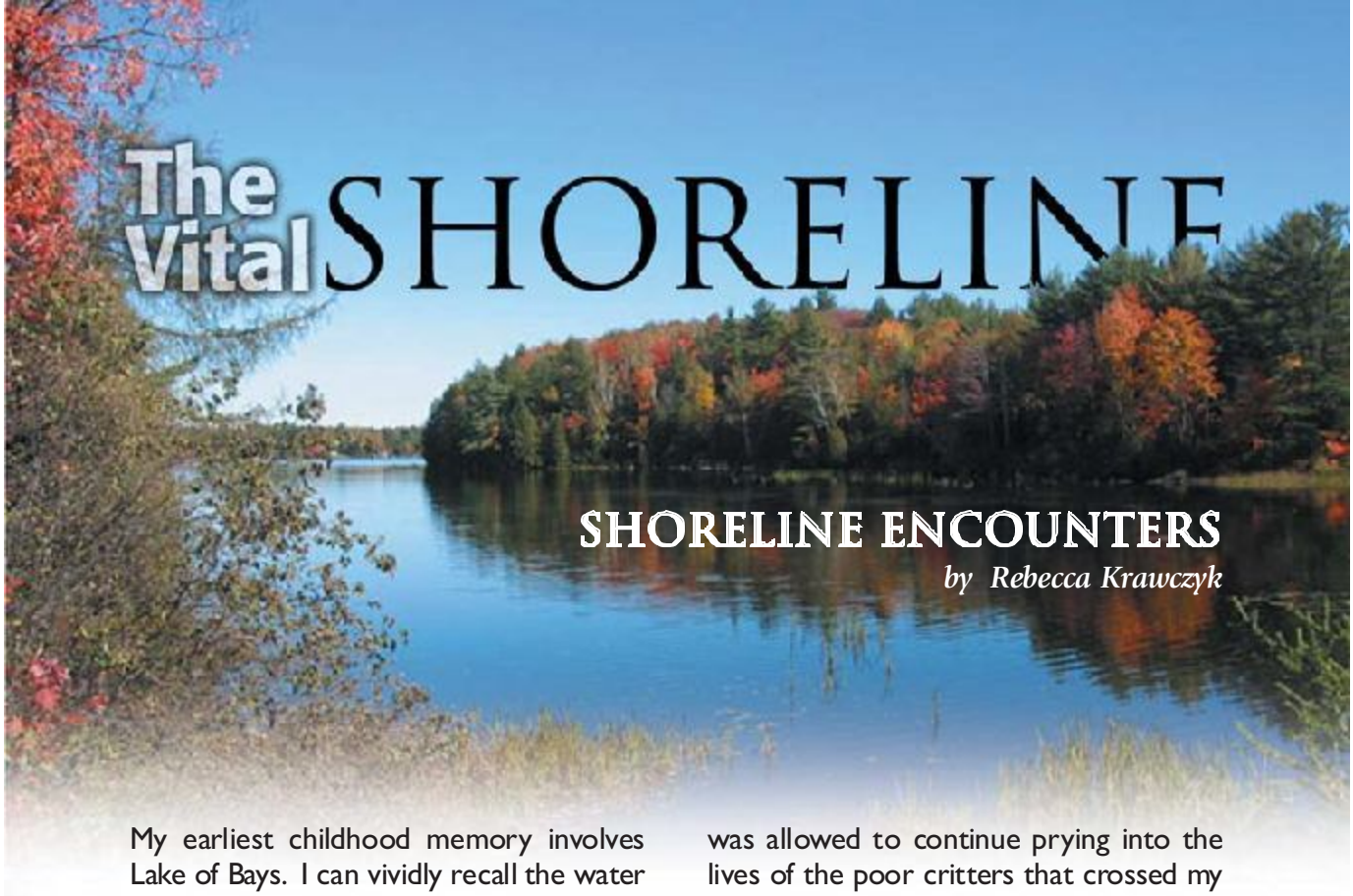


The Vital SHORELINE

SHORELINE ENCOUNTERS

by Rebecca Krawczyk

My earliest childhood memory involves Lake of Bays. I can vividly recall the water tickling my pudgy ankles while I investigated the sandy shores of my grandparent's cottage. The sun warmed my back, bleached my bowl cut blonder and faded my bikini bottoms to pink as I fumbled under the crib extension of their boathouse. I was after a brilliant Leopard Frog. It had made the mistake of glistening like gold within the line between water and land before it had darted into the dark, moss-lined crevice. After several minutes of discerning between sticks and stones I gave up on the frog and decided to move to another activity. When my hand emerged from the hole there was no mistake that the bottom half of my index finger had disappeared. A black shiny blob had replaced it. I rattled my hand in an attempt to remove it when the blob stretched into a skinny, ugly tongue, which was the size of my remaining fingers. I am certain to this day that the whole bay heard my screams of terror. Once my relatives realized that a Muskokan Dingo had not attacked me, and the cries ceased, my hero showed me the virtue of the cottage saltshaker. The leech was thrown back into the lake so we could "fish for those who eat it" and I was allowed to continue prying into the lives of the poor critters that crossed my path.

This poking and prodding soon evolved into exploration and quiet observation, which in turn, became my passion and life's work. I am confident in saying that Lake of Bays is responsible for my career in Environmental Sciences as well as for me being an advocate for maintaining the lake's natural heritage in this article and for the rest of my living years.

The shoreline of Lake of Bays is responsible for the memories and summer play of all who reside in or visit the Township of Lake of Bays and the Town of Huntsville. It is important for us to become fully aware of how vital the shoreline is to the lake itself.

LITTORAL ZONE, BIG ZONE

The littoral zone of a lake is the area from the water's edge to where the sunlight can no longer reach the lake's bottom. This area of a lake may only occupy a narrow percentage of the total water body, but it is no small fry in lake ecology. The lake relies on both its terrestrial and aquatic shoreline to filter and absorb pollutants, much as our eyebrows and eyelashes deter dust and debris from enter-

Diverse shorelines such as this one in Baysville are becoming extirpated from Lake of Bays. Alders, Dogwoods, Sweetgale, Cattails and Pickerelweed form layers which protect each other as well as the shoreline. This patterning of root systems is vital to lake health in these times of increasing watercraft traffic and wave action.

ing our sensitive eyes. The shoreline is the ideal home for countless microscopic and macroscopic organisms, including algae, in numbers that may be incomprehensible and perhaps best ignored by the average swimmer. Don't get the heebie jeebies; these marvelous creatures are what keep our world hygienic, balanced, and clean. They are a food source for thousands of other lake-dwellers, and are the most numerous and important foundations for a diverse, healthy lake.

Ninety Percent of the species in the lake either lives in or passes through the shoreline littoral zone. It is the only area that is shallow enough to allow the combination of sunlight and soil in which water plants can thrive. Aquatic plants (including, submergent, emergent and floating plants) filter water, nutrients, and pollutants through their roots and mix them with sunlight energy. This action produces food for them, and contributes oxygen to the lake. These plants act as the lake's lungs. They are also nurseries, playgrounds, subdivisions, supermarkets, and highways for insects, fish, amphibians, reptiles, birds and mammals. What would we, as a population, do if we were to remove more and more of the aforementioned places from our human environment?

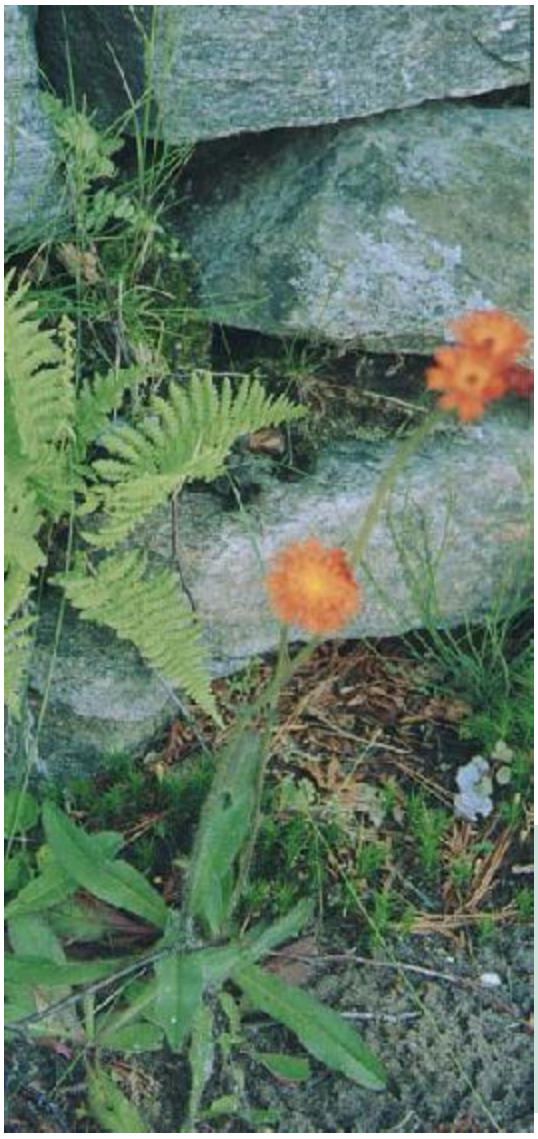
THE DO'S & DON'TS OF LAKESIDE LIVING

As lakeside stewards, property owners must stop for a few moments and think calmly before rushing ahead upon the fragile lives of those we chose to live amongst. Patience is a Muskokan virtue. When natural shoreline is manipulated for well-

A natural shoreline will not hinder play. It opens a child's eyes by educating, feeding and entertaining at the water's edge.

intended improvements in waterfront living (ie. increased sunlight hours) it uproots many complex floral and faunal communities. A simple example of this is when one clears shoreline shrubs. It not only strips the land's defenses from intense wave-action erosion, it also removes dragonfly habitat and hunting grounds, thus reducing our chances of enjoying their antics, colour, and protection from all flesh munching terrors such as mosquitoes and deerflies.

When it comes to gaining what we want from a shoreline property, it is best to research before we act, and to compromise before we disturb. Understand your ecosystems and organize priorities in such a way that you maintain the plant species that belong on the shores our lakes.



Wildflowers like this Orange Hawkweed (Hieracium aurantiacum) have broad basal leaves which catch water and direct it to the roots. When incorporated into a lawn, one can easily aviod the flowers with the mower. The Hawkweed's flat leaves cleverly keep grass growth under control. Ideal for sun.

A new millennium has begun. Let's start it off on the right ecological foot. Landowners on Lake of Bays could be compared with superheroes; we hold the lives of hundreds – even thousands in our hands and we need to act accordingly. We are shoreline managers, and with this comes great responsibility.

THE ROOT OF THE SOLUTION

Lawns and lakes make poor bedfellows. In a time of increasing shoreline population and wave action from watercraft traffic, we must insure the natural beauty of our lakes. We can retain our shorelines by maintaining native vegetative cover and naturally economic root retaining walls. Grass unfortunately flops over and allows 55% of rainfall to bowl right over it into

The Bunchberry (Cornus canadensis) is a shrubby groundcover that is ideal for slowing runoff under mature conifers. The flowers yield to red berries for the fall. A festive change from fescue in dappled shade.

the lake, along with any pollutants, pesticides, and fertilizers that have been applied. Hard-surface driveways or paths that run straight to the lake can also be charged with aiding and abetting dirty water's escape, whereas a natural shoreline made up of unmowed meadow grassland, shrubby shelters, or forest fathers are capable of absorbing up to 90% of runoff. These natural systems will store this water for periods of drought and use it to cool the environment (and us) in extreme heat. I must confess I find few things more romantic than Fir 'sweat' misting upon my brow on hot, muggy days.

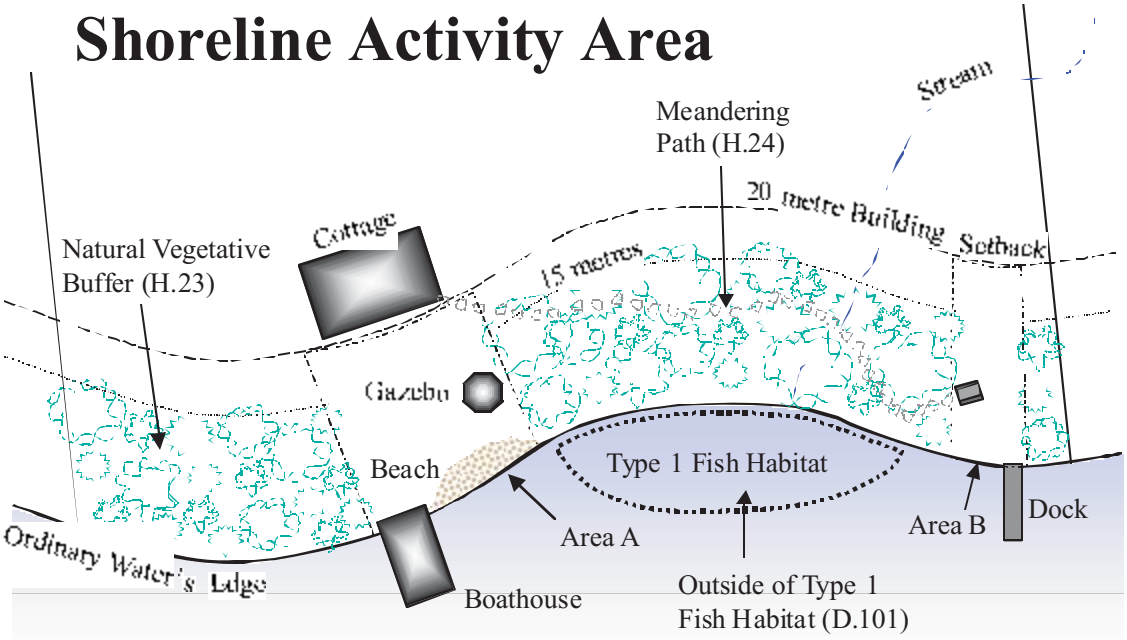
If you must have a lawn, the best way to prevent lake-pollution is to introduce a buffer between your lawn and the lake. A buffer can be a strip of any size or shape made through the utilization of naturalized vegetation. Stir your imagination - whether it be meadow, shrubs or trees it is your endless choice of filter that will slow runoff, shelter wildlife, and stabilize the shoreline. The ideal width of buffer recommended by the Ministry of Natural Resources is 30 meters. This increases to 50 meters if the property is upon a steep grade, which accurately describes the majority of Lake of Bays' shorelines. But any buffer is better than no buffer. If you are reluctant to give up your lawn, start small. Begin with 2 meters and beef it up throughout consecutive years until you feel your comfort level can be compromised no more.

The problems associated with lawns and runoff on lakeshore properties have been noted and addressed by the Lake of Bays Township. For several years a committee has been working on the draft for a new by-law system to be implemented in 2003; the Development Permit System. During an information session on September 14th 2002, residents of Lake of Bays Township learned that this plan introduces a new form of defense when it comes to the environmental protection of our township. During his brief explanation of how the Development Permit System came to be, Township of Lake of Bays mayor Tom Pinckard stated that the new by-law "gives us teeth" when halting unfriendly lakeside behaviour. This statement was given with a notable tone of relief that I could most definitely relate to.

The Development Permit System will require any new development to heed the buffer ideal. The committee's objective is "to retain natural vegetation along 75% of our shorelines". Therefore, only judicious removal of vegetation will be permitted within 50 feet of the shoreline's high water mark. This does not completely cramp one's room to display their 'artistic flair'. A waterfront owner may still clear 25% of the property's total shoreline length, or 76 feet/ 23 meters (whichever is lesser) for 'activity areas'. Each shoreline property is allowed two 'activity areas' as long as the total sum does not exceed the 25% or 76 feet/ 23-meter guideline (See illustration below). If an application to expand is entered for an existing, buffer-free property situation, persuasion and encouragement to establish an acceptable buffer will occur during the application process.

This is not a Hullabaloo. Now is the time that the lake's natural process is lawfully considered and respected. It is a compromise that need not be difficult. I am quite excited for all we are about to learn. Allowing nature to grow around you is educational, interesting to implement, and fun to observe. Naturalization and restoration will introduce many waterfront owners to the tranquility, delicate beauty, and timeless entertainment that native plant species and their guests bring to one's lakeside property. When natural interactions are allowed to occur around us, we as a race recognize our relativity to them. This in turn allows us to learn about ourselves as human souls before time, and before money. Native species are wild gems. Each holds its own key that will subtly unlock and soothe the spirit in these increasingly rushed and industrial times.

Shoreline Activity Area



Notes:

- Shoreline Activity Area = Area A + Area B = <25% & <23m of shoreline (H.22)
- Shoreline Activity Area bounded by parallel lines from water's edge to required setback from waters edge
- maximum of two activity areas per lot

HAVE FUN WITH NATIVE AND HERITAGE PLANTS

Last summer at Beaumaris, on Lake Muskoka, I was questioned about my occupation. When I replied that I build ecosystems and landscape with native plants, I was countered with "so you don't put in any flowers?" I chuckled, and proceeded to describe the joy I had felt standing upon a shoreline that I had planted that morning. I so relished the moment because the owner of this particular boggy shore wanted me

Hollyhocks and Oxeye Daisys (Leucanthemum vulgare) are a breathtaking buffer combination. The daisy was first introduced to Canada in the 1600's. It is now one of our most common wildflowers that has thrived throughout Muskoka's history.

Hobblebush (Viburnum alnifolium) gives the spring forest its first flowers. This floral display is matched in the fall with equally stunning deep burgundy foliage.

to sod over the luscious pillows of moss that were at that moment, soothing my laboured feet. I managed to convince him otherwise and installed several species from the Ericaceae or Heath family instead. As cool, stored spring water squished from the moss between my toes, I gazed upon the delicately scented chains of pastel bell flowers that the Ericaceae species so graciously display. I could almost taste the berries that were to be due in August and decided that a return visit must be scheduled after blueberry season. I was secretly hoping this meeting would result in a slice of homemade pie with my tea.

My point is this: Native plants DO produce a plethora of flowers, each with their own unique shape, colour and scent. Many of them decorate with both flowers and berries. Others just posess interestingly textured foliage. There is no doubt that beautiful functional spaces can be created with any combination of them. The following lists will help you choose and discern between plants that will contribute to the Lake of Bays ecosystem, and those that are just sterile landscaping cultivars that cannot participate with their surroundings. Listed species will feed local wildlife and your family, flower for your nose and will continue to grow strong so they can pollinate their kin around the lake and succeed for generations to come. You don't need to boycott your favorite garden beauties. Feel free to embellish your native plant communities with showier cultivars such as peonies and hollyhocks. Place your mother's favorite heirloom flowers throughout your property and have a ball!

When one thinks garden the first instinct is to say 'flowers'. Yes, flowers add beauty with colour and scent but ferns such as this Sensitive fern (Onoclea sensibilis) bring beauty and accent with texture.

NATIVE PLANT FOOTNOTES

When shopping for your native plants, be sure to check that there are no quotable names following the Latin nomenclature. 'Quoted' species are cultivars and are not truly native. They will most likely be either sterile or capable of degrading the environment and the surrounding wild community. An example of this is the Crimson King Maple (Acer platanoides 'Crimson King'), a popular burgundy maple that has leaves so large they choke out any species that may wish to grow beneath. Acer platanoides or the Norway maple (Crimson King's grandfather) has been so manipulated and mass produced that all of its cultivars are likely to get a mold known as Black Tar Spot (Rhytisma acerinum, R. punctatum). This pathogen causes the leaves to suffer black blotches before they wither and drop in late August. This occurs annually for the remainder of their lives. Pesticides are not effective against the cycle and cultural practice involves meticulous raking. Is the ease of obtaining a burgundy leaf or unmistakably pink flower bud worth the risk of importing diseases to cottage country?

Because they bloom at the same time as Ragweed, Goldenrods (Solidago canadensis) are falseley accused of causing allergies. They are definately a wildflower and not a weed. Their showers of gold should no longer be avoided in the garden.

If you wish to gather plants yourself rather than buy them, I cannot emphasize enough the importance of wise decisions. Only reap from nature after you feel you have adequately educated yourself on the subject. Do not remove rare colonies for your personal ease and gratification. Do not touch what you don't know, or you may also come home with a nasty rash. It is best to grow from collected seed that is harvested in such a way that seed and food source are left for the surrounding community. Never collect from private land. The best places to collect from are roadsides to be mowed or blazed, under power lines (watch for bears), and from areas slated to be bulldozed or constructed upon. When replanting, be sure to keep soil from the original habitat so it can be compared to the soil found in the transplant location. Distribute that soil into the new holes. If you wish to move a colony from one area of your cottage lot to an area in plainer view do so with research so that the species will survive the transplant.

KEEP YOUR WILD PLANTS FROM GETTING HOMESICK

Although they are hardy and independent, native plants are not total pushovers. They have several idiosyncrasies and, like wild animals, must be treated with respect and dignity when it comes to certain characteristics. For example, a tree's sun and shade requirements change as the tree ages. It is true that all trees strive upwards to find sunlight but whether a tree will live in sun or shade is listed in this article as per its sapling stage preference. Saplings are at a size where they are most successfully transplanted, as well as sensitive. Certain species sunburn easily at this young age. Remember that the shade from surrounding forest vegetation is very different from the shade cast by a solid man-made structure. Spring flowers require the full sun of leafless forests in the spring to thaw and bloom, but they rely on summer shade and leaf mulch for year-round survival. As you can see, there are so many tiny variations when it comes to wild species, one must hold some understanding of a plant's life

Sugar Maples (Acer saccharum) are the native kings of colour on Lake of Bays. With diligent pruning, a tree can remain small but maintain a valuable root system on shore without blocking the view. If started young, 'Muskokan Bonsais' can become wonderful shoreline centrepieces.

cycle, or at least its habitat, to ensure success. If you are at all in doubt you can easily consult a book or a local naturalist professional.

Willows and poplars must be respected for their fantastic root systems, and they should not be planted by anything that can be fractured or invaded by their rooty feet such as a foundation or septic. These species are best left far from any constructed objects or paths and placed along the immediate shoreline where they will grow to be superb retainers.

White birches are by far the most popular and well-recognized tree species in Muskoka. Many, however, do not realize that these beauties are as fragile as a boudoir's mirror. White birches must be planted in groups. They are a community tree and do best growing in sun spots under a forest canopy. Here they can grow sturdy and be protected from sun and wind burn by their companions. Often landowners wonder why their huge solitary birch trees suddenly fail. What they don't understand is that these trees in fact began dying as soon as the forest was removed from around them. If there are still gorgeous, but lonely solitary birches upon your property I recommend that you plant some shrubs or allow the base of them to naturalize immediately. Birches tend to be short-lived compared to most trees, but with the phenomenon of acid rain along with the wind and sun beating through their garbs of bark, these trees stress. Their limbs begin to die off and become a danger to the property because dead birch branches drop quite easily in storms. Lastly, as most of you may already know, beavers love birches, so screen the bases of your shoreline colonies.

Maintaining natural native forest upon a property is the ecologist's way to make the economist proud. Keeping a Muskokan forest environment lives up to the popular statement "diversity is the way to secure profit". How true; a diverse shoreline land-

The White Water Lily (Nymphaca odorata) is becoming a rarity on Lake of Bays. They prefer still water and with the introduction of jet-propelled watercraft, undisturbed, quiet bays are dissapearing.

scape is a healthier shoreline landscape, which immediately holds a higher value for a longer term, whilst nursery cultivars depreciate and eventually fail. I will explain this using two words: GENETIC DIVERSITY. Native plants are organisms that have surrounded Lake of Bays since its creation. They have had generations to evolve, survive, cross breed, and experience the climate, pests, and diseases that also call Lake of Bays home. They are more likely to survive without pesticides and fertilizers, and will live longer and stronger, so that your grandchildren can eat them, smell them, and swing from them as you did as a child/adult (is there really any difference up here?).

White Birch (Betula papyrifera) require companions to live a long, vigorous life. This species is too fragile to go it alone and does best as part of a community like this one. A minimum of five is recommended.