



Title: Assessing the effectiveness of the watershed stewards program

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Theme: Watershed Management

Situation: Maine is a water-rich state. With over 5000 scenic lakes attracting thousands of tourists to the state each year, it is essential to protect this resource. In 1996, the University of Maine Cooperative Extension (UMCE) initiated the Watershed Stewards Program (WSP) to educate people about threats to Maine lakes and how to take actions to prevent damage to lake water quality. Designed in a manner similarly to the Master Gardener Program, we provided attendees twenty hours of education and in return requested that they provide us with twenty hours of service to their lake watersheds.

Objectives: Having conducted the course for a seven-year period, we felt that it was time to assess program impacts and to determine areas to improve our program or to help set new program direction. Program evaluation is increasingly being seen as a fundamental part of being an effective Extension educator. Given the tight budgetary times, solid evidence of program impact is becoming increasingly important. We felt that being able to document solid impacts and program successes would increase our opportunities to continue program funding. As such, the overall goals of this project were to: 1) conduct a statistically valid sampling of program participants to assess program impacts; and 2) to compare knowledge level and awareness of and participation in lake management activities with people who live in the same watersheds but who have not been involved in our programs. Specific Research Questions were as follows: 1) Did the UMCE water quality program significantly improve the knowledge level of program participants over non participants; 2) Did program participant knowledge remain strong over time; and 3) Were program participants more knowledgeable and more actively involved in lake protection efforts than non-program participants living in those same lake watersheds.

Methods: To answer research question number one, we wrote a short 15-question test. We sent the test to 161 program participants and to twice that number of people that owned land in the same lake watersheds but whom did not attend the program. This test was designed to test knowledge of general lake biology, land-use impacts on water quality and similar issues that have been covered both in our programs and the lake-management awareness campaigns of our partner agencies. Our hope was to determine if program participants had a significantly higher knowledge level than other similar lake landowners. To more completely assess group differences (program participants from those not attending), we chose to design and conduct a standard scripted telephone survey. This was an eight-question survey with multiple parts. We randomly identified 50 people from each group to call and interview. We identified those people who had not attended our program from property maps of the same lake watersheds. We interviewed the first 25 people who volunteered to participate out of those 50 previously identified. We also called 25 program participants. An individual not involved in the educational program effort conducted the survey. We found that the Watershed Stewardship Program participants had significantly higher understanding of lake biology, knowledge of threats to the lake, and appropriate steps to protect lake water quality. Overall, stewards scored 23% higher on the objective test than those that did not been involved in the program. This difference was statistically significant ($p<0.001$). The interview process did allow us to find out in greater detail what our program participants are actively doing in the field, and it also allowed us to redirect some of our programming efforts as many non-Stewards were more involved or more knowledgeable about specific areas that we had initially considered. Program participants qualitatively demonstrated much more involvement with lake governance, implementation efforts, and re-

Partnerships: We have relied heavily on the assistance of our state partners in the delivery of these courses including the Maine Department of Environmental Protection, Maine Department of Agriculture, Food and Rural Resources, and Natural Resources Conservation Service personnel.

Research: The project has utilized school children in group projects, and the schools involved have then used our materials in some of their classroom activities. Various lake research projects have been initiated as a result of increased interest in the lakes caused by our project.

Resources: We have mostly leveraged money in terms of partner time commitments in the project. We have applied for and received 406 funding to expand this project into a three-state program.

Results: As far as program outputs, we have conducted this program for some 16 watersheds in Maine, and we have over 250 program graduates. In terms of project outcomes, on average stewards have given much more than the requested amount of time to their watersheds. Steward have been significantly more active in their activities than non-stewards, participating in 319 projects, in field studies to find sources of pollution and correct these problems, becoming actively involved in lake governance, organized lake clean up days, and collecting data for long-term lake monitoring. This has been a most successful lakes education program.



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