

Report as of FY2007 for 2005ME81B: "Enhancing Lakefront Buffer Adoption through Social Marketing (pilot project)"

Publications

Project 2005ME81B has resulted in no reported publications as of FY2007.

Report Follows

Enhancing Lakefront Buffer Adoption through Social Marketing

1. Problem and Information Transfer Objectives

Leading causes of impairment to our nation's waterbodies include nutrients (phosphorus and nitrogen), silt, and suspended solids (US EPA, 2005). In Maine lakes, phosphorus is the nutrient that most often limits algal production. Runoff from single-family low density development exports five to ten times more phosphorus than forested land (Dennis, 1986). The lakefront vegetative buffer area is the last opportunity for the removal of phosphorus and other nonpoint source pollutants from stormwater runoff. Ribbons of trees and shrubs around a shoreline capture nutrients and pollutants from developed areas, stabilize the shoreline and provide wildlife habitat. It is important to preserve and restore damage to wetlands and riparian areas because these areas can play a significant role in managing adverse water quality impacts (US EPA, 2005).

Lakes in Maine are under increasing development pressure. Seasonal camps are converted to year round use and greatly expanded. Many new lakefront property owners bring with them ideas and visions of the suburban lawn they left behind, failing to realize their vision is actually detrimental to the lake. To further illustrate the increasing threat to Maine lakes from development, there is now a proposal to construct resorts and subdivisions in the unorganized territory of the North Maine Woods (Plum Creek development proposal for Moosehead Lake Region).

Residential land use decisions are made on the homeowner scale. As our lakefronts become more developed with seasonal and year-round homes, management becomes fragmented, with individuals making decisions based on their own perceptions of what a property should look like. Volunteers conducting a Watershed Survey of Pushaw Lake (UMCE, 2003) found that 181 of the 900 lakefront properties (20%) lack a lakefront buffer. The lack of a lakefront buffer has been documented in many lake watershed surveys (e.g. Maine DEP, 2001). This issue needs to be addressed in order to provide long-term protection to Maine lakes. While some of these properties may be in violation of shoreland zoning regulations, the majority were cleared before those regulations were in effect, and education and marketing are the only tools available to effect change on these properties.

The primary objectives of this information transfer project were to:

- Determine motivators for lakefront landowners to maintain or enhance lakefront vegetation
- Determine barriers for lakefront landowners in maintaining or enhancing lakefront vegetation
- Test social marketing tools (incentives, commitment) developed in order to capitalize on the motivators and reduce the barriers to lakefront vegetation maintenance/enhancement.

2. Methodology

In order to understand the motivations for lakefront landowners' maintenance of their landscapes, two focus groups were held in the fall of 2006. The scripted questions were developed in order to better understand what people expected of their lakefront property, how they currently maintained that property, and what might motivate them to change the way they currently maintain their property.

As a result of the focus groups, we determined that possible barriers to lakefront vegetation installation were:

- Lack of knowledge about plants that would work in their specific soil/light/geographic situations
- Lack of knowledge about plants that worked together in a landscape
- Needing areas for play/recreation
- Needing view of lake for safety of children/grandchildren

A surprising motivator for the focus group participants was water quality, however, with other sources of pollution to the lake (septic systems, eroding and flooding roads, etc.) and misinformation (the belief that by opening a southern outlet to the lake would solve all water quality issues in the lake) the water quality/lakefront buffer issue was minimal comparatively in the view of the participants.

A survey was then mailed to all lakefront residents on Pushaw Lake, in order to refine our insight into barriers and benefits. Of approximately 300 surveys mailed, 74 responses were received, for a 25 percent response rate. The survey questions and associated responses were as follows:

General questions about Pushaw and water quality:

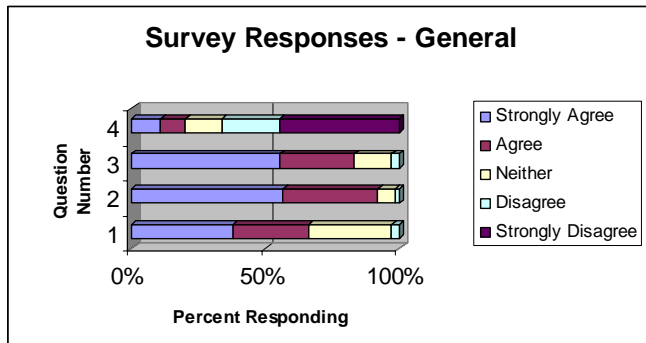


Figure 1: Responses to general survey questions:

1. The phosphorus and nitrogen levels in Pushaw Lake are too high.
2. I am concerned about the water quality of Pushaw Lake.
3. I am willing to take action/make changes on my lake property to protect the water quality of Pushaw.
4. What I do on my lakefront property has little or no effect on Pushaw Lake water quality.

From these answers, we determined that the lakefront landowners who responded to the survey do have concerns about the water quality of Pushaw, have some knowledge of nutrient and water quality issues, and realize that their lakefront property may be contributing to the rising levels of phosphorus in Pushaw. A large percentage of

respondents indicated a willingness to make changes on their property in order to protect the lake.

Landscaping questions:

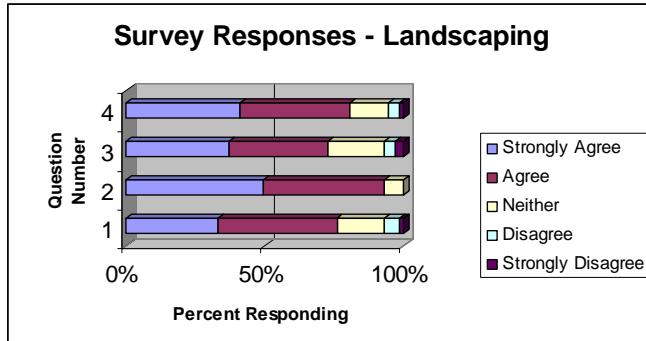


Figure 2: Responses to survey questions about landscaping:

1. I enjoy landscaping and working around my lakefront property.
2. I am interested in lake-friendly landscaping.
3. I would like to purchase a package of pre-selected plants for landscaping if it was available locally/specific to my area.
4. I would likely do lake-friendly landscaping if there were a list of helpful plants for my area.

As indicated initially by our focus group participants, the survey respondents are interested in landscaping, and they indicated an interest in either purchasing pre-selected groups of plants, or in being provided a list of plants suitable for their growing conditions. The surveys gave us valuable information about the resident’s concerns with the lake, as well as distinguishing residents that were willing to take steps to improve the lake. It was found that roughly 65% of the residents were aware of the unusually high levels of phosphorus in the lake, and at least 75% of the residents surveyed stated that they would take steps to reduce phosphorus introduction through the placement of buffer zones or other forms of vegetation.

The focus group participants also suggested that rewards programs such as the Maine Department of Environmental Protection’s “LakeSmart” program may act as an incentive to landowners, or that landowners would participate in informational meetings or workshops. They suggested that incentives such as food or entertainment could be used to increase participation in informational workshops. These suggestions were also tested with the survey:

Additional Survey Questions:

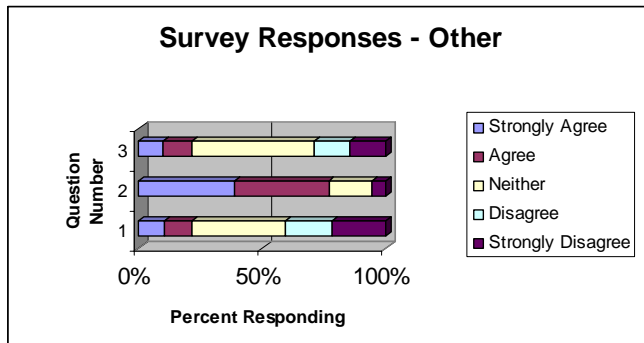


Figure 3: Responses to additional survey questions:

1. Being recognized with a plaque of having my name appear on a local list for having a lake-friendly landscape is important to me, and would motivate me to change my current practices and improve my property.
2. I would likely attend an informational meeting on how I could help protect Pushaw Lake.
3. I would be more likely to attend such a meeting if food would and entertainment would be provided.

From these responses, we determined that using the Maine Department of Environmental Protection’s “LakeSmart” program was not a suitable marketing approach with these residents. It is interesting that so high a percentage of respondents indicated willingness to attend an information meeting; historically such meetings generate poor turnouts.

Marketing Methods:

Two social marketing methods (incentives and commitment) were tested with this project. First was the development and marketing of packaged landscapes (pre-designed, checked by a landscape designer, and sold at a discount through the Penobscot County Soil and Water Conservation District). The pre-selected plants were meant to overcome the “what should I plant” barrier and the incentive to purchase was the discounted price. These “Lakeside Landscapes” were created with the following design objectives:

- Primarily native plants (with the inclusion of non-invasive ornamentals) that would do well in the Pushaw Lake area soils and climate,
- A 10’ wide buffer for a 50’ lakefront lot
- Three seasons of color/interest
- A combination of low-growing perennials and medium-sized shrubs, to preserve and frame lakefront views

One package was developed for full sun lots, one for part-shade.

Three methods of advertising the availability of the plant packages were used. First, the availability was advertised via direct mail to all homes on the Cedar Breeze area of Pushaw Lake. A brochure showing the plants and detailing the landscape design was sent, along with an order form. From this method, we had very poor response – only two plant packages were sold this way.

Second, door hangers were left for residents of Whitmore Landing Road in Hudson, only if the property were lacking a shorefront buffer (more targeted than a general mailing). Again, we had poor response from this method, with no plant packages sold.

The third method again targeted the residents of the Cedar Breeze area, with a “Garden Party” held at the local town office. About 20% of the individuals invited to the Garden Party attended – a higher than anticipated turnout. Three additional plant packages were sold – again lower than we had anticipated. However, residents came prepared with questions about the project and low impact lawn care. Residents also expressed an interest in purchasing partial landscape packages, and one resident contacted the Penobscot County Soil and Water Conservation District for technical assistance as a result of this event.

A second Garden Party was held at the Gould’s Public Boat Launch and Landing, to showcase a demonstration landscaping and buffer project developed through the US EPA’s 319 project currently underway. Door hangers were used to advertise this garden party to local residents. Turnout was very light, with only a few residents stopping by to ask questions and look at the installed buffer and rain gardens.

Our best results, however, came from a combination of personal contact and the social marketing tools of commitment and incentives. A student was sent out into the field with a pledge encouraging lake front buffer zones. With their pledge, residents were given a \$10 coupon to the Penobscot County Soil and Water Conservation District’s 2008 Wildlife Tree and Shrub sale. People reacted well to the personal contact and we received a 21% compliance rate. It was evident while doing this that most of the residents were familiar with the project and that many had taken steps towards a functional lake side buffer, which they were very eager to express.

3. Principal Findings and Significance

Our primary finding from this information transfer project was that personal, one-on-one communication is the best method to effect change. Our best results were obtained from sending a student door-to-door to talk about lakefront buffers (and obtain pledges from landowners) and from holding “Garden Parties” where local residents could ask questions and get answers from Cooperative Extension and Conservation District. The method of advertising the Garden Parties appeared to be important, with direct mail in the form of specialized invitations getting better results than informal door hangers.

We also learned that by developing full buffers for a 10’ x 50’ area, we inadvertently caused a barrier to planting. These buffers were too large for many residents, who wanted to enhance vegetation that currently was on their shorefront lot, or who were unwilling to take the step from “lawn to the lake” to “full buffer”. It is important to have an intermediate option available to landowners, with smaller plant packages to be offered by the District in the future.

We were hoping to use the Maine DEP's LakeSmart program (providing recognition to lakefront landowners who currently maintain their properties in a nonpolluting manner, or who make changes to reduce or eliminate the pollution from their property) as one social marketing tool for this project. However, due to the lack of interest in recognition received from the survey, we did not use this tool.

Our recommendations for future lakefront buffer projects, therefore, are:

- Use personal contact as much as possible,
- If one: one contact is not possible, make any information sent via the mail look as personal as possible (in the form of invitations sent to individuals, do not use "dear resident",
- Use local agency "experts" for events; try to piggyback onto an event that is already taking place,
- Don't try to market the "big" change – use small steps to get the changes you want. Don't try to sell full buffers unless you offer a smaller alternative,
- Try commitment/pledges as a tool, and offer an incentive for signing the pledge,
- Recognize that each lake, or even each road association, operates differently. What works for one may or may not work for another.

Student support:

This project supported three students. Mr. Theodore Smythe began the project, developed and delivered the focus groups and the survey, and compiled the survey results. Mr. Smythe left the University of Maine.

Ms. Kate Gaudet continued this project, and developed and delivered the Garden Parties and all associated materials.

Mr. William Ball completed this project, by developing the final social marketing commitment/pledge project, and showcasing this project at the 2008 Maine Water Conference.

Notable awards and achievements:

Mr. William Ball's poster presentation at the 2008 Maine Water Conference tied for first place in the Undergraduate Student Poster Competition.

Publications:

Ball, William, Laura Wilson, Christopher Brewer, Kate Gaudet and Theodore Smythe, 2008, Enhancing Lakefront Buffer Adoption through Social Marketing, in Maine Water Conference 2008 (poster presentation).