

Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents

Summary Report



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Executive Summary

This report is intended to summarize new survey data to evaluate water quality outreach and education efforts in the Greater Milwaukee Watersheds. The survey was sent to 3,000 homeowners living in the area.

Survey respondents were more highly educated than the average individuals living in the counties, and may have higher household incomes. It is possible that knowledge regarding water quality issues may be found more often among survey respondents compared to the general population. Indeed, even if there were no education or income differences, respondents to any water quality survey may tend to be those who know and care about the issues, suggesting some bias to the results.

The results of the survey find that 45% of respondents believe the quality of water used for recreational purposes is 'good' or 'excellent', with 78% placing the quality of drinking water at those levels. When asked about specific problems in their area with water for recreational purposes, the issues attracting at least a 'moderate' level of severity included *Algae blooms* (58%); *Polluted/closed beaches and swimming areas* (46%); and *Contaminated fish* (42%).

In terms of the importance of water quality, 81% of respondents 'agree' or 'strongly agree' that it affects *community quality of life* and 75% that it affects *economic stability*. In terms of personal responsibility, only 42% 'agree' or 'strongly agree' that *I would be willing to pay more to improve lakes, rivers, or streams*, but 95% 'agree' or 'strongly agree' that it is their *personal responsibility to help protect water quality*, with 77% agreeing that *I would be willing to change the way I care for my yard to improve water quality*.

When surveyed about the severity of nine specific pollutants, the only item attracting a majority viewing one of these as a 'moderate' or 'severe' problem was 65% for *Nutrients from fertilizers in local streams*. When asked about 15 specific sources for these types of pollutants, the only item attracting a majority agreeing it was a 'moderate' or 'severe' problem was 54% for *Lawn fertilizers and pesticides*.

When asked about nine water quality improvement practices around the home, at least half of respondents reported engaging in *Proper disposal of yard debris* (78%), *Recycling motor oil* (75%), *Directing downspouts away from paved surfaces* (66%), *Properly disposing of pet waste* (54%), and *Applying pesticides and herbicides at manufacturer's guidelines for your lawn* (48%). Still, the most common response regarding three practices was that they were aware of but not using *rain barrels* (63%), *Soil testing* (54%), or a *rain garden* (51%). Out of a list of seven possible reasons why the respondents could not further improve water quality practices around the home, only *Cost* (58%) attracted a majority, with at least 'some' or 'a lot' responses. The survey results find that only 9% had ever used a *Rain garden*, but 77% reported 'maybe' or 'would' consider using; 81% reported currently managing *Yard waste*, with an overlapping 36% willing to improve their use of fertilizer; 18% had ever used a *Rain barrel*, with 65% 'maybe' or 'would' consider using; 63% of dog owners currently clean up *Pet waste* immediately,

with 65% of the remainder at least ‘maybe’ willing to consider doing so; and 80% of respondents had their automobile or truck inspected regularly for leaks, with 85% fixing any leaks found immediately.

The final section of the survey asked which public service announcement efforts had ‘definitely’ reached them, and the main provider of this information. The most common responses included *stories addressing stormwater runoff* (40%), *water pollution caused by stormwater runoff* (36%), *ways homeowners potentially contributed to water pollution* (35%), and *ways homeowners can help improve water quality* (34%). Main providers of information included the Wisconsin Department of Natural Resources (40%), and their local city government (31%).

One interpretation of these results is that most respondents are concerned with water quality, and are willing to undertake some actions to improve water quality, so long as these are not financially costly. Not surprisingly, respondents seem most aware of issues that are both visible and close to home, including disposal of yard waste, recycling of motor oil, downspout positioning, fertilizer use, and pet waste. Perhaps the lowest cost initiative which would be utilized by many respondents involves reducing the incidence of over-fertilized gardens and lawns, since over-fertilization involves an unnecessary cost. Rain barrel utilization is currently low, but interest in this water quality improvement device is reasonably high, suggesting a small public subsidy to homeowners installing rain barrels may generate an increase in their utilization.

Introduction

This report presents results of a survey of urban and suburban residents in the Greater Milwaukee Watershed area. The study was conducted by the University of Wisconsin Whitewater’s (UWW) Fiscal and Economic Research Center (FERC). The information is intended to help focus water quality outreach and education efforts and provide a baseline for future research. 3,000 surveys were mailed to homeowners, with the mailing list provided by Mailers Haven. 202 households responded.

Results

The survey included eleven sections, measuring demographics, yard and household practices as well as knowledge, attitudes and beliefs regarding water resource issues for the Root Pike watershed.

1. Rating Water Quality

This section asked respondents to rate local water quality for two separate purposes, the quality of local waters in rivers, streams, and lakes for the purposes of swimming, fishing, and other recreational activities (kayaking, etc.) and the quality of drinking water. Respondents generally perceived the water quality in their local rivers, streams, and lakes to be ‘okay’ to ‘good.’ The vast majority of respondents believed their quality of drinking water was ‘good’ or ‘excellent.’

1. Overall, how would you rate the quality of the water in your area?

	Poor (0)	Okay (1)	Good (2)	Excellent (3)	Don't Know (4)	No Opinion (5)
Overall, how would you rate the quality of the water in your local rivers, streams, and lakes for purposes of swimming, fishing, and other recreational activities (kayaking, etc.)?	13%	37%	41%	4%	6%	>1%
Overall, how would you rate the quality of your drinking water?	4%	16%	45%	35%	1%	0%

2. Your Water use

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

- Canoeing / kayaking / other boating: 16%
- Picnicking / family activities near water: 18%
- Eating fish caught locally: 16%
- Swimming: 15%
- Fish habitat / fishing: 20%
- Scenic beauty / enjoyment: 31%

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

- Yes: 86%
- No: 14%

Where does the rain water go when it runs off of your property?

- Gutter: 12%
- Ditch: 16%
- Wastewater Treatment Plant: 10%
- Local Rivers: 19%
- Lake Michigan: 18%
- Storm Sewers: 25%

This section asked about awareness of water run off for individual properties and water use activities. The vast majority of respondents indicated that they were aware where rain water runs off their properties with 25% indicating rain water ran off their property into storm sewers. Scenic beauty / enjoyment was indicated to be the most important activity by respondents with 31% and the rest fairly equally distributed from 15% to 20%.

3. Consequences of Poor Water quality

Respondents were asked to rate the severity of the consequences of poor water quality in their area. Available choices ranged from 'not a problem' to 'severe problem,' with 'don't know' and 'no opinion' as additional options for each.

Several of the consequences listed in the survey were perceived as a 'moderate' to 'severe' problems by respondents. These were: *Algae blooms* (58%); *Polluted/closed beaches and swimming areas* (46%);

and *Contaminated fish* (42%). The three sources with the highest percentage in the ‘not a problem’ and ‘slight problem’ categories were: *Odor* (54%); *Reduced beauty of rivers and streams* (51%); *Reduced opportunities for water activities such as boating, canoeing, and fishing* (51%).

3. 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 (0)	Slight Problem (1)	Moderate Problem (2)	Severe Problem (3)	Don't Know (4)	No Opinion (5)
Contaminated drinking water	50%	22%	12%	5%	11%	>1%
Polluted / closed beaches & swimming areas	18%	31%	37%	9%	4%	2%
Contaminated fish	16%	22%	31%	11%	18%	2%
Increase in water / sewage bill	26%	17%	30%	10%	8%	10%
Loss of desirable fish and wildlife species	13%	21%	26%	19%	18%	3%
Reduced beauty of rivers and streams	18%	33%	30%	11%	6%	2%
Reduced opportunities for water activities such as boating, canoeing, and fishing	23%	28%	29%	8%	10%	3%
Algae blooms	8%	19%	34%	24%	15%	>1%
Odor	24%	30%	25%	8%	12%	2%
Lower property values	32%	21%	13%	6%	21%	7%

4. 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 *community quality of life* (81%) and *economic stability* (75%) depend on good water quality. When personalized to *I would be willing to pay more to improve lakes, rivers, or streams*, the percent of ‘agree’ and ‘strongly agree’ drops significantly (42%).
- A strong majority ‘agree’ to ‘strongly agree’ that it is their *personal responsibility to help protect water quality* (95%).

While there is a significant majority in agreement that they have a role in maintaining water quality, a smaller number would be willing to pay to improve water quality. This does not necessarily call into question commitment, as many respondents feel that there are yard care actions they can implement that do not cost anything. This is supported by a large percentage of respondents (77%) stating they ‘agree’ or ‘strongly agree’ that they *would be willing to change the way I care for my yard to improve water quality*.

4. What is your level of agreement with the following statements?

	Strongly Disagree (0)	Disagree (1)	Neither Agree or Disagree (2)	Agree (3)	Strongly Agree (4)	No Opinion (5)
The economic stability of my community depends upon clean lakes, rivers, and streams	3%	7%	14%	44%	31%	3%
The way that I care for my yard can influence water quality in lakes, rivers and streams	>1%	1%	6%	51%	39%	1%
It is my personal responsibility to help protect water quality	1%	>1%	2%	57%	38%	1%
What I do on my property doesn't have much impact on overall water quality	31%	42%	11%	11%	4%	>1%
Yard-care practices (on individual lots) do not have an impact on local water quality	36%	50%	6%	6%	1%	1%
My actions can have an impact on lakes, rivers, and streams	1%	2%	4%	60%	29%	1%
I would be willing to pay more to improve lakes, rivers, and streams	4%	16%	33%	33%	9%	4%
I would be willing to change the way I care for my yard to improve water quality	>1%	5%	17%	61%	16%	2%
The quality of life in my community depends on good water quality in local streams, rivers and lakes	1%	6%	10%	47%	34%	3%

5. 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' and 'no opinion' as additional options for each. Respondents showed a high degree of uncertainty regarding problems in their area, with nearly half of the types of water pollutants having *don't know* as their most common response. Over thirty percent of respondents indicated that they did not know how much of a problem salt, bacteria and viruses, and phosphorus 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': *Invasive aquatic plants and animals, nutrients, trash and debris, and phosphorus*. Of least concern was *organic matter and dirt and soil* in local streams.

5. Below is a list 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 (0)	Slight Problem (1)	Moderate Problem (2)	Severe Problem (3)	Don't Know (4)	No Opinion (5)
Dirt and Soil in local streams	15%	25%	30%	12%	18%	1%
Nutrients from fertilizers in local streams	4%	19%	35%	30%	14%	0%
Phosphorus in local streams	5%	17%	25%	22%	30%	1%
Bacteria and viruses in local streams (such as E. coli)	9%	15%	25%	19%	32%	1%
Salt in local streams	14%	16%	17%	11%	41%	2%
Invasive aquatic plants and animals	5%	19%	25%	34%	17%	1%
Oil or antifreeze from cars and trucks	14%	22%	16%	17%	31%	1%
Trash and debris	9%	25%	34%	23%	10%	0%
Organic matter, such as fallen trees, branches, grass clippings, leaves	17%	34%	27%	8%	15%	1%

6. Sources of Water Pollution

This section surveyed the perceived severity of eighteen potential sources of water pollution. 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* (22%); *Improper disposal of household Construction sites* (20%); *waste* (20%); *Soil erosion from farm fields* (19%) and *Manure from farm animals* (18%).

Only two pollutants, *Discharge from sewage treatment plants* (25%); and *Agricultural fertilizers and pesticides* (25%), were most commonly identified as 'severe problem'. Respondents most commonly identified the following six sources as a 'moderate problem': *Street salts* (36%); *Stormwater runoff from streets, highways, and/or parking lots* (36%); *Lawn fertilizers and pesticides* (34%); *Droppings from geese, ducks, and other waterfowl* (32%); *Discharges from storm sewers* (27%); and *Discharges from industry into streams and lakes* (25%).

Combining 'moderate problem' and 'severe problems' categories, the following were rated highest by respondents: *Lawn fertilizers and pesticides* (54%); *Stormwater runoff from streets, highways, and/or parking lots* (52%); *Street salt and sand* (52%); *Discharges from sewage treatment plants* (46%). The three sources with highest percentages in the 'not a problem' and 'slight problem' categories combined were: *Pet Waste* (57%); *Grass clippings and leaves* (57%); and *Soil erosion from construction sites* (49%).

6. 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 (0)	Slight Problem (1)	Moderate Problem (2)	Severe Problem (3)	Don't Know (4)	No Opinion (5)
Discharges from industry into streams and lakes	13%	20%	25%	19%	22%	1%
Discharges from sewage treatment plants	13%	20%	22%	24%	19%	1%
Soil erosion from construction sites	14%	35%	20%	10%	20%	1%
Soil erosion from stream farm fields	11%	29%	22%	17%	19%	2%
Lawn fertilizers and pesticides	5%	27%	34%	20%	13%	2%
Grass clippings and leaves	21%	36%	18%	4%	18%	3%
Discharges from storm sewers	12%	24%	27%	16%	18%	3%
Improper disposal household waste (batteries, medications, chemicals, etc.)	12%	24%	23%	18%	20%	2%
Improper disposal of used motor oil and antifreeze	13%	26%	20%	15%	24%	2%
Manure from animal farms	13%	25%	23%	19%	18%	2%
Stormwater runoff from streets, highways, and/or parking lots	9%	28%	36%	16%	10%	1%
Street salt and sand	5%	29%	36%	16%	12%	2%
Droppings from geese, ducks, and other waterfowl	11%	31%	32%	10%	13%	2%
Pet waste (such as dogs or cats)	17%	40%	17%	4%	19%	2%
Agricultural fertilizers and pesticides	6%	24%	24%	25%	18%	2%

7. Practices to Improve Water Quality

Section seven asked respondents to provide their level of familiarity with nine 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:

- Proper disposal of yard debris (78%)
- Recycling motor oil (75%)
- Directing downspouts away from paved surfaces (66%)
- Properly disposing of pet waste (54%)
- Applying pesticides and herbicides at manufacturer's guidelines for your lawn (48%)

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

- Using rain barrels (63%)
- Soil testing (54%)
- Using a rain garden (51%)

7. Please indicate which statement most accurately describes your level of experience with each practice listed below.

	Never Heard Of It (0)	Somewhat Familiar (1)	Aware How to Use it; Not Using it (2)	Currently Using it (3)
Applying pesticides and herbicides at manufacturer’s guidelines for your lawn	4%	16%	31%	48%
Using phosphate free fertilizer	18%	23%	36%	22%
Properly disposing of pet waste	9%	13%	23%	54%
Using rain barrels	4%	15%	63%	19%
Recycling motor oil	4%	9%	11%	75%
Directing downspouts away from paved surfaces	6%	10%	16%	66%
Using a rain garden	24%	15%	51%	9%
Proper disposal of yard debris	4%	8%	9%	78%
Soil testing	16%	23%	54%	6%

8. Making Management Decisions

In general, how much does each issue limit your ability to change your household & lawn care practices (such as those in Question 6)?

	Not at All (0)	A Little (1)	Some (2)	A lot (3)	Don’t Know (4)	No Opinion (5)
Cost	17%	20%	39%	19%	3%	3%
My own physical abilities	42%	17%	27%	12%	2%	2%
The need to learn new skills or techniques	31%	23%	31%	7%	7%	3%
Legal restriction on my property	47%	6%	16%	6%	22%	4%
Not having access to the necessary equipment that I need	38%	13%	27%	6%	12%	4%
Lack of available information about the practice	30%	16%	26%	10%	14%	3%
Concerns about resale value	42%	14%	21%	11%	7%	5%

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’ responses together, respondents most commonly identified *Cost* (58%). These constraints were the least influential in changing practices (responses of ‘not at all’ and ‘a little’): *My own physical abilities* (59%); *Legal restriction on my property* (53%); *Not having access to the necessary equipment that I need* (51%); and *Lack of available information about the practice* (46%).

9. Constraints for Specific Practices

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

Do you have or have you had a rain garden?

Yes	Currently Use	Do Not Currently Use	No	Never Used
9%	3%	2%	70%	17%

How familiar are you with rain gardens?

Never Heard of It	Somewhat Familiar With it	Know How To Install, Not Doing It	Have Installed A Rain Garden
35%	45%	12%	8%

Are you willing to try utilizing a rain garden?

Yes	Maybe	No	Already Have One
24%	53%	18%	5%

How much do the following factors limit your ability to build a rain garden (or limited, if you already have one)?

	Not at All (0)	A Little (1)	Some (2)	A lot (3)	Don't Know (4)	No Opinion (5)
Lack of information skills	21%	15%	28%	29%	4%	4%
Time required	17%	18%	29%	18%	12%	5%
Cost	18%	13%	28%	21%	16%	4%
The features of my property do not support it	17%	8%	15%	22%	33%	4%
Physical or health limitations	46%	12%	20%	12%	8%	3%

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

Do you manage your yard waste by keeping grass clippings out of street, etc.?

Yes	Maybe	Currently Do	No	Never Have	Currently Do It
81%	3%	8%	6%	2%	2%

How familiar are you with yard waste management?

Never Heard Of It	Somewhat Familiar With It	Know How To Manage, Not Doing It	Currently Managing Yard Waste
4%	25%	3%	68%

Are you willing to manage your use of fertilizer?

Yes	Already Managing It	No	Maybe
36%	51%	4%	7%

Downspouts and rain barrels: Downspouts should be aimed at pervious areas like gardens, lawns, and pervious paved areas and not down driveways or onto sidewalks. A rain barrel installed on a downspout can hold back stormwater.

How familiar are you with rain barrels?

Never Heard Of Them	Somewhat Familiar With Them	Know How To Install, Not Doing It	Have Installed A Rain Barrel
6%	49%	28%	18%

Are you willing to try utilizing a rain barrel?

Yes	Maybe	No	Already Have One
25%	40%	22%	13%

Pet Waste: Dog poop is a major pollutant in runoff. When it reaches our rivers and lakes, poop uses oxygen as it decays and sometimes releases ammonia, both of which can kill fish. Pet poop also contains nutrients that encourage weed and algae growth. Most importantly, pet waste carries diseases, which make water unsafe for swimming or drinking.

Do you own a dog?

Yes	No
43%	56%

How often do you clean up your pet's waste?

Always	In Nice Weather	Rarely	Most Of The Time	When People Will Be In My Yard	Never
63%	2%	3%	16%	3%	12%

Are you willing to clean up your pet's waste every time?

Yes	Maybe	No	I Already Do
56%	9%	16%	20%

Auto & Truck Care: How we care for our vehicles has an impact on water quality. Leaking oil and other fluids along with runoff from washing cars in the driveway lead to an increase in pollutant in our waterways.

Do you have your car inspected for leaks regularly?

Yes	Somewhat Regularly	I Don't Own A Car	No	I'm Not Sure
80%	12%	1%	7%	>1%

When a leak is discovered, how long does it usually take you to get it fixed?

I Get It Fixed As Soon As Possible	I Get It Fixed If It Causes Problems With How My Car Runs	I Don't Own A Car	I Get It Fixed When I Can Afford It	I Don't Worry About It Or Get It Fixed
85%	6%	>1%	8%	>1%

The section asked for detailed information regarding awareness, use, and constraints related to five specific practices: rain gardens, yard waste management, downspouts, pet waste and auto and truck care.

Rain Garden: A rain garden was defined as 'a garden that is designed to absorb and filter stormwater.' Most people (87%) responded 'no' or 'never used' when asked if they have or had a rain garden, though only 35% of the respondents have 'never heard of it,' with 45% indicating they were 'somewhat familiar with it.' Over 75% of the respondents indicated 'Maybe' or 'Yes' they were willing to use a rain garden. Roughly one third of respondents answered, they 'Don't know' whether their property could support a rain garden, and one third suggest, that lack of information skills limited their ability to build a rain garden 'A lot.' Physical limitations were the least important constraint, with 46% responding it was 'not at all' a limitation.

Yard Waste: The definition provided for this practice was 'keeping grass clippings and leaves out of the roads, ditches, and gutters.' Although 89% of the respondents state that they are currently managing yard waste, 29% of them are either 'Somewhat familiar with it' or 'Never heard of it.' 43% of the respondents answered, 'Maybe' or 'Yes' they were willing to manage their yard waste.

Downspouts and rain barrels: This practice involved the usage of rain barrels. When asked how familiar they were with rain barrels over 49% of respondents express they were 'somewhat familiar with them.' 6% of respondents claimed they had 'never heard of them,' while 18% claim to 'have installed a rain barrel.' 65% of respondents indicated they would be willing to try utilizing a rain barrel.

Pet Waste: Respondents were asked if they owned a dog, with 43% indicating they did. When asked how often they clean up their pet's waste, 63% claim to 'always' clean up their pet's waste, with 12% indicating they never clean up their pet's waste.

Auto & Truck Care: Survey respondents were asked about aspects of their vehicle care, with 92% of respondents indicating ‘yes’ or ‘somewhat regularly’ when asked how often they had their vehicles inspected for leaks. 85% of respondents indicated ‘I get it fixed as soon as possible’ when asked how long does it usually take to get their vehicle fixed when a leak is found.

10. About You and Your Property

What is your gender?

Male	Female
50%	50%

What year were you born?

> 1930's *Age 77+	1940's *Age 67-76	1950's *Age 57-66	1960's *Age 47-56	1970's *Age 37-46	1980's *Age 36 & Under
7%	19%	34%	24%	12%	4%

* At Time of Survey

What is the highest level of education you have completed?

Less Than High School	High School Diploma Or Equivalent	Some College	2 Year Associate's Degree	4 Year Bachelor's Degree	Graduate Degree
1%	15%	16%	16%	30%	23%

What is your annual household income level?

Less than \$24,999	\$25,000 to 49,999	\$50,000 to 74,999	\$75,000 to 99,999	\$100,000 or More
5%	18%	24%	18%	34%

A series of questions were asked regarding the respondent and his or her property. Information about respondents and their property:

- Less than one percent have an education below high school graduate level, with 15% having a HS diploma. Respondents to the survey were well educated, with 30% having a four-year degree and a large number of graduate degrees (23%). Those figures are above U.S. Census estimates of education for Racine County, where 12.1% of adults do not have a HS diploma, and only 23.4% have a Bachelor's degree or above.¹ Similarly, in Kenosha County, 10.3% of adults do not have a HS diploma, and 24.3% hold a Bachelor's degree or above.²

1 - Education and household income figures for Racine from U.S. Census: census.gov/quickfacts/table/PST045215/55101 December 4, 2016. Demographic data for Milwaukee area: <http://www.choosemilwaukee.com/index.php?submenu=DataStatistics&src=gendocs&ref=DataStatistics&category=Data Maps>

2 - Education and household income figures for Kenosha from U.S. Census: census.gov/quickfacts/table/PST045215/55059 December 4, 2016.

- Roughly 34% of respondents have a household income of over \$100,000, while 24% have a household income below \$49,999. The median category for income was ‘\$55,000 to \$74,999, which fits or is higher than U.S. Census figures. Those estimates place median household income in Racine in 2014 of \$55,000, with a similar figure of \$54,700 for Kenosha.

These differences suggest that respondents tended to be more highly educated than the average adult living in the area, and may have higher incomes.

11. Information Acquisition

11a. Please look at the loose leaf image provided, Sparkles the Water Spaniel, which represents a public awareness campaign that has run over the past four years. Then answer the questions below:

	Definitely Not (0)	Don't Think So (1)	Don't Know (2)	I Think So (3)	Definitely Have (4)
Do you recall seeing or hearing related advertising about water pollutions caused by stormwater runoff (storms that ultimately carry yard or street pollutant into lakes, rivers, & streams)?	16%	25%	5%	18%	36%
Are you aware of any advertising that carries the message, “Respect Our Waters?” (as seen above)	12%	28%	8%	24%	27%
Do you recall watching, reading, or hearing any news stories that address stormwater runoff?	7%	16%	9%	29%	40%
Do you recall seeing, reading or hearing the Respect Our Water message at any community events (fairs, festivals, farmer’s markets, etc.)?	18%	37%	14%	16%	14%
Through advertising or news stories, have you learned of ways homeowners potentially contributed to water pollution?	8%	17%	9%	31%	35%
Through advertising or news stories, have you learned of ways homeowners can help improve water quality?	7%	17%	11%	31%	34%

11b. People receive information about water quality through many different sources. From which of these sources have you received information about water quality, and to what extent did the source assist you in education and awareness regarding the issue?

	Not at All (0)	A Little (1)	Some (2)	A lot (3)	Don't Know (4)
Respect Our Waters	46%	16%	19%	8%	11%
Southeast Wisconsin Watersheds Trust Inc. (aka Sweet Water)	68%	8%	5%	1%	19%
Root Pike Watershed Initiative Network	72%	7%	5%	1%	15%
Your Local School or College	63%	10%	11%	4%	12%
Your Local Home & Garden Center	50%	20%	16%	2%	11%
Your Local City Government	37%	22%	26%	5%	10%
Your County Government	48%	16%	20%	3%	13%
UW Extension	50%	18%	17%	3%	12%
Wisconsin Department of Agriculture, Trade and Consumer Protection	53%	17%	11%	2%	18%
Wisconsin Department of Natural Resources	30%	22%	29%	11%	9%
The United States Environmental Protection Agency	48%	15%	19%	3%	16%
Political Organizations, such as League of Conservation Voters	61%	10%	7%	4%	18%

Respondents were asked if they recalled seeing information regarding water quality regarding 6 different areas. Most respondents responded with the majority 'I Think so' or 'Definitely Have' to the following five areas:

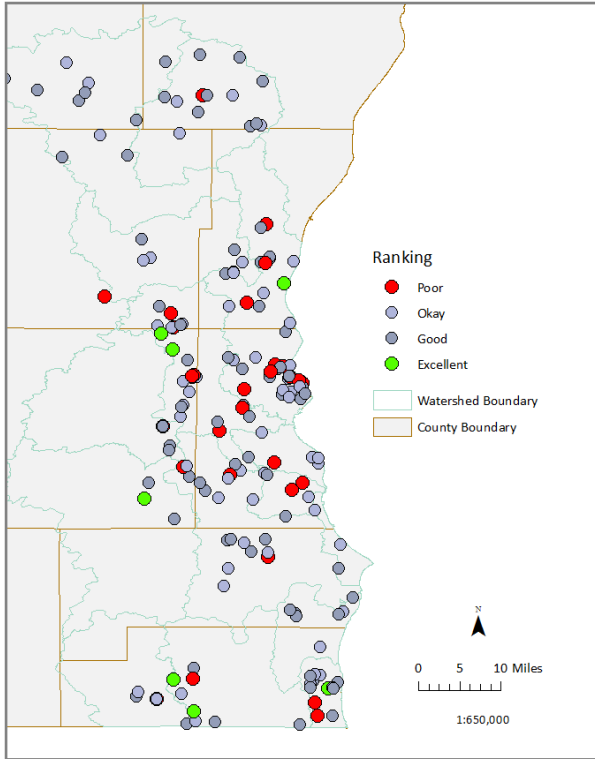
1. *Recall seeing or hearing related advertising about water pollution caused by stormwater runoff (54%)*
2. *Aware of any advertising that carries the message "Respect our Water?" (51%)*
3. *Recall watching, reading, or hearing any news stories that address stormwater runoff (69%)*
4. *Advertising or news stories, have you learned of ways homeowners potentially contributed to water pollution (66%)*
5. *Have you learned of ways homeowners can help improve water quality (65%).*

Respondents were also asked to what extent did the information about water quality come from 22 different sources. Respondents indicated that these sources did not assist in the education and awareness regarding the issue: *Root Pike Watershed Initiative Network (72%); your local school or college (63%); Political organizations (61%); Wisconsin Department of Agriculture, Trade and Consumer Protection (53%); UW Extension (50%); and your local home and garden center (50%).*

Perception of Water Quality for Recreational Activities

Part 1, Question 1

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



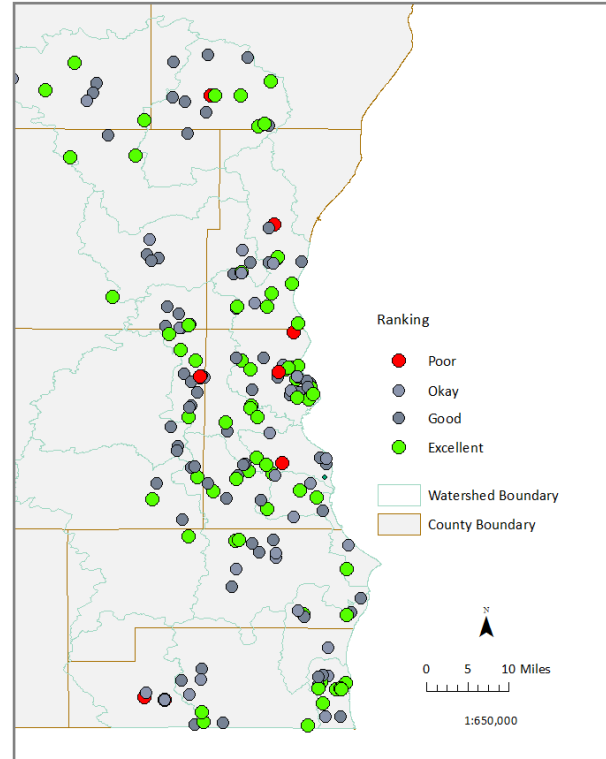
WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Nov. 2016
UW-Whitewater

Perception of Drinking Water Quality

Part 1, Question 2

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



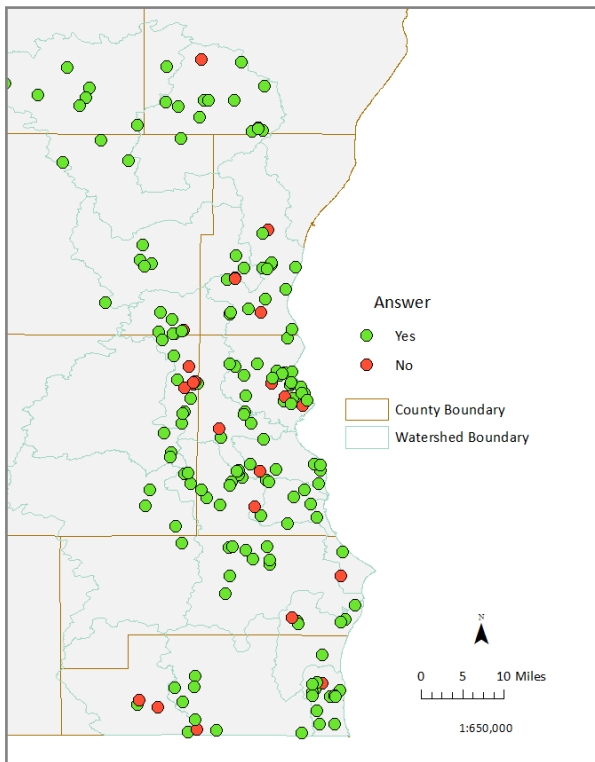
WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Dec. 2016
UW-Whitewater

Knowledge of Where Rainwater Runoff Goes?

Part 2, Question 4

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



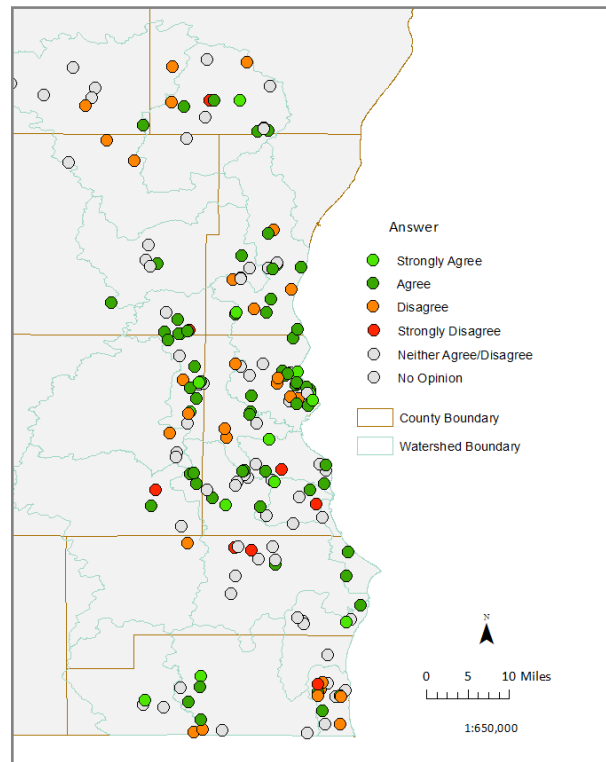
WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Dec. 2016
UW-Whitewater

Willingness to Pay More to Improve Lakes, Rivers, Streams

Part 4, Question 22

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



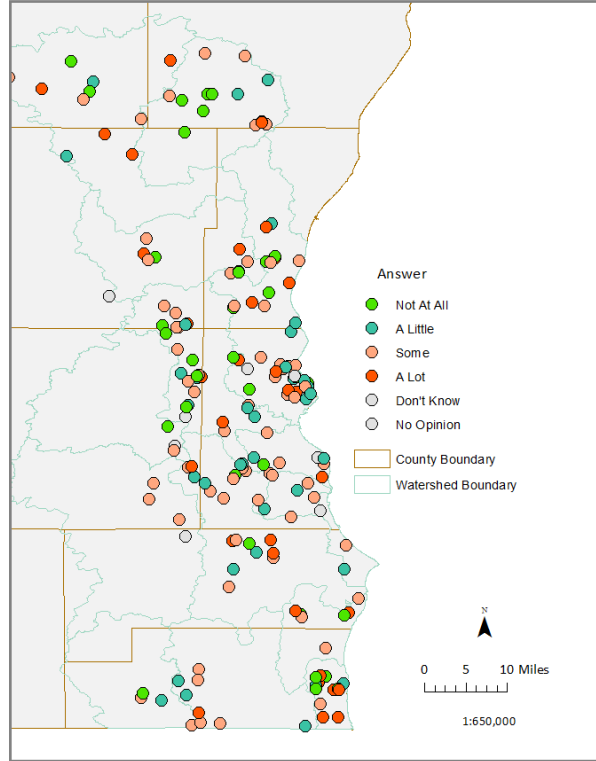
WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Dec. 2016
UW-Whitewater

Making Management Decisions off Cost

Part 8, Question 58

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



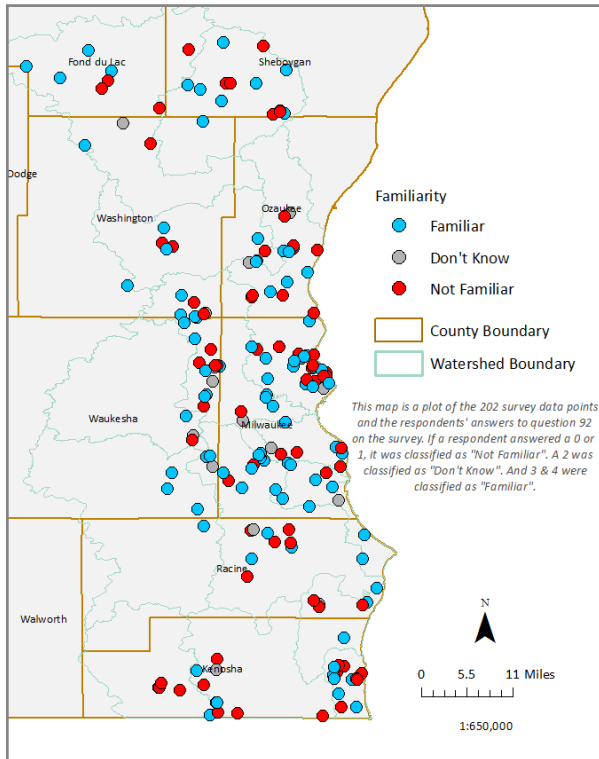
WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Dec. 2016
UW-Whitewater

Familiarity with "Respect Our Waters" Message

Part 11, Question 92

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"

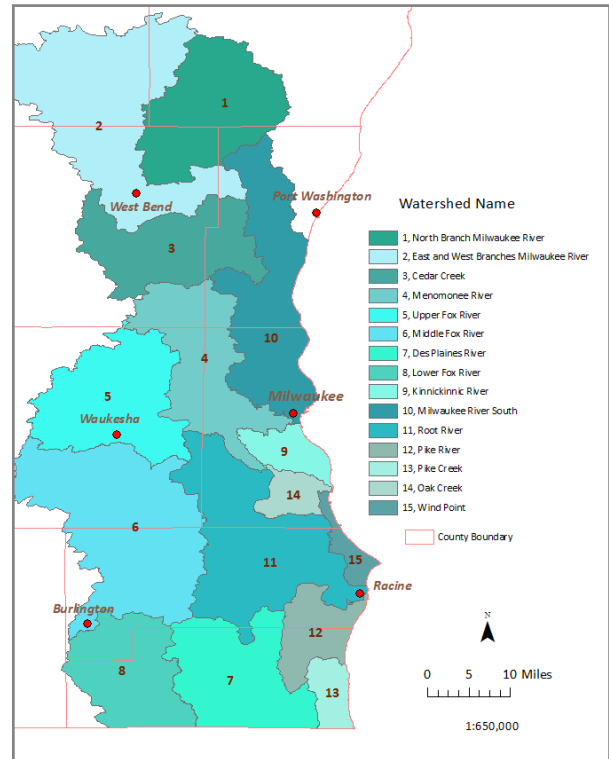


WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Nov. 2016
UW-Whitewater

Watershed Reference Map

"Views on Southeastern Wisconsin Watersheds: Responses from Urban/Suburban Residents"



WI Dept. of Natural Resources, 2016
Sweetwater Survey, 2016
ESRI Data, 2014

Marcus Riccio, Nov. 2016
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Appendix:

It is notable that there is strong consistency between the survey results for the 2010 survey and the 2016-2017 survey. Those means that have changed may be partially due to the larger sample size of the most recent survey. The response mean change that may be of greatest interest is the perceived consequences of poor water quality on lowering property values with the 2010 survey mean (1.0) indicating that it was not viewed as a problem with a 2016-2017 survey mean (1.8) moving strongly towards the belief that poor water quality is a slight problem for property value. Other notable changes from the 2010 to 2016-2017 survey results include changes in views of how much a problem salt in local streams was perceived to be, changing from a mild belief that it is a slight problem (2.4) to a mild belief that it is a moderate problem (2.8). The amount of experience indicated by survey respondents using rain barrels has increased from being somewhat familiar (2.6) in 2010 to knowing how to use a rain barrel but not using it (3.0) in 2016-2017, suggesting that a lack of familiarity with the use of rain barrels is no longer a driving factor in their implementation. The survey results in general suggest very little change in respondent mean beliefs about water quality from 2010 to present.

(Note: Each mean value removes respondents who responded “Don’t Know” or “No Opinion”)
Comparison of 2010 survey mean results to 2016-2017 survey mean results:

Question	2016-2017 Mean	2010 Mean
Your Water Use:	-	-
Do you know where the rain water goes when it runs off your property?	.86	.7
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?	-	-
Contaminated drinking water	1.7	2.1
Polluted / closed beaches & swimming areas	2.3	2.6
Contaminated fish	2.5	2.8
Increase in water / sewage bill	2.3	2.7
Loss of desirable fish and wildlife species	2.6	2.8
Reduced beauty of rivers and streams	2.4	2.5
Reduced opportunities for water activities such as boating, canoeing, and fishing	2.2	2.4
Odor	2.2	2.5
Lower property values	1.8	1.0
General Water Quality Attitudes: What is your level of agreement with the following statements?	-	-
The economic stability of my community depends upon clean lakes, rivers, and streams	4.1	3.9
The way that I care for my yard can influence water quality in lakes, rivers and streams	4.3	4.1

Appendix Continued...

Question	2016-2017 Mean	2010 Mean
It is my personal responsibility to help protect water quality	4.3	4.2
What I do on my property doesn't have much impact on overall water quality	2.1	2.2
Yard-care practices (on individual lots) do not have an impact on local water quality	1.9	2.0
My actions can have an impact on lakes, rivers, and streams	4.2	3.9
I would be willing to pay more to improve lakes, rivers, and streams	3.3	2.9
I would be willing to change the way I care for my yard to improve water quality	3.9	3.8
The quality of life in my community depends on good water quality in local streams, rivers and lakes	3.7	3.9
Types of Water Pollutants: Bellow 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?	-	-
Dirt and Soil in local streams	2.5	2.3
Nutrients from fertilizers in local streams	3.0	3.0
Phosphorus in local streams	2.6	3.0
Bacteria and viruses in local streams (such as E. coli)	2.9	3.0
Salt in local streams	2.4	2.8
Invasive aquatic plants and animals	3.1	3.2
Oil or antifreeze from cars and trucks	2.5	2.7
Trash and debris	2.8	3.0
Organic matter, such as fallen trees, branches, grass clippings, leaves	2.3	2.4
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?	-	-
Discharges from industry into streams and lakes	2.6	2.7
Discharges from sewage treatment plants	2.7	3.0
Soil erosion from construction sites	2.8	2.5
Soil erosion from stream farm fields	2.6	2.7
Lawn fertilizers and pesticides	2.8	2.9
Grass clippings and leaves	2.1	2.1
Discharges from storm sewers	2.6	2.9
Improper disposal household waste (such as batteries, -medications, chemicals, fluorescent light bulbs, etc.)	2.7	2.7

Appendix Continued...

Improper disposal of used motor oil and antifreeze	2.5	2.7
Manure from animal farms	2.7	2.6
Storm water runoff from streets, highways, and/or parking lots	2.7	2.8
Street salt and sand	2.7	2.9
Droppings from geese, ducks, and other waterfowl	2.5	2.8
Pet waste (such as dogs or cats)	2.1	2.2
Agricultural fertilizers and pesticides	2.9	3.0
Practices to Improve Water Quality: Please indicate which statement most accurately describes your level of experience with each practice listed below.	-	-
Applying pesticides and herbicides at manufacturer's guidelines for your lawn	3.2	3.2
Using phosphate free fertilizer	2.6	2.6
Properly disposing of pet waste	3.2	3.0
Using rain barrels	3.0	2.6
Recycling motor oil	3.5	3.5
Directing downspouts away from paved surfaces	3.4	3.5
Making Management Decisions: In general, how much does each issue limit your ability to change you household and lawn care practices?	-	-
Cost	2.4	2.4
My own physical abilities	2.5	2.9
The need to learn new skills or techniques	2.9	2.7
Legal restriction on my property	3.3	3.0
Not having access to the necessary equipment that I need	3.1	3.0
Lack of available information about the practice	2.8	2.6
Concerns about resale value	2.5	2.7
Constraints for Specific Practices: How much do the following factors limit your ability to build a rain garden (or limited, if you already have one)?	-	-
Lack of information skills	2.7	2.5
Time required	2.6	2.4
Cost	2.6	2.7
The features of my property do not support it	2.7	2.4
Physical or health limitations	2.0	1.9
About You and Your Property:	-	-
What is your gender?	.5	.35