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Restore Your Shore: A Community-Based Social Marketing Approach

Sue Buckle and Dan Walters

Once upon a time, the backbone of every environmental public education program or awareness campaign was a three-fold brochure or a flyer. There was a simple, yet misguided belief that once people were given factual, credible, information they would be enlightened and instantly do the right thing for our environment.

Numerous studies document that while education might improve knowledge, alone it often has little or no effect upon creating sustainable behavior. As a result, programs that focus on flyers, direct mail, and hand-outs have very little possibility of prompting people to change their behavior or take action to solve an environmental problem.

In Northern Ontario, five municipalities that share the Callander-Wasi subwatershed came together under the leadership of the North Bay-Mattawa Conservation Authority (NBMCA) to take a different approach to engage residents in helping protect their watershed from the growth of blue-green algae.

Based on the principles of Community-Based Social Marketing (CBSM), the Restore Your Shore Program was developed with the help of a diverse 25-member stakeholder advisory group to reduce phosphorus loadings to the waterways, increase the amount of phosphorus bound in plant material and soil, and engage people in behaviors and activities to achieve these two goals.

In 2015, 36 rural, cottage, agricultural, and urban properties in the Callander-Wistiwasing watershed were planted at no cost to the property owners with over 5,000 trees, shrubs and herbaceous plants along more than 1.8 km of streambanks and shorelines. The program reach extended further through a communications/public education

strategy that incorporated collaboration with community groups as well as public commitments and recognition through a website, social media, media, and signage (www.restoreyourshore.ca).

The Callander-Wistiwasing (Wasi) Subwatershed

Just south of North Bay, Ontario, Canada (3.5 hours north of Toronto) the 336-km² Callander-Wasi watershed flows through a series of cottage, residential, agricultural, commercial, and undeveloped land uses into Lake Nipissing's Callander Bay. Callander Bay is also the source of drinking water for the residents of the Municipality of Callander, the most populated area within the watershed with 3,800 residents.

The watershed is a cornerstone of the economic and social health and well-being of the region offering spectacular scenery as well as four seasons of activities. In summer, residents and visitors enjoy the many benefits of the lakes, rivers, and streams. While swimming, boating, and fishing are popular activities, bird watching, mountain biking, and hiking are drawing people into the outdoor environment. In winter it becomes a playground for ice fishing, cross country skiing, snowmobiling, and skating. Spring and fall offer great experiences for hunters and anglers and those who love to travel during the quieter "off season."

The impetus for the Restore Your Shore Program came from the North Bay-Mattawa Drinking Water Assessment Report and Source Protection (SP) Plan, called for by the *Ontario Clean Water Act, 2006*. The Assessment Report and SP Plan identified that microcystin LR (a toxin that may be produced by cyanobacteria) could impact the source of Callander's municipal drinking water. The occasional

cyanobacteria blooms that occur in the watershed are related to external and internal sources of phosphorus contributions. The SP Plan called upon the five municipalities to develop and implement an education and outreach program to help reduce the phosphorus contributions to the watershed and increase the retention of phosphorus in plants and soils. (See Figure 1.)

Phosphorus enters waterways via runoff and erosion, when phosphorus-bound sediments, either recent or historic, are disturbed by fast-moving water, human activity, wildlife activity, waves, or wind. Human sources of phosphorus can include malfunctioning septic or lagoon systems as well as fertilizer applications for agriculture, lawn, and garden that can run into lakes, rivers, and streams when more is applied than plants can use.

The SP Plan set the framework for the program: identify the desired actions and/or behaviors, as well as the goals, timeline, deliverables, and desired outcomes and to include a process for measuring the outcomes. The program plan needed to identify the benefits of engaging in the desired behaviors, as well as the barriers, and incorporate a variety of strategies and tools to overcome the barriers. The program needed to take into consideration the principles of social marketing as a strategy for fostering the desired behaviors and actions.

Community-based social marketing (CBSM), developed by environmental psychologist Dr. Doug McKenzie Mohr, (www.cbsm.com) applies behavioral psychology to create sustainable behaviors. This approach is based on three key principles: it values local knowledge and personal interaction; it's designed to remove barriers to behavior change; it leads to measurable behavior change.



Figure 1. Mayors and representatives of the five municipalities – Callander, Chisholm Twp., East Ferris, North Bay, and Powassan – along with representatives of the North Bay-Mattawa Conservation Authority and North Bay-Mattawa Drinking Water Source Protection Committee, came together to launch the RYS Program during a media event at Callander Bay.

Community collaboration in finding solutions

To capture local knowledge, engage individuals, and create champions with a sphere of influence to promote the program, NBMCA formed an advisory committee, with a broad representation of stakeholders to reflect the demographics and interests of the watershed. NBMCA hosted a one-day CBSM training workshop for the advisory committee members. An invitation was extended to other environmentally interested community groups and agencies to help build community capacity for developing effective environmental stewardship programs throughout the region. More than 50 individuals from 23 different organizations took part in the one-day training.

The advisory committee was comprised of representatives of the urban, rural, agricultural, cottaging, environmental, and business communities, along with technical, policy, and science-based professionals from NBMCA, the North Bay-Parry Sound District Health

Unit, Nipissing University faculty, and three provincial ministries – agriculture, natural resources, and environment.

Elected and planning representatives of the five municipalities – Callander, Chisholm Twp., East Ferris, North Bay, and Powassan – took part, along with community members from the Wasi Lake Property Owners & Friends, the Ontario Federation of Agriculture, Ontario Soils and Crop Improvement Association, Nipissing Naturalists, Callander Community Enhancement Group, and the Greater Nipissing Stewardship Council.

Nipissing University's faculty of geography is a key partner and collaborator with NBMCA on a variety of initiatives in the Callander-Wasi watershed, including ongoing research and water-quality monitoring with a focus on

phosphorus loading and harmful algal blooms. Storm-based event sampling in Wasi River captures the total phosphorus and soluble reactive phosphorus loading into Callander Bay. Internal phosphorus loading in Callander Bay is monitored using a marine buoy and bi-weekly water chemistry, phytoplankton, and chlorophyll-*a* samples collected during the off-ice season. Ontario's Clean Water Act requires that Source Protection Plans include monitoring and reporting of plan implementation. The collaborations with Nipissing University and Ministry of Environment and Climate Change help complete this task (Figures 2 and 3).

A ten-minute online survey and four targeted focus groups helped capture local knowledge about water quality and identify baseline awareness and behaviors surrounding fertilizers, buffer strips, septic system maintenance and run-off, factors that can influence the amount of phosphorus reaching waterways. The survey was promoted through municipal websites and newsletters, media releases, advertisement in local newspapers, at community events, and presentations. Copies were also available at the municipal offices.

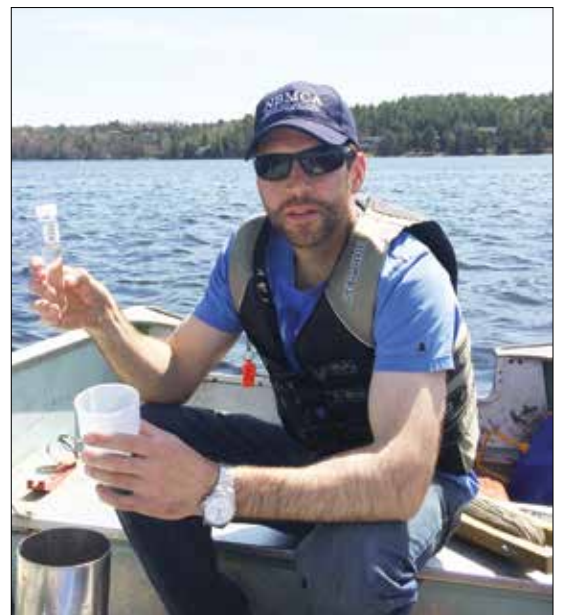


Figure 2. NBMCA and Nipissing University partner for ongoing research in the watershed. NBMCA collects samples to be analyzed for total phosphorus concentration at the Ontario Ministry of the Environment and Climate Change lab at the Dorset Environmental Science Centre as part of the Lake Partner's Program. Pictured: Joel Harrison, NBMCA water resources specialist.

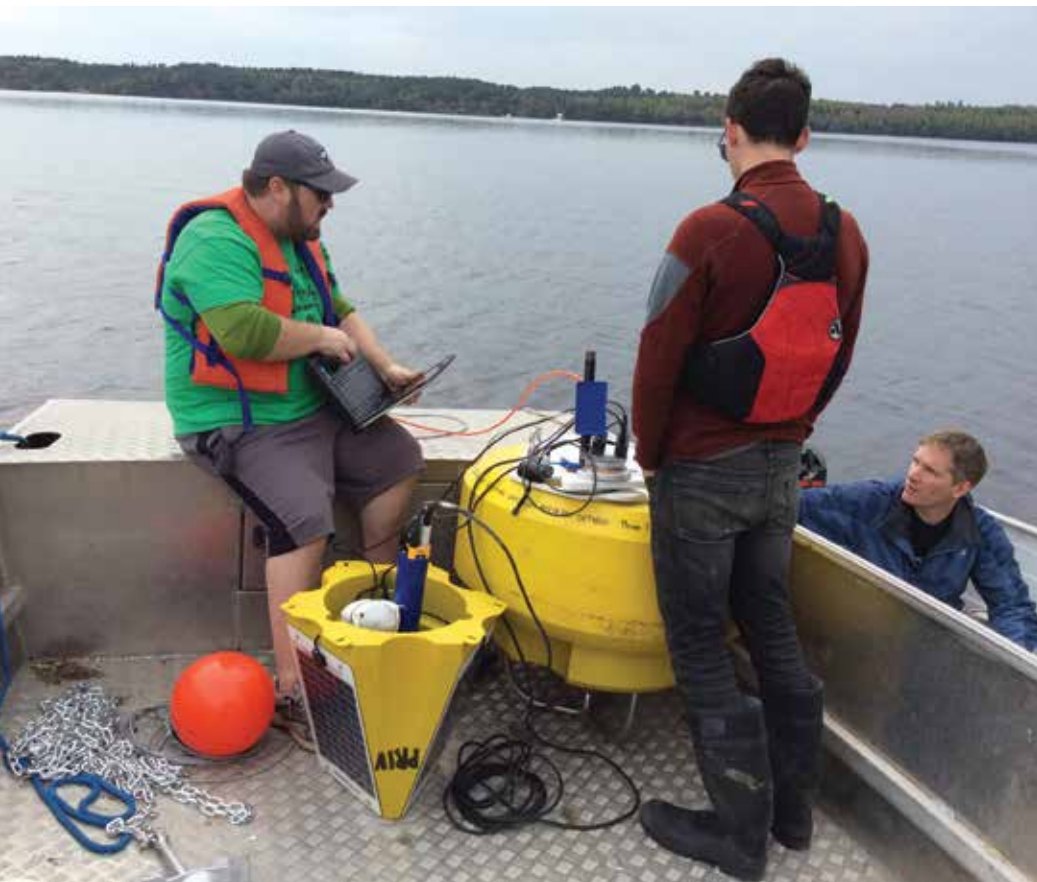


Figure 3. Nipissing University Research: A buoy deployed in Callander Bay from May to October collects high frequency data including temperature, weather, dissolved oxygen, pH, Chlorophyll-a. The ongoing research helps inform future strategies for the watershed's management and social marketing programs. (Left to right) Krystopher Chutko, David McCorkel, and Dan Walters.

The advisory committee then:

- reviewed existing science and research about phosphorus in the Callander-Wasi watershed, including water quality monitoring results, agricultural site visits, erosion assessments and a phosphorus budget (which found that 46% percent of the total phosphorus load in Callander Bay is from human sources and since 1955, phosphorus concentrations have remained above the provincial water quality objectives);
- considered best management practices, research in phosphorus-reducing activities;
- reviewed the effectiveness and lessons learned of other CBSM phosphorus-reducing programs elsewhere in Ontario; and
- assessed the potential degree of impact of a variety of phosphorus-reducing activities, the likelihood of public

participation in those activities, and the extent to which the activity is already being undertaken.

Three questions were asked:

- Is it already being done?
- How likely are people to do the behavior?
- Will the behavior make a difference?

As a result, the committee recommended that shoreline planting be the focus activity for the Callander-Wasi watershed and Restore Your Shore was born (see Figure 4).

Overcoming barriers, maximizing benefits

CBSM programs are designed around identifying the barriers and benefits to participation in an activity.

Through the focus groups, four barriers for the shoreline planting program emerged: cost, technical

knowledge, degree of effort, and attitudes regarding plants on a shoreline including attractiveness and loss of view, recreational area, or farmable land. Perceived personal benefits included enhanced aesthetics, discouragement of geese, less lawn to cut, and pride in being an environmental steward. The environmental benefits of shoreline planting include retention of phosphorus, improvement of fish habitat, stabilization of streambanks, and prevention of erosion and run-off (see Figure 5).

A key motivator for landowners was a cost-share program for plant materials. Another major motivator was being able to see a natural shoreline that was aesthetically pleasing, maintained usable space and view, and used species that thrived in the local area. In general, landowners wanted to be “shown” rather than “told.” Landowners responded positively to the idea that their local municipalities may install a demonstration site. (Two were implemented.)

Landowners also liked the idea of complimentary site visits that would help them develop a planting plan. When door-to-door visits were discussed, landowners felt it would be best to have the visits by invitation or appointment.

The CBSM “tool box” for developing those strategies and overcoming the barriers includes:

- Gaining public commitment to undertake an action
- Creating a “social norm” around the activity (Figure 6)
- Creating effective messaging
- Enhancing the motivation to act by offering incentives
- Making it easy, convenient for the public to undertake the activity

Restore Your Shore achieved those goals by:

- offering free shoreline assessments, planting plans, plants, and planting assistance as incentives
- selecting plants that take into account the site conditions and preferences of the property owners including waterfront views and access
- asking property owners to approve the planting plants, sign a written commitment to maintain the plantings



Figure 4. Before (top) and after (bottom). This cottage property was planted with 6 trees, 21 shrubs and 63 perennials on the south shore of Wasi Lake. Approximately 20 meters (66 feet) of shoreline were planted covering a total of 40 sq m (430 sq ft), leaving a 13-meter (42-foot) access path to the water. Trees, shrubs, and plants included white cedar, white spruce, elderberry, buttonbush, smooth wild rose, bush honeysuckle, sweet gale, and serviceberry as well as celandine poppy, bee balm, Virginia mountain mint, New England aster, and blue vervain.

Community Based Social Marketing, a strategy coined by Douglas MacKenzie-Mohr (www.cbsm.com)

- Focus on environmentally sustainable behaviors – not just information
- Identifies barriers and benefits to engage in a specific behavior
- Incorporates motivators/incentives to overcome barriers
- Utilizes prompts and commitments to ensure effectiveness
- Creates new social norms
- Finds champions with a sphere of influence to promote the program

for five years and consent to publication of their photo and name

- selecting language and messaging that focus on benefits, avoiding perceived negatives
- publicly acknowledging participants and encouraging community participation through on-site signage and an interactive web map
- engaging volunteers, community groups, and advisory committee members in planting events

One of the focus group discussions surrounded language. Participants were asked how they felt and what they visualized when they heard various terms. There was a negative reaction to “shoreline naturalization” (too wild), “natural shorelines” (unruly, unattractive) and “vegetated buffer strips” (too technical – what’s a buffer strip anyway?).

As a result, and with the intent to create a new social norm, messaging focused on “Planting for cleaner water – you can too!” This tagline was part of the graphic branding for the program which included a stylized logo on all the communication and promotional tools (Figures 7 and 8).

Recognition – a step toward creating a social norm

The website www.restoreyourshore.ca was a key communication and education tool for the program. In addition to promoting the program and providing public recognition of the participants, it hosts an interactive map that includes the locations, photographs, and details of the plantings. Public commitment and recognition are part of the framework of community based social marketing, strategies that help move shoreline planting into the realm of a “social norm.”

The website also includes sample planting plans for cottage, lakefront, and rural shoreline properties, a guide to native plants suited for shoreline conditions, as well links to information about cyanobacteria/blue-green algae. A YouTube video was created and is also hosted on the site.

Several municipalities in the watershed have established 15 meters (49 ft) as the standard for shoreline buffer strips, a bylaw that kicks in when new site plan control agreements or development



Figure 6: Property owners agreed to post this recognition sign on their shorelines and at the end of their driveways, visible to boaters and/or passersby. This CBSM strategy fosters shoreline planting as a “social norm” by acknowledging the behavior in a positive way and engaging others through the statement “you can too!”



Figure 5. Chisholm Twp Beach and Callander Waterfront Park. Focus group participations expressed a desire to see the municipalities show leadership in shoreline restoration of public properties. Volunteers joined NBMCA staff to plant the Chisholm Twp Beach on Wasi Lake (top) and a community park while Youth Stewardship Rangers from the Ministry of Natural Resources and Forestry helped plant trees and shrubs on Callander’s shoreline at the municipal waterfront.

Drinking Water Source Protection Program – The Clean Water Act, 2006

The Clean Water Act, 2006, introduced a new level of protection for Ontario’s drinking water resources that focuses on protecting water before it enters the drinking water treatment system. Source protection involves delineating sources of drinking water, identifying and ranking threats to those sources of drinking water, determining the appropriate response to the drinking water threats, taking action, and monitoring progress (www.actforcleanwater.ca).

permits are issued for shoreline and streambank properties. Because Restore Your Shore is a voluntary program and focus groups had strong objections to the 15-meter set-back, the Restore Your Shore coordinator who conducted the site visits worked with the property owners on the premise of a “good,” “better,” “best” plan. Time was spent educating and encouraging them to plant as much of the shoreline as possible to have a positive environmental impact.

Funding for the 2015 program was provided by the five municipalities, which received monies through Ontario’s Source Protection Municipal Implementation Fund from the Ministry of Environment and Climate Change. Additional grants were obtained from Ontario’s Great Lakes Guardian Community Fund as well as the Canadian Environmental Damages Fund. Initial funding for the Restore Your Shore program was tied specifically to the Callander-Wasi watershed. The North Bay-Mattawa Conservation Authority has secured additional funding to take the program’s momentum and lessons learned and extend the program to its entire jurisdiction in 2016.



Figure 7. Preserving access to the lake and having grass between the plantings was important to this property owner. Ten meters (33 feet) of shoreline saw 4 trees, 30 shrubs and 40 perennials planted with coco discs instead of mulch to preserve some grass, while maintaining a 20-meter (65-ft) wide access to the waterfront.



Figure 8. This Callander Bay property saw 26.1 meters (85.5 feet) of grass-covered shoreline on either side of the dock planted with 81 shrubs and 153 perennials. Plants included windflower, purple cornflower, bush honeysuckle, white beard tongue, cardinal flower, blazing star, thimbleberry, and smooth wild rose. Planting plans took into consideration the property owner's preferences for view, accessibility, and aesthetics.

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Next Issue – Fall 2016 *LakeLine*

In our next issue we follow up this Shoreline Management topic with, appropriately, an issue devoted to the broader issue of **Watershed Management**. We'll include a number of success stories and some lessons for what works and what doesn't.



The Bow River in Banff flows as far as Hudson's Bay