Bridging Water Quality Human Dimensions Research and Practice

Project title: Bridging Human Dimensions Research and Practice to Address Water Quality Concerns in the Great Bay Watershed

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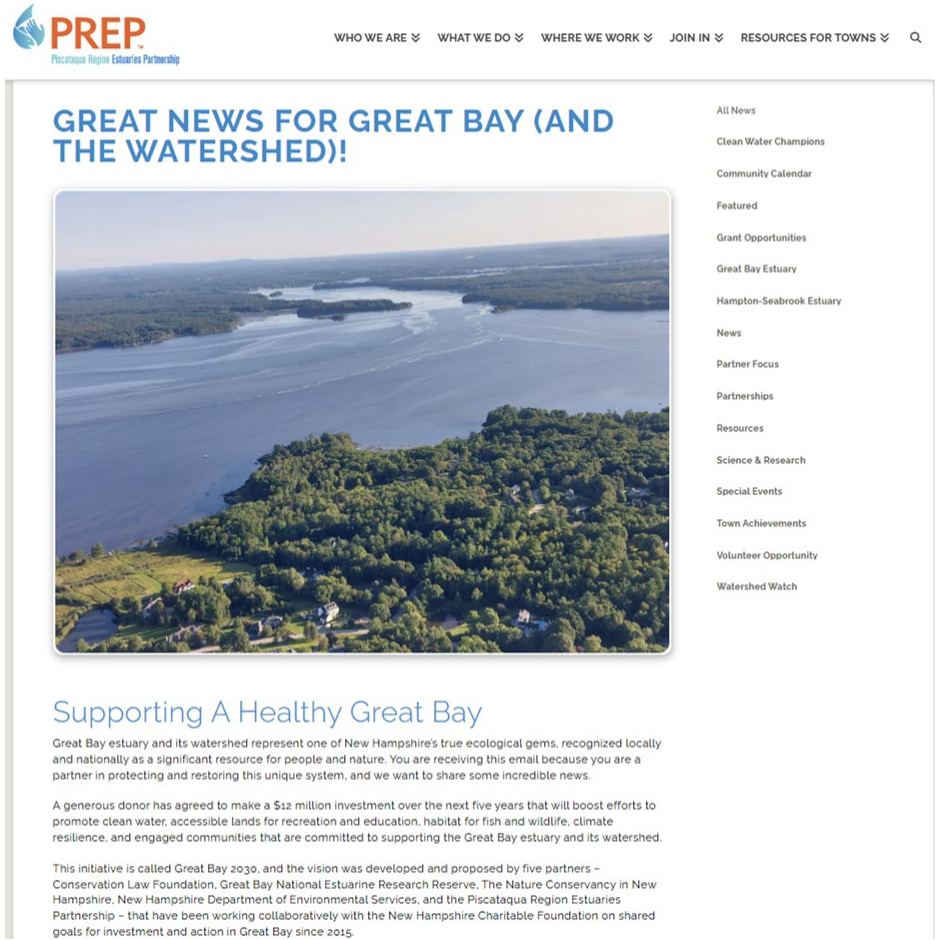
1 - University of New Hampshire; 2 - NH Sea Grant, 3 - UNH Cooperative Extension; 4 - Great Bay Nat'l Estuarine Research Reserve; 5 - NOAA Office for Coastal Mgmt

Photo Credit: GBNERR Osprey Cam



A generous donor has agreed to make a **$12 million investment** over the next five years that will boost efforts **to promote** clean water, accessible lands for recreation and education, habitat for fish and wildlife, climate resilience, and **engaged communities that are committed to supporting the Great Bay estuary** and its watershed.

ECOSYSTEMS AND PEOPLE
2024, VOL. 20, NO. 1, 2297560
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RESEARCH

OPEN ACCESS Check for updates

Cultivating commitment: how cultural ecosystem services affect visitor loyalty attitudes and intention-to-return in parks and protected areas

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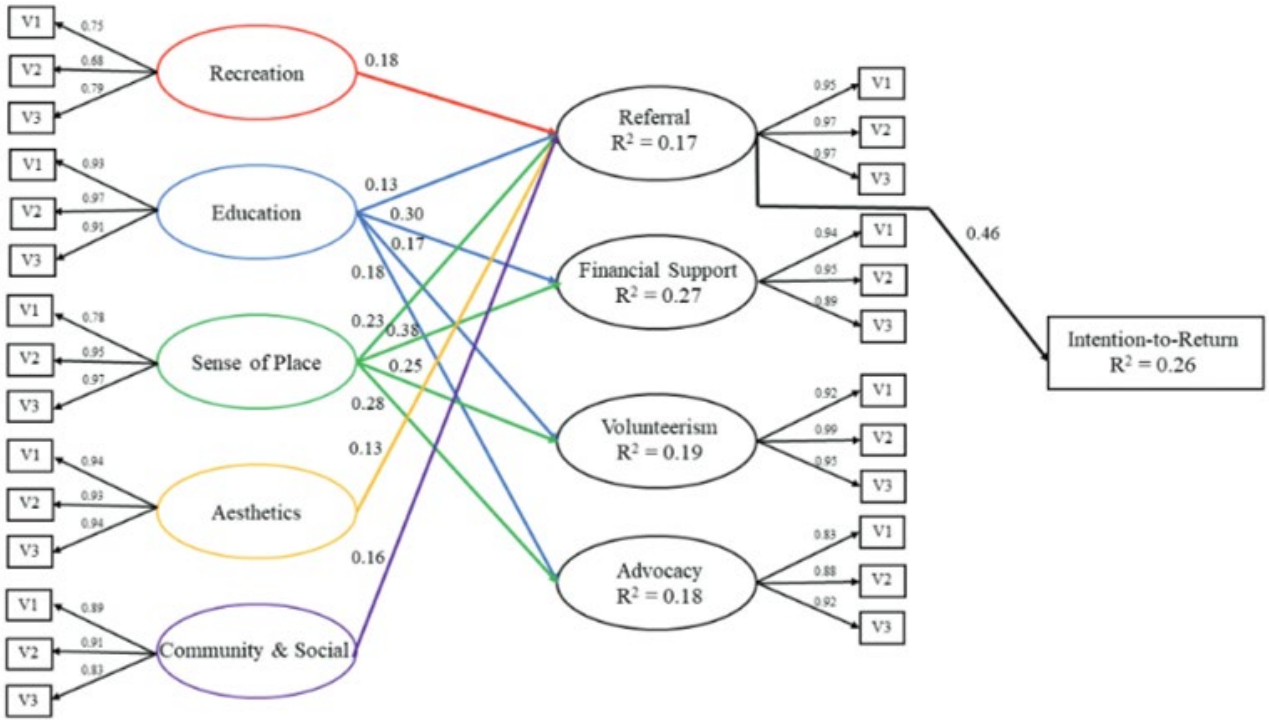


Audience polls

Our Plan for Today

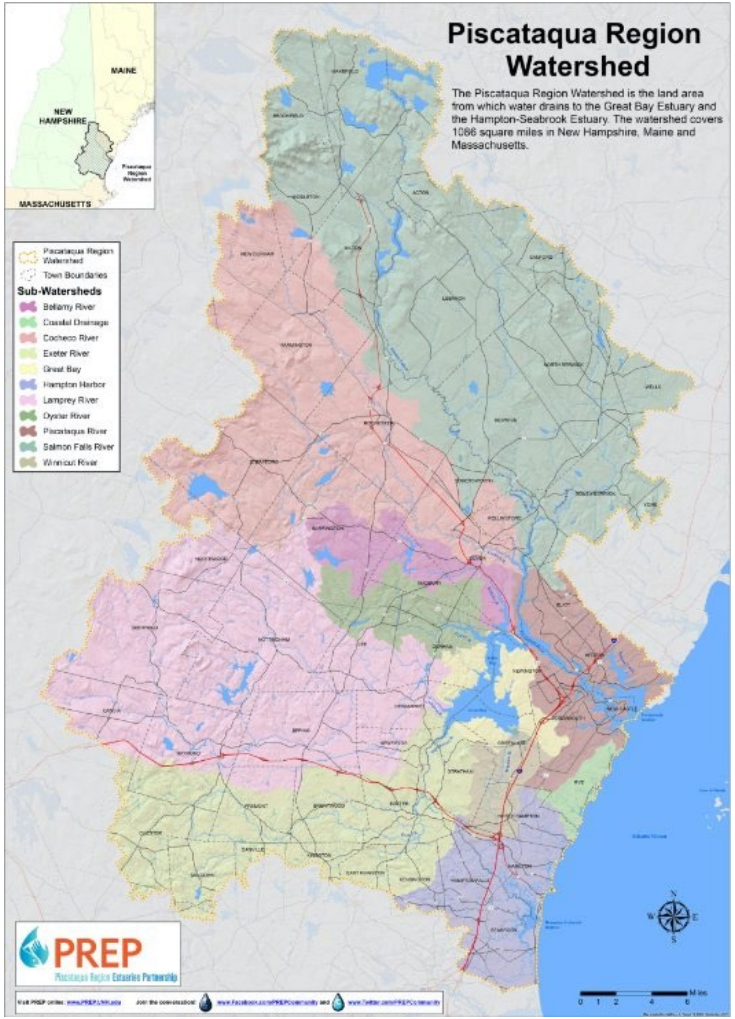
- Setting the stage
- Context and management need
- Approach, findings, outputs, and reflections
- Implications and next steps
- Q&A / Discussion
- Wrap Up

The Great Bay Region

Context and management need

Regional Context - Great Bay

- Nationally significant estuary as designated by both NOAA and the EPA.
- Estuary links significant freshwater systems bordered by communities of various sizes
    - 52 municipalities - 42 in NH and 10 in Maine
- Environmental indicators of estuarine health show mixed results demonstrating a continued need to address water quality from all angles
- Region is experiencing demographic shifts that require revisiting previous approaches to outreach and engagement
- Consumption of media and news and the social networks that shape norms have changed



Project Concept (Why?):

- Interest in more intentionally using social science and human dimensions research to address environmental challenges
- Range of disciplines, theories, and methods can be challenging to parse through (i.e. sociology, anthropology, economics, psychology, etc.)
- Data on human dimensions can be hard to access (e.g. estuarine literacy, attitudes, values, behaviors, economics, etc.)
- Temptation to rely on intuition rather than systematic research
- New investments in outreach and engagement through Great Bay 2030

What was this project?

One year National Estuarine Research Reserve System (NERRS) Science Collaborative "Science Transfer" project under the water quality focus area

- Driver for action: In order to improve the environmental conditions in the watershed, outreach and engagement efforts need to affect human behaviors, policies, practices, and (where possible) attitudes.

To do so, this project:

- Focused on ***bridging research and practice*** around social science / human dimensions
- Sought to help ***advance outreach and engagement efforts*** so they are built on existing evidence, and are adapting and evolving to meet the needs of a changing population
- Sought to ***strengthen social science literacy and create a stronger applied social science and human dimensions network*** within the Great Bay Estuary complex

Original Grant Project Team - thank you!

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Bridging human dimensions research and practice to address water quality concerns in the Great Bay watershed
(https://nerrssciencecollaborative.org/project/Williams23)

What did we do?
What did we find?
What did we create?
How are we using it?

Approach, findings, outputs, and reflections

Project Components

Kick off Workshop - January 2024

- Understanding assets, interests, and barriers around use of social science
- Input on topics / focus / structure for project - “What do you wish you knew about people in the watershed that you think would make your work better?”

Literature Review & Session Planning - Spring / Summer 2024

- Finding literature and experts
- Planning learning circles to match needs

Learning Circles - Summer 2024

- Five 1.5 hr online monthly sessions

Wrap Up Workshop - Dec 2024

- Input on materials, next steps planning

Learning Circles

Online sessions (1.5hrs) to bring practitioners and social scientists together to explore an aspect of social science research and discuss how it can inform outreach and engagement work. As a series, we hoped the circles would:

- ***Build Connections*** among practitioners and social scientists
- ***Increase Confidence*** to engage with social science research and partners
- ***Deepen Knowledge*** about how to interpret and apply social science research
- ***Increase Awareness*** about needs for social science research, collaboration opportunities, and potential partnerships
- ***Collaboratively Generate Actionable Takeaways*** from social science research (e.g., Fact Sheets or other summary products)

Key Takeaways from Learning Circles

Learning Circle Topics

- Conceptual Frameworks for Motivating Behavior Change (May)
- Documenting Public Opinion to Guide Programs & Influence Policy (June)
- Understanding and Building Loyalty Among Visitors and Volunteers (July)
- Social Science For Communications and Messaging (Aug)
- Drivers of Local Policy Change and the Role of Technical Assistance (Sept)

https://nerrssciencecollaborative.org/resource/peer-learning-circle-summaries

Key Takeaway Highlights - Learning Circle #1: Conceptual Frameworks for Motivating Behavior Change

Practitioner Context: How can we use human behavior and theoretical models to improve engagement and outreach efforts? Are there local and national examples of using social science for environmental behavior change?

Key Takeaways:
Vocabulary: Shared vocabulary and terminology to bridge research and practitioner conversations about social science
Theoretical Models: Many different theoretical behavioral models can help guide outreach, engagement and technical assistance, but it's not always clear how to apply the models
Normative Messaging: People are motivated to follow norms, but norms change
Start from Agreement: When people disagree with you, start from where you can agree

Key Takeaway Highlights - Learning Circle #2: Documenting Public Opinions to Guide Programs & Implement Policy

Practitioner Context: How can we better understand the public opinions on environmental topics to best tailor programs to the public, partnership opportunities, and communications with policy makers?

Key Takeaways:

Existing Local Surveys: Recent public opinion surveys conducted in the Great Bay watershed.

Public Opinion and Policy Support: Polls/surveys can effectively capture both

Clean Water: People in the Great Bay watershed value clean water

Surveying & Processing: Partnership opportunities for data collection and interpretation

Key Takeaway Highlights - Learning Circle #3: Understanding and Building Loyalty Among Visitors and Volunteers

Practitioner Context: What are methods for increasing engagement of visitors and volunteers? What motivates volunteers, program participants, and visitors to public lands/facilities?

Key Takeaways:

Inquiry Based Engagement: Begin every conversation with a question

Visitor Tracking Capacity: Differs based on size and type of organization

Importance of Word of Mouth: How people learn about programs and public lands

Sense of Place: People are drawn to engage with the Great Bay because of “cultural ecosystem services”

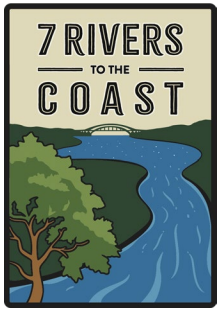
Signs: Use intention so there aren’t too many

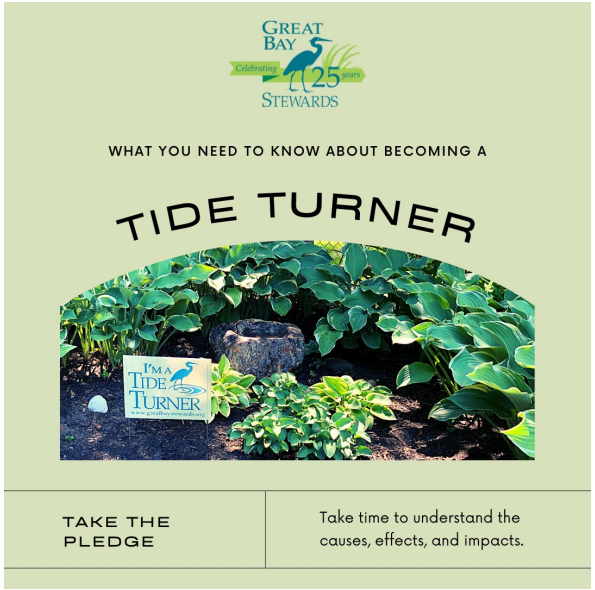
Key Takeaway Highlights - Learning Circle #4: Social Science for Communications and Messaging

Practitioner Context: How do we improve science communication to effectively engage people in pro-environmental action?

Key Takeaways:

- Know Your Audience
- Place-Based Messaging
- Connect, Not Convince
- Collaborate on Communications - power of networks





Key Takeaway Highlights - Learning Circle #5: Drivers of Local Policy Change and the Role of Technical Assistance

Practitioner Context: What drives better policies and practices? How can research inform improved approaches to technical assistance, municipal staff support, and community engagement?

Key Takeaways:
Quality of Collaboration: Bring in and engage with different types of expertise.
Time, Twists & Turns: It takes time to go from science knowledge to policy action
Requires Skill, Sensitivity and Trust
Respect Local Knowledge & Perspectives

Outputs - Resources and References

- Learning Circle Discussion Summaries (for participants)
- “Takeaway” overviews on Learning Circle topics
- Directory of interested researchers & practitioners
- Inventory of existing studies & resources of interest
- Social Science Basics Video
- Workshop summaries

DRAFT TO SHARE (FINAL WORKSHOP)
KEY TAKEAWAYS & RESOURCES:
Conceptual Frameworks for Motivating Behavior Change

This document is a summary of takeaways that could be useful to practitioners and researchers interested in this topic, especially as applied to the Seacoast region of New Hampshire. Generated from “Learning Circle #1,” organized by the Bridging Human Dimensions Project. Additional shared project files are available at this link.

Practitioner Context & Challenges

★ **A better understanding of human behavior**, and its relationship to environmental conditions and protection, **is important to inform the work of outreach and engagement practitioners** because environmental protection relies on how humans interact with the environment and each other.
★ **What should technical assistance, outreach, engagement practitioners know about social science** generally **and where can they learn** about it?
★ Are there **social science frameworks, theories, and models that are particularly helpful** for understanding environmental mindsets, behaviors, policies, practices, and interactions?
★ Are there **local examples** of applying social science frameworks, theories, and models to outreach and engagement projects and project planning?
★ Are there **social scientists who are interested in collaborating** with outreach and engagement practitioners **working around the Great Bay**?

Key Takeaways

- Social sciences that can help inform understanding the relationship between people and the natural environment include psychology, sociology, anthropology, economics, etc.

Project/Paper Title	Lead Investigator	Data Collection Methods	Theoretical Framework	Data Collection Timeframe	Study Location	Data Access Information	Management Issue(s)	Study Subjects	Key Findings
Why People Move to and Stay in New Hampshire	Kenneth M. Johnson	Used Granite State Poll (GSP) to gather data via phone on recent migrants and long-term residents of the state; 2063 polled	No specific framework mentioned. General demographics / perceptions.	summer 2018-fall 2019	New Hampshire (all state)	none found - ask authors?	General human behavior	NH residents (new and long term)	"Family and the natural env. are … to and stay in NH"; "people mo… than current residents"
Sociocultural Dimensions of Environmental Stewardship in New Hampshire: Implications for Adult Environmental Education	Ian Patrick Hanley	Interviews with participants in volunteer program /	"The overarching aim of this dissertation is to expand evidence and theory of adult identity processes in the context of environmental stewardship, as well as to provide knowledge and recommendations to environmental stewardship and environmental education professionals. "	interviewed 2018 and 2019 cohort members (unclear when interviewed)	New Hampshire	none found - ask authors?	Environmental stewardship behavior and adult education	NH residents in volunteer program	"This line of inquiry stems from … environmental stewardship act… environmental content knowle… forms of cultural and social eng… these dual aspects of environm… and educators can provide bett… environmental stewardship effo…
Do You Trust Scientists About the Environment? News Media Sources and Politics Affect New Hampshire Resident Views	Lawrence C. Hamilton	Used Granite State Poll (GSP) to gather data via phone; 568 polled	No specific framework mentioned. General trust in science / scientists	Feb 2014 (see note re: more recent work?)	New Hampshire (all state)	none found - ask authors?	General environmental / trust in science, scientists	NH residents	"64 percent say they trust scien… environmental issues, whereas … not. The percentage of New Ha… scientists is significantly higher … percentage found on a fifty-stat… in New Hampshire versus 54 pe…
Great Bay Estuary Resident Views of Water Quality Issues	FM3 Research	Multi-modal Resident Survey; 861 subjects	No specific framework mentioned. General perceptions / likelihood of action	May 25-June 7, 2023	New Hampshire seacoast	See link	water quality / stewardship behavior / willingness to act	Adult Residents of the Great Bay Estuary Watershed	From LV - "See water quality as … ID their watershed as Great Bay… incentives for septics make a di… make that much more differenc… Compelling themes- Jenga effe… species. Jobs and recreation lo… medium effect; Trusted messen… climate change - more intereste… change in general versus floods… narrow impacts); HIGH willingn… about - ecosystems and wildlife… Regional differences;
New Hampshire's Citizens Value and Use Water in Many Ways	Shannon Rogers	Used UNH Survey Center - "In total, Survey Center staff received responses from 406 New Hampshire residents in 316 towns. The oversample included 210 randomly sampled respondents from towns within the watershed, including those in Maine"	No specific framework mentioned. General perceptions / likelihood of action	September 20 and September 29, 2013	Piscataqua Rgion Watershed - NH & ME	Significant summary data in report - contact authors for raw data?	water quality / stewardship behavior / willingness to act	Adult Residents of the Great Bay Estuary Watershed	"survey shows many Granite St… Piscataqua Watershed are conc… pollution in our water resource… higher fees to ensure water qu…
Outreach and citizen engagement in the Winnicut River watershed: A participatory action study watershed: A participatory action study	Jill Farrell	Participant observation and direct participation	Participatory action research / policy sciences frame / collaborative learning / public engagement / social learning / public participation	2009-2010?	Winnicut River watershed - NH	unlikely additional data beyond what is in thesis	citizen initiated stewarship / organization	Participants in noted processes	Recommendations include: wa… planning; involve regionally/co… regionally; focus on cultivating … knowledge; employ a systems a… and sustainability.
Preparing for climate change in three New England coastal communities: Lessons on motivations, approaches, and outcomes	Chris Keeley	Document review, site visits, key informant interviews	Case study frame / climate adaptation / transition from concern to action	?? (2011-2012?)	Bridgeport, CT / Seabrook Hampton Estuary, NH / Cape Cod, MA	unlikely additional data beyond what is in thesis	Climate adaptation	Key informants (experts in climate adaptation)	"The major factors prompting c… experience with extreme weath… climate change, and access to t… adaptation process was largely … approaches varied and include… experiences, updating a traditi… planning framework, and using … "For example, findings suggest …

Reflections:
Are we meeting Learning Circle desired outcomes?

- ***Build Connections*** among practitioners and social scientists
- ***Increase Confidence*** to engage with social science research and partners
- ***Deepen Knowledge*** about how to interpret and apply social science research
- ***Increase Awareness*** about needs for social science research, collaboration opportunities, and potential partnerships
- ***Collaboratively Generate Actionable Takeaways*** from social science research (e.g., Fact Sheets or other summary products)

Reflecting on Impact:
Increasing Awareness

Bridging Human Dimensions of Water Quality
Learning Circle 2: Documenting Public Opinions to Guide Programs and Implement Policy
Meeting Summary - June 27, 2024

This document is a summary of the second Learning Circle in a series organized by the Bridging Human Dimensions Project. Shared project files are available at this link.

I. Meeting Overview

Location: Zoom

Time: 11:00 AM- 12:30 PM, Thursday, June 27, 2024

Overview: During this peer learning circle session, featured voices in research and practitioner roles will prime our group for discussion by sharing examples of existing research about, and tools available in, the Great Bay region to document public opinions and how that work is being (or could be) applied.

Featured Voices:

- Kirsten Howard - NHDES Coastal Program, Hampton/Seabrook Resident Survey (kirsten.howard@des.nh.gov)
- Janet Swim - The Pennsylvania State University (janet.swim@gmail.com)
- Miranda Everitt - FM3 Research (miranda@fm3research.com)
- Tracy Keirns - UNH Survey Center (Tracy.Keirns@unh.edu)
- Others in the room! Thank you for participating in our community.

Objectives:

As a series, Learning Circle sessions aim to:

- ***Build connections*** among practitioners and social scientists
- ***Increase confidence*** to engage with social science research and partners
- ***Deepen knowledge*** about how to interpret and apply social science research
- ***Increase awareness*** about needs for social science research, collaboration opportunities, and potential partnerships
- ***Collaboratively generate actionable takeaways*** from social science research

Learning Circle 2 Session Specific Objectives:

- ***Gain awareness of research*** about public opinion and public perceptions completed in the Great Bay watershed.
- ***Build knowledge about resources and networks*** available to support data collection and interpretation.
- ***Reflect on practical issues related to doing social science research*** in academia versus applied settings (e.g., IRB, job/workplace specific constraints).
- ***Collaboratively shape and refine session product(s)*** that help meet the goals of this Learning Circle Series (i.e., increasing confidence, deepening knowledge, etc.)


GROWING
A COMMUNITY OF
CHANGEMAKER

Funded by the NH Charitable
Foundation through the Great
2030 Initiative, the Changem
Program was piloted in the fa

Have you ever heard about an environmental issue happening in your community—or being discussed at the State House—that you have a strong opinion about and considered getting involved with, but then had second thoughts on such as:

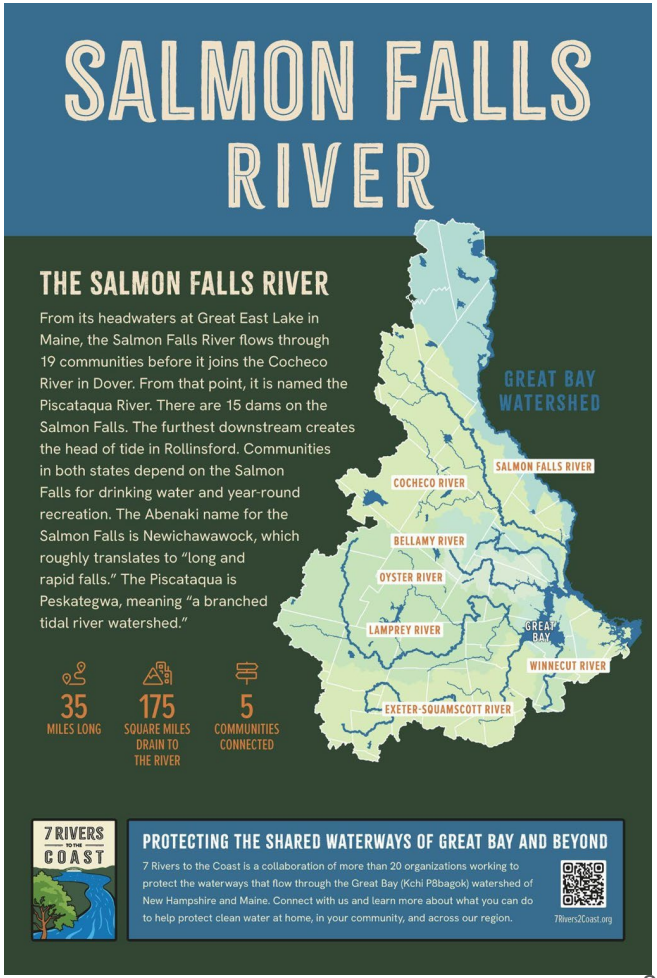
- Maybe I don't know enough to talk about this—I'll leave it to the experts.
- I'd be too nervous to get up at the podium in a public meeting.
- What will my neighbors think if they disagree with me?
- I'm too busy; hopefully someone else will speak up.

If any of these thoughts sound familiar, you might be a great candidate for the Great Bay Changemaker Program. This is a new initiative, co-led by the Great Bay NERR and the Conservation Law Foundation, that aims to build the skills, knowledge, and confidence to effectively advocate for clean water and healthy communities among residents in the Great Bay region.

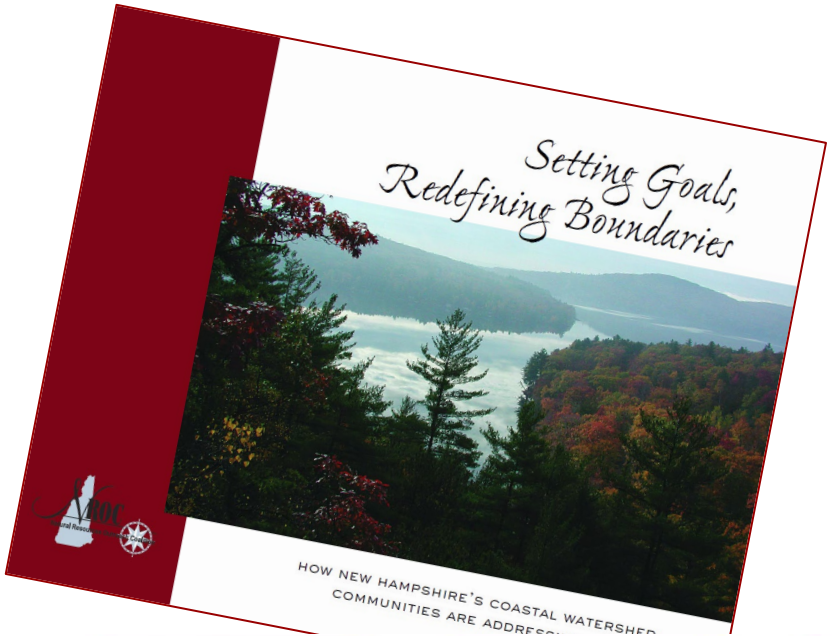
Why do we need changemakers? Over the years we have seen many excellent projects and policy proposals falter because leaders weren't sure there was adequate public support to make a bold change. The Great Bay Changemaker Program aims to help concerned residents understand how to use their voices effectively, figure out how to get involved at whatever level they're able, and to help support policy changes and investments needed to make our waterways healthier and our communities more sustainable.

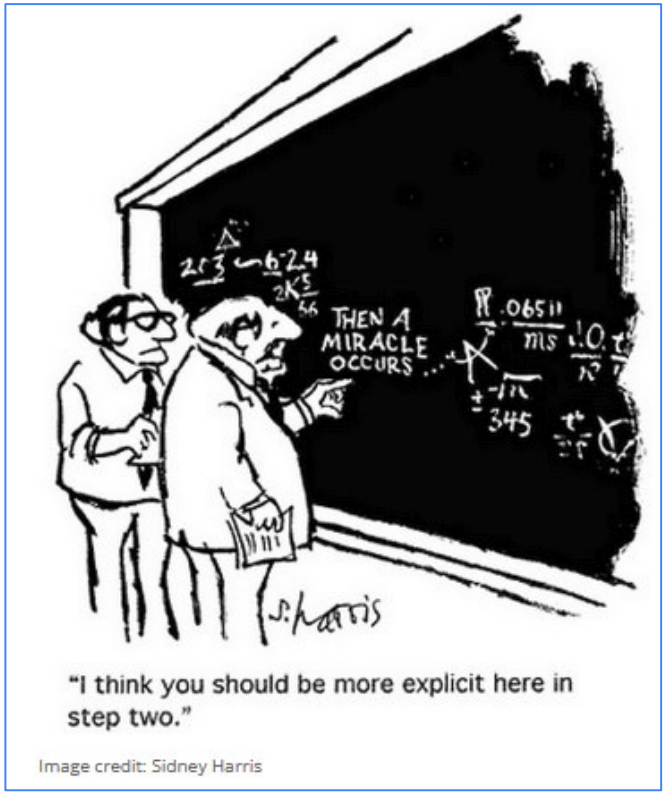
Funded by the NH Charitable Foundation through the Great Bay 2030 Initiative, the Changemaker Program was piloted in the fall of 2023 with four training sessions and fifteen participants who learned about the threats to the Great Bay Estuary and how local land decisions are made that can either impr or further reduce water quality. They heard inspiring examples from aroun region in which residents engage to better decision making. Partici learned and practiced a range of skills such as how to tell a story why they care about our regi resources, how to make soci

Reflecting on Impact:
Increasing Connections and Confidence



Reflecting on Impact:
Deepening Knowledge





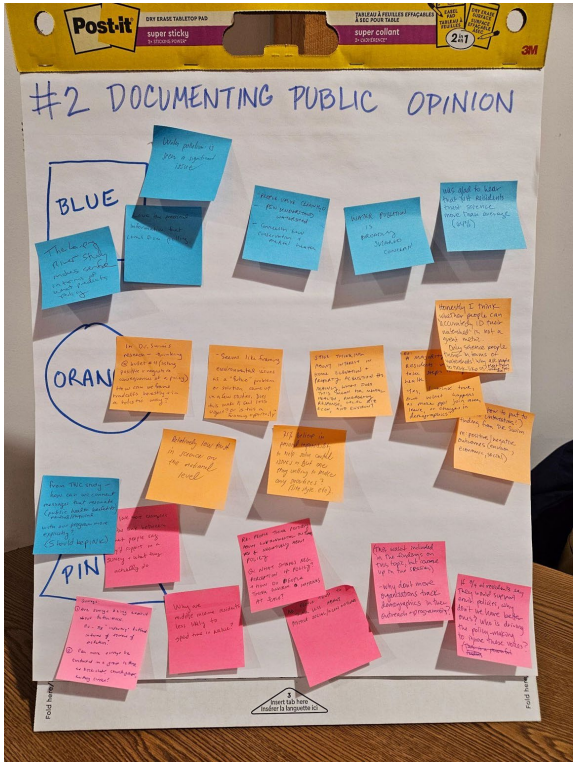
"I think you should be more explicit here in step two."

Image credit: Sidney Harris

Reflecting on Impact:
Starting to Implement

Sea Grant
NEW HAMPSHIRE

Where are we headed next?



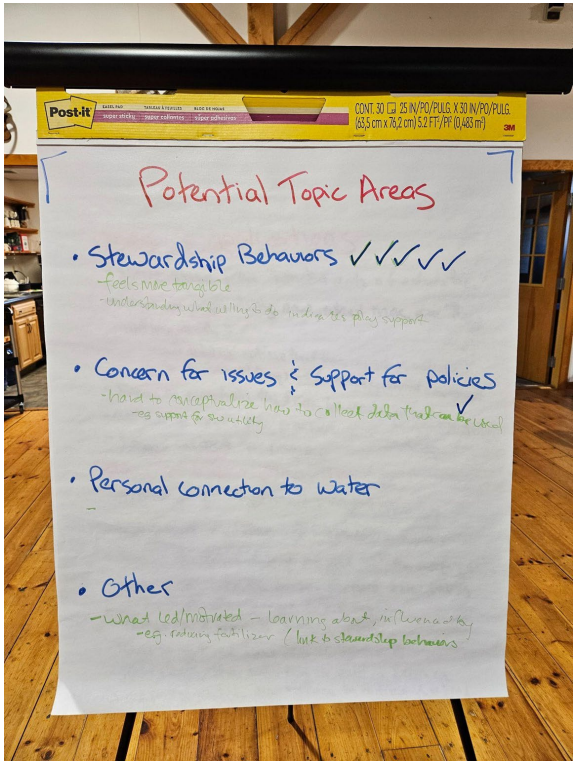


Photo Credit: GBNERR Osprey Cam

National Estuarine Research Reserve System Science Collaborative

GREAT BAY NATIONAL ESTUARINE RESEARCH RESERVE

Sea Grant NEW HAMPSHIRE

Questions?

Photo Credit: GBNERR Teacher Workshop