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# Fostering Citizen Stewardship for Maine's Freshwater Lakes

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# Fostering Citizen Stewardship for Maine's Freshwater Lakes

Citizen science research engages the public in data collection efforts that contribute to the scientific endeavor. Members of the Maine Volunteer Lake Monitoring Program exemplify such work, contributing time and resources to collect systematic data on environmental conditions that affect Maine's lakes. *Beyond data collection and the scientific contributions they make, such citizen commitment can foster a conservation stewardship ethic across local communities.*

Our current project, which includes a partnership between the University of Southern Maine, the University of Maine, the VLMP and the Maine Department of Environmental Protection, seeks to assess the vulnerability of Maine lakes to water quality decline. As part of this study, the University of Southern Maine and the VLMP engaged in a survey of lake associations and VLMP monitors across a study sample of twenty four lakes to examine their role in data collection, monitoring, and conservation management vis-à-vis lake stewardship. These data enable us to build a profile of our citizen stewards. Moreover, we are able to elaborate on the factors that influence their involvement in lake protection and conservation activities and detail the elements they consider important for lake stewardship and citizen participation. *These data will help us assess ways in which engaged public involvement influences the long-term success of conservation strategies and provide insights into how more effective, long-lasting partnerships between citizen conservation groups and scientists can be developed.*

During the summer and fall of 2015 survey data were collected from 342 VLMP members across our study sample

of twenty four lakes. The largest number of respondents (73 percent) were from the sixty years or older age group and 60 percent of those responding were retired. Nearly 80 percent of all respondents had either a Bachelors or graduate degree and 67 percent had an annual income of over \$50,000. When asked to reflect on a description of the work they engage in, respondents favored the terms environmental stewardship (74%), data collection (40%), volunteerism (36%) and community service (21%) over necessarily calling themselves citizen scientists (20%). *The identification of these terms suggests that individuals engaged in such collaborative projects think of themselves as stewards first and foremost, which may also help explain their long-term involvement with VLMP.*

The motivations of volunteers to engage in lake stewardship and monitoring activities is varied and multi-faceted. *While concern for lake health and its future ranks high, equally important to many who responded is a deep sense of personal attachment to the lake and its surrounding and personal satisfaction from contributing to a cause. One of the highest responses received on the question of motivation was a strong belief in, and commitment to, VLMP's mission.* Repeat volunteers build long-term relationships between their peers. The rapport of trust and communication built between them and VLMP also facilitates a sense of community that keeps bringing them back.

Many volunteers live in the vicinity of lakes or are also long-term residents of the lakes they monitor. As such, their insights into lake health can provide valuable historical data. Respondents in our survey are most concerned with negative water quality trends and invasive species affecting their lakes. In addition to these biophysical considerations, concerns over shorefront and watershed development activities and increased lake usage ranked a close second, while concerns over climate change impacts on lakes ranked third. *Given these*

*concerns, the focused data collection efforts by VLMP on water quality and invasive species monitoring, watershed surveys, and ice-in/ice-out tracking all contribute to our long-term scientific understanding of the changes our lakes experience.*

Long-term VLMP members also have the historical benefit of observing the efficacy of stewardship activities and their first-hand knowledge can help resource managers and decision-makers understand strategies that work and are worth pursuing. Our survey provided some key insights on this front. *Education, communication and outreach to property owners and the general public are identified as key contributors to sustaining stewardship practices and fostering a long-term conservation ethic around Maine lakes.* Encouraging the greater involvement of the younger generation through engaging Youth Conservation Corps and schools by "learning through doing" is also emphasized as important to assist the work of VLMP. Building social capital, or relationships between people and organizations, nested at different scales and involvement levels is identified as critical to maintaining long-term conservation efforts. Finally, respondents identified networks, with supporting institutions like land trusts, the Department of Environmental Protection, Soil and Water Conservation Districts, town and county offices and municipalities, as vital to the longer-term success of lake stewardship.

The insights provided by these survey data enable us to assess citizen engagement and shed light on strategies that can encourage positive conservation stewardship outcomes for Maine lakes. Currently, we are expanding the implementation of our survey to additional Maine lakes. *Eventually our aim is to incorporate these social data with physical science data on lakes to arrive at a more comprehensive understanding of both the social and physical variables that contribute to the vulnerability of Maine lakes to negative water quality trends.* ♣