Aaron Thompson, PhD
Assistant Professor & Land Use Specialist,
College of Natural Resources
University of Wisconsin - Stevens Point

The evolving science of watershed planning, addressing the need to understand social context

My goals:

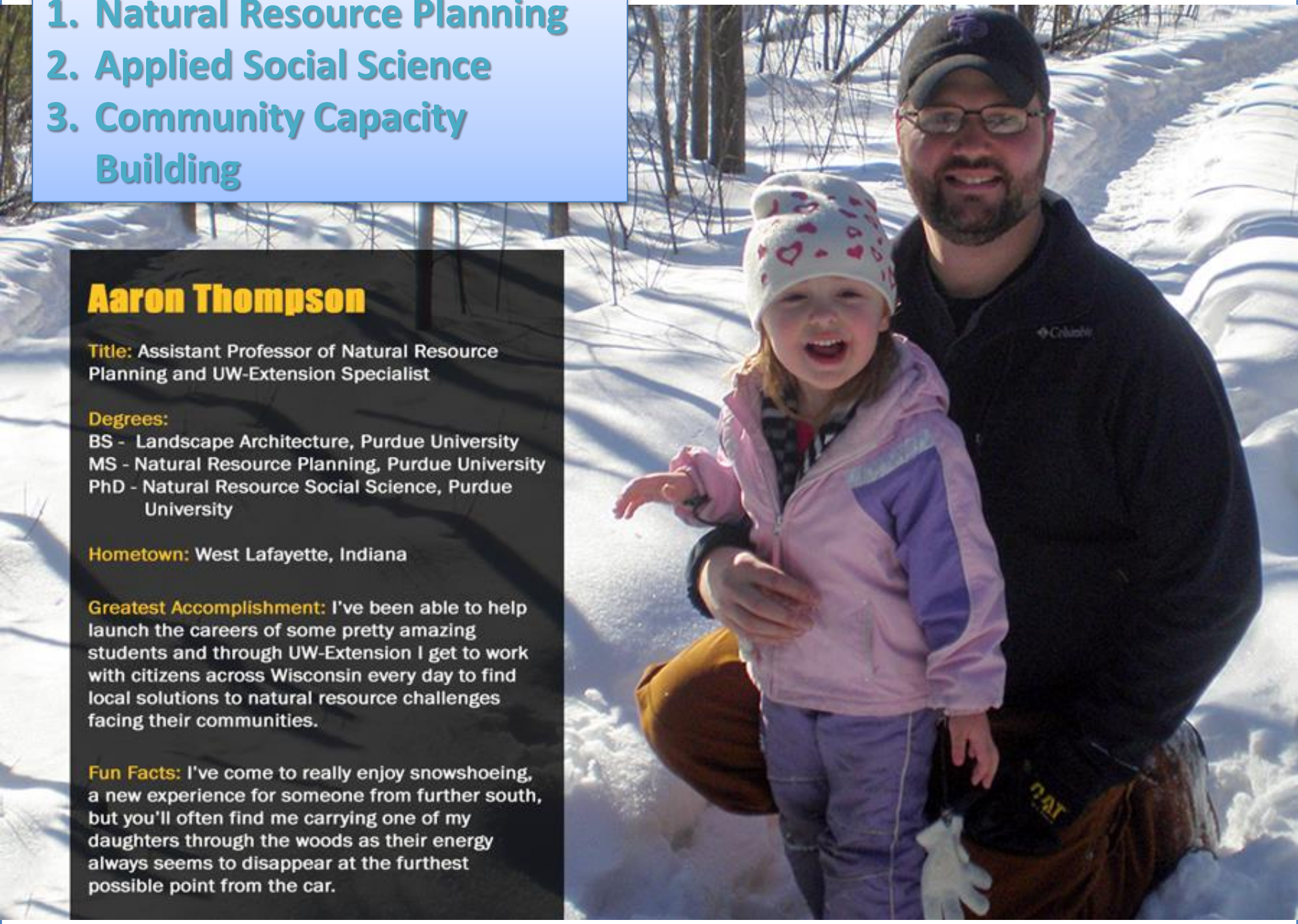
- **Introduce Community Capacity**
- **Provide Framework & Examples for Applied Social Science in Watershed Projects**

BUILDING CAPACITY

Center for Land Use Education
College of Natural Resources
University of Wisconsin-Stevens Point

UW Extension
University of Wisconsin-Extension

1. Natural Resource Planning
2. Applied Social Science
3. Community Capacity Building



Aaron Thompson

Title: Assistant Professor of Natural Resource Planning and UW-Extension Specialist

Degrees:
BS - Landscape Architecture, Purdue University
MS - Natural Resource Planning, Purdue University
PhD - Natural Resource Social Science, Purdue University

Hometown: West Lafayette, Indiana

Greatest Accomplishment: I've been able to help launch the careers of some pretty amazing students and through UW-Extension I get to work with citizens across Wisconsin every day to find local solutions to natural resource challenges facing their communities.

Fun Facts: I've come to really enjoy snowshoeing, a new experience for someone from further south, but you'll often find me carrying one of my daughters through the woods as their energy always seems to disappear at the furthest possible point from the car.

Natural Resource Planning

College of Natural Resources

Imagine your future

Natural resource planning students find careers in sustainable solutions

A love of the outdoors and a passion for connecting people with the natural resources around them has inspired Star Prairie native Bailey Matthys throughout her studies at the University of Wisconsin-Stevens Point.

As a senior in the natural resource planning option, she has the opportunity to make those connections for communities, city planning units, farmers, land owners, land trusts and nonprofit environmental organizations. She's done so as a student and looks forward to continuing those connections when she ventures into the job market after graduating in May.

"I enjoy the shared excitement and sense of community when you work with people who care about natural resources," she said.

UW-Stevens Point offers one of the few natural resource planning

UWSP College of Natural Resources is widely regarded as the nation's leading undergraduate natural resource program.

- *More than 10,000 alumni*
- *Over 1900 undergraduate majors and 180 faculty and staff.*

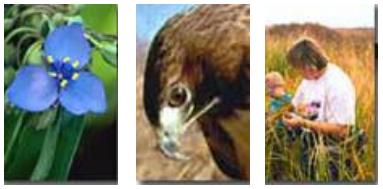
Human Dimensions of Natural Resource Management

UW-Extension: Center for Land Use Education

CLUE creates learning opportunities for communities to help them make sound land use decisions that result in a sustainable Wisconsin.

Resource Management

University of Wisconsin-Stevens Point
College of Natural Resources



INTRODUCTION:
Natural Resource Planning & Social Science

Research & Engagement

- Applied social science research to inform community initiatives addressing sustainability, conservation, and development challenges.

PLANNING: ACTIVE DECISION MAKING

Making Firm Commitments of Resources

PLANNING: COMMUNITY DIALOGUE

Coalition (Capacity) Building

Google Wisconsin conflict water quality

River Ne

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DNR officials, staff disagree over shoreland rule

Wolf population marching ever upward

Richard Moore
Investigative Reporter

The New York Times

Gunman Kills 4 Marines at Military Site in Chattanooga

Chattanooga Gunman Mohammod Youssuf Abdulazeez: 'Life Is Short and Bitter'

Chattanooga Mosque Where Worshiped Mourns Marines

CHRYSLER

CHECK CLASS-LEAI OF CHRYSL

U.S.

Conflict Over Soil and Water Quality Puts 'Iowa Nice' to a Test

Politics

Panel says lawmakers — not regulators — will have final say over dam

Wisconsin Department of Natural Resources

Republican lawmakers have added a provision to the state budget that would require legislators, not Department of Natural Resources regulators, to decide whether new water levels can be set at sites like the Rest Lake dam in the Town of Manitowish Waters.

By Lee Bergquist of the Journal Sentinel

June 13, 2015

So why is it time to leverage social science as part of watershed planning efforts?

greenbaypressgazette.com

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Towns push lawmakers to strip Dane County's land use powers

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March 16, 2015 9:30 am • By Steven Verburg | Wisconsin State Journal (9) Comments

The Wisconsin Towns Association is helping several Dane County towns drum up support for legislation that would strip the state's fastest growing county of its zoning authority

CHRYSLER

Business updated: 2/16/2015 9:32 AM

Water, air quality concerns heighten conflict with pig farms

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Barb Kalbach stands near a hog confinement facility, near Orient, Iowa. Kalbach has fought for more than a decade against the construction of huge hog operations, and has joined Iowa Citizens for Community Improvement, a nonprofit that's against such enterprises because members believe they are ruining Iowa's waterways.

Associated Press

By David Pitt
Associated Press

not air balloon flight!

608.577.9606 | flygentlebreezes.net

FLIR

Offutt defends his company's land stewardship

By Mikkel Pates / Forum News Service on Jun 22, 2015 at 5:45 a.m.

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So why is it time to leverage social science as part of watershed planning efforts?

-Same reason we want the best biological, chemical, & physical science to inform our efforts

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DNR says peak time for toxic algae bloom

Posted: Jul 10, 2015 3:26 PM CDT
By Kaitlyn Riley CONNECT

Eau Claire (WQOW) - Wisconsin Dep
goers that July and August are peak t

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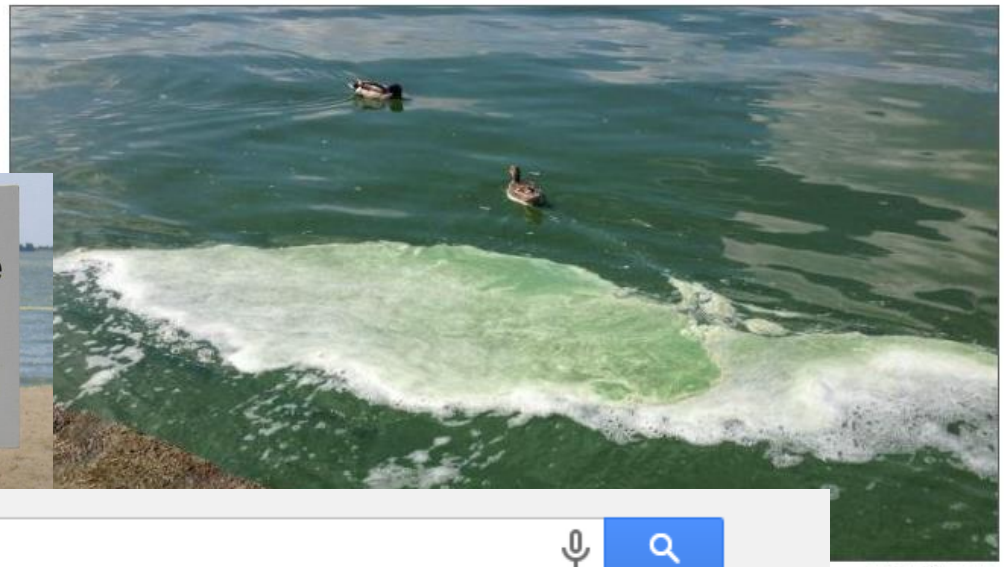
Blue-green algae closes swimming pier at Wisconsin Union

Officials will test water again Tuesday

Published On: Jun 30 2015 07:25:48 AM CDT | Updated On: Jun 30 2015 10:25:45 AM CDT



Adam Schrager

MADISON, Wis. -High levels of blue-green algae have closed a popular swimming spot on Lake Mendota.

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Wisconsin

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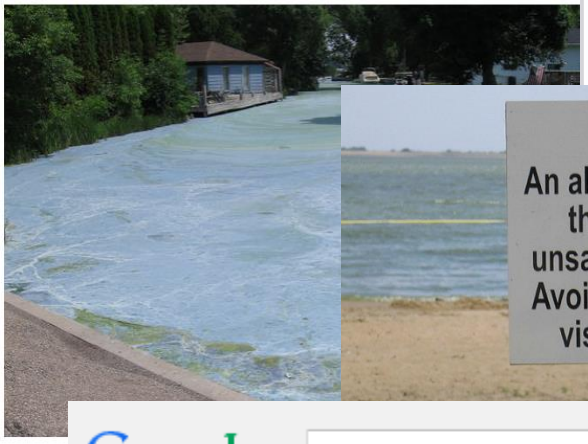
Poison algae that hit Toledo often found in Wisconsi



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decomposi

Google wisconsin lakes with blue green algae

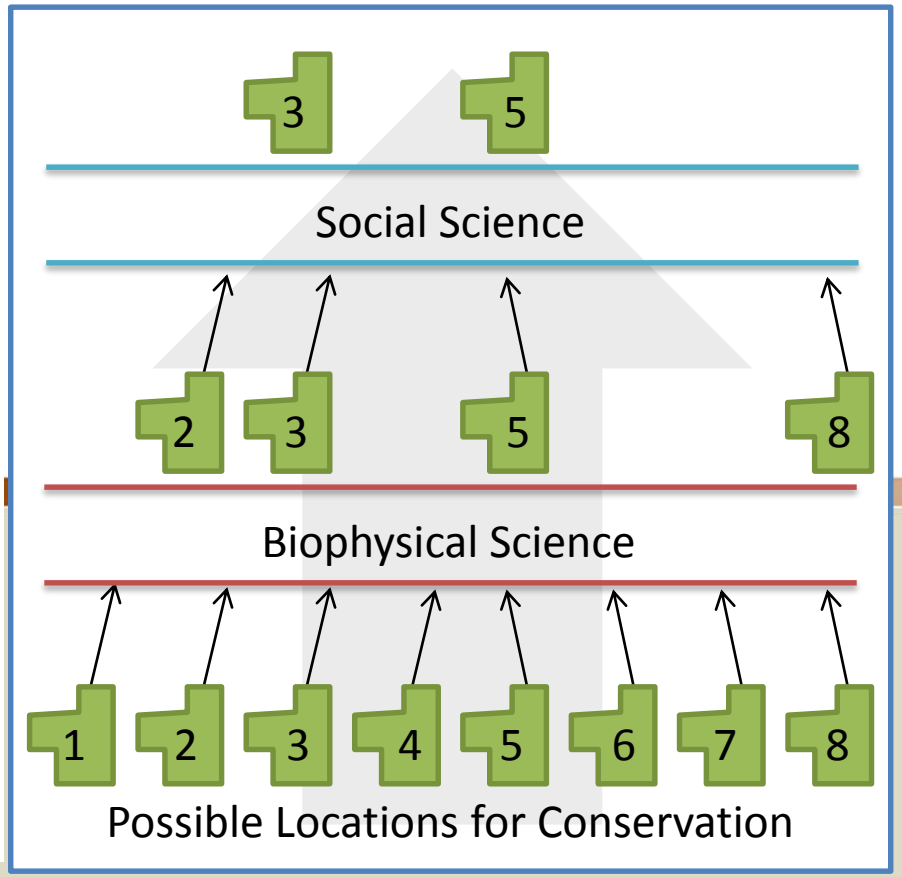
Natural Resource Planning: Applying Social-Ecological Analysis to Support Natural Resource Management Initiatives

on lakes / rivers

water quality

agriculture

NATURAL RESOURCE PLANNING REQUIRES SPATIAL PROBLEM SOLVING



Adapted from Walter et al. (2007)

"A conservation action that is highly desired by some segments of society may be vigorously opposed by other segments." *(Walter et al., 2007)*

Science of Targeting:
Biophysical science provides the foundation for conservation decision making, socioeconomic and political realities determine which actions are actually implemented.

Walter, T., Dosskey, M., Khanna, M., Miller, J., Tomer, M., Wiens, J. (2007). The science of targeting within watersheds to improve conservation effectiveness. In M. Schnept & C. Cox (Eds.) Managing Agricultural Landsacpes for Environmental Quality. (pp. 63-114). Akeny, IA: Soil and Water Conservation Society.

Views of Agriculture:

Understanding farmers attitudes to identify strategies for improving rural landscape planning

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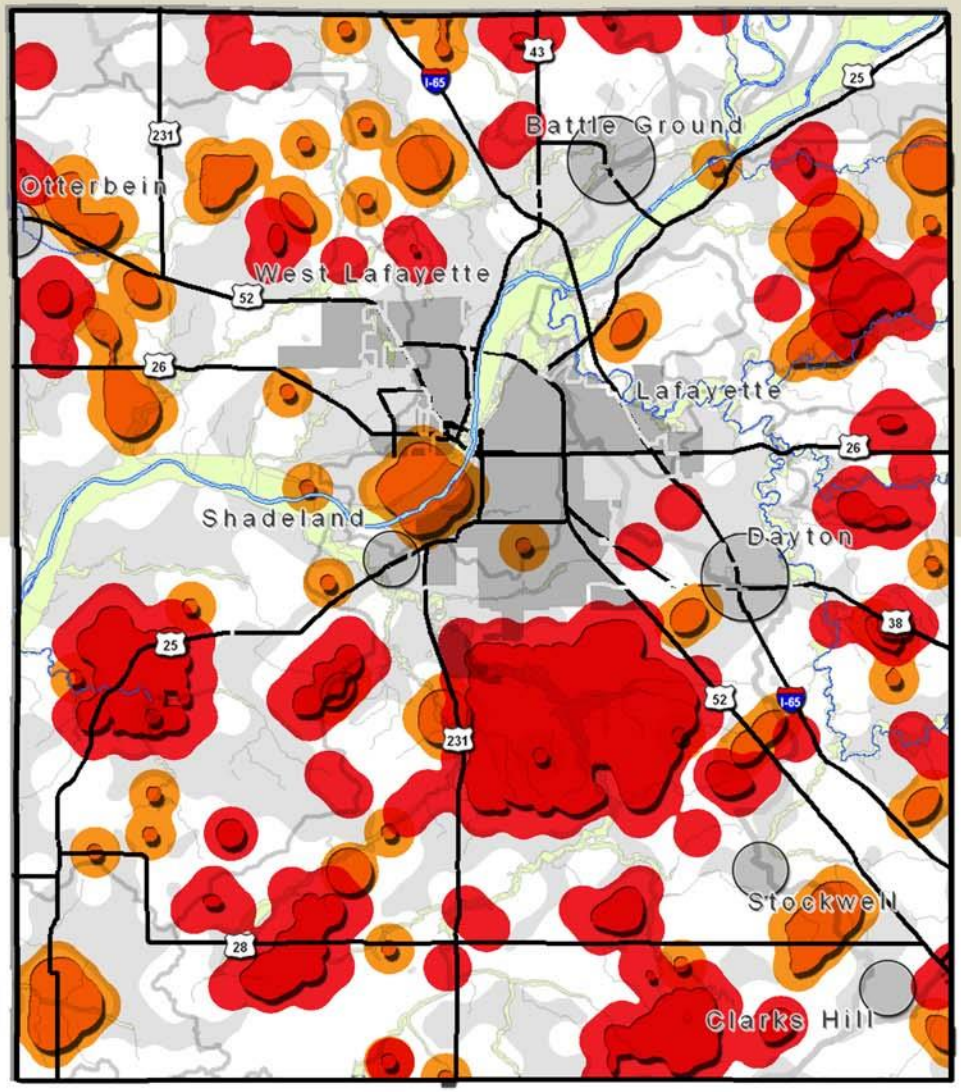
Support for Environmental Outcomes



Tippecanoe County

LEGEND

- Density Estimate for Category
- Upper 50 percent of Distribution -- High Density (Percent Volume Contour)

Least supportive — Most supportive

Continuum of support for Environmental Outcomes

Aaron Thompson
Linda S. Prokopy

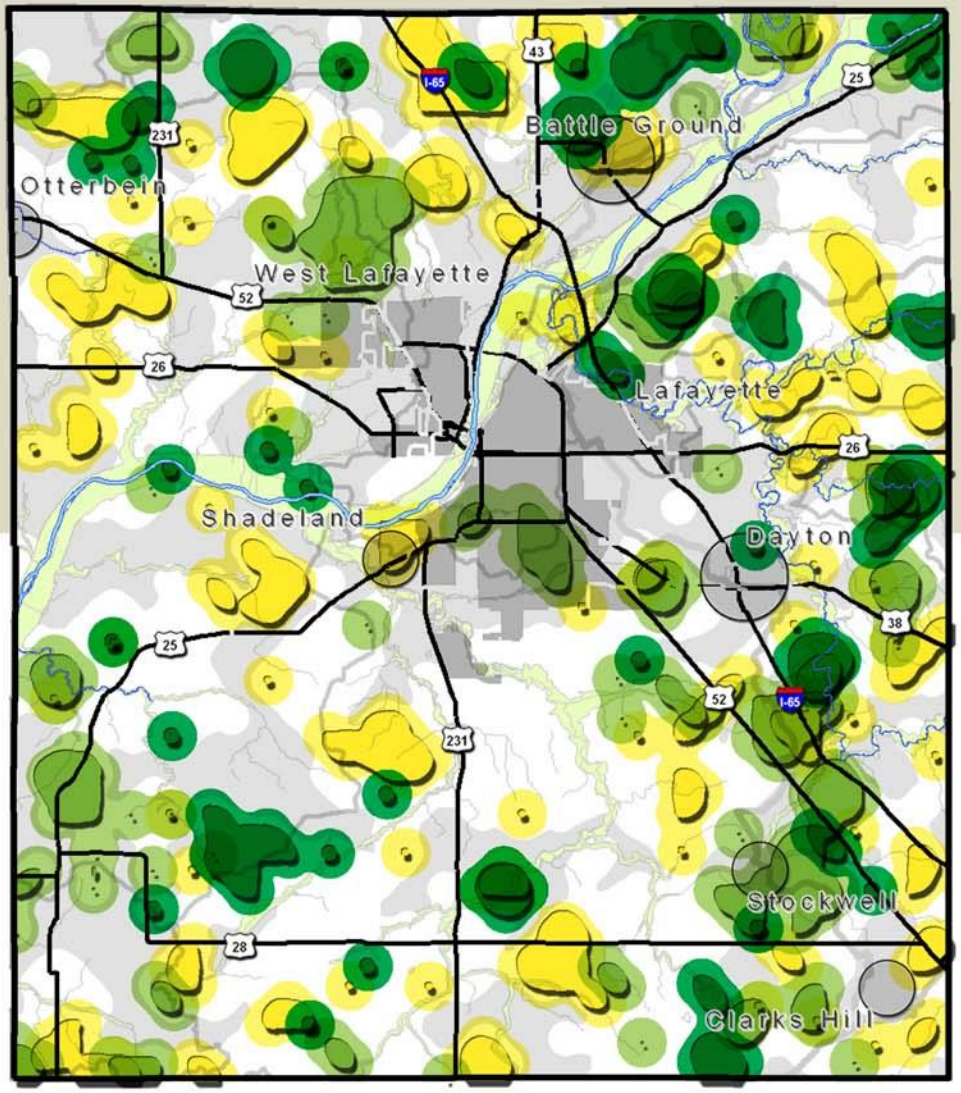
PLUS
Partnering for Land Use Sustainability

Views of Agriculture:

Understanding farmers attitudes to identify strategies for improving rural landscape planning

PURDUE UNIVERSITY

Support for Environmental Outcomes



Tippecanoe County

LEGEND

Density Estimate for Category

Upper 50 percent of Distribution -- High Density (Percent Volume Contour)

Least supportive — Most supportive

Continuum of support for Environmental Outcomes

Aaron Thompson
Linda S. Prokopy

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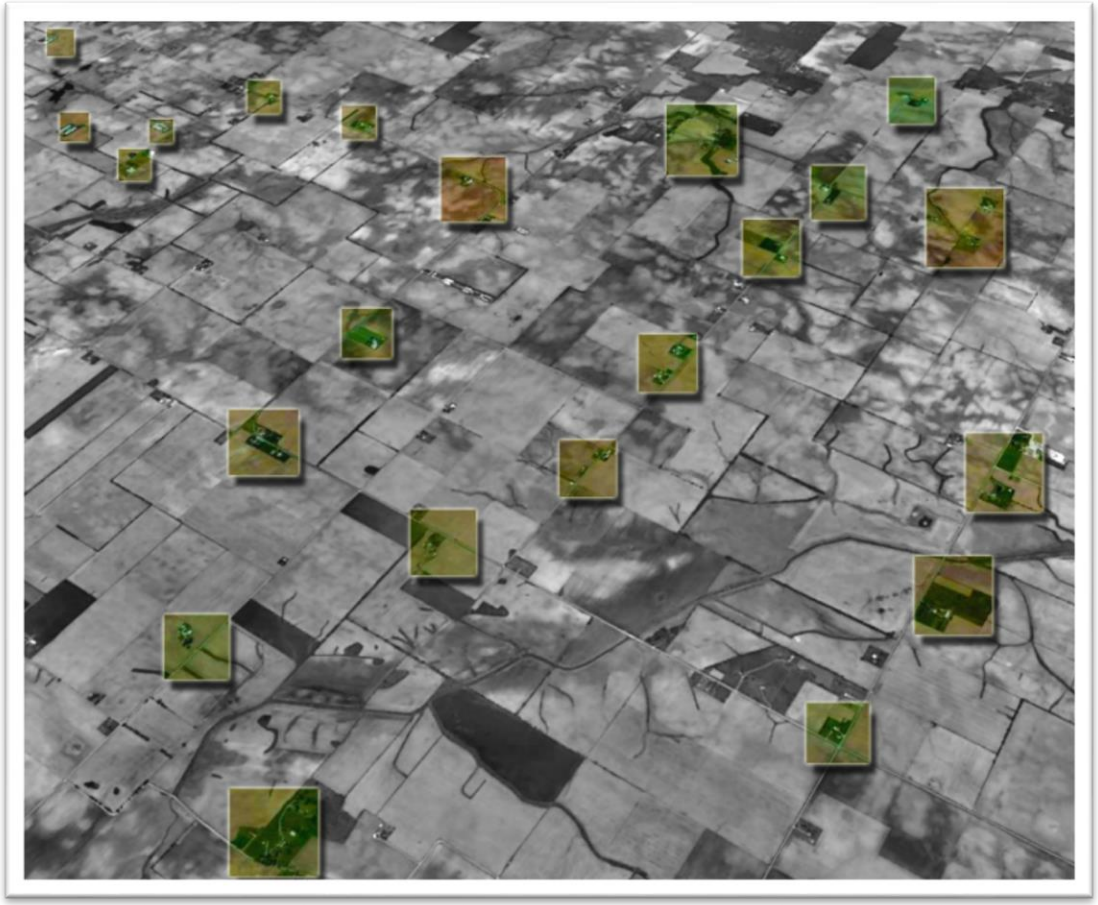
Partnering for Land Use Sustainability

NATURAL RESOURCE PLANNING REQUIRES SOCIAL SCIENCE



What we're often missing --

A. Attitudinal information is critical to implementing natural resource management plans
B. Landowners attitudes are also inherently spatial

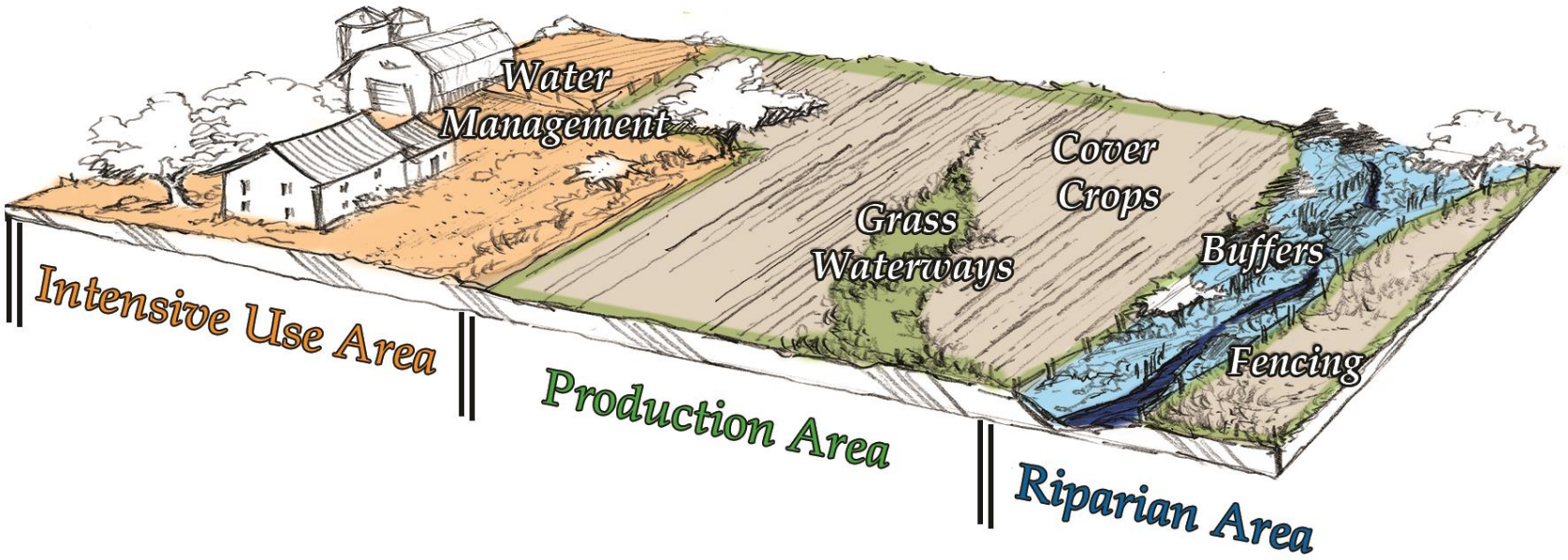
SOCIAL SCIENCE in Watershed Planning

Adoption of Conservation Practices

What motivates farmers to adopt? Or maintain these practices? Informs selection of 'acceptable practices' to target for implementation.

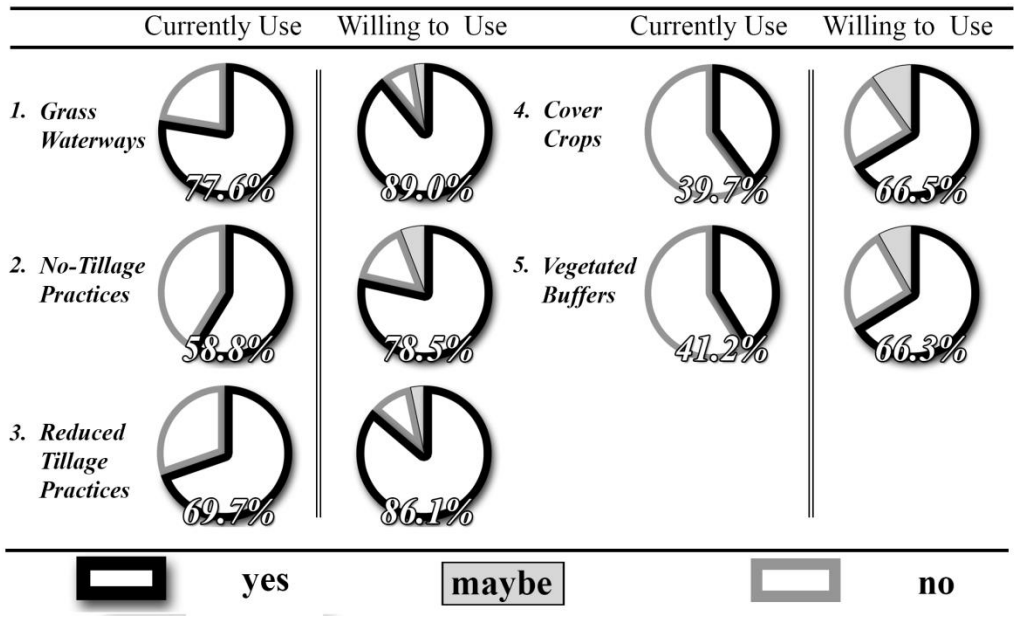
What outcomes are we trying to achieve?

Acceptance of Outcomes



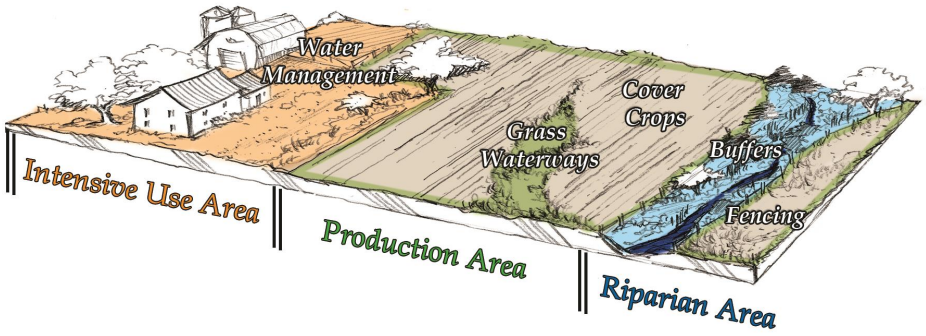
SOCIAL SCIENCE in Watershed Planning

Adoption of Conservation Practices



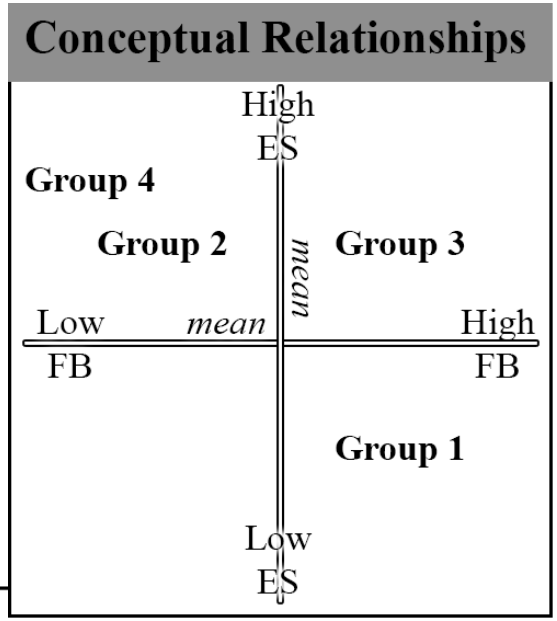
What are individuals doing now? Willing to do in the future?

Acceptance of Outcomes



SOCIAL SCIENCE in Watershed Planning

Adoption of Conservation Practices



What influences willingness?

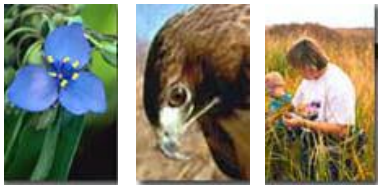
Acceptance of Outcomes

Adoption versus Maintenance

Table 4 Farmer clusters mean response to adoption, attitude, and acreage variables

Group	N	Description	FVE steward	FVE business	Use BMPs	Willing BMPs	DEM: acres
1	37	Low ES, high FB	1.47	3.81	2.41	2.23	691.0
2	77	High ES, low FB	16.18	−3.42	2.71	3.15	357.6
3	45	High ES, high FB	17.92	10.81	2.84	2.83	563.2
4	46	Very high ES, very low FB	22.77	−16.40	2.48	2.78	100.7

Based on pooled values from multiple imputation estimates using pairwise deletion



COLLABORATIVE PLANNING: Social Science Foundation

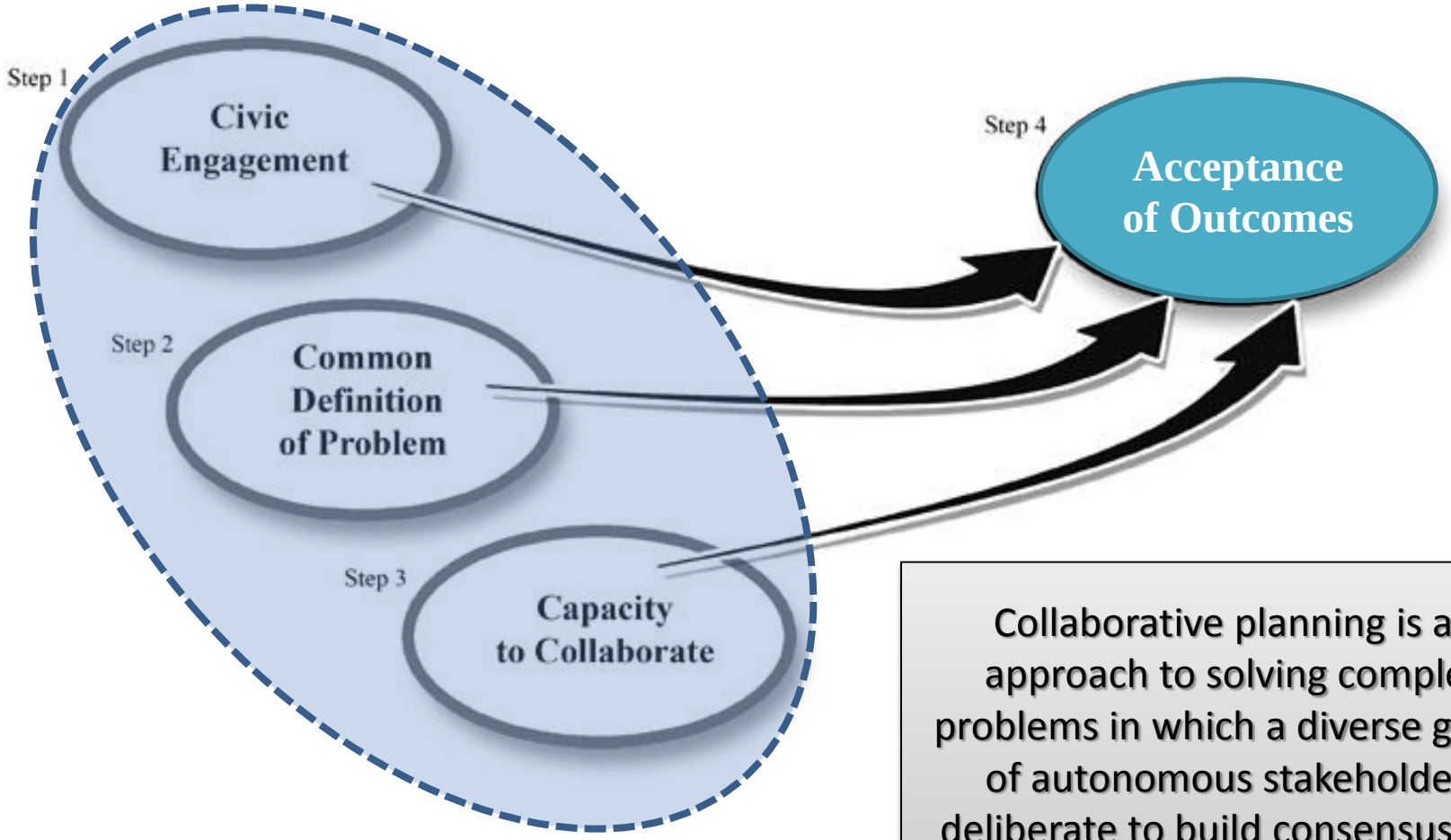
Natural Resource Social Science

- Interdisciplinary approach that is informed by:
  - **Regional Planning**
  - **Social-Psychology**
  - **Sociology**

  - And represents applied research for **Natural Resource Management**

Planning

Making Public (Community) Decisions



Collaborative planning is an approach to solving complex problems in which a diverse group of autonomous stakeholders deliberate to build consensus and develop networks for translating consensus into results. – Margerum (2011)

Social-Psychology

Understanding Factors Driving Individual Behaviors

Conversations frequently begin with "we need to change the behavior of … , maybe we should try … (targeted outreach, farmer-led councils, etc.)"

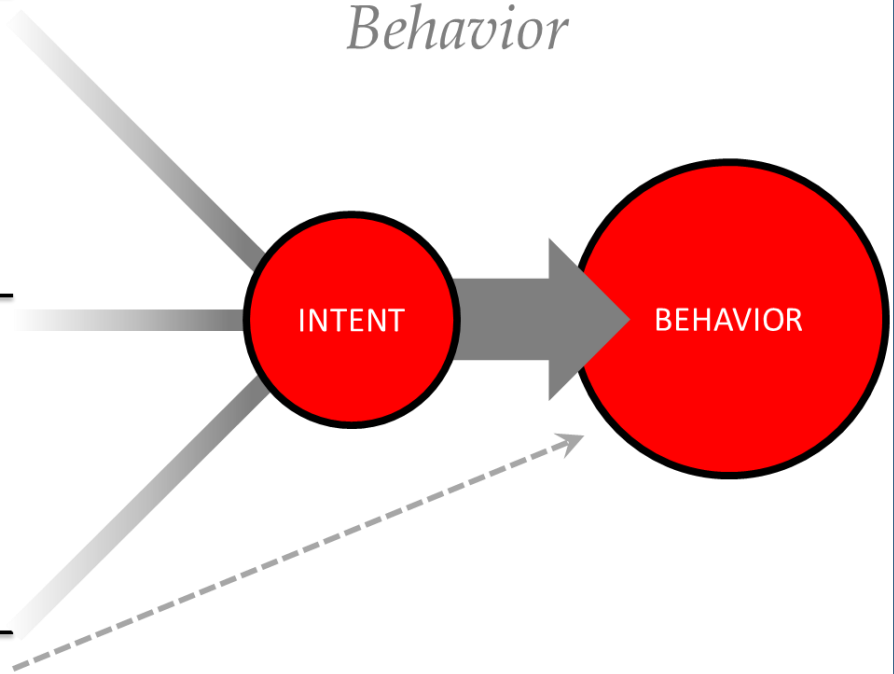
We need better information about what individuals (and communities) will & won't support before jumping to strategies.

Theory of Planned Behavior

Attitudes
Behavioral beliefs x
Outcome Evaluations

Subjective Norms
Normative beliefs x
Motivation to comply

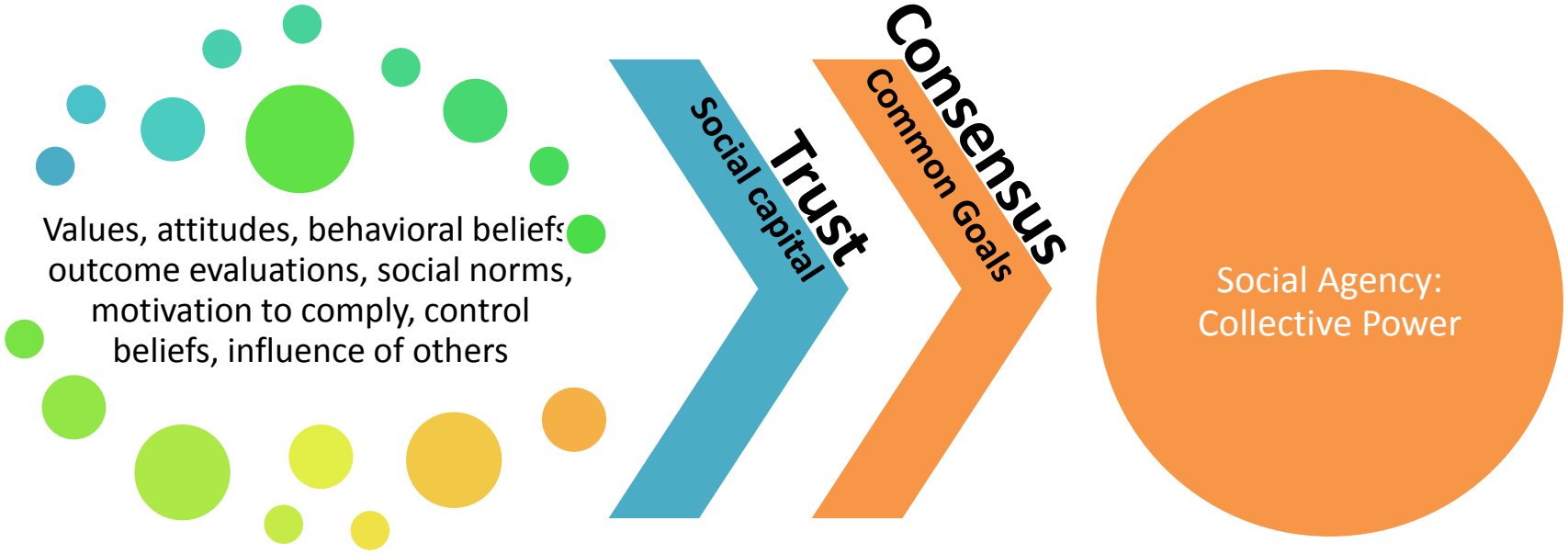
Perceived Behavioral Control
Control beliefs x
Influence of control beliefs



Source: Fishbein, M., and I. Ajzen. 2010. Predicting and Changing Behavior: The Reasoned Action approach. New York: Taylor and Francis.

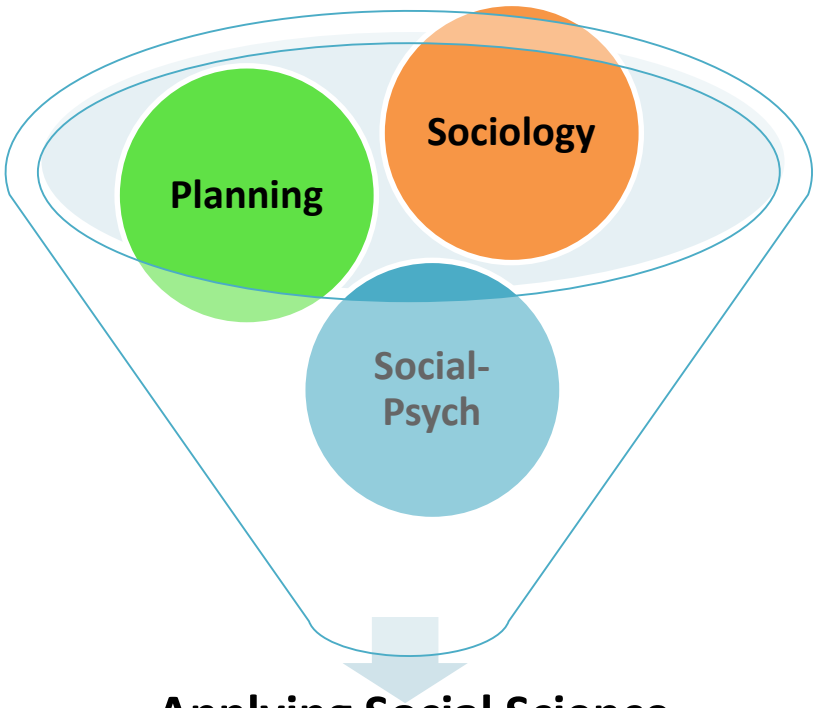
Sociology

Understanding Factors Driving Community Behaviors



Individual Actions **Community Actions**

"Social change and civic engagement goes beyond just trying to change an individual's behavior … the community has to change first, or at least simultaneously with the individual land user." -- Nels Paulson, UW-Stout



Applying Social Science Principles to Natural Resource Management

Evolving Science

- Often confused with non-scientific data collection "(I love my lake) surveys"
- Is driven by research questions and funding availability
- Is best when it is an integrated part of an ongoing planning process

Natural Resources Social Science

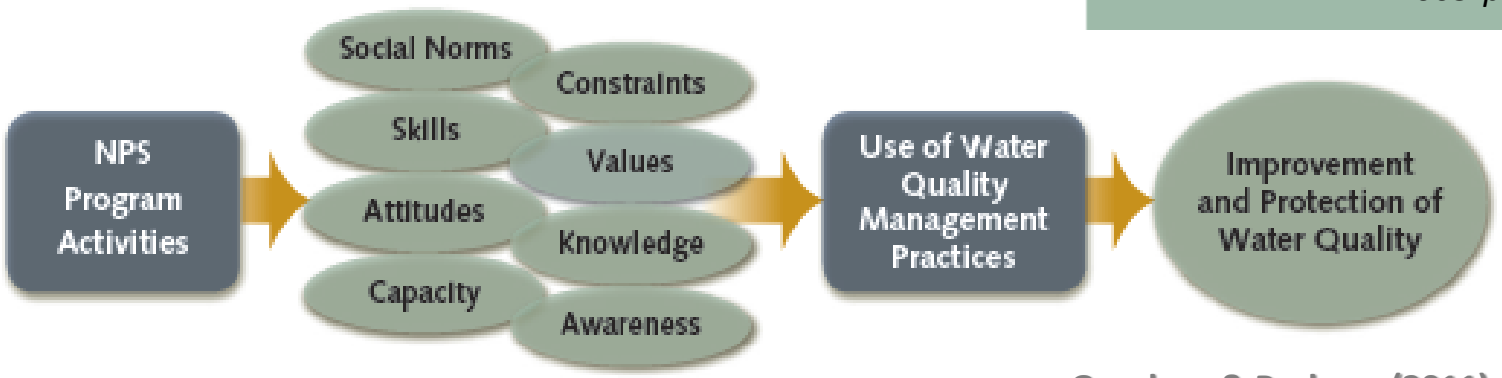
Applied Social-Ecological Research

The Social Indicator Planning & Evaluation System (SIPES) for Nonpoint Source Management

2005-present

S C I E N C E B A S E D

Figure 1: **Conceptual model of social indicators and water quality**



Genskow & Prokopy (2011)

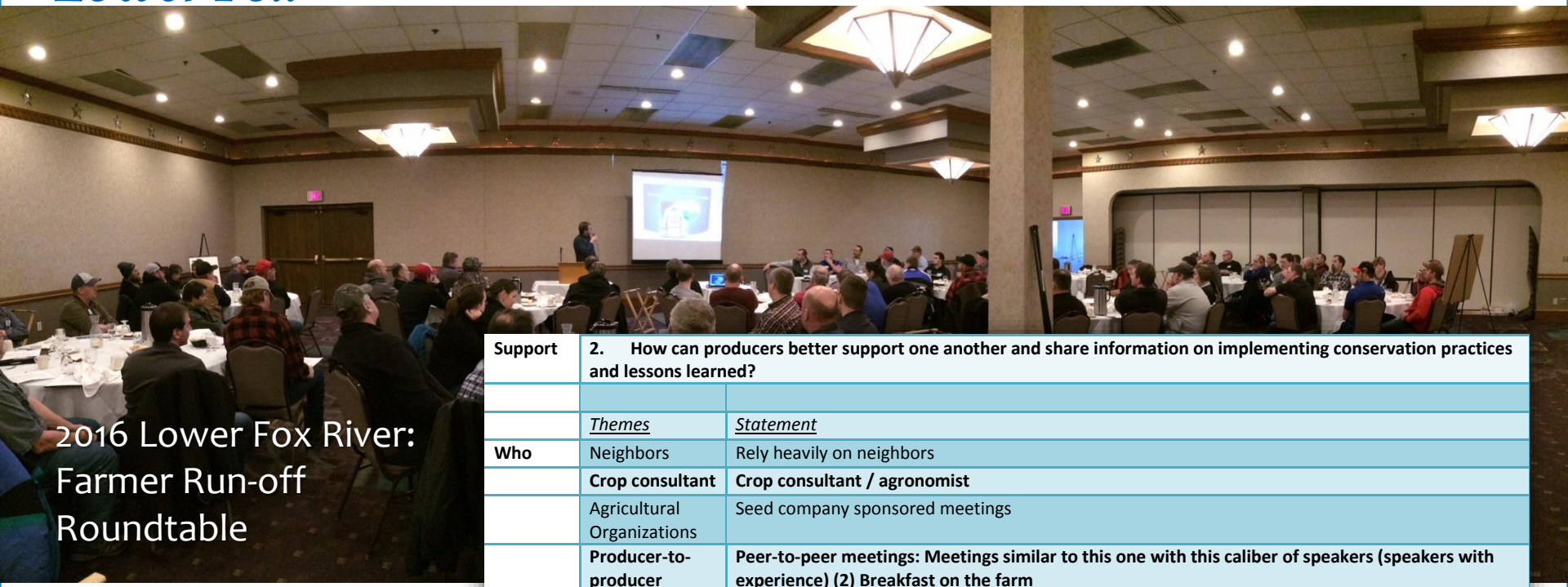
R E S E A R C H Q U E S T I O N / F U N D I N G D R I V E N

People ask why this survey didn't help them change behaviors of landowners

Reality: This was an EPA Region 5 program evaluation tool to assess whether or not there was a change from pre- to post- 319 project implementation

Outcome: Provides the framework & jumping off point for applied social science research to inform watershed planning

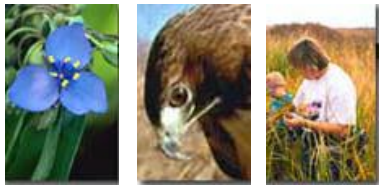
Lower Fox



Applied Research: Integrated research efforts

Not always surveys … we use many methods

Support	2. How can producers better support one another and share information on implementing conservation practices and lessons learned?	
	Themes	*Statement*
Who	Neighbors	Rely heavily on neighbors
	Crop consultant	**Crop consultant / agronomist**
	Agricultural Organizations	Seed company sponsored meetings
	Producer-to-producer	**Peer-to-peer meetings: Meetings similar to this one with this caliber of speakers (speakers with experience) (2) Breakfast on the farm**
	Agencies	Agencies keep momentum going with events like this
What	Agriculture Publications	Agriculture Publications
	Demonstration Farms	**Demo farm network – share information and data (2) NRCS field days**
	Equipment	**Share equipment**
	Farmer-led watershed groups	It could be coordinated by the Extension, but led by farmers. (2) Farmers need to lead the watershed meetings/programs and take ownership of message
How	Information sharing	Share information about what DOES NOT work, which is often as valuable as hearing what does work
	Experiential Learning	What "sold" one producer on taking a risk with conservation techniques was hearing about infiltration rates in similar soils in Pennsylvania.
	Personal contact	**Promote more of the smaller roundtable discussions, some may be more comfortable in small groups (2) One-on-one**
	Monitoring	I would like to see what results are at the edge of field or gauging [monitoring] stations.
	Social Media	Use of social media / e-mail



Natural Resource Social Science: Community Capacity Building

Community Capacity Defined
"The interaction of human capital, organizational resources, and social capital existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of that community" (Chaskin et al., 2001, pg. 7)

Community Capacity: Are local partners ready to accept responsibility?

- **Progression**
  - *Stage 1:* Public participation is a good idea
  - *Stage 2:* Public participation is necessary to achieve results
  - *Stage 3:* Public ownership of the problem and the solution are necessary for long-term success

Applied Social Science Lessons

- Does our community have the capacity to work together toward a common goal?
- Do we really know our stakeholders, what will and won't they support?
- How do we work toward consensus with our partners and communicate water quality solutions?

Community Capacity Building

Center for Land Use Education
College of Natural Resources
University of Wisconsin-Stevens Point

UW Extension
University of Wisconsin-Extension

What is society demanding of conservation efforts?

PARTICIPATORY: fair and equitable participation, avoidance of unwarranted priority or power distribution (including recognition of experts as one of many legitimate contributors within an extended peer community).

ADAPTIVE: deliberative learning efforts that allow for collective reflection and questioning, emphasizing social-ecological problem solving.

ACTION ORIENTED: emphasis on taking real and substantive steps to implement solutions to local problems.

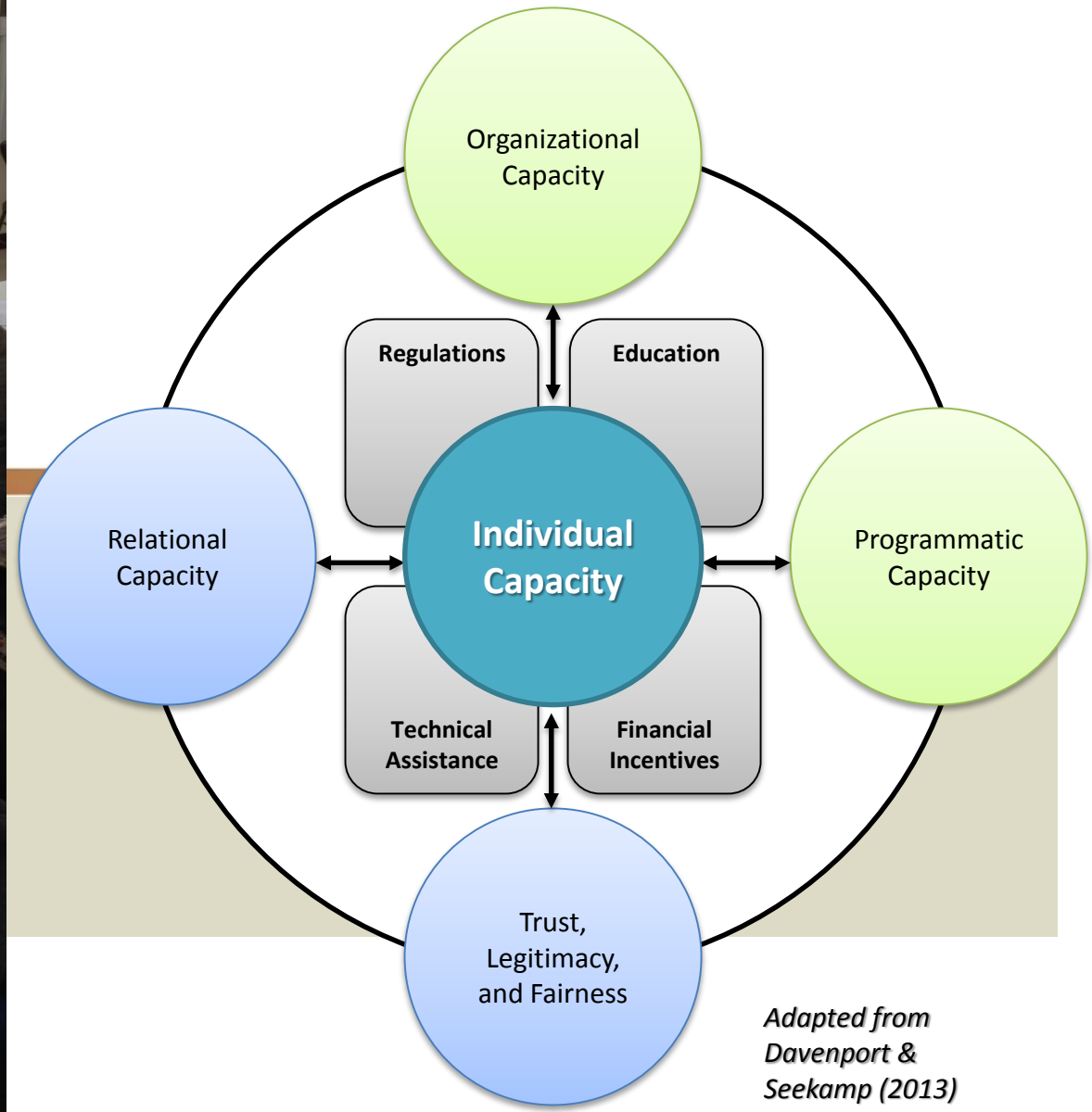
Source: Clark, Douglas A. (2015). Human dimensions and the evolution of interdisciplinary approaches in conservation social science. In N.J. Bennett & R. Roth (Eds.), The Conservation Social Sciences: What?, How?, and Why? (pp. 64-70). Vancouver, BC: Canadian Wildlife Federation and Institute for Resources, Environment and Sustainability, University of British Columbia.

Collaborative Planning: Sustainable Watershed Management

Strengths: Characteristics of the stakeholder group / community that give efforts a relative advantage for success

CAPACITY

Weaknesses: Characteristics of the stakeholder group / community that reduce the likelihood of successful action to address issues



Adapted from Davenport & Seekamp (2013)

Analysis of Capacity

Data Needs: ***Governance***

Relational Capacity

Network Development

- Relationships
- Identify
- Community Organizing

Organizational Capacity

Organization & Leadership

- Conflict Management
- Strategic Partnering

Trust, Legitimacy, and Fairness

Building Trust

- Transparency
- Representation of Diverse Stakeholders
- Collaborative Planning

Programmatic Capacity

Coordination

- State, Regional, & Local outreach
- Evaluation & Adaptation

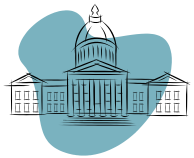
Data Needs: ***Social and Economic Profile***

Adapted from Davenport & Seekamp (2013)

Social Inventory

Getting Started: **What Social Data do we need?**

- Identifying Strengths and Weaknesses:



- Social and Economic Profile
- Governance Analysis

- Analysis of Capacity

Social Inventory

- **Social & Economic Profile**

Co-Learning

RESEARCH — Define the problem / Identify Issues

What do stakeholders want?

What will they support / won't support?

What is currently being done?

Who is looked to for leadership?

What ideas are already out there?

↓

DECISION MAKING — Select goals and outcomes

Lake Wausau Community Survey

University of Wisconsin-Stevens Point
College of Natural Resources

As a resident of one of the communities that surround Lake Wausau you have been randomly selected to receive a survey concerning efforts to improve the community resource of Lake Wausau. This survey is being conducted by faculty in the College of Natural Resources at the University of Wisconsin--Stevens Point in partnership with the Lake Wausau Association and sponsoring local governments. Survey results will help these groups understand how residents in the Wausau area interact with and value Lake Wausau and the Wisconsin River. Results will inform ongoing research and activities to improve water quality in Lake Wausau. **All results will be kept confidential** and if you have any concerns about the treatment of research participants please contact the UWSP Institutional Review Board that can be reached at (715) 346-4598.

Your voluntary participation in this survey is a chance to be a part of the process of determining the future for Lake Wausau. Please take the time to share your views about this important community resource by completing and returning the survey in the enclosed postage paid envelope. If you have questions about the survey, please feel free to contact one of the members of the research using the informations provided below.

Thank you for your assistance,

Dr. Aaron Thompson
Assistant Professor
aaron.thompson@uwsp.edu
715.346.2278

Dr. Melinda Vokoun
Assistant Professor
melinda.vokoun@uwsp.edu

Dr. Kristin Floress
Assistant Professor
kristin.floress@uwsp.edu

PLEASE READ BEFORE BEGINNING THIS SURVEY:

The survey must be completed by an adult member of your household 18 years of age or older.

Please mark all answers clearly, in pen or pencil, as indicated below.

Example "A" ☐ ☐ ☒ Example "B" ☐ ☐ ☑

The Lake Wausau Association

Have you heard of the Lake Wausau Association?

Never heard of them ☐	Heard of them, but don't know what they do ☐	Heard of them, and know what they do ☐

Lake Wausau Association's (LWA) mission is "*to protect, maintain, and enhance environmental and recreational values on Lake Wausau and its surroundings; to organize and conduct activities intended to maintain or improve the ecology, water quality, fishing, and recreational use of Lake Wausau.*" — lakewausau.org

Do you agree with the priorities that the Lake Wausau Association has put forth in their mission statement?

Strongly Disagree	-3	-2	-1	0	1	2	3	Strongly Agree

STAKEHOLDER PROFILES

UNDERSTAND MOTIVATION:

What are the key attitudes that influence their involvement in water quality efforts?

BUILDING CAPACITY

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+ 'Inverted-R' process revealed 4 distinct belief systems among respondents

Lake Wausau

Outcome:

- Challenged "those in the room" to explore how they are similar or not from their community – **HOW do we start a community conversation?**
- Recognize a need for a community vision – which is broader than weed and algae control

Group 01: Tradition

Wausau: 37.0%
Schofield: 56.9%
Rothschild: 54.1%
Rib Mountain: 41.9%
Near Lake: 52.0%

Lake Wausau Community Survey

University of Wisconsin-Stevens Point
College of Natural Resources

Group 01: Tradition

Wausau: 37.0%
Schofield: 56.9%
Rothschild: 54.1%
Rib Mountain: 41.9%
Near Lake: 52.0%

Group 02: Industry

Wausau: 21.7%
Schofield: 10.3%
Rothschild: 16.4%
Rib Mountain: 20.2%
Near Lake: 17.3%

Group 03: Not on Lake Wausau

Wausau: 17.4%
Schofield: 10.3%
Rothschild: 16.4%
Rib Mountain: 12.1%
Near Lake: 14.7%

Group 04: Dirty

Wausau: 13.0%
Schofield: 15.5%
Rothschild: 6.6%
Rib Mountain: 13.5%
Near Lake: 14.7%

"Interests of all kinds are at the heart of natural resource policy and management."

Common interests are those beliefs that are widely shared within a community and {are perceived to} benefit the whole community.

(Clark, 2002, p. 13)

CONSENSUS

CONSENSUS -- Defining the common interests

+ Process identified commonalities, including that all groups:

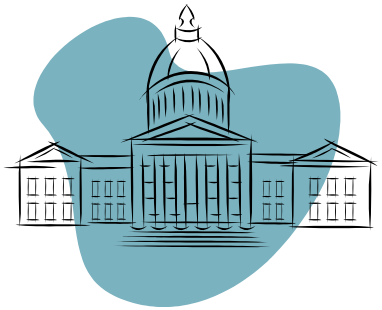
1. Strongly agree that Lake Wausau adds to the beauty of the community (Item #1).

2. Strongly agree that community members must take an active role in the future of Lake Wausau (Item #2).

3. Agree that Lake Wausau contributes to the community's ability to attract new residents and employers (Item #7).

4. Agree that local funding to revitalize Lake Wausau is a good investment in the future (Item #8).

Social Inventory



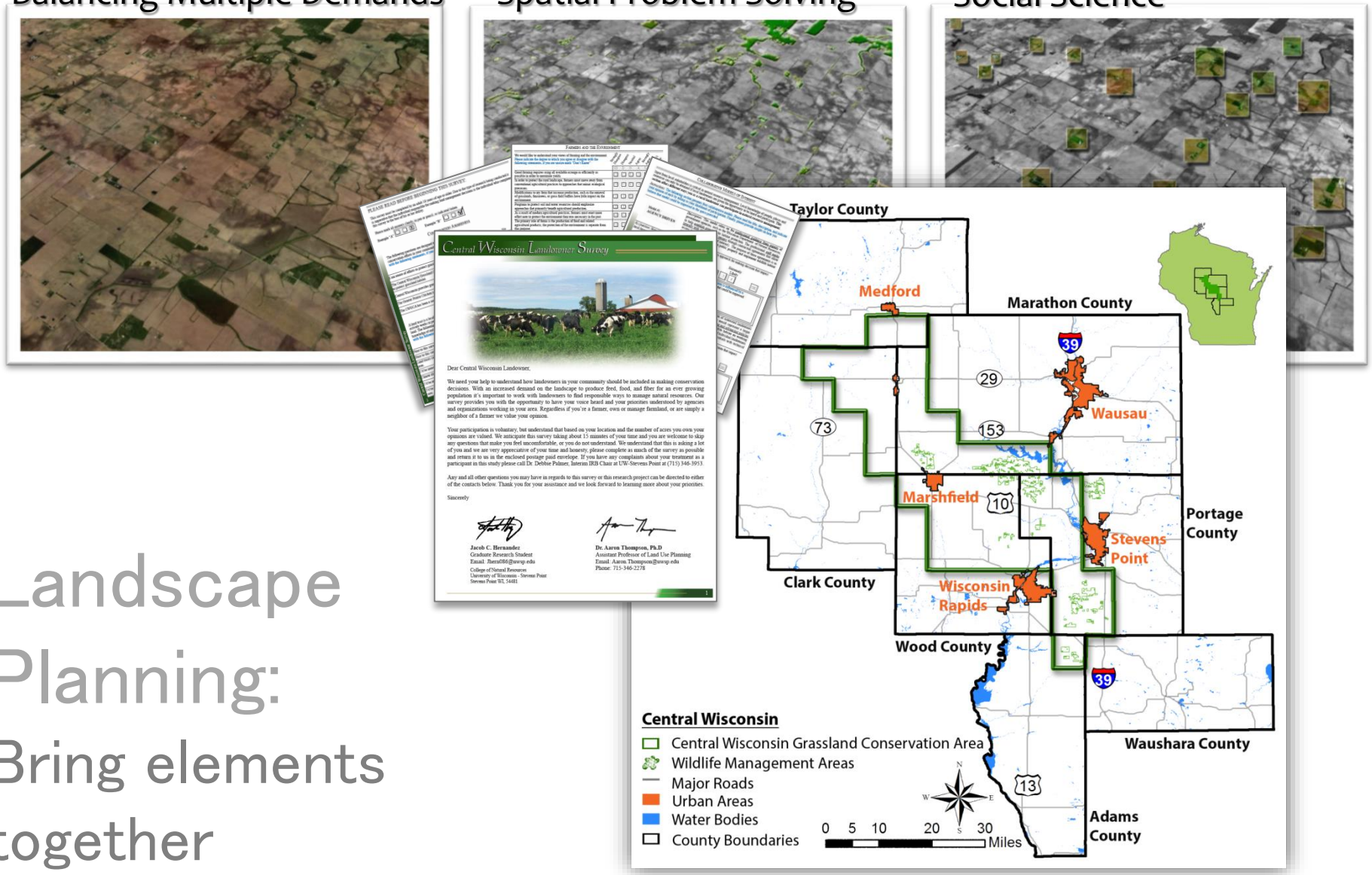
- **Governance**
  - Key Question:
    - How will decisions be made? Will these be representative of the community?
    - Who are the governing bodies that will ultimately be responsible for implementing the plan?
    - Social analysis can identify the need for alternative decision making processes (determining how to work with a diverse set of stakeholders)

Central Wisconsin Grassland Conservation Area

Balancing Multiple Demands

Spatial Problem Solving

Social Science



Landscape Planning:

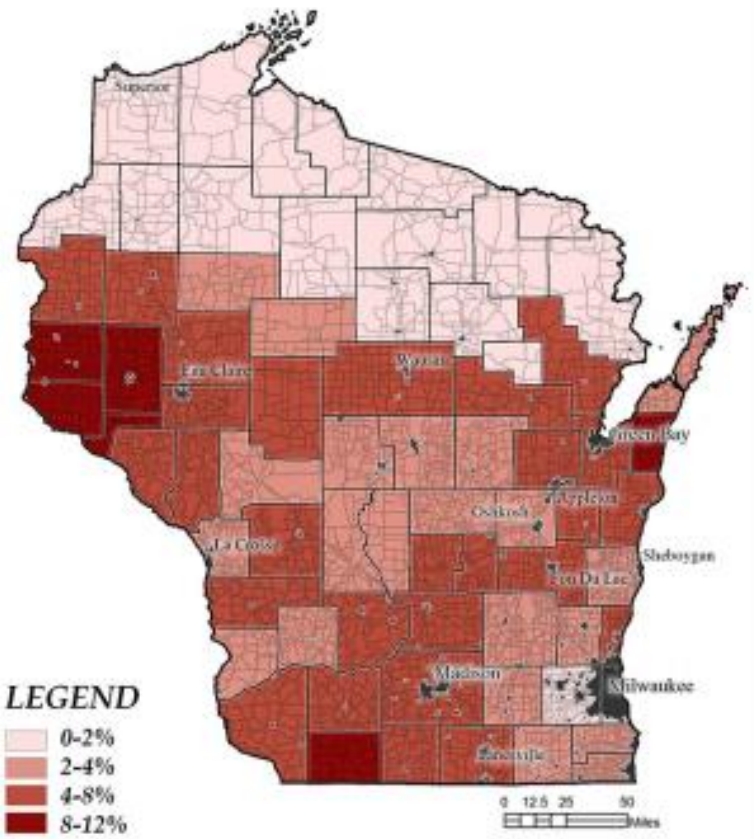
Bring elements together

Landscape Assessment: Habitat Loss

Pasture to Corn

>100,000 acres / year

Figure B3: 2003-2010 Percent of Total County Acreage Converted from Pasture to Corn Production



The Central Wisconsin Grassland Conservation Area

> 1,500 sq. miles.

> Generally encompasses remaining Greater Prairie Chicken habitat

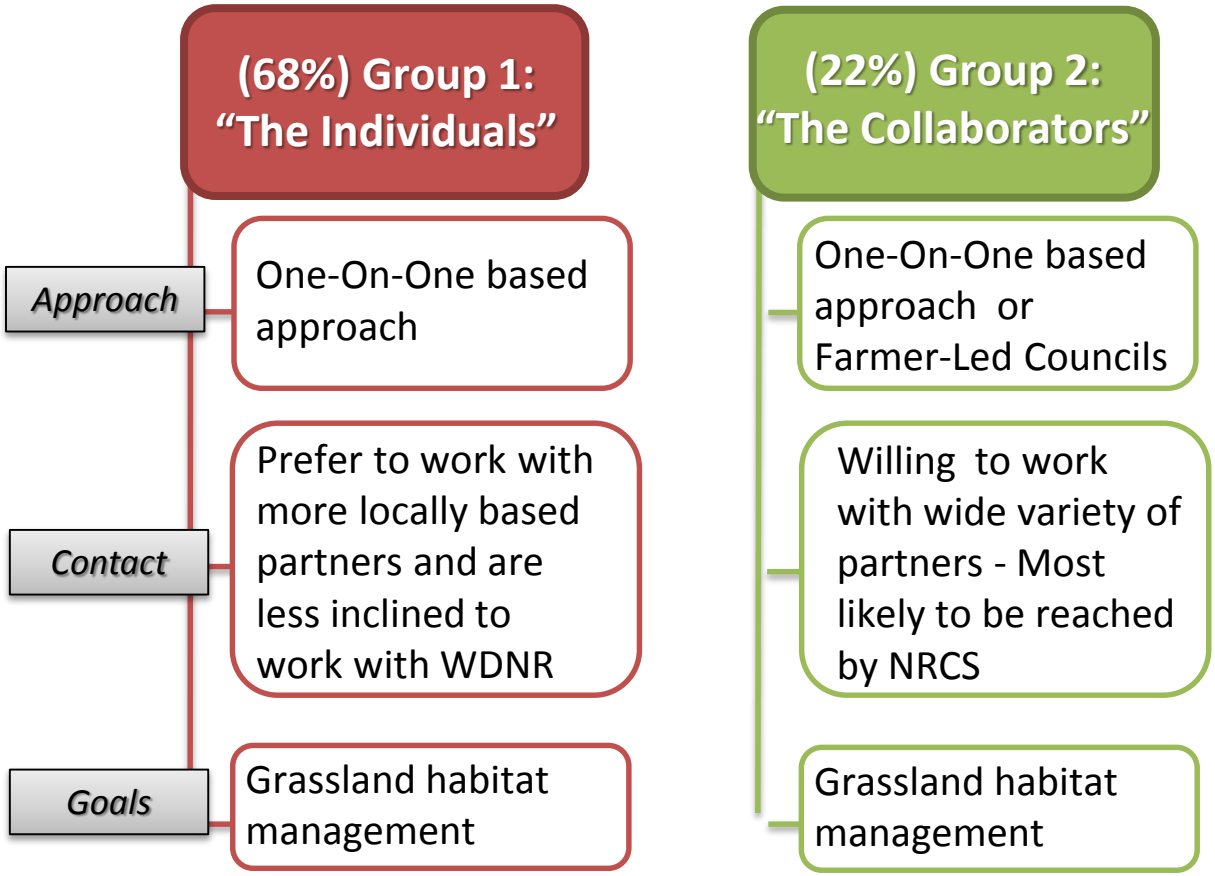
Greater Prairie Chickens

- 30 year Steady decline
- 75% decrease from 1991
- 90% booming males reside on 4 major wildlife areas

Social Assessment: Governance Profile

So how do we engage private landowners in grassland conservation efforts?

Determining Pathways for Participation



Stakeholder profiles can help us understand key decision making characteristics of landowners

Are local resource managers (ag professionals, conservation staff, etc.) willing to take a different approach?

YES

(CWGCA, Lower Fox, Mason Lake)

Social Inventory

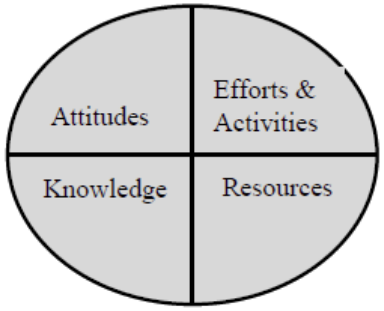
- **Analysis of Capacity**
  - Understanding Capacity Issues Allows Us To:
    1. Identify issues that will have the support of the community
    2. Be realistic about what can be accomplished
    3. Incorporate potential funding sources early in the process

- **Analysis of Capacity**

We must be willing to commit to communities with the capacity to sustain these efforts (and determine when to invest in capacity building before committing more resources for watershed analysis or planning).

The Community Readiness Model (CRM)

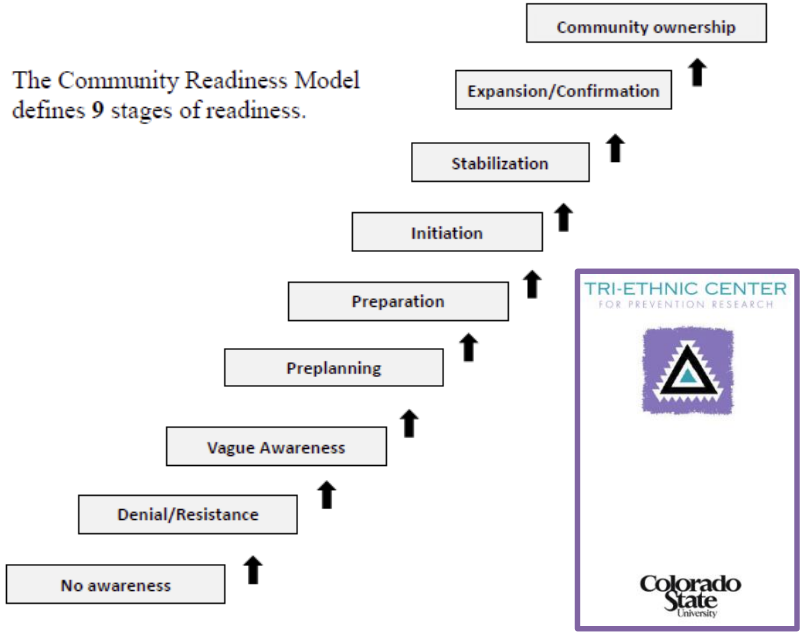
Measures



of

Community Members + Leadership

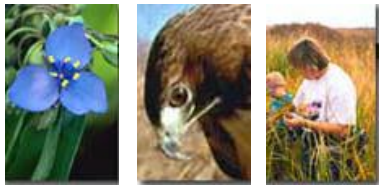
The Community Readiness Model defines **9** stages of readiness.



A project must start with implementation in mind -- What capacity do we have:

-To engage people on key issues

-To connect to community infrastructure (such as comprehensive plans & governance structure, volunteer networks, etc.)



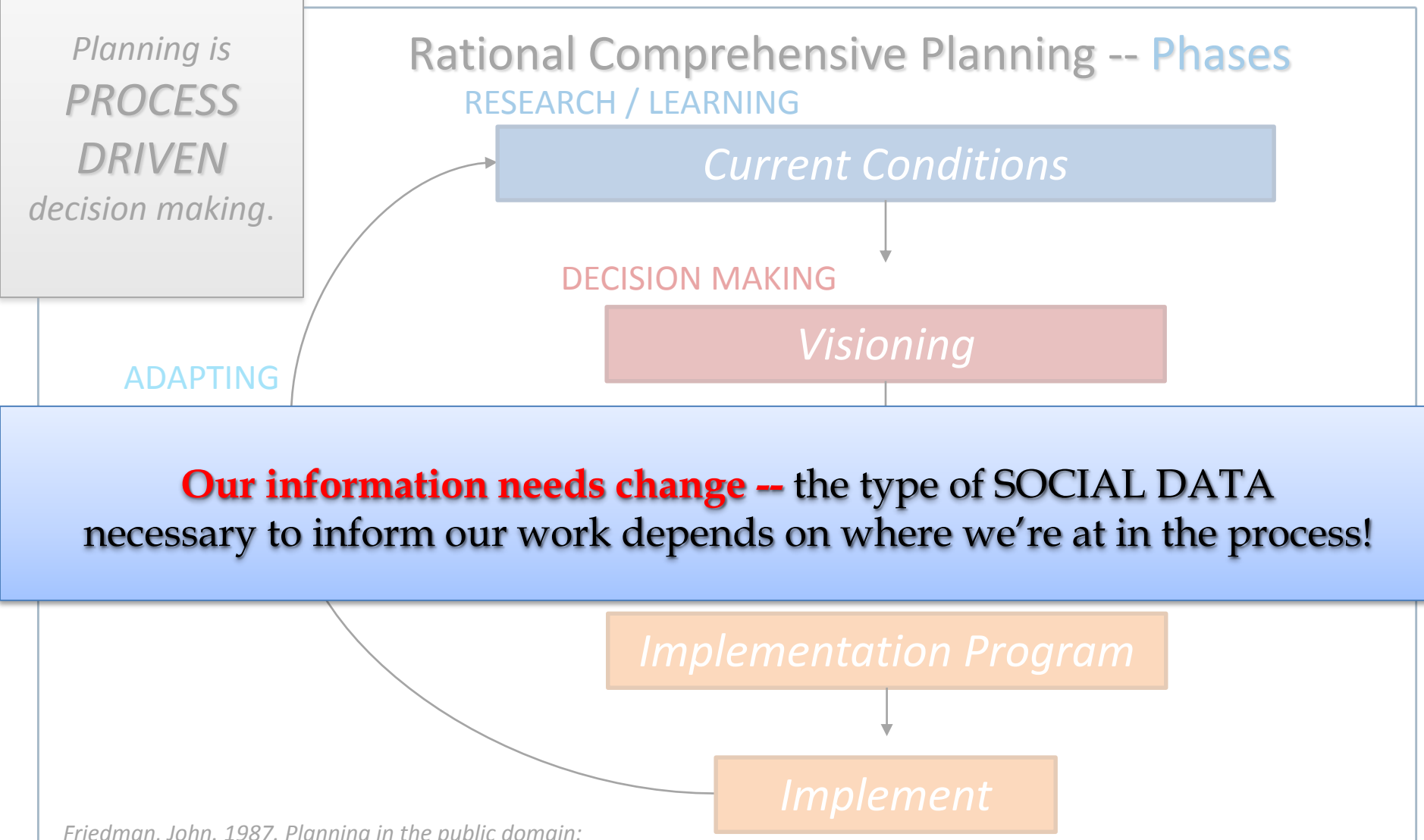
Applied Social Science in Watershed Projects

WHY ARE WE CONDUCTING SOCIAL SCIENCE RESEARCH ON WATERSHEDS?

- To select or **prioritize watersheds** (high capacity, willing partners, etc.)
- Design outreach strategies that **respond to the social context** in a particular watershed
- To **identify and understand stakeholders** positions and how widely supported their views are within the community (legitimacy)
- **Identify barriers** to civic engagement and adoption of conservation practices

Planning is ***PROCESS DRIVEN*** *decision making.*

Rational Comprehensive Planning -- Phases



Our information needs change -- the type of SOCIAL DATA necessary to inform our work depends on where we're at in the process!

Friedman, John. 1987. Planning in the public domain: From knowledge to action. Princeton University Press: Princeton, NJ.

STAKEHOLDER PROFILES

BEGINNING A COMMUNITY DISCUSSION …

Applied Social Science Lessons:

No marketing firm would attempt to 'sell something' without first knowing something about their customers -- we need to learn from this example.

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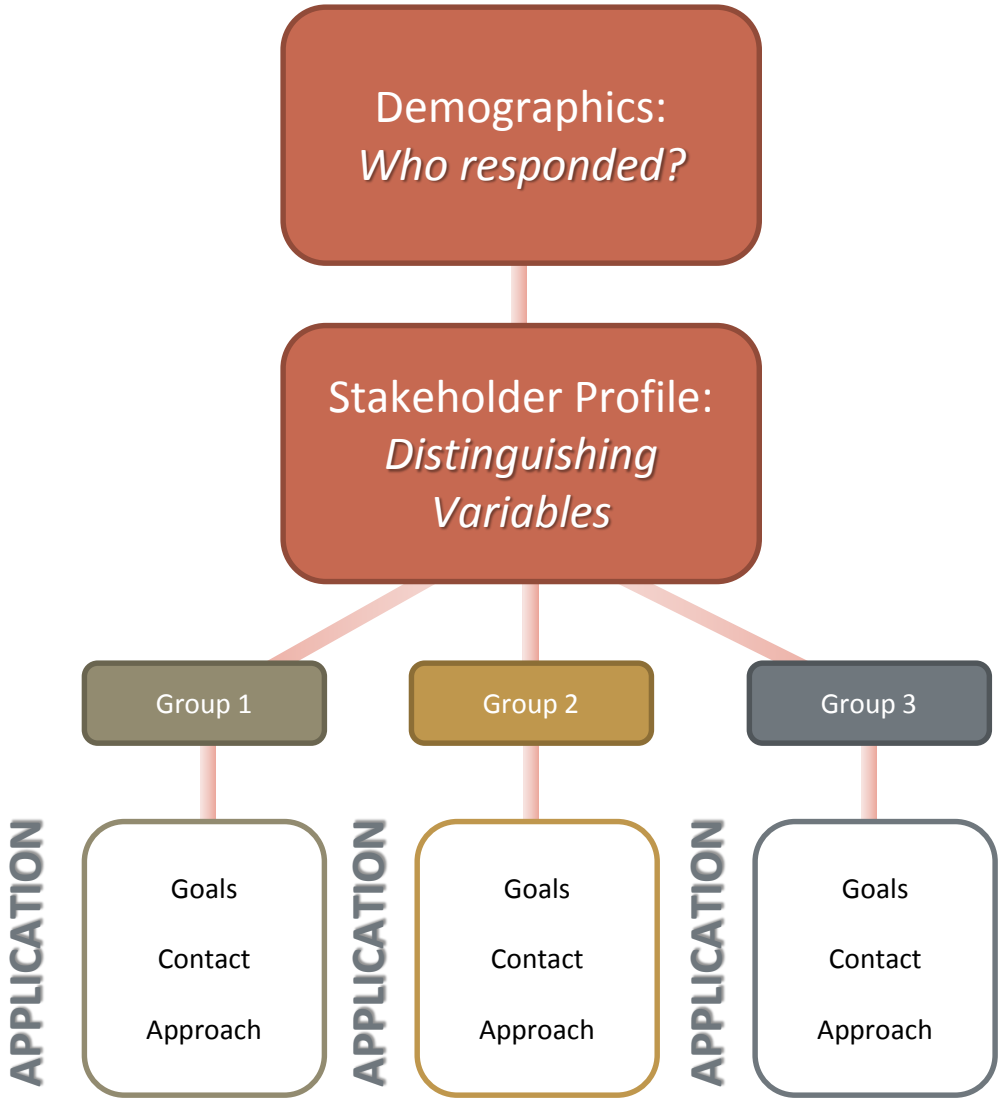
ACTIVITY

What motivates you to engage in long-term efforts to improved water quality in your community?

STAKEHOLDER PROFILES



UNDERSTAND MOTIVATION:
What are the key attitudes that influence their involvement in water quality efforts?

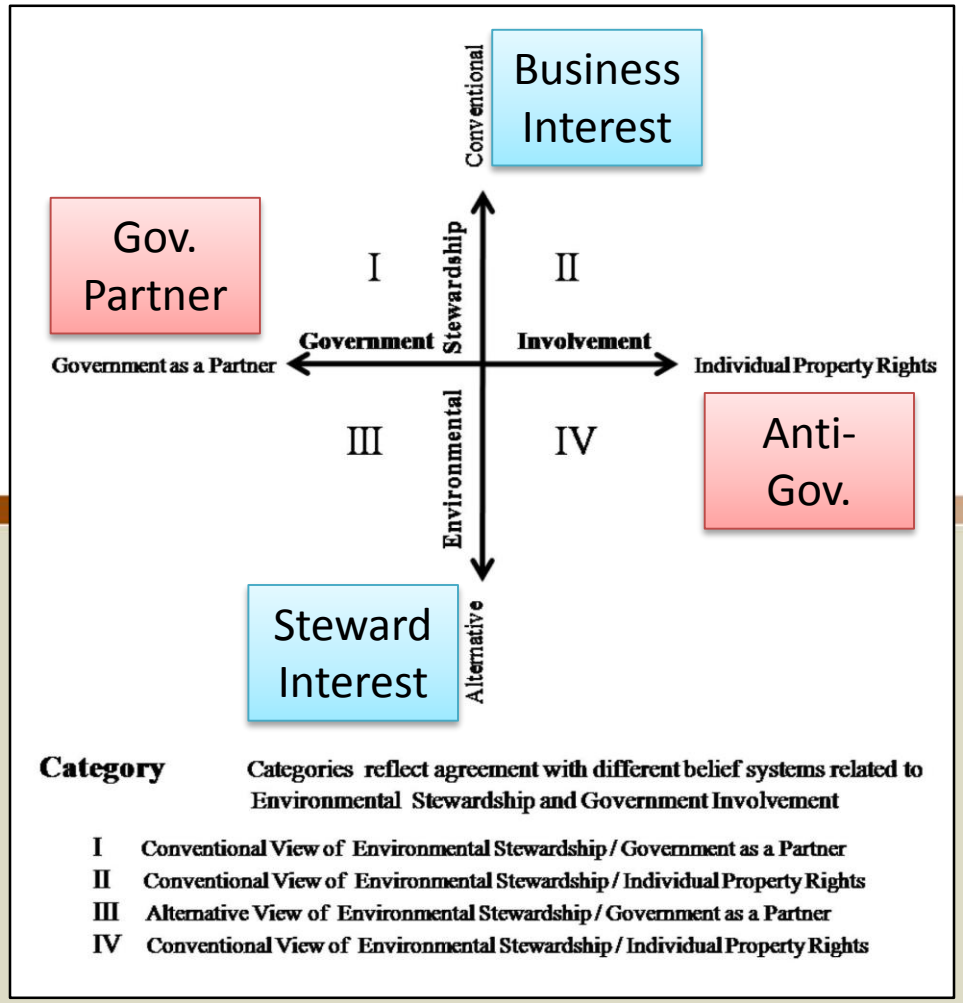
(GOALS) ASSESS PRIORITIES:
What will they / won't they support?

(CONTACT) MATCH PARTNERS:
Which groups / agencies are trusted?

(APPROACH) POWER SHARING:
What will it take for individuals to get involved / take ownership?

Measuring Landowner Attitudes

Factors Influencing Likelihood of Participation



Farmers Views of the Environment Scales

Thompson, Reimer, & Prokopy (2015)

- Environmental Stewardship scale
- Farm as a Business scale

Government Involvement

- (Positive Views) Government as a Partner scale
- (Negative Views) Individual Property Rights scale

Perspectives on Planning

III

Category 3: 42 individuals

(+2) Alternative ES
(-1) Conventional ES
(Neutral) Government as a Partner
(-1) Individual Property Rights

Areas of agreement

- All landowners should be allowed to participate
- Approach should emphasize addressing issues that affect the entire county
- Focus should be on the preservation of farmland

Summary

- Category 03: **Willing Partners, Conservation Focused**
  - Additional information: More likely to less conservative than members of other belief system categories
  - Value preserving farmland and are more supportive of government involvement in managing the land

Perspectives on Planning

II

Category 2: 45 individuals

(Neutral) Alternative ES
(+1) Conventional ES
(-2) Government as a Partner
(+1) Individual Property Rights

Areas of agreement

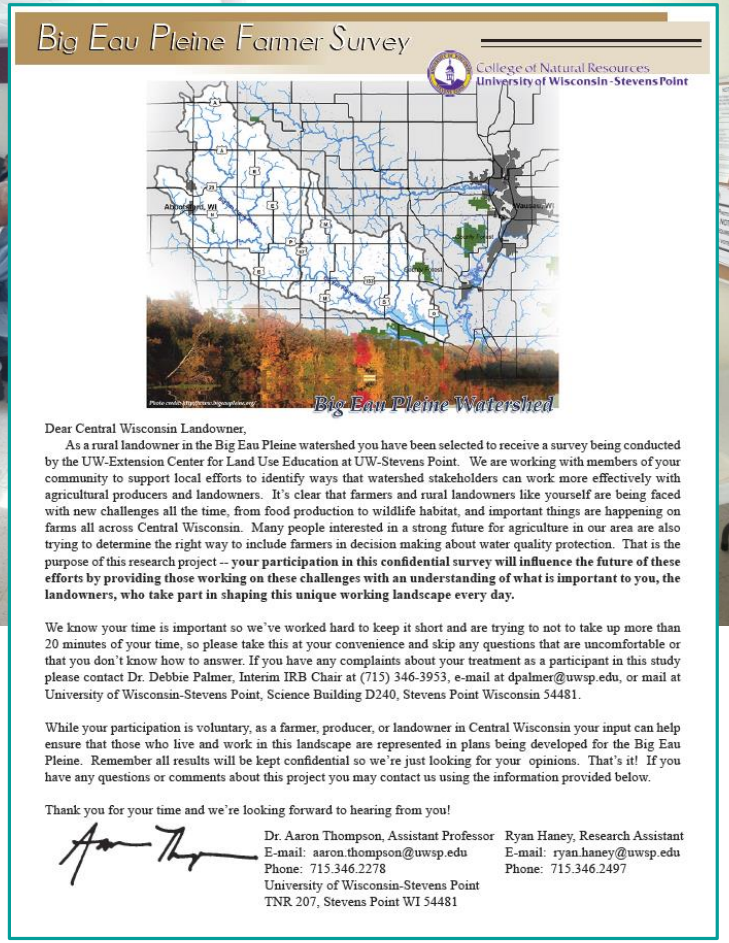
- Decisions should not be left to local officials
- Approach should emphasize regular meetings and providing small groups of neighboring landowners with incentives to work together to
- Focus is on improving the quality of working lands.

Summary

- Category 02: **Government Averse, Production Focused**
  - Additional information: More likely to be crop farmers and own more acreage than members of other belief system categories
  - Supportive of increased productivity and limiting government involvement on their farm.

Big Eau Pleine

January 2015: Community Conversation



Big Eau Pleine Farmer Survey

College of Natural Resources
University of Wisconsin-Stevens Point

Dear Central Wisconsin Landowner,

As a rural landowner in the Big Eau Pleine watershed you have been selected to receive a survey being conducted by the UW-Extension Center for Land Use Education at UW-Stevens Point. We are working with members of your community to support local efforts to identify ways that watershed stakeholders can work more effectively with agricultural producers and landowners. It's clear that farmers and rural landowners like yourself are being faced with new challenges all the time, from food production to wildlife habitat, and important things are happening on farms all across Central Wisconsin. Many people interested in a strong future for agriculture in our area are also trying to determine the right way to include farmers in decision making about water quality protection. That is the purpose of this research project -- **your participation in this confidential survey will influence the future of these efforts by providing those working on these challenges with an understanding of what is important to you, the landowners, who take part in shaping this unique working landscape every day.**

We know your time is important so we've worked hard to keep it short and are trying to not to take up more than 20 minutes of your time, so please take this at your convenience and skip any questions that are uncomfortable or that you don't know how to answer. If you have any complaints about your treatment as a participant in this study please contact Dr. Debbie Palmer, Interim IRB Chair at (715) 346-3953, e-mail at dpalmer@uwsp.edu, or mail at University of Wisconsin-Stevens Point, Science Building D240, Stevens Point Wisconsin 54481.

While your participation is voluntary, as a farmer, producer, or landowner in Central Wisconsin your input can help ensure that those who live and work in this landscape are represented in plans being developed for the Big Eau Pleine. Remember all results will be kept confidential so we're just looking for your opinions. That's it! If you have any questions or comments about this project you may contact us using the information provided below.

Thank you for your time and we're looking forward to hearing from you!

Dr. Aaron Thompson, Assistant Professor
E-mail: aaron.thompson@uwsp.edu
Phone: 715.346.2278
University of Wisconsin-Stevens Point
TNR 207, Stevens Point WI 54481

Ryan Haney, Research Assistant
E-mail: ryan.haney@uwsp.edu
Phone: 715.346.2497

Survey Sample

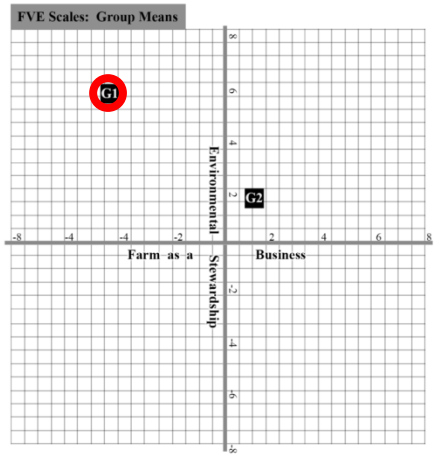
Response Rate: 42 percent

- 375 addresses total

Sample Design

- Parcel Data: Within watershed, >40 acres
- Farmland: >30% of acreage in agriculture
- Private Landowners: Removed corporations and out of county mailing addresses
- Stratified: 175 owners randomly selected from upper, middle, and lower watershed

Aaron Thompson, PhD
Assistant Professor &Land Use Specialist,
College of Natural Resources
UW - Stevens Point



FS Group 1: STRONG ENVIRONMENTAL STEWARDSHIP VIEWS (34 Percent)

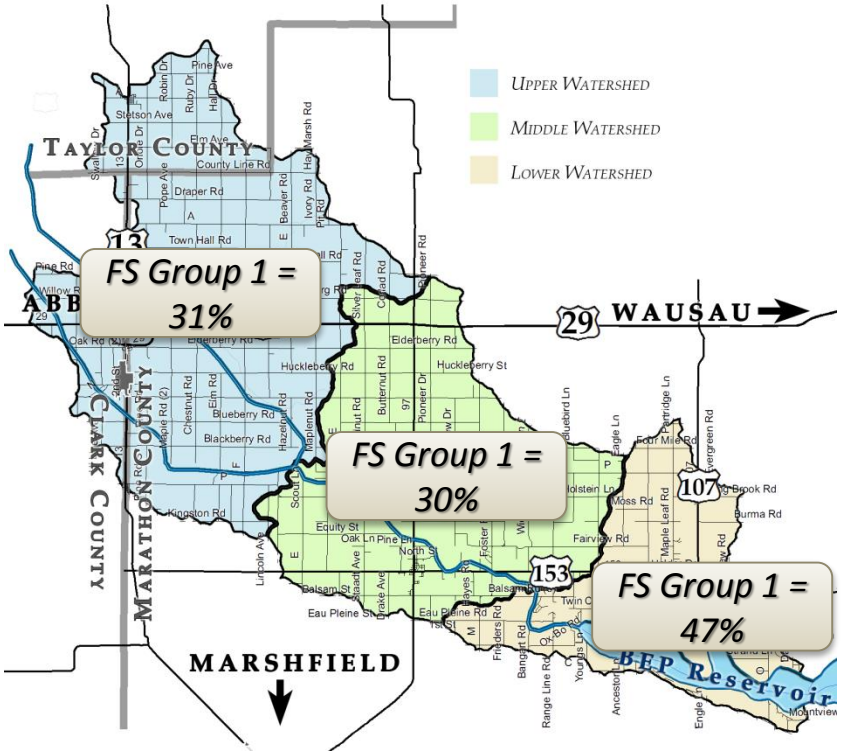
This group clearly separated from the all respondents with a **strong positive response to the Stewardship Scale and a strong negative response to the Business scale**. This result demonstrates that approximately 34 percent of agricultural landowners hold positive environmental attitudes characterized by strong support for statements that express views like, "**good farming results from placing equal importance in managing both the agricultural and natural areas of my farm**;" and disagreement with statements that express views like, "**modifications to my farm that increase production, such as the removal of grasslands, fence rows, or grass field buffers have little impact on the environment**."

Aaron Thompson, PhD
Assistant Professor &Land Use Specialist,
College of Natural Resources
UW - Stevens Point

MANAGEMENT OF RUNOFF ISSUES THROUGHOUT THE WATERSHED

FS Group 1 is the 'best match' for the watershed efforts

- Highest concentration of FS Group 1 in the lower portion of the watershed (where awareness of BEPCO is already strongest).



Misconception: We do social science to confirm that our hunches are correct.

Purpose: We do social science to ensure that valid perspectives that exist in the community are not ignored by our planning efforts.

Community Conservations

COLLABORATIVE PLANNING

Applied Social Science Lessons

VISION & GOALS

Social science role: Develop networks for translating **CONSENSUS** into results

-Meet stakeholders where they are at!

DECISIONS MUST BE COMMUNITY DRIVEN

Social science role: Identify decision making approaches the community will support

-Community ownership of the process = local solutions for local problems

BEHAVIOR CHANGE

Social science role: Identify pathways (messaging, barriers, incentives, etc.) for change

-Attitudes, Norms, Behavioral Control

EVOLVING SCIENCE

BUILDING CAPACITY

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Vision & Goals: PROCESS IS GOAL FOCUSED

Issue: a community must first decide on what is most important and work toward these goals

Big Eau Pleine Community Survey

DISSOLVED OXYGEN ISSUES IN THE RESERVOIR

Preventing winter fish kills due to low oxygen levels	25.0	25.0	22.5

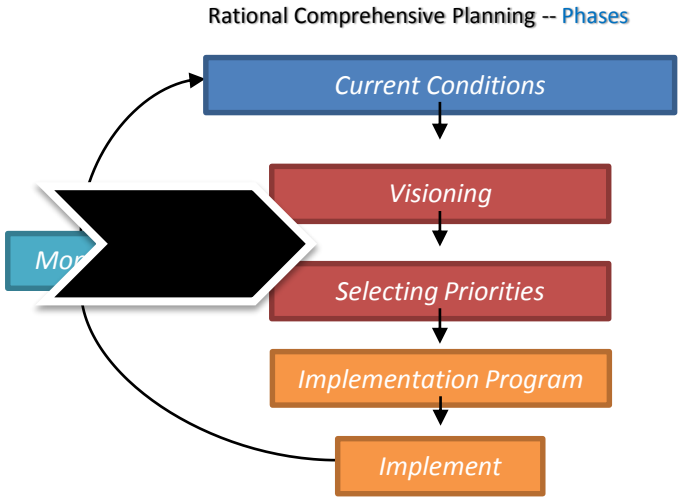
Avg. Points (out of 100)

#1 Issue for all Riparian Stakeholder Groups

Developing a vision for the BEP requires acknowledging that minimizing the threat of winter fish kills is key to building lasting support among riparian landowners.

Y / N Mentioned 60% solution or winter water levels in comments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	32	20.1	47.8	47.8
	Yes	35	22.0	52.2	100.0
	Total	67	42.1	100.0	
Missing	System	92	57.9		
Total		159	100.0		



Decisions must be community driven:
Lack of implementation success in watershed plans

FOCUS: Our planning process tries to simultaneously educate stakeholders and ask them to make decisions, the result is that we oversimplify the problem solving process.

Result – There isn't enough time spent on tough decisions and necessary negotiation.

SCALE: We are perceived as planning in isolation, fixating on water quality and / or recreational benefits to shore land owners.

Result – Our problem solving becomes too limited to engage in real negotiations with other stakeholders (i.e. rural landowners) who have different priorities.

Individual Capacity

Taking Action for Water Quality

…be presented with information about 5 practices that landowners can place on their …uality problems in Bass Lake. Please respond to the series of questions about each …our interest in taking action on your property.

The 5 practices presented below (and on the next page) are appropriate for different parts of a lake front property, this diagram shows the 3 zones where these practices could be installed.

Transition Zone Practices

NATIVE PLANTINGS are large areas (not small patches) of tall grasses, trees, and shrubs adjacent to the lake that can be designed to meet different goals depending on the property owner – such as plantings to control erosion or create bird habitat.

What is your level of interest in installing NATIVE PLANTINGS on your property?

(-2) = Not Interested [-2] [-1] [0] [1] [2] = (2) Very Interested (0)=Neutral

DIVERSION PRACTICES use a berm or shallow trench to intercept runoff from a path or road and divert it into a dispersion area. Depending on the site, multiple diversion practices may be necessary.

What is your level of interest in installing DIVERSION PRACTICES on your property?

(-2) = Not Interested [-2] [-1] [0] [1] [2] = (2) Very Interested (0)=Neutral

Please describe your level of agreement or disagreement with the following statements based on your views of the **Transition Zone Practices**.

	Strongly Disagree SD	Disagree D	Neutral N	Agree A	Strongly Agree SA
Installing these practices on my property will help reduce algal blooms or other undesirable water quality problems in the lake.	-2	-1	0	1	2
Installing these practices will negatively affect how my property looks.	-2	-1	0	1	2
I have the skills and knowledge necessary to install or maintain these practices on my property.	-2	-1	0	1	2
I lack the funding to install or maintain these practices.	-2	-1	0	1	2
I'm concerned that my neighbors would disapprove of me installing these practices on my property.	-2	-1	0	1	2

– 4 –

Bass Lake Community

Behavior Change

We all want to be able to do this – but it's a commitment!

Gov. Involvement

BUILDING CAPACITY

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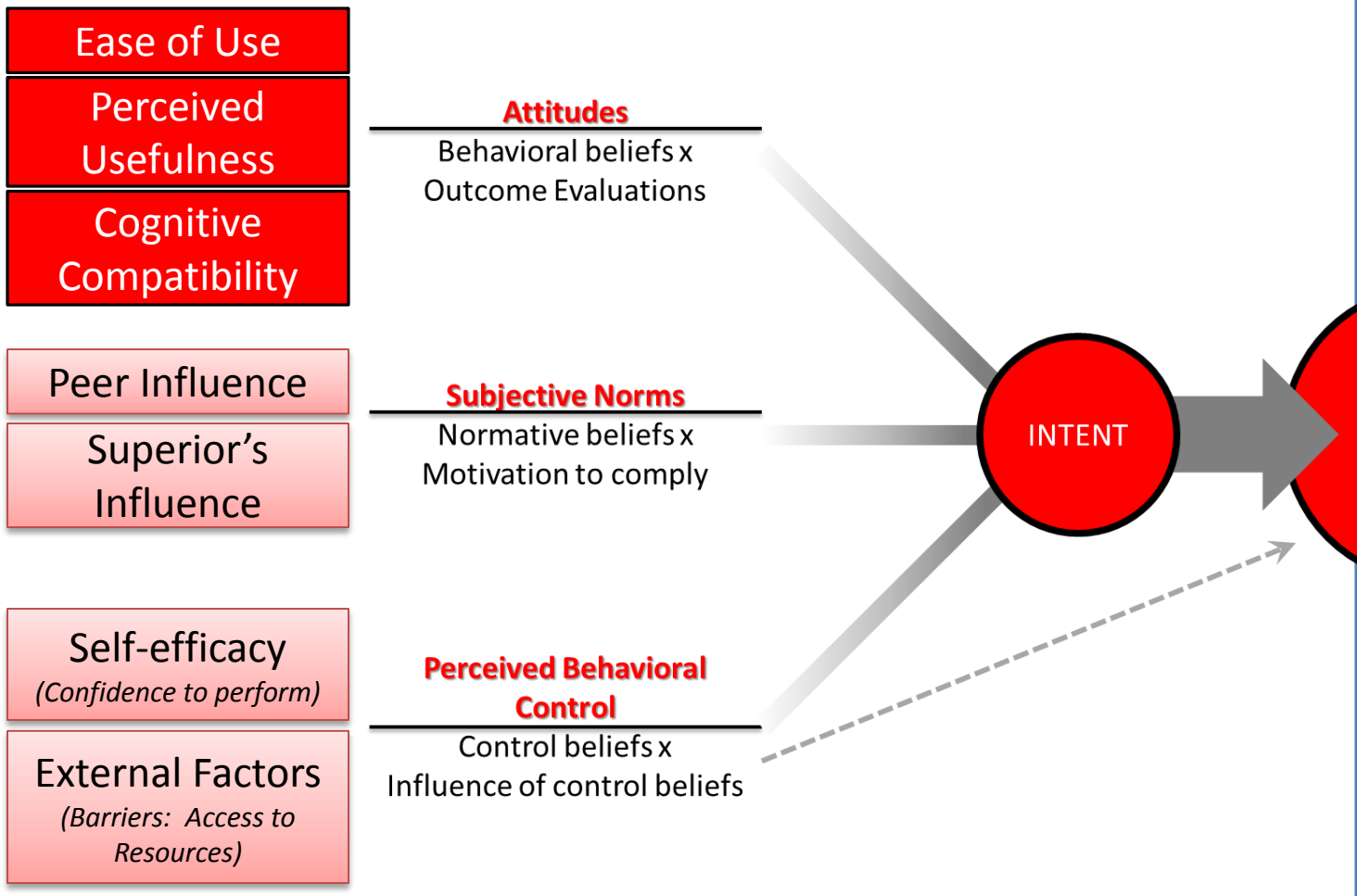
Theory of Planned Behavior

Shoreline Example

1. Landowner's attitudes about landscape, views of native vegetation
2. Landowner's belief that installing native vegetation will affect lake health
3. Relative value of a healthy lake compared to other priorities



Source: Fishbein, M., and I. Ajzen. 2010. Predicting and Changing Behavior: The Reasoned Action approach. New York: Taylor and Francis.

Group A

Round 1: Groups 1,2

13 Individuals (~54%)

Theory of Planned Behavior

Shoreline Example

1.Neighbor's attitudes about landscape, views of native vegetation

2.Perceived beliefs about what is and isn't allowed by regulations

3.(Related) Whether or not peer or superior's influence motivates compliance or resistance

- Ease of Use
- Perceived Usefulness
- Cognitive Compatibility

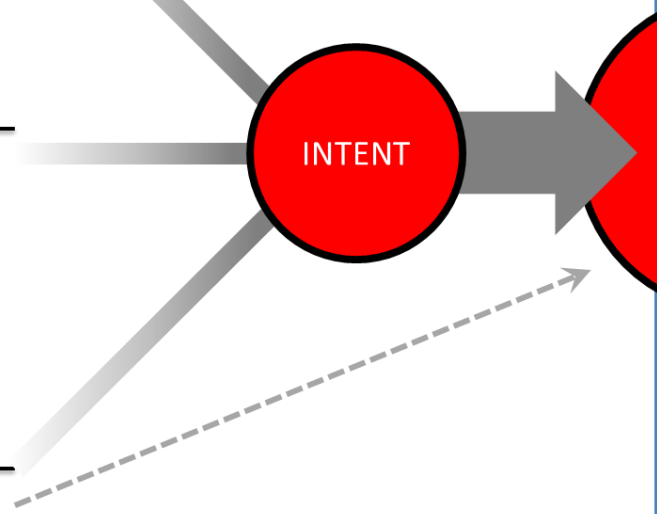
Attitudes
Behavioral beliefs x
Outcome Evaluations

- Peer Influence
- Superior's Influence

Subjective Norms
Normative beliefs x
Motivation to comply

- Self-efficacy *(Confidence to perform)*
- External Factors *(Barriers: Access to Resources)*

Perceived Behavioral Control
Control beliefs x
Influence of control beliefs



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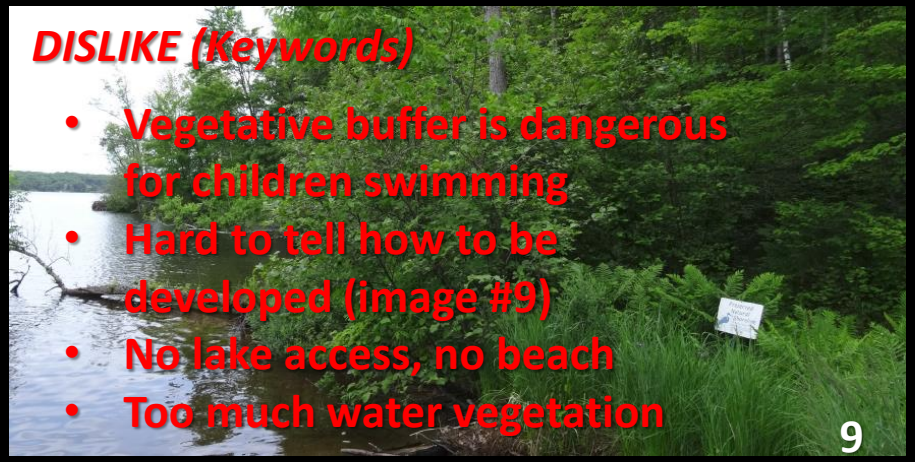
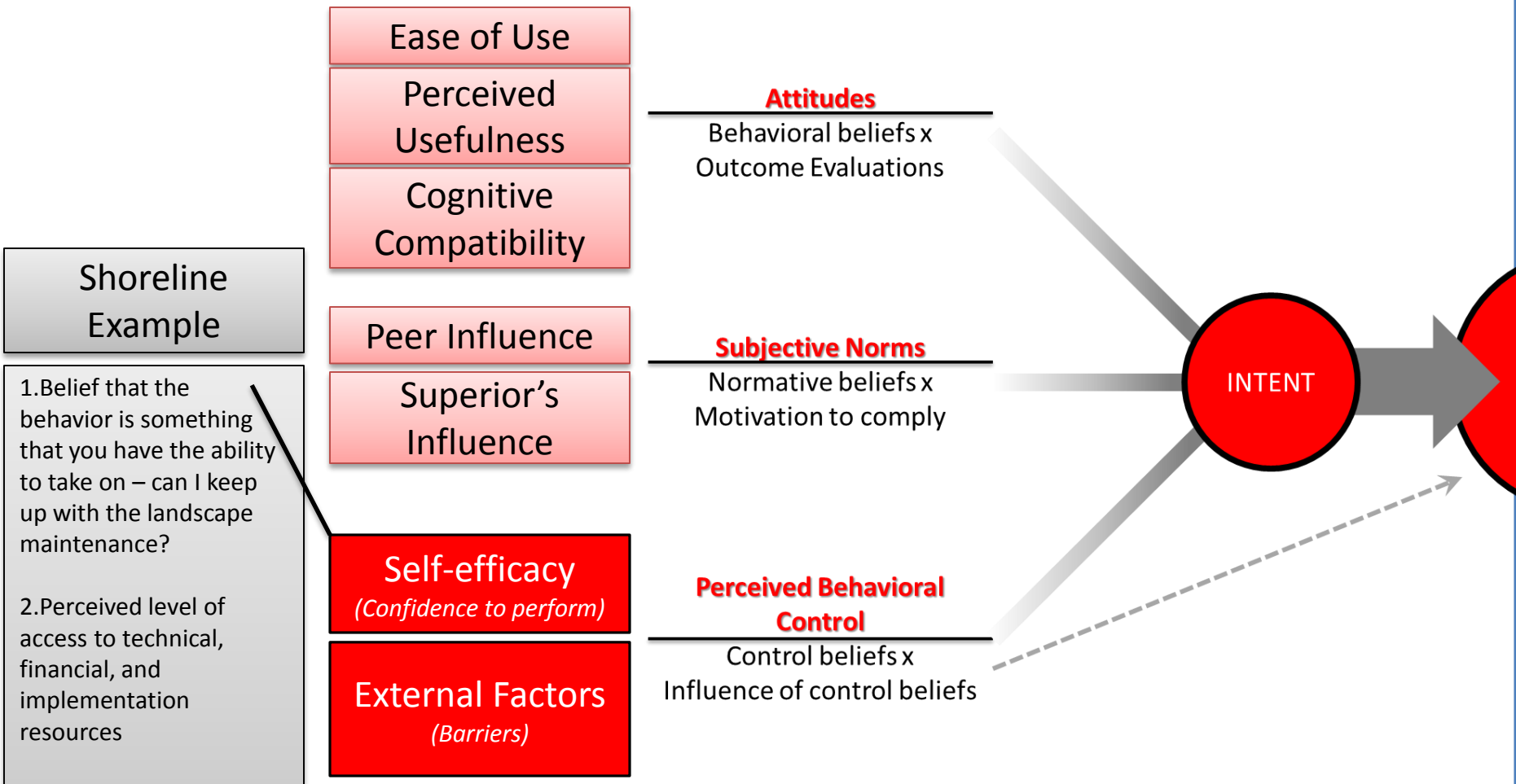


Group C

Round 1: Group 5

5 Individuals (~21%)

Theory of Planned Behavior



Source: Fishbein, M., and I. Ajzen. 2010. Predicting and Changing Behavior: The Reasoned Action approach. New York: Taylor and Francis.

QUESTIONS?

Aaron Thompson, PhD
Assistant Professor &Land Use Specialist,
College of Natural Resources
University of Wisconsin - Stevens Point

The evolving science of watershed planning, addressing the need to understand social context

My goals:

- **Promoting planning with community capacity building in mind**
- **Using social science to improve implementation success**

BUILDING CAPACITY

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