to _____

3. General Water Quality Attitudes

What is your level of agreement with the following statements?

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean (n)
a. The economic stability of my community depends upon clean lakes, rivers, and streams.	0%	8%	20%	50%	22%	3.9 (116)
b. The way that I care for my yard can influence water quality in lakes, rivers, and streams.	3%	5%	4%	55%	33%	4.1 (116)
c. It is my personal responsibility to help protect water quality.	0%	2%	9%	55%	34%	4.2 (117)
d. It is important to protect water quality even if it slows economic development.	1%	7%	14%	54%	24%	3.9 (117)
e. What I do on my property doesn't have much impact on overall water quality.	23%	52%	11%	12%	2%	2.2 (118)
f. Yard-care practices (on individual lots) do not have an impact on local water quality.	25%	59%	9%	5%	2%	2.0 (118)
g. My actions can have an impact on lakes, rivers, and streams.	3%	7%	8%	60%	22%	3.9 (118)
h. Taking action to improve lakes, rivers, and streams is too expensive for me.	9%	40%	40%	11%	0%	2.5 (117)
i. It is okay to reduce water quality to promote economic development.	33%	53%	4%	8%	2%	1.9 (117)
j. It is okay to reduce water quality to promote economic development.	36%	49%	5%	8%	2%	1.9 (110)
k. I would be willing to pay more to improve lakes, rivers, and streams (for example: through local taxes or fees).	13%	23%	32%	30%	2%	2.9 (117)
l. I would be willing to change the way I care for my yard to improve water quality.	3%	4%	14%	67%	12%	3.8 (117)
m. The quality of life in my community depends on good water quality in local streams, rivers, and lakes.	0%	5%	20%	54%	21%	3.9 (116)

4. Types of Water Pollutants

Below is a list of types of water pollutants that are generally present in water bodies to some extent. In your opinion, how much of a problem are the following pollutants in your area?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know	Mean (n)
a. Dirt and Soil in local streams	14%	28%	22%	8%	28%	2.3 (115)
b. Nutrients from fertilizers in local streams	6%	14%	25	27%	28%	3.0 (116)
c. Phosphorus in local streams	6%	9%	23%	22%	40%	3.0 (116)
d. Bacteria and viruses in local streams (such as E. coli)	7%	14%	15%	30%	34%	3.0 (115)
e. Salt in local streams	9%	9%	23%	16%	43%	2.8 (115)
f. Toxic materials such as PCBs in local streams	6%	9%	15%	28%	42%	3.1 (116)
g. Not enough oxygen in the water in local streams	9%	12%	20%	12%	47%	2.7 (115)
h. Invasive aquatic plants and animals	3%	16%	15%	36%	30%	3.2 (115)
i. Cloudiness of the water in local streams	7%	24%	22%	17%	30%	2.7 (115)
j. Oil or antifreeze from cars and trucks	11%	16%	16%	20%	37%	2.7 (116)
k. Trash and debris	9%	17%	26%	35%	13%	3.0 (115)
l. Organic matter, such as fallen trees, branches, grass clippings	16%	32%	26%	11%	15%	2.4 (113)

5. Sources of Water Pollution

The items listed below are sources of water quality pollution across the country. In your opinion, how much of a problem are the following sources in your area?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know	Mean (n)
a. Discharges from industry into streams and lakes	13%	17%	23%	19%	28%	2.7 (115)
b. Discharges from sewage treatment plants	8%	13%	21%	33%	26%	3.0 (114)
c. Soil erosion from construction sites	10%	30%	22%	11%	27%	2.5 (113)
d. Soil erosion from farm fields	6%	26%	22%	15%	31%	2.7 (114)
e. Soil erosion from stream channels	10%	28%	19%	4%	39%	2.3 (114)
f. Lawn fertilizers and pesticides	8%	14%	33%	22%	23%	2.9 (114)
g. Grass clippings and leaves	21%	31%	22%	5%	21%	2.1 (115)
h. Discharges from storm sewers	8%	19%	29%	22%	22%	2.9 (116)
i. Improper disposal household waste (such as batteries, chemicals, florescent light bulbs, etc)	11%	22%	23%	20%	24%	2.7 (116)
j. Improper disposal of used motor oil and anti-freeze	12%	21%	24%	20%	23%	2.7 (116)
k. Manure from farm animals	9%	24%	21%	13%	33%	2.6 (116)
l. Stormwater runoff from streets, highways, and/or parking lots	8%	18%	32%	20%	22%	2.8 (116)
m. Street salt and sand	5%	19%	33%	19%	24%	2.9 (115)
n. Droppings from geese, ducks, and other waterfowl	9%	23%	26%	23%	19%	2.8 (114)
o. Pet waste (such as dogs or cats)	15%	36%	17%	6%	26%	2.2 (116)
p. Agricultural fertilizers and pesticides	4%	13%	33%	20%	30%	3.0 (113)
q. Land development or redevelopment	6%	24%	26%	13%	31%	2.7 (116)
r. Large turf-grass areas (such as golf courses and sports fields)	15%	27%	16%	9%	33%	2.3 (116)

6. Consequences of Poor Water Quality

Poor water quality can lead to a variety of consequences for communities. In your opinion, how much of a problem are the following issues in your area?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know	Mean (n)
a. Contaminated drinking water	37%	20%	17%	17%	9%	2.1 (115)
b. Polluted / closed swimming areas	15%	25%	31%	21%	8%	2.6 (116)
c. Contaminated fish	9%	20%	27%	23%	21%	2.8 (116)
d. Increase in water / sewage bill	15%	18%	34%	22%	11%	2.7 (117)
e. Loss of desirable fish and wildlife species	5%	23%	26%	23%	23%	2.8 (116)
f. Reduced beauty of rivers and streams	15%	29%	29%	15%	12%	2.5 (117)
g. Reduced opportunities for water activities such as boating, canoeing, and fishing	17%	25%	29%	12%	17%	2.4 (116)
h. Reduced quality of water activities	14%	31%	26%	13%	16%	2.4 (117)
i. Excessive aquatic plants or algae	8%	21%	27%	21%	23%	2.8 (116)
j. Fish kills	12%	24%	16%	18%	30%	2.6 (117)
k. Odor	15%	31%	27%	18%	9%	2.5 (117)
l. Lower property values	25%	20%	22%	13%	20%	1.0 (117)

7. Practices to Improve Water Quality

Please indicate which statement most accurately describes your level of experience with each practice listed below.	Never Heard Of It	Somewhat familiar with it	Know how to use it; not using it	Currently Use It	Mean (n)
a. Apply pesticides and herbicides at manufacturer's guidelines for your lawn	4%	15%	36%	45%	3.2 (116)
b. Apply pesticides and herbicides at manufacturer's guidelines for your garden	3%	14%	48%	35%	3.2 (117)
c. Use phosphate free fertilizer	21%	22%	33%	24%	2.6 (116)
d. Properly dispose of pet waste	15%	13%	23%	48%	3.0 (110)
e. Using rain barrels	15%	21%	56%	9%	2.6 (116)
f. Recycle motor oil	2%	14%	17%	67%	3.5 (116)
g. Direct downspouts away from paved surfaces	3%	15%	11%	71%	3.50 (117)

8. Making Management Decisions

In general, how much does each issue limit your ability to change your household and lawn care practices (such as those in Question 7)?

	Not at All (4)	A little (3)	Some (2)	A lot (1)	Don't Know	Mean (n)
a. Cost	17%	23%	29%	23%	8%	2.4 (116)
b. My own views about effective lawn and yard maintenance	28%	16%	34%	14%	8%	2.6 (113)
c. How easily a new action fits with my current practices	22%	18%	39%	6%	15%	2.7 (115)
d. My own physical abilities	36%	19%	30%	10%	5%	2.9 (116)
e. The need to learn new skills or techniques	26%	21%	35%	7%	11%	2.7 (113)
f. Legal restrictions on my property	37%	17%	14%	11%	21%	3.0 (115)
g. Not having access to the equipment that I need	36%	25%	24%	8%	7%	3.0 (114)
h. Lack of available information about a practice	25%	22%	29%	15%	10%	2.6 (114)
i. No one else I know is implementing the practice	41%	15%	16%	5%	23%	3.2 (116)
j. Approval of my neighbors	58%	8%	14%	6%	14%	3.4 (116)
k. Don't know where to get information and/or assistance about the practice	31%	24%	19%	12%	14%	2.9 (114)
l. Environmental damage caused by the practice	29%	11%	22%	20%	18%	2.6 (112)
m. Concerns about resale value	35%	13%	20%	22%	10%	2.7 (113)
n. I do not own the property	73%	1%	3%	9%	14%	2.6 (93)
o. Other _____ (Please specify)	21%	0%	7%	7%	65%	3.0 (14)

9. Constraints for Specific Practices

Rain Garden A rain garden is a garden that is designed to absorb and filter stormwater. They are usually designed to collect stormwater from a house or structure.

1. Do you have or have you had a rain garden?
 4% Currently use
 14% Don't currently use
 82% Never used

2. How familiar are you with rain gardens?
 41% Never heard of it
 44% Somewhat familiar with it
 11% Know how to install one, not doing it
 5% Have installed rain garden
3. Are you willing to try to use a rain garden?
 18% Yes or already have one
 63% Maybe
 18% No

<i>How much do the following factors limit your ability to build a rain garden (or limited, if you already have one)?</i>	Not at All (1)	A little (2)	Some (3)	A lot (4)	Don't Know	Mean (n)
a. Lack of information or skills	21%	19%	30%	20%	10%	2.5 (114)
b. Time required	23%	27%	20%	19%	11%	2.4 (114)
c. Cost	19%	17%	19%	31%	14%	2.7 (116)
d. The features of my property do not support it	23%	10%	17%	17%	33%	2.4 (113)
e. Physical or health limitations	52%	10%	18%	10%	10%	1.9 (113)
f. Desire to keep things the way they are	47%	18%	14%	9%	12%	1.9 (116)

Yard Waste management. Yard waste management means keeping grass clippings and leaves out of the roads, ditches, and gutters.

1. Do you manage your yard waste?
 91% Currently do
 2% Don't currently do
 7% Never have done

2. How familiar are you with yard waste management?
 7% Never heard of it
 26% Somewhat familiar with it
 3% Know how to manage, not doing it
 64% Currently managing yard waste
3. Are you willing to manage your yard waste?
 84% Yes or already doing
 13% Maybe
 3% No

<i>How much do the following factors limit your ability to manage your yard waste (or limited, if you already have one)?</i>	Not at All	A little	Some	A lot	Don't Know	Mean (n)
a. Lack of information or skills	54%	17%	17%	6%	6%	1.7 (113)
b. Time required	46%	21%	16%	10%	7%	1.9 (112)
c. Cost	45%	18%	16%	12%	9%	2.0 (113)
d. The features of my property do not support it	60%	9%	5%	5%	21%	1.4 (112)
e. Physical or health limitations	61%	13%	13%	5%	8%	1.6 (113)
f. Desire to keep things the way they are	60%	14%	6%	7%	13%	1.6 (113)

Managing Lawn Fertilizer. Lawn fertilizers should be applied according to the guidelines from the manufacturer.

1. Do you manage your use of lawn fertilizer?
 76% Currently do
 12% Don't currently do
 13% Never have done

2. How familiar are you with managing the use of your lawn fertilizer?
 5% Never heard of it
 29% Somewhat familiar with it
 10% Know how to manage, not doing it
 55% Currently managing lawn fertilizer
3. Are you willing to manage your use of lawn fertilizer?
 76% Yes or already doing
 16% Maybe
 8% No

<i>How much do the following factors limit your ability manage your lawn fertilizer (or limited, if you already have one)?</i>	Not at All	A little	Some	A lot	Mean (n)
a. Lack of information or skills	65%	13%	15%	7%	1.6 (106)
b. Time required	61%	20%	15%	4%	1.6 (104)
c. Cost	50%	18%	16%	16%	2.0 (107)
d. The features of my property do not support it	89%	7%	4%	0%	1.1 (105)
e. Physical or health limitations	67%	15%	12%	6%	1.6 (105)
f. Desire to keep things the way they are	73%	13%	7%	7%	1.5 (106)

10. About You and Your Property

a. Do you make the home or lawn care decisions in your household?

96% Yes
4% No

b. What is your gender?

65% Male
35% Female

c. What year were you born? Ave age = 54 years; median = 4 yrs; range: 25-90 yrs

d. What is the highest grade in school that you have completed?

2% Some formal schooling
22% High school diploma or GED
14% Some college
8% 2 year college degree
34% 4 year college degree
20% Graduate degree

e. What was your total household income last year?

7% Less than \$24,999
23% \$25,000 to \$49,999
22% \$50,000 to \$74,999
16% \$75,000 to \$99,999
33% \$100,000 or more

f. What is your occupation? 92 provided information; 27% wrote "retired"

g. What is the approximate size of your residential lot?

49% ¼ acre or less
38% More than a ¼ acre but less than 1 acre
12% 1 acre to less than 5 acres
1% 5 acres or more

h. Do you own or rent your home?

98% Own
2% Rent

i. Which of the following best describes the street drainage where you live?

47% Curb and gutter construction
44% Ditch and swale construction
9% Don't know

j. How long have you lived at your current residence?

Ave 16 yrs; mode 3 yrs; range: 1.5-60 yrs

k. Do you use a professional lawn care service?

4% Yes, just for mowing
8% Yes, just for fertilizing
1% Yes, just for pest control (including herbicide)
9% Yes, some combination of mowing, fertilizing and pest control
79% No

l. Do you use pesticides or herbicides on your lawn?

42% Yes
58% No

m. Do you use fertilizer on your lawn?

68% Yes
32% No

n. If so, have you ever had your soil tested to determine your fertilizer needs?

18% Yes
10% No, it is too expensive
14% No, I don't know how
48% No, I didn't know soil testing was important
12% Other

o. I've heard about local water quality problems from the following (check all that apply).

61% Newsletters/brochures/factsheets
11% Internet
25% Radio
60% Newspaper/Magazine
4% Workshops/demonstrations/meetings
42% Television or Billboards
9% Schools
35% Conversations with others
14% Other

11. Information and Activities

People get information about water quality from a number of different sources. To what extent do you trust the organizations listed below as a source of information about water quality?

	Not At All (1)	Slightly (2)	Moderately (3)	Very Much (4)	Am Not Familiar	Mean (n)
a. Root-Pike Watershed Initiative Network	5%	6%	17%	21%	50%	3.1 (107)
b. City, village, or town government	8%	19%	45%	19%	9%	2.8 (107)
c. US Environmental Protection Agency	7%	19%	36%	26%	12%	2.9 (107)
d. UW Extension	7%	14%	25%	26%	28%	3.0 (108)
e. Wisconsin Department of Agriculture, Trade, and Consumer Protection	9%	17%	28%	20%	26%	2.8 (106)
f. Wisconsin Department of Natural Resources	6%	15%	32%	33%	14%	3.1 (107)
g. County Government	12%	35%	31%	9%	13%	2.4 (108)
h. Political organization, such as League of Conservation Voters	19%	26%	12%	6%	37%	2.1 (106)
i. Local school or college	12%	20%	35%	8%	25%	2.5 (107)
j. Local Home and Garden Center	16%	31%	28%	6%	19%	2.3 (108)
k. Other _____ (Please specify)	10%	0%	5%	15%	70%	2.8 (20)

APPENDIX 2: Response Rates

Table 2.1 below lists the communities involved in the survey and how they were grouped for creating a sample of households (HH). Response rates by group are also included.

Table 2.1 Sample and Response Rates

Name/Group	Number of HH in Area	Percentage of total HH in sample	Base HH # for sample	Additional HH for sample	Total number of HH in sample	Actual response # for group	Response % for group
Village of Wind Point	736	0.50%	30	1.0	31	?	?
Village of Silver Lake	876	0.60%		1.3			
Village of Sturtevant	1,477	1.00%		2.2			
Town of Bristol	1,715	1.17%	50	2.6	56	20	35.7%
Village of Hales Corners	3,260	2.22%		4.9			
Town of Somers	3,399	2.31%		5.1			
Town of Salem	3,529	2.40%	50	5.3	65	14	21.5%
Village of Pleasant Prairie	5,819	3.96%		8.7			
Village of Greendale	6,011	4.09%		9.0			
Village of Caledonia	8,549	5.81%		12.8			
Village of Mt. Pleasant	9,453	6.43%	50	14.2	95	9	9.5%
City of Franklin	10,602	7.21%		15.9			
City of Oak Creek	11,239	7.64%		16.8			
City of New Berlin	14,495	9.86%	50	21.7	104	19	18.3%
City of Racine	31,449	21.39%		47.1			
City of Kenosha	34,411	23.41%	50	51.5	149	51	34.2%
Totals	147,020	100.00%	280	220.0	500	113	22.6%

NOTES: