

Developing Social Indicators for NPS Programs in the Great Lakes Region

Presented by:

Ken Genskow

University of Wisconsin

Representing a collaborative project of the CSREES Great Lakes Regional
Water Quality Program, EPA Region 5, and the Region 5 states

USDA-CSREES National Water Quality Conference, 2007

Our Charge

- Develop a system for collecting and using social data to evaluate NPS management efforts
 - regional, state, and project levels
 - indicators, measures, and data collection and analysis methodologies
 - web-based data management system compatible with existing regional and state systems
 - Integrate with environmental & administrative indicators
- Provide assistance & support

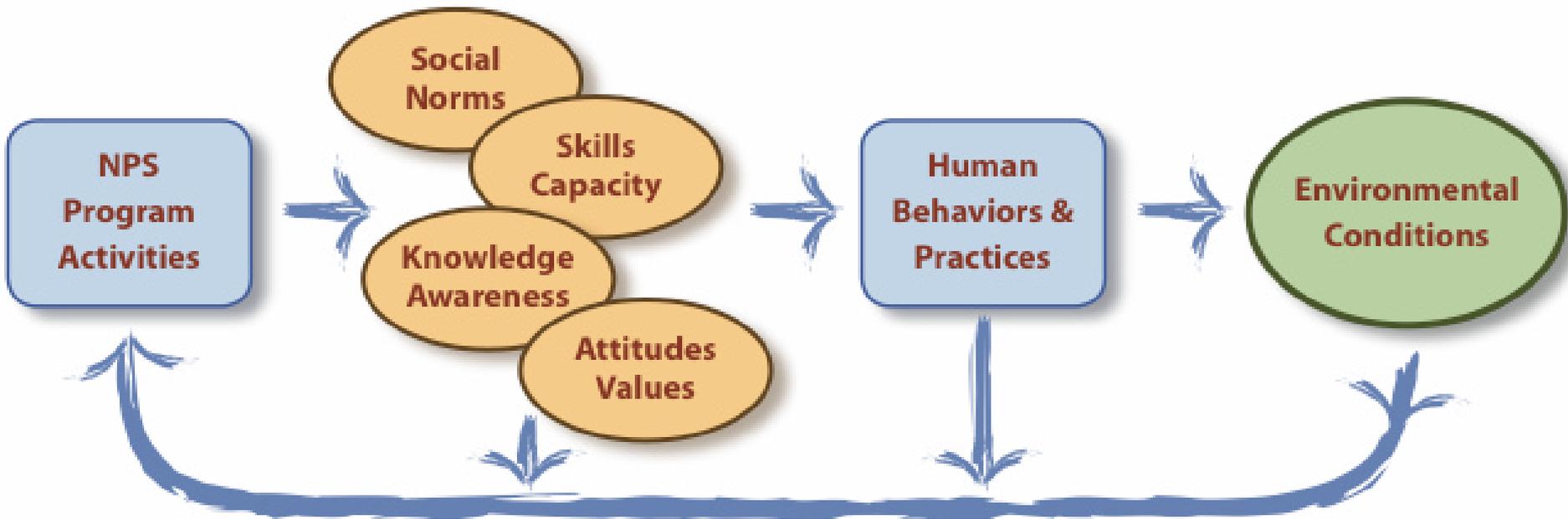
Project Drivers

- Shift toward outcome-based evaluation
- Dissatisfaction with existing measures
 - Inputs/outputs (administrative)
 - Un-responsive long-term impacts (environmental)
- Interest in interim measures of social change
- Regional collaborations: USEPA, Great Lakes RWP

Opportunities

- Build relationships
 - USEPA Region 5 NPS Program/Region 5 states
 - CSREES Great Lakes Regional Water Program
 - Local projects
- Develop capacity for state & local projects
- Explore appropriate evaluation approaches
- Improve project performance

Social Component



Using Social Indicators

- NPS projects in USEPA Region 5
- Indicators collected pre- and post-project
 - Surveys
 - Record review
 - Focus/discussion groups
- Online Social Indicator Data Management and Analysis (SIDMA) system

EPA Watershed Planning & Implementation Process

i Build Partnerships

- Identify and engage key stakeholders.
- Identify and agree upon issues of concern.
- Set preliminary goals.
- Conduct public outreach.
- *Involve stakeholders in meaningful ways throughout the planning and implementation process.*

ii Characterize the Watershed

- Gather existing; create a watershed inventory.
- Identify gaps; collect additional information as needed.
- Analyze environmental and social data.
- *Develop and agree on ecological and social models.*
- Identify causes and sources of pollution. (a.)
- Estimate pollutant loads.

iii Finalize Goals and Identify Solutions

- Set overall goals and management objectives.
- Develop indicators/targets.
- Determine load reductions needed. (b.)
- Identify critical areas.
- *Define target audience.*
- *Determine behavior changes needed.*
- Develop management measures to achieve goals. (c.)
- *Check each task for consistency with new information and conditions.*

iv Design an Implementation Program

- Develop technical and financial assistance strategy needed to implement plan. (d.)
- Design an information/education component. (e.)
- Develop implementation schedule, including interim milestones to track implementation of management measures. (f. & g.)
- Select criteria to measure progress toward meeting watershed goals. (h.)
- Develop a monitoring component and an evaluation process. (i.)
- Compile into a written plan.
- Assign responsibility for reviewing and revising the plan.

v Implement Watershed Plan

- Develop management strategies.
- Conduct monitoring.
- Conduct information/education activities.
- *Evaluate efforts in mid-project and use results to make mid-course corrections.*

vi Measure Progress and Make Adjustments

- Review and evaluate information.
- Share results.
- Prepare annual workplans.
- Report results to stakeholders and others.
- *Make adjustments to program.*

Steps for Using Social Indicators in NPS Evaluation

Social Indicators Preparatory Review

SI Step 1:
Collect beginning-of-project data

SI Step 2:
Analyze social data and refine social outcomes

Note:
Planning projects would stop after Step 2. All other projects would continue with Steps 3-5.

SI Step 3:
Monitor social data throughout project

SI Step 4:
Collect end-of-project data

SI Step 5:
Analyze data and use results

Core Social Indicators

- Four categories/goals, 13 indicators
 - Awareness
 - Attitudes
 - Capacity
 - Behavior
- Additional contextual data
 - will expand with optional indicators

Awareness

- Awareness of pollutants impairing waterways
- Awareness of consequences of pollutants to water quality
- Awareness of appropriate practices to improve water quality

Attitudes

- General water-quality-related attitudes
- Willingness to take action to improve water quality
- Constraints to behavior change

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

SIDMA Interface

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

http://35.9.116.207/si/index.asp

File Edit View Favorites Tools Help

Google C Go Bookmarks 95 blocked Check AutoLink AutoFill Settings

SitePlot Reseller ... http://www.nort... Social Indicat... x Microsoft Outloo...



SIDMA
Social Indicators
Data Management and Analysis System



Home | Admin Panel | Project Data | Data Collection Tools | Statistical Tools | Launch Map



Using Social Indicators as a Measure for Water Quality Improvement

The Social Indicators Data Management and Analysis (SIDMA) system is a tool to organize, analyze, and visualize social indicators related to water quality improvements through spatial relationships. The SIDMA system will be designed as a web-based application with different access privileges to different parts of the system. It will be divided into three major components 1) web interface, 2) SQL database, and 3) analysis tools.

The web interface provides the front end access to different tools and components of the system and ties each of the main components together seamlessly.

The SQL database houses the social indicators selected from the Delphi process. State's 319 offices, local watershed groups, and regional level users utilize input forms for editing, scoring, weighting or ranking, and adding new indicators. Documents and data for social indicators are structured using XML for standardization and easy exchange of information.

The analysis tools includes a mapping interface with GIS functions, download capabilities, charts, graphs, and tables. The tools will assist in developing summaries and simple statistical analyses, along with viewing extensive comparisons at various scales over time.

Map Application

The map application provides access to regional and site specific geographic information. If you are not familiar with using a WebGIS we recommend using the tutorial before proceeding.

Launch WebGIS

Login

Login:

Password:

Enter

Institute of Water Research, All rights reserved 2006

Project Data

Project Data Menu

- Create New Project
 - Contact Information
 - Project Type
 - Target Audience
 - Collect Spatial Information
- Edit Existing Project
 - Modify project data
 - Create surveys
 - Enter survey results

The screenshot displays the SIDMA (Social Indicators Data Management and Analysis System) web interface. The browser window title is "Social Indicators - Data Management and Analysis System - Windows Internet Explorer". The address bar shows the URL "http://35.9.116.207/s/newproj_input.asp". The page features a navigation menu with links for Home, Admin Panel, Project Data, Data Collection Tools, Statistical Tools, and Launch Map. The main content area is titled "Data Entry Form for Project Information" and is divided into several sections:

- Project Information:** Includes fields for Title (Jones River Watershed), Identifier (4585-39369), Organization (Jones River Group), State (MI), and Category (Knowledge/Awareness).
- Contact Information:** Includes fields for First Name (John), Last Name (Smith), and Phone (517-969-5693).
- Project Type:** Includes checkboxes for Watershed Planning, TMDL Implementation, Outreach, and Training.
- Target Audience:** Includes checkboxes for Farmer and Non-Farmer.
- Project Goals:** Includes checkboxes for Increase awareness of target population, Attitude change or maintenance in population, Increase capacity to address NPS management issues in project area, and Increase behavior/adoption among target population.

On the right side of the form, there is a "Project Operations" section with links for "Create New Project" and "Edit Existing Project", and a "Login" section with fields for "Login:" and "Password:" and an "Enter" button. A "Save Project Form" button is located at the bottom right of the form.

Survey Builder

Survey Builder

- Uses identified goals
- Generates questions

The screenshot displays the Social IndiGoalsers web application in a Windows Internet Explorer browser. The browser's address bar shows the URL <http://35.9.116.207/s/selected.asp?projid=19>. The application header features the logo for SIDMA (Social Indicators Data Management and Analysis System) and a navigation menu with links for Home, Admin Panel, Project Data, Data Collection Tools, Statistical Tools, and Launch Map. The main content area is titled "Build a Survey" and displays the following information:

Goal: Attitude maintenance or change in target population.

Outcome: Attitudes changed in a way that is expected to facilitate desired behavior change of target audience in the critical area.

Indicator: General Water Quality related attitudes

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

For Farmers:

- Most people who I know believe good stewardship of water resources is important
- Most people who I know are not concerned with water quality
- How my neighbors care for their property influences how I take care of mine
- The stability of my community depends upon good water quality.
- It is important to protect water quality even if it affects agricultural operations
- It is important to protect water quality even if it means sacrificing economic development
- It is my personal responsibility to help safeguard water quality
- How I treat my land doesn't make much difference in overall water quality
- The time of year that I apply fertilizer to my farm fields impacts water quality
- The amount of fertilizer that I use on my farm fields impacts water quality

At the bottom of the page, the text "Taking action to improve water quality is too expensive for an" is partially visible.

Interface Layout

Map Tools

Map Layers

Information Window

The screenshot shows a web browser window titled "Social Indicators for EPA Region V - Windows Internet Explorer". The address bar displays "http://35.8.121.114/website/social/viewer.htm". The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The address bar contains a "Google" search engine. The browser's toolbar includes "Go", "Bookmarks", "Popups okay", "Check", "AutoLink", "Send to", and "Settings". The browser's status bar shows "Done" and "Internet" with a "100%" zoom level.

The main content area is titled "SIDMA - Mapping Interface". It features a map of EPA Region V (Minnesota, Wisconsin, Illinois, Indiana, and Ohio) with county boundaries. A red box highlights a portion of the map in the upper left corner. To the left of the map is a vertical toolbar with various navigation and map control icons. To the right of the map is a "Layers" panel with a "Visible Active" section. The "Layers" panel includes the following items:

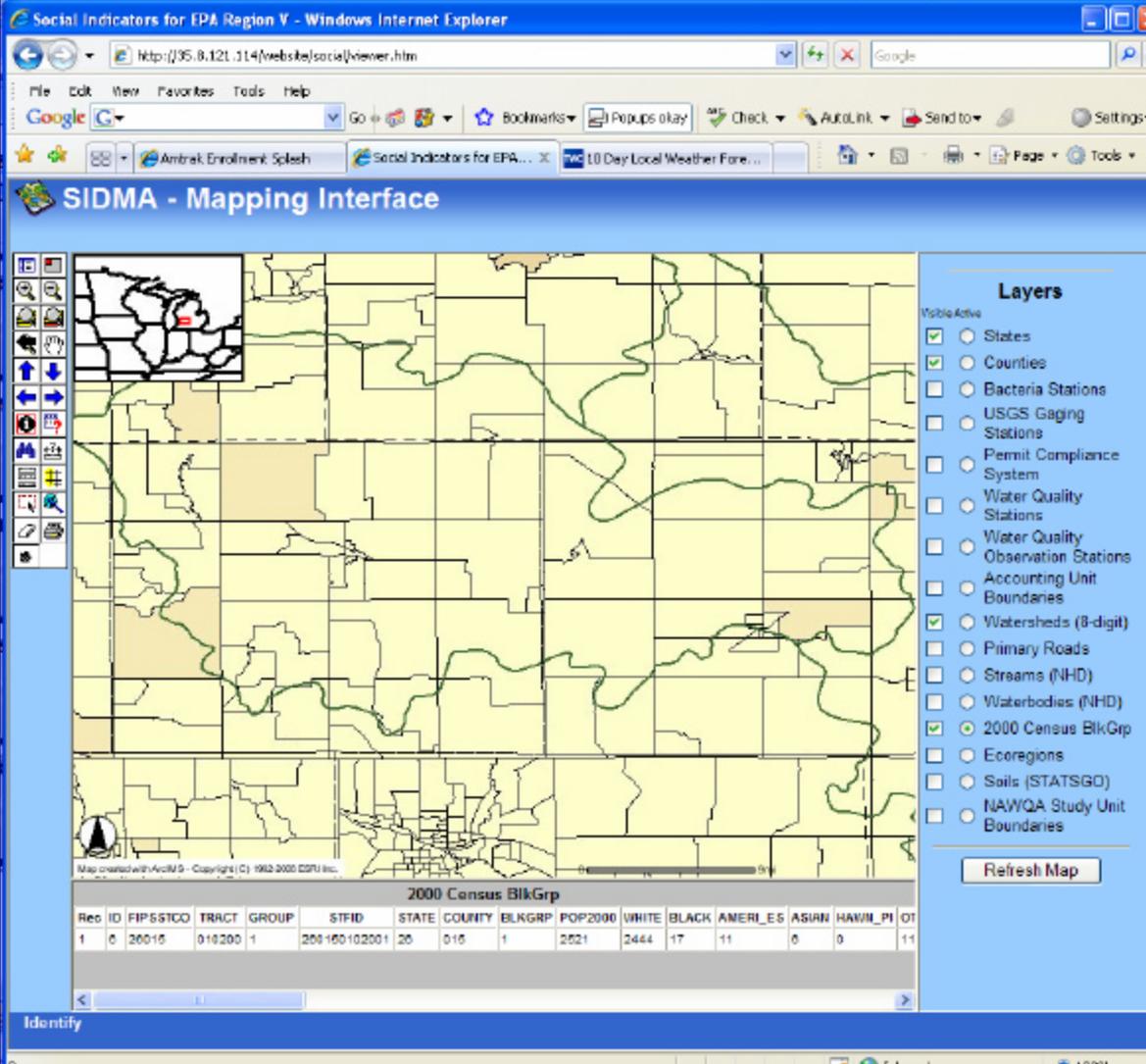
- States (EPA Region V)
- Counties (EPA Region V)
- Bacteria Stations
- USGS Gaging Stations
- Permit Compliance System
- Water Quality Stations
- Water Quality Observation Stations
- Accounting Unit Boundaries
- Watersheds (8-digit)
- Ecoregions
- NAWQA Study Unit Boundaries

Below the "Layers" panel is a "Refresh Map" button. At the bottom of the map area, there is a north arrow, a scale bar, and the text "Map created with ArcIMS - Copyright (C) 1996-2006 ESRI Inc." and "0 200km". The status bar at the bottom of the browser window shows "Zoom In" and "Done".

Extracting Census Information

2000 Census Blk Grp

- Identifies demographic groups within a watershed
- Census information can be aggregated by watershed
- Data can be downloaded to be analyzed on a local machine



Screenshot of a web browser displaying the "Social Indicators for EPA Region V - Windows Internet Explorer" window. The browser shows the URL "http://95.8.121.114/webste/socialviewer.htm". The page title is "SIDMA - Mapping Interface". The main content is a map showing a watershed boundary and various layers. A table at the bottom displays the "2000 Census BlkGrp" data for a specific area.

Reg ID	FIP5STCO	TRACT	GROUP	STFID	STATE	COUNTY	BLKGRP	POP2000	WHITE	BLACK	AMER_LES	ASIAN	HAWN_PI	OT	
1	0	20015	010200	1	200100102001	20	010	1	2021	2444	17	11	0	0	11

Development Process & Timeline

- Form team & clarify objectives - 2005
Research, discussions with stakeholders
- Develop initial indicators - 2005 & 2006
Workshops and web-based feedback
- Develop draft handbook & support system - 2006
- Refine system and tools - 2007
Feedback and testing; SIDMA development
- Release for use Feb 2008
- Guidance and support - 2008 →

Issues

- Implementation challenges
 - Costs
 - Ease of use
 - Ability to support over long term
- Emphasis on critical areas
- Project responsiveness to baseline data
- Additional research and application

Project Collaborators

- CSREES Great Lakes Regional Water Quality Leadership Team
- US EPA Region 5 NPS staff
- Region 5 State Nonpoint Source Coordinators
- Land Grant Institutions Team:

Ken Genskow, Univ of Wisconsin
Linda Prokopy, Purdue Univ
Rebecca Power, UW-Extension
Karyn McDermaid, Univ of Illinois
Joe Bonnell, Ohio State Univ
Shorna Broussard, Purdue Univ

David White, Univ of Illinois
Jeremiah Asher, Michigan State
Karlyn Eckman, Univ of Minnesota
Kristen Floress, Purdue Univ
Adam Baumgart-Getz, Purdue
Jerry Long, Univ of Wisconsin

<http://www.uwex.edu/ces/regionalwaterquality/>