

# Case Studies of Volunteers Involved in Research

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# Researchers Discovering the Wealth of Volunteers & Their Data

- Increased # of sites
- Increased frequency
- Long-term data (some programs now entering their 2<sup>nd</sup> or 3<sup>rd</sup> DECADE)
- Network of trained volunteers expands the reach of science to address local issues

# Participatory Research

1. Community members should be directly involved in the design and implementation of research projects.
2. Research processes and outcomes should benefit the local community as well as the scientific community.
3. Community members should be part of the analysis and interpretation of the data and should have input into how the results are distributed.
4. Productive partnerships between researchers and community members should be encouraged to last beyond the life of the research project.

# NH Lakes Lay Monitoring Program Fish Condition Study

- Volunteers conducted fish surveys (weight, length, condition & scales)
- Data analyzed by post-doc
- Results utilized by state agency and local groups
  - Yellow perch population problem
  - Lakes Association initiated fishing derby and worked with other tournament groups to reduce populations



# NH Boat Impact Study

- Assessed cumulative impacts throughout a busy boating weekend
- Used a single watercraft to compare impacts at various areas of a lake
- Impacts of watercraft are highly dependent on lake characteristics:
  - lake area, mean depth, and bottom type; shoreline configuration, condition, and development; weed bed extent; and shoreline and lake-bottom slope.

# Relations Between Water Chemistry and Water Quality as Defined by Lake Users in Florida

- A lake user survey conducted concurrent with citizens' water sampling activities to determine if there were relationships between perceptions and trophic state water chemistry indicators.
- Found significant relationships, but noted that there were regional differences that need to be taken into account.

# Applications and Limitation of Qualitative Lake Assessment Data

- Conducted by New York Department of Conservation (CSLAP),
- Explored the inclusion of qualitative (user perception) data for assessing lakes,
- Worked with volunteers and volunteer data

# Bacteria Methods Comparison

- Compared low-tech methods commonly used by volunteer programs
  - Coliscan Easygel incubated at 35 C
  - Coliscan Easygel incubated at room temp.
  - 3M Petrifilm *E.coli*/Coliform Count Plate
- More technically demanding methods
  - Coliscan-MF
  - IDEXX Laboratories with Quanti-tray
    - Colisure
    - Colilert

# Bacteria Methods

- Compared results of samples split with Univ. of Iowa Hygienic Lab
- Assessed ease of use as well as accuracy
- Found all methods compared well to laboratory methods and were suitable for volunteer programs

# Use of Transparency Tubes for Rapid Assessment of Total Suspended Solids and Turbidity in Streams

- Ohio EPA evaluated the use of transparency tubes to predict total suspended solids concentrations
- Worked with volunteers to determine whether significant differences existed between individual observers under a variety of conditions
- Determined that turbidity tubes have broad application for low cost stream monitoring programs – validating use by volunteer programs

# Detecting Water Quality Trends With Citizen Volunteer Data

- Minnesota
- Missouri
- Florida
- Lake George, New York
- Michigan - Water Clarity Trends in Michigan Lakes and Their Relation to Ecoregion and Land Use/Cover

# Researchers Using Volunteer Data

- Responses in the James River Arm of Table Rock Lake, Missouri (USA) to point-source phosphorus reduction (LMVP)
  - Volunteer data used alongside professionally collected data
- Long-term monitoring of growth in the Eastern Elliptio, *Elliptio complanata* (Bivalvia: Unionidae), in Rhode Island: a transplant experiment.
  - Relied on volunteer collected water quality data

[www.usawaterquality.org/volunteer](http://www.usawaterquality.org/volunteer)

- Maintain a section of research about, for, by or with volunteer data
- Includes links to full report or program websites
- Updated regularly
- Please send relevant reports

# Conclusion

- Volunteer generated data is gaining acceptance within the academic community
- Agencies are learning to work with volunteers to validate volunteer methods as well as to address questions of local concern
- Volunteer community needs to capitalize on the increasing use of volunteer generated data to help sustain programs

- Questions?

- Favorite Studies to Share?

