

You've probably heard time and again how valuable the Volunteer Lakes Monitoring Program is to Maine. It is great to have lots of 'eyes' on our lakes to report curious happenings and great to have a local contact when we have questions. You volunteers are often the 'catalyst' for a variety of local projects in addition to lake monitoring. And of course, you all provide data - the focus of this piece.

So let's look at the ways your data are useful. First to consider is the sheer volume of the data. Having a large, well-distributed dataset allows us to look at all kinds of lake relationships we'd never see with a small data set from only a few lakes. As of the 2007 monitoring season, we had 96,547 Secchi readings, over 90 % from volunteers. In addition, 65% of our 356,000 DO /Temperature readings, 38% of our phosphorus readings, and more than half of our chlorophyll and chemistry readings are from volunteers and organizations enrolled in the program. DEP tries to visit VLMP lakes at least every 5 years to obtain data for other parameters such as alkalinity, pH, color and conductivity, which help put your data in context. Often we can use your information to help interpret data gathered from lakes similar to yours.

Second on the list is how your data is used in lake protection. Strategies for protecting our lakes have at least three components: an educated and informed public, local action, and, appropriate regulation. Volunteer data have been vital in setting up many of the legal standards used by both local governments and state agencies such as DEP and the Land Use Regulation Commission. These data allow us to determine the overall water quality and sensitivity of individual lakes to inputs of phosphorus from stormwater so that development permits can have appropriate conditions. VLMP data have been fundamental in placing lakes on the "Lakes at Risk" list which triggers higher standards for development review in 241 lake watersheds under the Stormwater Law (www.maine.gov/dep/blwq/docstand/stormwater). Your data have also helped to select the Priority Watersheds list which combines lake conditions, sensitivity, and regional growth patterns to identify which watersheds should be emphasized for federal grants supporting projects proposed by local people (www.maine.gov/dep/blwq/docwatershed/nps_priority_list). The VLMP data also help us when DEP staff review potential effects of water level changes and other actions on water quality.

Having long term datasets lets us look for trends in water quality and have confidence in the information, another important data use. Recently, people in the Belgrade Lakes region were alerted to the declining condition of Long Pond which might have gone unnoticed without decades of good quality data. Portland Water District has raised questions about the status of Sebago Lake's water quality; this was only possible because dataset had been gathered since the 1970s. Also, having data on wide variety of lakes helps us set expectations and to better gauge when lake water quality may be compromised. Recently, DEP has responded to EPA with proposed Nutrient Criteria that sets a standard as to how much phosphorus is too much; this was based in large part on your data.

Applied research having practical uses is supported by your data. For example, several years back we were able to demonstrate the economic value of good water quality to lake users and owners. This generated more support for lake protection in the Legislature and at the local level ("*Great Ponds Play an Integral Part in Maine's Economy*" by Boyle et. al, University of Maine, 1997). VLMP data had revealed differences in how lake sediments processed phosphorus; these differences caused us to ask *why* and ultimately resulted in further research with University of Maine faculty members. The collaboration identified sediment chemistry changes related to watershed development and resulted in a new tool for use in estimating lake water quality status. Literally dozens of other projects have used your data; many graduate students are indebted to volunteer monitors for your data and your help in projects.

Every two years, Maine is required to report water quality conditions to the federal Environmental Protection Agency and to the Maine State Legislature. This report relies heavily on volunteer data and is a prerequisite for a lot of the federal funds Maine gets for water quality protection. Without it much of the work we do would not be possible, including support for the VLMP. Federal agencies really like the VLMP and support citizen monitoring for all the right reasons: cost effectiveness, widespread data acquisition, citizen participation, local project initiatives, collaboration with local entities and state government, and better fulfillment of Federal mandates.

More often than not it is volunteer data that brings a water quality problem to our attention. Lakes unfortunate enough to experience such problems are placed on the list of Impaired waters, also known as the 303(d) list. These lakes are the subject of in-depth studies or TMDL (Total Maximum Daily Load) studies, which look at the causes of impairment and set goals for improving conditions (www.maine.gov/dep/blwq/docmonitoring/TMDL). Volunteer lake data are often the primary means used by DEP not only to select lakes, but to understand the severity of a problem and ultimately determine the right target conditions for a lake.

The information we get is shared in all sorts of ways, DEP gets inquiries on almost a daily basis about water quality of Maine lakes, and without volunteer data we would not be able to help these callers. There is enough demand for this information that we post it on-line in the PEARL system at U Maine; these data are often used by students in projects and by citizens that are just plain curious (www.pearl.maine.edu). A variety of community programs and projects such as DEP's Lake Smart and Lake Days, and the University of Maine Cooperative Extension's Watershed Stewards use your data regularly as part of their outreach mission.

But perhaps the most important uses of the data are to encourage local action. Towns use VLMP data and sensitivity assessments to set goals for protection levels in their Comprehensive Plans and local ordinances. Often when a problem is detected or a lake turns out to be particularly sensitive, it spurs local people to take action to clean up sources of stormwater pollution. It's also incredibly valuable to DEP to have more eyes and ears in the watersheds, as well as committed and knowledgeable people in town that can spread the word and support local projects. We often call the volunteer monitor for local knowledge when a question comes in about water or stormwater complaints, and the volunteer monitors often provide a 2-way conduit for information between DEP (and other agencies) and their communities.

So what's in the future? You never can tell what the next issue will be. For several years now, volunteers have stepped up to the challenge of invasive species and done an incredible amount of valuable work, from boat inspections, education and plant patrolling to managing infestations. Recently, volunteers have been cooperating with the University of Maine (Farmington) to collect long term temperature data from their lakes as part of an effort to establish a baseline for climate change response. Although it is impossible to predict when volunteers will be asked to participate in new projects, it is absolutely fabulous that VLMP volunteers will respond as they always have when the need arises! Thanks!