



Maintaining What We Value

Results of A Survey to Guide The Nippersink Creek Watershed Management Plan

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Project Partners

Illinois Environmental
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Nippersink Creek Watershed Planning Committee



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Introduction

- Location of the Nippersink Creek Watershed
- Water Quality
- Watershed pollution
- Changes in the watershed
- Goal of the Survey
 - Evaluate understanding of watershed issues
 - Document knowledge and current behaviors
 - Assess support for Plan recommendations
 - Identify outreach opportunities

Research Methods

- Survey Design
 - Interviews with key informants helped to develop and design survey questions.
 - Self-administered mail questionnaire
 - EPA pilot project – SIPES
- Sampling
 - Four subwatersheds: Wonder Lake, Lower Nippersink, Nippersink Headwaters, and Silver Creek
 - 2,400 eligible households in sample; Census blocks

Response Rate and Addressing Non-Response

- Response Rate: 25.3%
- Non-Respondent Bias
 - Non-respondent phone survey (300 households)
 - Did not include Wonder Lake residents due to lack of phone numbers
- Data Comparisons to Address Non-Response Bias
 - McHenry County ACS data
 - Non-respondent survey data

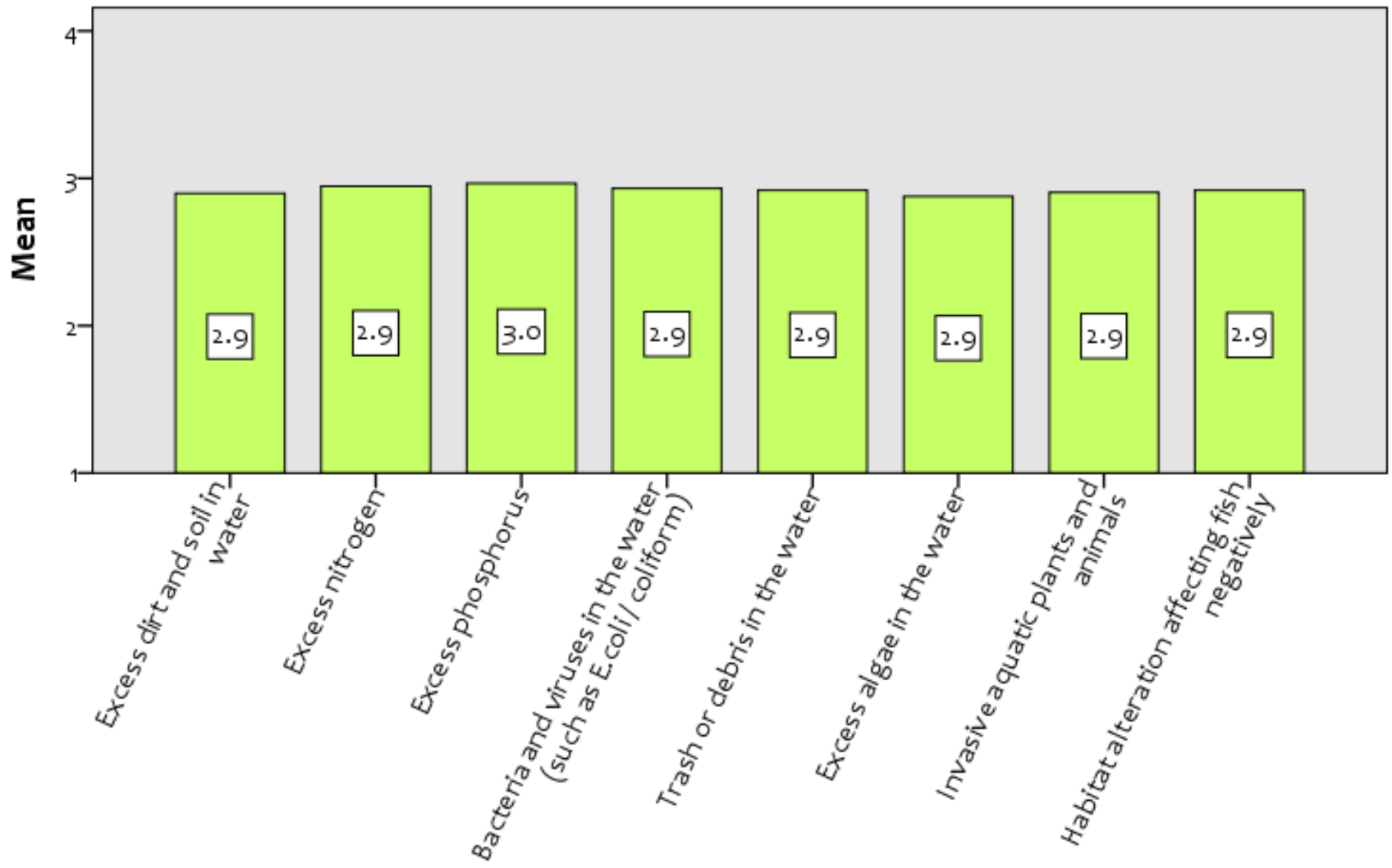
T-Tests Comparing Mean Responses Between Mail Survey Respondents and Non-respondents

Variable	Mean Response of Respondents	Mean Response of Non-Respondents
Water Quality: Canoeing, Kayaking, Other Boating	2.45	2.50
Water Quality: Eating Fish	1.88	2.04
Water Quality: Swimming	1.85	2.00
Water Quality: Picnicking	2.54	2.54
Water Quality: Fishing	2.27	2.47
Water Quality: Scenic Beauty*	2.59*	2.85*
My lawn and yard care can influence water quality	4.17	4.07
It is my responsibility to protect water quality	4.24	4.11
My actions have an impact on water quality	4.13	4.24
Quality of life in community depends on good water quality*	3.99*	4.27*
Familiarity with the Nippersink Creek Watershed Plan	1.46	1.52
Expand water quality and biological monitoring*	4.08*	3.82*
Protect/enhance stream corridors	3.98	4.02
Change the way storm water is managed	3.82	3.69
Gender*	1.32*	1.25*
Year Born	2.84	2.89
Highest Education Level	4.00	3.87
Total Household Income	3.42	3.24

Respondent Demographics

- College education: 79% have at least some college
- Median age: 57 years
- Property ownership: 94% own their property
- Median length of residence: 14 years
- Lawn care use
 - 23% of respondents use a professional lawn service

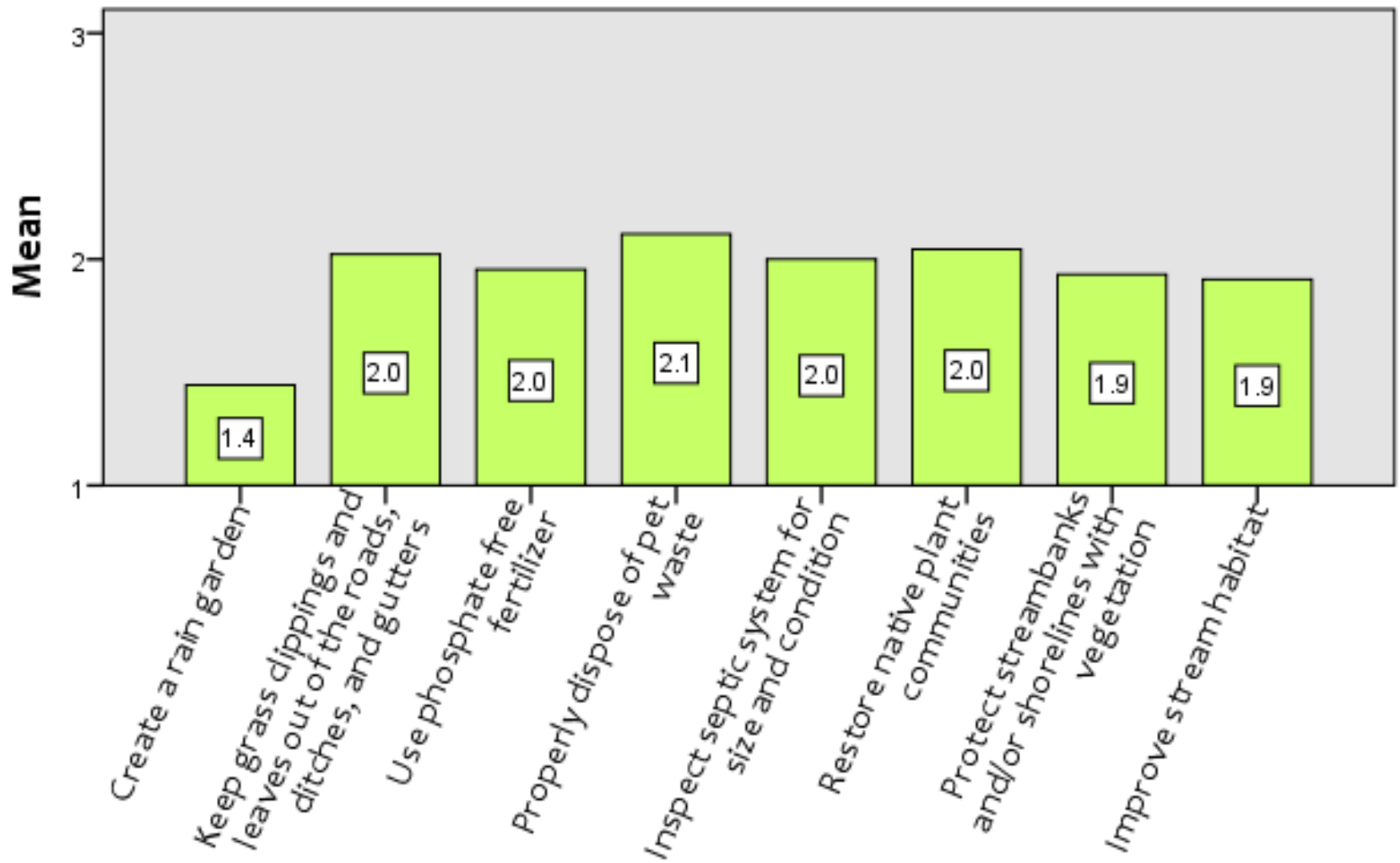
Perceptions of Water Impairments



What do We Know and Practice?

- Most commonly used practices to improve water quality:
 - Properly disposing of pet waste (60.4%), keeping roads and gutters free of grass (65.8%), septic system inspection (52.9%)
- Least commonly used practices:
 - Creating a rain garden (95% do not currently use this practice)
- Residents practice what they are most familiar with.

Familiarity with Practices to Improve Water Quality



Decisions About Changing Lawn Care and/or Storm Water Practices on Residents' Property

- Greatest Limiting Factors (A Lot):
 - To Much Time Required for Implementation (42.3%)
 - The Need to Learn New Skills or Techniques (31.6%)
 - Lack of Available Information About a Practice (30.2 %)
- Least Limiting Factors (Not At All):
 - Restrictive subdivision covenants (50.7%)
 - No One Else I Know is Implementing The Practice (42.9.%)

Constraints for Specific Practices

- **Follow Pesticide Application Instructions for Lawn and Garden**
 - The majority of respondents (56%) follow application instructions
 - 68% of respondents are familiar with pesticide application instructions
 - 86% are willing to follow, or already use, application instructions
 - Perceived constraints: cost and a desire to keep things the same.

Constraints for Specific Practices

cont'd

- **Regular Servicing of Septic System**
 - The majority of respondents (86%) service their septic systems
 - 80% are familiar with septic system servicing
 - 91% are willing to practice, or already practice, septic maintenance
 - Perceived constraints: cost and a desire to keep things the same.

Constraints for Specific Practices

cont'd

- **Protecting Stream banks and Shorelines with Vegetation**
 - 42% do not follow the practice, while 37% currently protect shorelines
 - 48% are “somewhat familiar” with protecting shorelines; 23% had never heard of it
 - 66% are willing to protect stream banks
- Perceived constraints: cost, the features of their property, and the skills and information needed to practice.

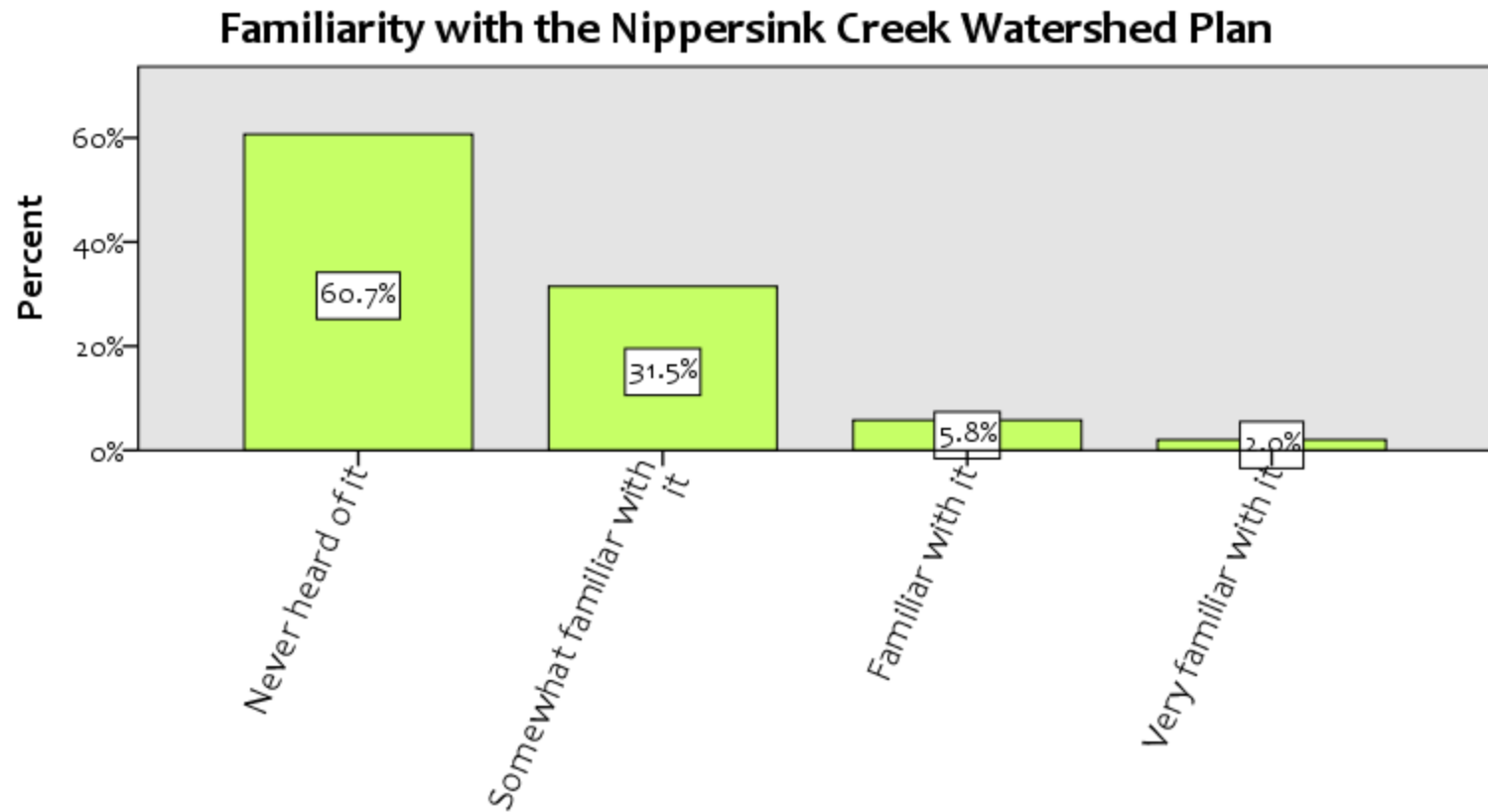
Septic Systems

- Septic system ownership
 - 60% of respondents own a septic system
- Septic system problems
 - 13% of respondents have had some kind of problem with their septic system
- Maintenance reminders
 - An overwhelming majority (79%) of respondents do not want a service reminder from the public health department

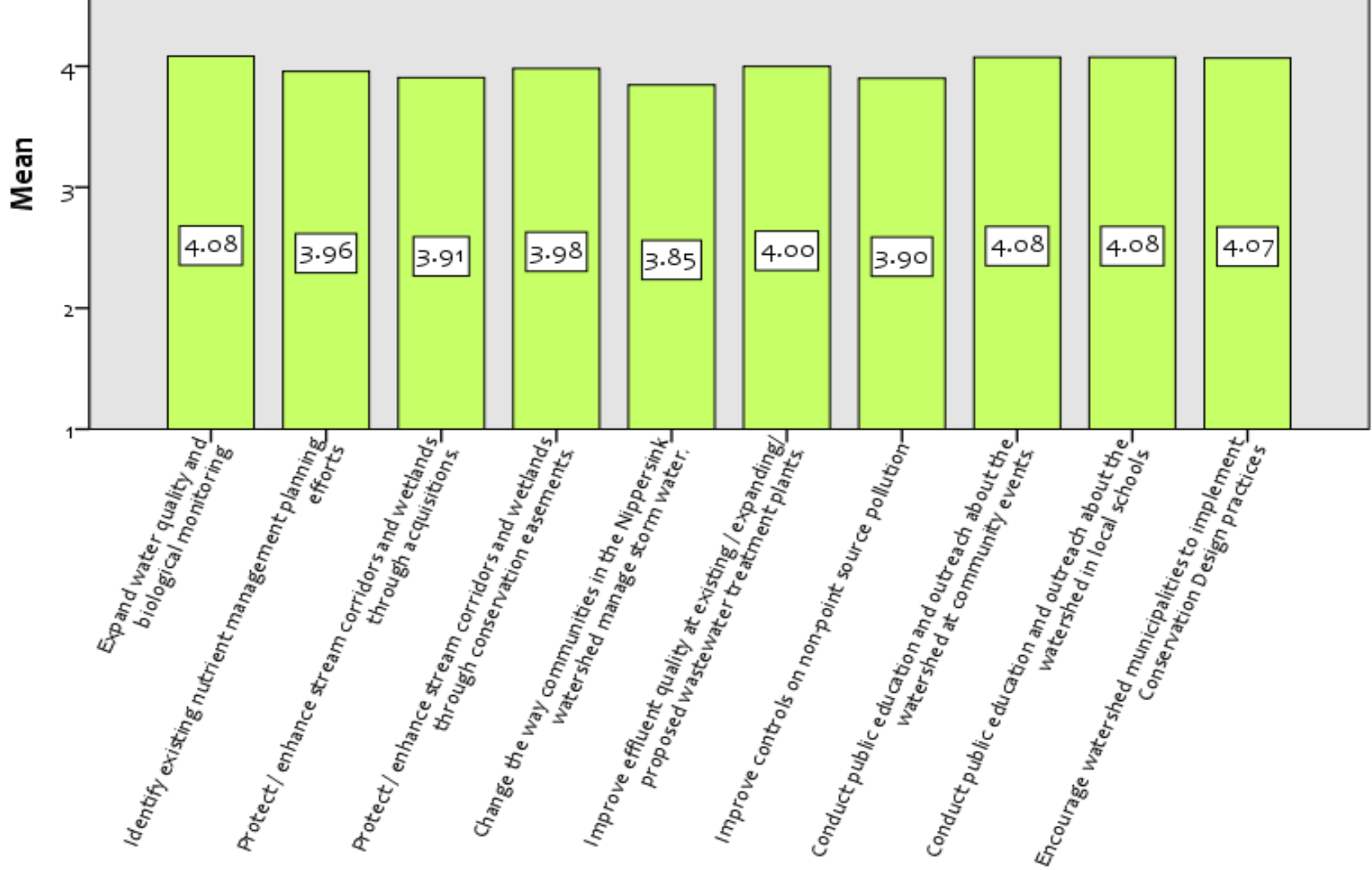
What do Residents Value?

- Opinions and Beliefs Regarding Water Quality
 - Respondents agreed/strongly agreed that the way they care for their lawn and yard can influence local water quality (86.8%)
 - Respondents agreed/strongly agreed that their actions have an impact on water quality (88.4%)
 - Respondents disagreed/strongly disagreed with statements such as “It is okay to reduce water quality to promote economic development” (86.7%)

Familiarity with the Nippersink Creek Watershed Management Plan



Support for the Recommendations in the Nippersink Creek Watershed Management Plan



Support for Recommendations in the *Nippersink Creek Watershed Management Plan*

- The most supported recommendations are expanding water quality and biological monitoring and public education in schools and at community events
- Recommendations are supported strongly and consistently
- Most of the recommendations are supported regardless of knowledge of the Plan

Regression Analysis

- Respondent Opinions
 - Education and age most constant predictors
- Practices to Improve Water Quality
 - Plan familiarity, education, use of lawn care service
- Making Decisions for My Property
 - Income, household decision-maker
- Nippersink Creek Plan Recommendations
 - Education is the most constant predictor of support

Conclusions

- Respondents demonstrate respectable level of knowledge about water quality issues and threats within the watershed.
- Respondents see a connection between their actions, water quality, and quality of life in their community.
- Strong support for recommendations in the watershed plan among respondents.
- However, 60% of respondents were not aware of watershed management plan.

Conclusions

- Majority of respondents reported having a septic system.
- Significant presences of septic systems in four sub-watersheds and high levels of concern for bacteria and viruses in water.
- Respondents overwhelmingly opposed to receiving a reminder from the public health department regarding servicing their system.

Outreach

- Considerable room for further dissemination of the Watershed Management Plan and its recommendations.
- As knowledge of the plan increases, use of various BMP practices to improve water quality also increases (ie: proper use of lawn fertilizers).
- Opportunity to collaborate with other organizations that promote broader watershed health or water quality (ie: McHenry County Conservation District; Environmental Defenders of McHenry County; local schools and science teachers)

Community Based Social Marketing

- Education alone often has little or no effect on changing people's behaviors, in particular as it relates to sustainability issues such as water quality or watershed health (Geller 1981; Geller, Erickson, and Buttram 1983; Jordan, Hungerford, and Tomera 1986).
- Community-based social marketing addresses this shortcoming by first identifying barriers to a sustainable behavior and then designing a strategy that utilizes behavior change tools (McKenzie-Mohr 2010).

Community Based Social Marketing Outreach

- May be beneficial to partner with local, private septic system providers within the watershed to develop a social marketing plan to provide routine reminders about servicing septic systems.
- “Septic Social” events targeted at smaller neighborhoods or clusters of homes with high percentage of septic systems.

Final Thoughts

- Overall respondents have a strong sense of their watershed and water quality.
- Respondents recognize the significance to their overall quality of life.
- Important baseline information on barriers to specific BMP actions – helpful for the development of tailored actions to influence behavior.
- Develop and direct these tools at the community level to have the greatest impact.

For More Information

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