

Social Indicators for Nonpoint Source Projects

Building Capacity for Sustainable
Watershed Management in Illinois

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Content based on materials developed in conjunction
with Ken Genskow and Rebecca Power

Social Indicators for NPS Project Overview

- Develop a system for collecting and using social data to evaluate NPS management efforts in Great Lakes Region/Region 5
- Partnership with USEPA, state water quality agencies, and land grant universities
- Provide assistance & support to state programs and NPS projects
- Complement existing “administrative” and “environmental” indicators

Three Types of Indicators

- Environmental
 - Pesticide levels, pH, E. coli
- Administrative
 - Bean counting!
 - Number of plans written, number of newsletters distributed
- Social



Management Response

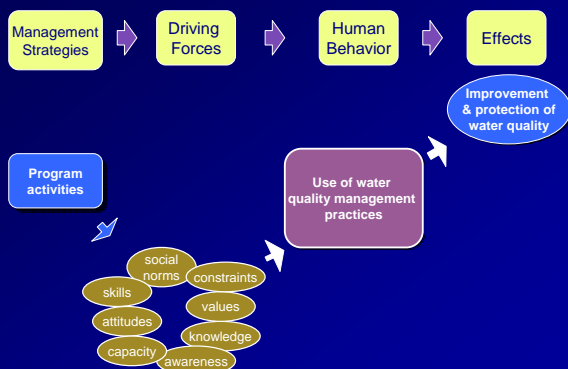


Options:

- Regulate
- Persuade
 - Outreach and education
 - Financial Support
 - Technical Support

HD.gov

Conceptual Model



Overview of Social Indicators System

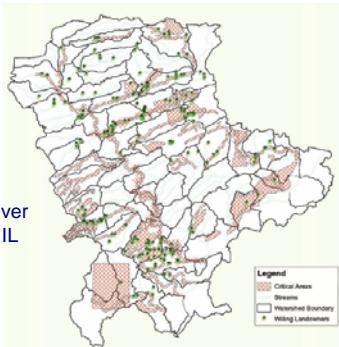
- Core indicators, supplemental indicators, and background/contextual factors
- All indicators measure change
- Scale is project level
- Currently focusing only on 319 projects
- Critical areas
- Target audiences

Targeting

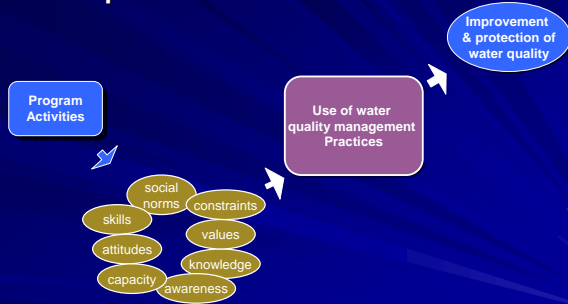
- Focus efforts on area of greatest impact
 - Specific audience
 - Specific geographic area
- Some behaviors in some places can have a disproportionate impact on water quality

Targeting Critical Areas

La Moine River
Watershed, IL



Conceptual model



Conceptual model



Awareness



- Awareness of consequences of pollutants to water quality
- Awareness of pollutant types impairing water quality
- Awareness of pollutant sources impairing water quality
- Awareness of appropriate practices to improve water quality

Awareness of Consequences of Pollutants to 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
a. Contaminated drinking water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Contaminated fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. High drinking water treatment costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Reduced beauty of lakes or streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Reduced opportunities for water recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Awareness of Pollutant Types Impairing Water Quality

Below is a list of water pollutants and conditions 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
a. Sediment in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Nitrogen in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Nitrates in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Phosphorus in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Heavy metals in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Algae in rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Awareness of Pollutant Sources Impairing Water Quality

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
a. Discharges from industry into rivers and streams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Discharges from sewage treatment plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Discharge from mines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Soil erosion from construction sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Soil erosion from farm fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Soil erosion from shorelines and/or stream banks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Awareness of Appropriate Practices to Improve Water Quality

The practices below have the potential to improve water quality in your area. Please indicate which statement most accurately describes your level of experience with each practice. Please answer part "A" and part "B" for this set of practices.

Please answer Section A and B for all practices	A. Please indicate which statement most accurately describes your level of experience with each practice.					B. How often do you use this practice?
	Does not apply	I've never heard of it	I've heard of it but I'm not very familiar with it	I am familiar with it but I've never done it	I have tried it, but I am never doing it	I currently use it
a. Using grass waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Managing rills (channels) to control the flow of waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Using no-tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Using reduced tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Using Integrated Pest Management (IPM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Attitudes

- General water-quality-related attitudes
- Willingness to take action to improve water quality



General Water-Quality Related Attitudes

Please indicate your level of agreement or disagreement with the statements below.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Individual households have the potential to impact water quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Taking action to improve water quality is too expensive for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Willingness to Take Action to Improve Water Quality

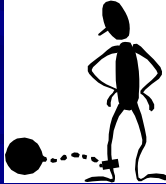
The practices below have the potential to improve water quality in your area. Please indicate which statement most accurately describes your level of experience with each practice. Be sure to answer part "A" and part "B" for this set of practices.

<p>Please answer Section A and B for all practices</p>		B. Would you be willing to try an alternative using this practice?		
		Yes	No	Maybe
	A. Using green waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	B. Managing life strategies to control the flow of waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	C. Using no-tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	D. Using reduced tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	E. Using Integrated Pest Management (IPM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Constraints

■ Constraints to behavior change



Constraints to Behavior Change

■ Constructs:

- Economics / profitability
- Financial incentives
- Independence / own ideas
- Environmental considerations
- Status quo / traditional
- Assistance incentives
- Caution about government programs
- Peer / norms considerations



Constraints to Behavior Change

When you make decisions about new management practices for your farm operations, how important is each of the following?

	Not at all important	Somewhat important	Important	Very important
a. Personal out-of-pocket expense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My own views about effective farming or land management methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. How easily a new practice fits with my current farming methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The need to learn new skills or methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Lack of government funds for cost share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Too much time required for implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Not having the equipment that I need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Capacity



Grant recipient

- Resources leveraged by grant recipient

For target audience

- Funding available to support NPS practices in critical areas
- Technical support available for NPS practices in critical areas
- Ability to monitor practices in critical areas

Behavior

- Percentage of critical area receiving treatment
- Percentage of target audience implementing practices in critical areas
- Ordinances in place that will reduce NPS stressors

Percentage of Target Audience Implementing Practices in Critical Areas

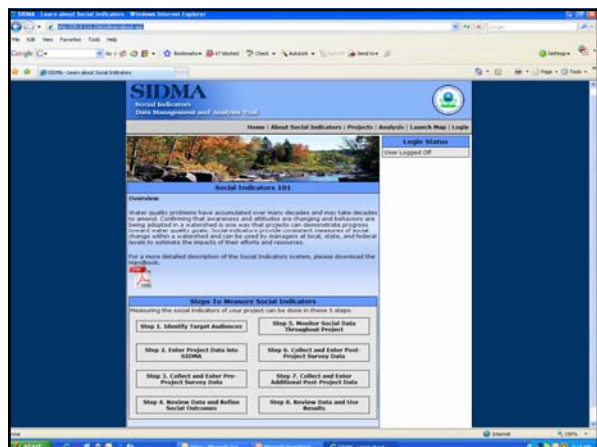
The practices below have the potential to improve water quality in your area. Please indicate which statement most accurately describes your level of experience with each practice. Be sure to answer part "A" and part "B" for this set of practices.

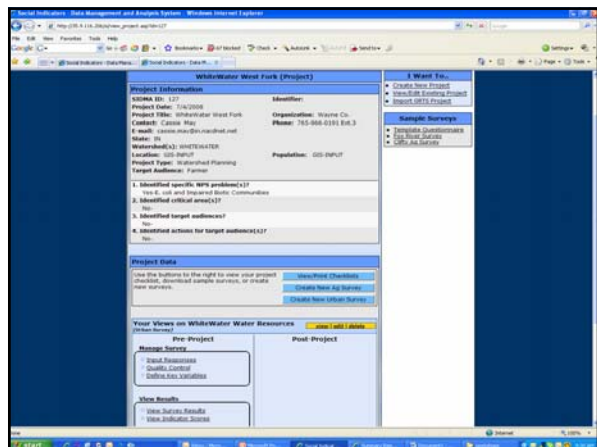
Please answer Section A and B for all practices

	A. Please indicate which statement most accurately describes your level of experience with each practice.					B. How often do you use this practice?
	Does not apply	I've never heard of it	I've heard of it but I'm not very familiar with it	I am familiar with it, but I've never done it	I have tried it, but I am having trouble doing it	
A. Using grass waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
B. Managing site drainage to control the flow of runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
C. Using no-tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
D. Using reduced tillage farm practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
E. Using Integrated Pest Management (IPM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

SI Planning and Evaluation Process







SDMAS: Social Indicators Data Management and Analysis System - Windows Internet Explorer

File Edit View Favorites Tools Help

Google Custom Search

SDMAS: Social Indicators Data Management and Analysis System

Home About Social Indicators Projects Analysis Launch Map Logout

Survey Builder

Survey Information:

Survey Title:

Select the components you want to include in the survey by placing a checkmark next to desired items.
(Name, carbon footprint, energy and infrastructure are required and are therefore pre-selected)
Health and infrastructure should be selected if the survey is to be displayed in line.
(These instructions will not be included in the final survey.)

☒ Name
☒ Carbon Footprint
☒ Energy
☒ Health
☐ Infrastructure

Project Operations

- Create New Project
- Download Existing Project
- Project ID/CA Project

[Launch Analysis](#)

Rating of Water Quality

All questions required.

This question is required for the following categories: Excellent, Good, Fair and Poor. For the survey system, this question is required for the following categories: Excellent, Good, Fair and Poor. For the survey system, this question is required for the following categories: Excellent, Good, Fair and Poor. For the survey system, this question is required for the following categories: Excellent, Good, Fair and Poor.

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

	Poor	Fair	Good	Excellent
<input type="checkbox"/> Is the swimming / boating / other boating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Is the bathing / fish caught in the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Is the swimming / fish caught in the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Is the swimming / fish caught in the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Is the swimming / fish caught in the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Your Water Resources

All questions required.

The Rating of Water Quality question asks respondents thinking about the issue and is required in the survey. It will also give you some basic information regarding how flexible your target audience is with the basic colour of a watershed and how flexible they may be about your particular watershed.

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

Water Impairments

Impacts identified, select options released to your waterbody.

This question provides a measure of your target audience's awareness about water impairments. This question is required, but the options within it are customizable for your waterbody. Select an option from the list of water quality parameters (12) and select the water uses (1-12) that may be impacted. Please keep in mind that each field is an impairment that you are planning to address through your permit. In some cases, the impairment options may not fit the conditions that you are seeing in your waterbody. If this is the case, select the options that most clearly match the requirements to your waterbody, and refer to section 3.6 on the Impairment for Interim Action.

Note: A list of water pollutants and pollutants that are present across a water body to give context, the problems and conditions become a problem when present in excessive amounts. If you select, how much of a problem are the following water impairments in your water? (0=none)

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Very Severe Problem
1. Sedimentation/Silt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Nitrate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Nitrogen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Phosphorus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Copper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Lead	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Toxic Metals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Salt/Nutrients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Oil and grease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. PCBs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Toxic Material	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Other Impurities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. Drinking Water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Agriculture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Fisheries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Irrigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Aquatic Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Shellfish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Fish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Other Aquatic Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

General Information Data Management and Analysis Systems Worksheet 1/2019

File Help Data & Info Data Management & Analysis Systems Worksheet 1/2019

Rating of Water Quality

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

	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Mean (SD)
1. For swimming / sunbathing / other recreation	100.0	0.0	0.0	0.0	0.0	3.00 (0.00)
2. For fishing for caught in the water	99.9	100.0	0.0	0.0	0.0	3.00 (0.00)
3. For swimming	9.0	50.0	50.0	0.0	0.0	2.29 (0.75)
4. For paddling and float activities	9.0	10.0	10.0	100.0	0.0	2.00 (0.82)
5. For fish habitat	0.0	0.0	100.0	0.0	0.0	2.00 (0.00)
6. For aquatic insects	0.0	100.0	0.0	0.0	0.0	2.00 (0.00)

Your Water Resources

1. Of these activities, which is the most important to you? (2=1)

- 1.0000 Swimming / sunbathing / other recreation
- 0.00 Fishing for caught in the water
- 0.00 Swimming
- 0.00 Paddling and float activities near water
- 0.00 Fish habitat / fishing
- 0.00 Aquatic insects / environment

2. Do you know where the water goes when it runs off your property? (2=1)

- 0.00 Yes
- 1.0000 Yes, it goes to (2=1/2, 3=2/3, 4=3/4, 5=4/5, 6=5/6, 7=6/7, 8=7/8, 9=8/9, 10=9/10)

Your Opinions

Please indicate your level of agreement or disagreement with the statements below.

	Strongly Disagree (1)	Disagree (2)	Neutral / Agree (3)	Agree (4)	Strongly Agree (5)	Mean (SD)
1. The economic viability of environmental demands upon land	100.0	0.0	0.0	0.0	0.0	2.00 (0.00)
2. Environmental management practices on farms improve water quality	0.0	0.0	0.0	0.0	0.0	3.00 (0.00)
3. In the current circumstances it is	0.0	0.0	0.0	0.0	0.0	2.00 (0.00)

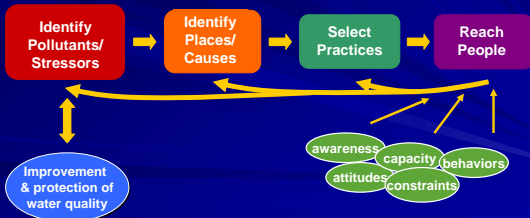
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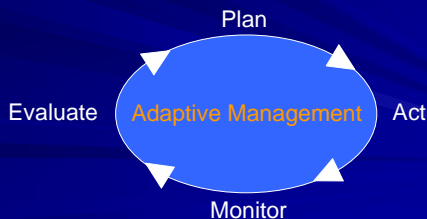
Using Social Indicators

- Identify social outcomes that will achieve project and watershed goals



Using Social Indicators

- Monitor impacts of outreach activities
- Feed evaluation data back into decision-making processes



Social Indicators Team

Team Co-Leaders:

Ken Genskow, UW-Madison/UW-Extension
Linda Prokopy, Purdue University

Current Team Members:

Jeremiah Asher, Michigan State University
Adam Baumgart-Getz, Purdue University
Joe Bonnell, The Ohio State University
Cyd Curtis, EPA Region V
Karlyn Eckman, University of Minnesota
Kristin Floress, University of Wisconsin, Stevens Point
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Rachel Walker, University of Minnesota
Danielle Wood, University of Wisconsin

Acknowledgements

- USEPA Region 5
- Illinois Environmental Protection Agency
- Indiana Department of Environmental Management
- Michigan Department of Environmental Quality
- Minnesota Pollution Control Agency
- Ohio Environmental Protection Agency
- Wisconsin Department of Natural Resources
- Great Lakes Regional Water Program
- Land Grant Universities in USEPA Region 5
