



2005 Squam Watershed Workshop Summary

Plymouth State University

June 17, 2005

Hosted by:



Center for the Environment

The logo for Plymouth State University features a green wave-like graphic above the text. The text "Plymouth State" is in a large, green, serif font, and "UNIVERSITY" is in a smaller, black, sans-serif font below it.

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Center for the Environment

October 4, 2005

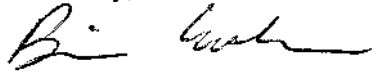
On June 17, 2005 interested individuals and representatives from organizations that are stakeholders in environmental issues in the Squam Lakes watershed convened a conference organized by the Center for the Environment and the Squam Lakes Association. The conference was designed to provide a forum for the discussion of environmental issues in the watershed. We are pleased to provide you with a report of the outcomes from that important gathering.

The Squam Lakes watershed is a beautiful resource that is treasured by community residents, but the region faces many environmental challenges. Invasive species, intensive development, increased human activities, and a myriad of other issues will affect the future environmental health of the region. The workshop was organized, in part, to facilitate the development of ways to address these challenges.

The document enclosed provides an overview of discussions about important environmental issues in the region, summaries of the scientific presentations made at the conference, and the ideas that were generated about how to ensure the watershed continues to have excellent environmental quality. One of the most important decisions made at the conference was that the event should be repeated in the future to continue to provide a forum for organizations and researchers who are active in the watershed to communicate and to share information with local decision makers. The Center for the Environment will facilitate this effort. There are many fascinating projects underway and nearly unlimited opportunities for future research projects in the region, and we look forward to many years of productive collaboration on efforts to address important environmental issues in the Squam Lakes watershed.

On behalf of the Center for the Environment, thank you for your interest in this project.

Sincerely,

A handwritten signature in black ink, appearing to read "B. [unclear]".

Associate Director

2005 Squam Watershed Workshop Report

Executive Summary

The first annual Squam Watershed Workshop included presentations of several lines of research and monitoring underway in the watershed, with the complementary goals of:

1. Improving communication (and thus effectiveness) among those collecting this information;
2. Identifying priorities for future research and monitoring, including projects suited to graduate students in the new M.S. graduate degree program on Environmental Science and Policy at PSU;
3. Developing an enhanced dialog and action plan for better engagement of local decision makers.

A key issue raised was that of *cumulative impact*, the changes and negative trends in the environmental quality and aesthetic attributes of a watershed or region due to seemingly insignificant impacts that nevertheless add up to measurable change.

The priorities were categorized as follows, with each category including a) research and monitoring information and data gaps, b) management, c) policy, and d) public education and outreach:

1. Water quality assessment and trends (the most visible and measurable attribute of environmental quality) (we lost this by name)
2. Biological monitoring (the baseline data for ecological integrity)
3. Shoreland zone (including lack of buffer strips and use of best management practices for protection of water quality and aesthetics)
4. Upland Watershed (such cumulative impacts to water quality via tributaries, and ridge line development)
5. Invasive species (especially plants such as milfoil)
6. Recreation and tourism (including overuse and surface use social conflicts).

The Center for the Environment at PSU intends to accept the challenge of the participants of this first Squam Watershed Workshop, facilitating this dialog as an annual event in the future. The plan is to organize alternate years as a science forum, with the intervening years as a public engagement workshop, directly involving stakeholders, policy makers, local leaders, and involved citizens. *These complementary events will improve the dissemination of best management practices and encourage innovative policies and management to make the Squam region a regional leader in protecting lake resources for the northeast.*

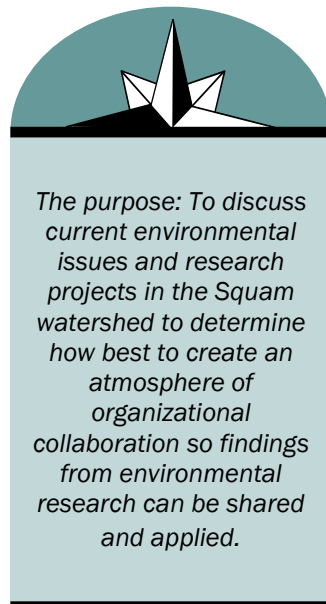
Introduction

The Squam Lakes watershed is a region of unique natural beauty that offers abundant amenities for residents of the area, many of whom are strongly attached to the environmental attributes of the watershed. The quality of natural environment in the watershed faces many threats, however, and issues such as population growth and the spread of milfoil are examples of the complex problems that affect the watershed's future.

On June 17, 2005 interested individuals and representatives from organizations that are stakeholders in environmental issues in the Squam watershed gathered at a conference sponsored by the Center for the Environment and the Squam Lakes Association. The conference was held on the campus of Plymouth State University for a full day. The purpose was to discuss the current environmental issues and research projects in the Squam watershed to determine how best to create an atmosphere of organizational collaboration so benefits from environmental research can be shared and applied. In particular, the goal was to begin to develop research ideas for future graduate student projects

The conference began with presentations of findings from research projects recently completed or currently underway in the watershed. The presentations provided examples of the high-quality professional research being done in the region. Summaries of the presentations and the visual materials used in them are summarized in this report. Discussions of these and other projects indicated that the research conducted in the watershed over the last twenty years has focused on a wide variety of topics, and also clarified an important point—that more integration among researchers is needed to prevent replication and to facilitate a more

holistic approach that incorporates the findings of other research in the region. Environmental issues are complex phenomena that are affected by social, political, biological, atmospheric, and a multitude of other factors, and research on these issues is most useful when informed by complimentary works on related topics. The research undertaken by professionals and organizations in the Squam watershed is diverse and continues to contribute to developing more complete understanding of the watershed, the issues it faces, and the best means for addressing them.



In the third part of the workshop, small groups of six to eight participants were asked to discuss research and monitoring needs about a specific topic. The discussion focused on six areas: lake and tributary water quality; biological monitoring; invasive species; shoreland zone issues; upland watershed issues; and recreation and tourism. The outcome of these small group discussions is summarized in this report.

The groups reported on the ideas generated about each topic followed by a lively exchange by the whole group. Discussion of the activities of the many NGO's in the region revealed that there are excellent opportunities for organizations and institutions to develop complimentary monitoring programs.

The workshop concluded with a discussion, facilitated by Steve Kahl, of the activities that should follow the event to ensure that the ideas generated during the workshop are pursued. The discussion is summarized in this document, and participants have already begun to engage in some of the activities suggested in the workshop. The workshop was an active and stimulating event that generated many important ideas, and this document is drafted to record those insights and facilitate their application.



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Squam Watershed Workshop Agenda

Friday, June 17, 2005

Plymouth State University

Hartman Union Building (The HUB), High Street

Multi-Purpose Room (second floor)

Please park behind Hyde Hall in lots #301 or 303

- 8:30 am Arrive (pastries, coffee, tea, and juice will be available)
- 8:45 am Opening remarks - Chris Devine, Squam Lakes Association
Steve Kahl, Center for the Environment, Plymouth State University
- 9:00 am Overview of existing work on Squam Lakes and the watershed
- Roger LaRochelle – GIS, Land Use and Natural Resource Patterns
 - Rick Van de Poll - Bio Inventory
 - Jeff Schloss - Water Quality
 - Harry Vogel – Loon Research
 - Chris Devine – Milfoil Management, Boating Use
 - Steve Kahl - Indicators and Unexpected Threats for Lakes
- 10:50 am Break
- 11:00 am Discussion on research & monitoring needs by topic
- Lake and tributary water quality
 - Biological monitoring
 - Invasive Species
 - Lake ecology
 - Shoreland protection
 - Upland watershed protection
 - Recreation & tourism
- 12:00 pm Lunch (served in the meeting room)
- 12:30 pm Continued discussion on research & monitoring needs by topic:
- 3:15 pm Next Steps & Closing Comments

Thank you to the William and Jean Hallager Fund of the New Hampshire Charitable Foundation and Rockywold-Deephaven Camps, Inc. for their support.

Discussion Summary Points

Common Themes

The following were identified as common themes throughout the discussion on individual topics:

- More research and monitoring in a variety of areas is needed.
- Research needs to be interdisciplinary.
- Various projects and research need to be integrated.
- It is important to think outside of the box and outside the lake. Think of the watershed, not just the lakes.
- Data and research findings need to be more available to a variety of audiences.
- Local officials need to understand the research and results.
- Policy and land use decisions need to be developed from the data.

Future Steps

The day concluded with a general discussion on the next steps that ought to follow the workshop.

- The Squam watershed has been the site of many past research projects. This experience can be combined with future work to make the Squam Lakes and watershed a center for fresh water ecology and social science. Much like Hubbard Brook as a place has attracted research over many years, Squam could become a premier site for interdisciplinary.
- Create an organization that pulls together a broader group for social and environmental research focused on the Squam watershed, as no one organization currently does this.
- Develop an annual “Squam Science Conference” designed for a wide variety of audiences.
 - This workshop can serve as a great start to a Squam conference.
 - It is important to maintain continuity and keep people in touch. If the frequency of a conference is too long, the people involved will change and continuity will be lost.
 - An essential feature of long range planning is to regularly update the plan.
 - How frequently should this conference be held? Every 5 years? More frequently?
 - Other people, such as local officials, need to be involved.
 - The consensus was to have an annual gathering that focuses on policy one year and research the next.
- Develop a means of sharing information and data
 - Information needs to be distributed in a means accessible to the public.
 - Data often needs to be explained many times and in different ways to different audiences.
 - A web site of Squam data would be one means of making the data accessible.
- A convener of research (local, region and statewide) is needed.
- Funding for future projects needs to be facilitated and the distribution managed.

Summary

The first Squam Watershed Workshop was an event designed to bring together many of the organizations and individuals involved in research on environmental issues affecting the watershed. The day's proceedings clarified a number of facts: First, it is apparent that a wide variety of issues affect the current state and future environmental health of the Squam Lakes watershed. Second, it is clear that many of these issues have been identified, and some are the subjects of impressive professional research projects that are producing usable knowledge for efforts to address these important environmental issues. Third, place-based organizations that involve local residents in lake issues and educate users about the region are integral parts of the research being conducted in the watershed. These organizations provide direction for research and support for research, and also provide a forum for the dissemination of findings so that new information from the research can be applied in efforts to address important. *In sum it is clear that the region faces many environmental threats, but regional organizations and researchers are actively engaged in efforts to understand and deal with them.*

While these facts are encouraging, it is also clear that improvements in the way research is conducted and used in the region can be made. Over the course of the workshop participants frequently expressed that they were not aware of all the research projects in the watershed, and some of the work they were unaware of could be useful in endeavors of their own. The frequency of these comments indicates that channels of communication among researcher and organizations need to be more fully developed and maintained. The Center for the Environment at Plymouth State University volunteered to work in collaboration with other organizations to develop a series of mechanisms for achieving

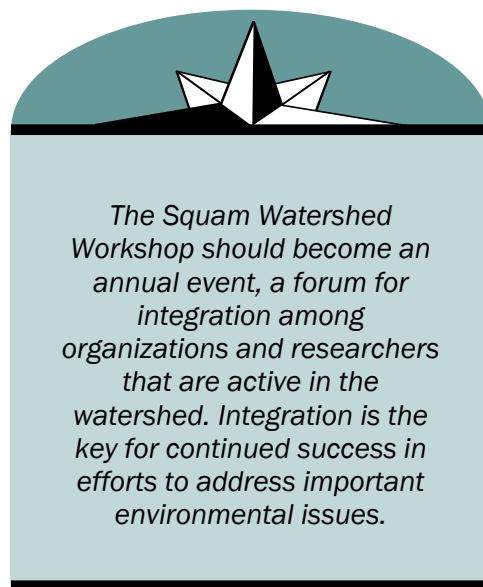
this important goal. As part of that effort, there was consensus that the Squam Watershed Workshop should become an annual event, serving as a forum for integration among organizations and researchers.

Enhancing communication about existing and on-going research was identified as an important step towards empowering efforts to address environmental issues in the region. Several as yet unaddressed research needs were also identified by project participants. Research is needed on these topics because they constitute some of the

most important environmental issues that will affect the Squam watershed in the future. The workshop facilitated participants' identification of these needs by asking them to think about specific topics. However, some needs are so important that they were identified no matter what area of focus participants were asked to discuss. As participants consider these issues and decide whether to undertake research to address them they should contact each other so resources and efforts can be pooled to ensure that research

achieves all that it can.

The Squam watershed is a beautiful region with many natural amenities that contribute to the strong sense of attachment many people feel for the area. The state of the watershed is threatened by a wide range of environmental issues, and many organizations are involved in research and other efforts to address them. A review of these efforts in the workshop leads to the conclusion that there are numerous talented individuals and teams working on important projects, but it is important to ask: "what can we do better?" Integration is the key to continued success, as both the design of research and the dissemination of findings can be improved by enhancing the sense of community and the communications among researchers and organizations active in the region.



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