Sharing Water Quality Best Education Practices: Reducing Time and Cost of Water Quality Education Projects for Northern New England Lakes

Jurij Homziak
Lake Champlain Sea Grant, University of Vermont, Burlington, VT

Laura Wilson
University of Maine Cooperative Extension, Orono, ME

Jeff Schloss
University of new Hampshire Cooperative Extension Service, Durham, NH

Northern New England lakes

Asset to local communities

- Quality of life
- Economy/tourism

Development threatens water quality and value of assets

- Rapid development of lake communities
- Increase in second homes
- Greater seasonal population
- Sprawl
- Increased NPS

Impacts of shore land development on lakes

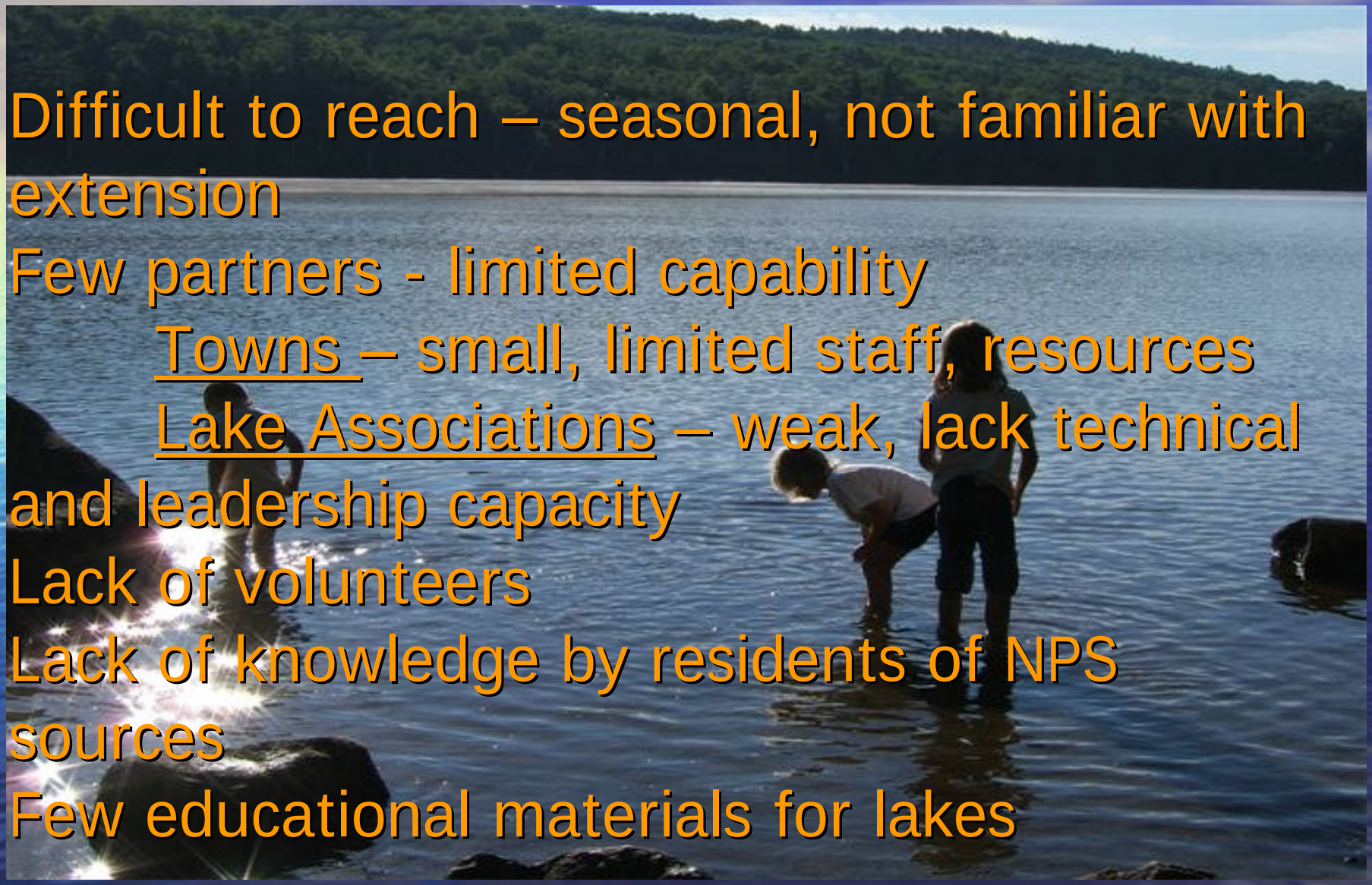
- Bacterial contamination and beach closures
- Nutrient inputs
- Erosion and Sediments

Difficult issue to address

Extension - overstretched

- Limited funds
- Fewer specialists
- Lack of appropriate skills, tools
- Competing needs

Seasonal lake communities



Difficult to reach – seasonal, not familiar with extension

Few partners - limited capability

Towns – small, limited staff, resources

Lake Associations – weak, lack technical and leadership capacity

Lack of volunteers

Lack of knowledge by residents of NPS sources

Few educational materials for lakes

Lake Education and Action Project

Tri-state, northern New England effort to reduce time, effort and cost of implementing effective lake stewardship and water quality protection activities

Objectives

- Develop Best Extension Education Practices for water quality protection for New England lakes
- Use proven practices in place in ME, VT, NH and on lake educational materials in the reg
- Replicate, adapt and test education and extension approaches
- Streamline exchange of information about effective programs
- Train each other in program application

LEAP programs

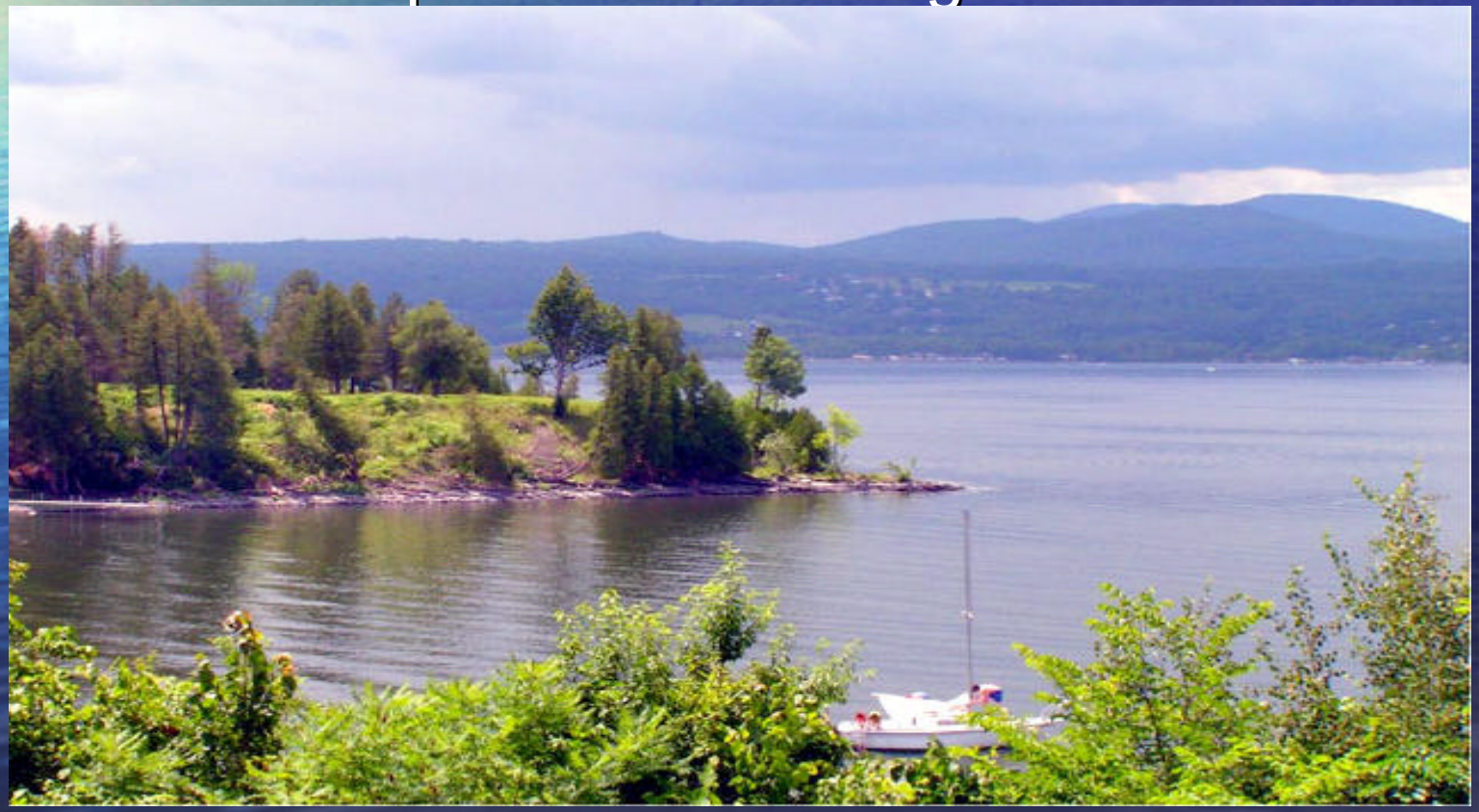
- UNH Extension:
  - Data to Action
  - Following the Flow
- UVM Extension/Lake Champlain Sea Grant:
  - Watershed Alliance
  - Shoreline Stabilization
- UMaine Extension:
  - Watershed Stewards Program
  - Outreach Training for Lake Associations

Core Programs

- NH – Lake Lay Monitoring and Data Management:
  - improve access to and understanding of lake water quality data
- ME –Lake Stewards program: train the trainers, strengthen lake association s in key skills
  - Youth Action Teams: train youth to identify and prevent/correct lake NPS sources as a service to lakeshore community
- VT – Watershed Alliance: a hands-on youth education, monitoring and service program for middle and HS youth
  - Shoreline Stabilization: town officers training, guidebook and demonstration of bioengineering erosion control

Successfully Shared Programs

- Vermont's Watershed Alliance
- Maine's Watershed Stewards
- Maine's Youth Action Teams
- New Hampshire's Following the Flow



UVM Watershed Alliance – developed in Vermont, adapted for use in Maine

Currently active in 15 schools in VT
- Leading VT watershed education program
- Recognized as Best Educational Practice, Flagship Educational Program (USDA), model watershed education program (NEEE)
- Products include

- Lesson plans that meet state science education standards

- Proven field procedures and equipment
- State and EPA approved QA/QC plans
- On-line Teachers Guide
- Intern training program
- Web page
- Web based data storage and retrieval
- Summer educators training institute

Cost, time and effort invested

Three years in development, one pilot year, two in development.
1 FTE educator, up to 8 interns annually

Estimated cost:

- 1 FTE MS level educator $41,700/yr
- Supplies, travel, equipment $10,000/yr
- Interns $4,800/yr
- Summer Institute $8,000/yr
- Data management system $24,000

ME can implement in one year, using available materials and exchange of educators

Youth Action Teams

- Developed in Maine, adopted in NH and VT
- Focus on shoreline stabilization, erosion control through buffer planting
- Program provides volunteers to assist lakeshore property owners
- Successful model of lakeshore stablization

Maine

- One crew of three students, 32 hours/week
- Focus on eight lakes/lake groups in three counties

Vermont

- Intern led high-school students
- Located in project area
- Strong local partner (Conservation District)
- 2-4 hours/day 3-4 days per week
- Focus on one lake only (St. Catherine)

New Hampshire

- High-school students
- Leaders located in project area
- Strong local partner
- Focus on one lake watershed - Acton Wakefield

Lessons learned from adapting ME model - accelerated refinement of the program

- High school students do quality work
- Students-landowner communication better than through adults
- Use shorter work hours (3 – 4)
- Some students are truly interested in the lake protection aspects, but many are just looking for a summer job
- Don’t stay hidden - A demonstration garden in a highly visible spot is the best advertisement

Lessons learned

- Good planning and design is essential
- Help landowners visualize results and guide them through project
- Use native plants
- Strong local partners essential
- Conservation Districts are excellent partners where effective lake associations do not exist
- Stay local - use local students and leaders, base locally

Benefits of formally exchanging programs

- States have been informally borrowing from one another for years
- Formal collaboration brings in tested, successful, fully developed programs
- Formal exchanges provide comprehensive training and support from experienced program leaders
- Exchanges provide significant savings in cost, time and effort
- Using the same program in multiple states quickly tests, refines and adapts the program
- Strengthens individual sxtagte and regional efforts

LEAP – Northern New England Lake Education and Action Project

Applying knowledge to improve water quality

New England Regional Water Program

A Partnership of USDA CSREES & Land Grant Colleges and Universities

1865 THE UNIVERSITY OF MAINE Cooperative Extension

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

CSREES EDUCATION • RESEARCH • EXTENSION USDA

This material is based upon work supported (in part) by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, National Integrated Water Quality Program, under Agreement No. 2003-51130-02074.

The UNIVERSITY of VERMONT EXTENSION