

# Sustainable Lakeshore Living and Shoreline Naturalization

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## In this article:

- Lawns and maintenance
- Buffer zone
- Runoff and grading
- Trees
- Leaves
- Septic systems
- Shore protection

Sustainable Development means minimizing your impact on the environment, working with nature and not against it. Here are some ways to do it.

## Lawns and maintenance

Lawns have a huge impact on our lakes, by allowing nutrients to run off them into the water. Lawns are both unnatural and high maintenance, requiring inputs of energy and chemicals.

You can start by **not fertilizing** them, as that is where the nutrient input issue primarily arises. A natural system does not require the input of externally-sourced chemical nutrients. More on that a bit later.

## **Plant a buffer zone**

We also hear that planting a buffer of natural vegetation along the lakeshore is important. These are narrow plantings of native shoreline-type vegetation, instead of a lawn to the water's edge.

Close to the shore, try growing plants that are native to Ontario and easy to maintain. The following grow well in land that may be wet or flooded part of the year:

- Joe Pye weed
- Swamp milkweed
- Cardinal flower
- White turtlehead
- Canada blue-joint grass
- Common vervain
- Canada wild rye
- Prairie cordgrass
- Meadowsweet
- Dogwood
- Shrub willow
- Elderberry
- Nannyberry
- Highbush cranberry

For many more more ideas visit Peterborough Greenup <http://www.greenup.on.ca/>. Look for the Factsheet *Restoring Healthy Shorelines*.

A buffer zone will certainly make your property look more natural, help stop erosion, and shade the water shallows, and it might even deter Canada geese. But is this enough?

### **Runoff and grading**

There is another, probably more important component to the lawn issue, and this arises from the **grading** of your lot. Natural vegetation along the shoreline, i.e. trees and shrubs, will have little ability to absorb runoff-borne nutrients if the water runs right past them to the lake.

Natural shoreland, as with any natural land, is not smoothly graded downhill, to the lake in our case, but is hummocky, and peppered with little depressions. If you have a natural woodland near you, take a walk through it and see how it is 'graded'.

When people develop a property nowadays, they typically fill in all the **depressions** and remove the little hummocks to create a smooth terrain. This further necessitates the removal of almost all the native vegetation.

In the natural state, those depressions collected runoff, where it sat until it soaked away. This meant that most nutrients were trapped in the soil. Only very well-filtered water would leave the site, sinking beneath the surface, and little, if any, actually flowed overland to the lake or stream.

Most older cottages tended to have minimal lot re-grading. The buildings sat on blocks or rocks that conformed to the contours of the ground. Most trees were left in place, and regrading was minimal, only enough to meet the needs of the user.

### **Does a cottage need urban-style grading?**

With the tendency today to build four season urban type homes, urban-style lot grading is being applied along with it.

Municipal regulations are often at fault, as they oblige landowners to grade their lands in an 'urban-type' perfectly-draining manner. This may be valid over your septic tile bed, but elsewhere we should be encouraging a different approach to lot grading near waterways, by allowing numerous small pockets to collect runoff, or providing at least one larger depression, or paired depressions either side of a front yard pathway, a short distance from the water.

Nonetheless, if your property is currently graded in an 'approved' but unnatural, perfect manner, once approved by the municipality, there is usually no legal obligation to keep it this way. By **introducing some undulations**, with the goal of collecting runoff for seepage into the ground, you can improve the situation considerably. It also produces a more interesting landscape, and provides opportunities to introduce varying types of vegetation that can take advantage of differing moisture conditions, as one finds in the natural landscape, while absorbing both the nutrients and water.

This doesn't mean you have to introduce mosquitoes. The **depressions** should be sized and modified as needed to allow for only a few hours of 'storage'. That woodland near you might show you how deep your depressions can be without holding standing water for longer than you want. Free draining material such as sand can also be imported to create low barriers to produce ponding that then allows the water to filter through it, where native soils are heavy, such as clay.

If you have a paved **driveway**, a nearby depression to collect the runoff from the driveway is particularly important, as it will capture and filter water from washing cars and boats. In some cases, this runoff can be instead directed to a wooded natural area to rely on those natural depressions as well as deep, loose soils, to do the filtering work. This is particularly important if you have a driveway that becomes a boat ramp at the lake.

As well, many lot owners have more land than they actually need for their day to day living, but somehow feel obligated to manicure the entire property. Why not **convert some of your lot to natural conditions**, and re-grade, or rather 'un-grade', and **plant native trees**? And don't ever rake the leaves in this area.

Then, for the area that you do want to keep usable and open, what can you do instead of a grass lawn?

## **Trees**

Many people admire the property that is covered in big pines (usually white pine) with their majestic beauty, vast open space beneath, and carpet of soft pine needles that don't require any maintenance. These pines are usually quite old and this means, to most people, that they can't reproduce that scene on their property. But it can be done.

**White pines** are fast growers, and while you won't get that magnificent old-growth in a few years, you can get a reasonable and attractive facsimile. In addition to introducing a few hummocks and depressions, scatter a planting of White Pines across your lawn, leaving critical view paths open if you like.

As pines grow, they add a new ring of branches each year to the top of the tree. When the pines reach a height of two metres or so, the lower ring of branches, which are typically spaced about a foot apart up the trunk, can be pruned off. This forces the tree to grow upward faster, as it puts its energy into new higher branches and the remaining lower ones. Each year, prune off the lowest row until you have attained the open area beneath that you prefer. In relatively short order, you will have a pine-covered lot with diminishing grass cover and expanding needle cover.

Your property value will likely soar along with it, as these properties usually command a premium. You will also be adding to the scenery of the lake, offering yourself more shade, and all for the price of less work on your lawn.

This approach can also be used to allow any type of tree to occupy the space in front of your home or cottage. Instead of cutting a tree down because it is blocking your view, or not planting it in the first place, just prune it from the bottom up in the same manner, and it will grow rapidly above your field of view leaving only the trunk visible in few short years.

## **Leaves**

There is another sustainable approach to lawn maintenance, as most people will still retain some amount of grassed area, and there is nothing inherently wrong with that. It's just how it is maintained.

In the autumn, many landowners rake their leaves and take them to the dump, or somewhere off-site. This is an unsustainable practice that depletes the natural nutrients and minerals in the soil that all vegetation requires. This in turn leads to the perceived need to fertilize the lawn or trees to encourage growth. The better approach is to add nothing and take nothing away, mimicking natural systems.

Get a mulching mower. **Mulch those grass clippings and leaves on your lawn instead of raking and removing.** The grass and leaves are loaded with the nutrients that both the grass and the trees need, and these nutrients are released slowly from the decaying mulch, with much less opportunity for it to reach the waterways.

Also, if you clear away branches and other **yard waste, don't haul it to the dump.** Again you are removing valuable nutrients and minerals that have existed on your lot for millennia, that have constantly been recycled until you came along. Set aside an area as your **compost area**, and allow it all to decay there, or, if you have a larger enough area in a natural state, distribute the waste material through the woods to let it return to the land more naturally. Always strive to **add nothing and take nothing away.**

## **Septic systems**

Now, what about those septic systems? Here we have a necessary departure from that “add nothing, take away nothing” goal, because septic systems essentially add nutrients to the land, in a subsurface mode that minimizes impacts on our waterways. These nutrients came from the food that you brought to your home or cottage.

It goes without saying that you should keep your septic in good repair. Have it checked and pumped every few years, depending on your usage. Replace old leaky steel tanks with concrete, plastic or fibreglass ones. Generally speaking, septic systems perform very well, with most nutrients staying onsite, rather than reaching the water. Some output does make its way to the waterways, but there are things you can do to reduce that. The soil itself can only hold so much. You need something more to uptake those inputs to the lot, before they reach the lake.

First, your septic system should be as **far from the water** as practical. There is no magic distance, it is simply a case of the farther the better. Then, the ideal situation is to have a wooded area or a **grove of trees between the lake and your tile bed.** Trees have a voracious appetite for water in the growing season, which is typically the time when most lakeshore properties have the greatest usage, and therefore receive the greatest inputs from those septic systems.

During this period, if weather is fairly dry, your trees may uptake every bit of water that enters the septic system, and with it, the nutrients. The trees then redistribute this nutrient back to the land as fall leaves, and ultimately as fallen branches and trunks. Some is sent to the lake when the wind blows the leaves into it, but generally this is a small percentage. In many cases, the waves wash much of this back to the shore where the wind blows it back onto the land. But this can only happen if you have a natural shoreline, and not a shorewall. More on this below.

In this manner, most of your septic system inputs will never reach the waterways. If you can plant a small forest in between your septic system and the lake, you will be doing the lakes a favour.

## **Shore protection**

Finally, what about those shorewalls?

So commonly seen around the Kawartha Lakes are developed properties with hardened shorelines of concrete or crib walls, which are both unnatural looking and usually totally unnecessary. There seems to be a need in many people's minds to provide a hard definition between lake and land. They want no grey area or land between.

Severe erosion along our lakes is relatively rare and rarely warrants an approach such as this. **The best shorewall is none at all**, with the lake determining, and creating a beach condition where the waves run-up into increasingly shallow water until they break and the land takes over just beyond. Beaches allow a place for the waves to toss the flotsam which can then blow back onto the land.

Unfortunately, most of our lakes were raised by dams, and this means that the original shorelines are submerged, and the lakes are still adjusting to the higher water level, even over a century later. We see this in the slow erosion that is occurring in various places, and the numerous windfalls along the shoreline with upturned tree roots, often with bare rock or soil exposed underneath. The lakes are trying to create a beach zone again.

In time, the lakes will achieve the more natural beach condition with either exposed sand or rock all along the shore, making room for wave uprush, but, most people, we must recognize, are not prepared to wait for it. They also don't like to see the loss of their land or trees along the shore.

The best erosion control systems mimic naturally occurring ones where tree deadfalls along the shore, along with wave tossed flotsam, produce a wooden barrier slowing erosion. In other areas, rocks found in the shallows or along the beach become bulldozed by moving ice into barriers of rocks at the water's edge. There are many examples of this around the Kawartha Lakes, where centuries of ice movement under undammed conditions created rows of rocks along now-submerged shorelines, often mistaken for old farm fences.

These features are very effective in slowing erosion, and are obviously natural looking. You can use these natural techniques and incorporate both together to produce a 'naturally' protected shoreline. By placing **deadfalls tight up against the edge of the land and then covering with rocks** (you can get the rocks from a gravel pit operator or quarry, or buy a pile from a farm owner), you get double the effectiveness. The rocks keep the wood in place, and they collect additional detritus adding to the shoreline stability, and absorb much of the wave action.

The rock-buried logs, which form a barrier to soil migration, very slowly decay where they meet the land, and this allows tree and shrub roots to invade them, both anchoring the shore protection as well as themselves. This won't entirely stop the process, but it will usually slow it to an imperceptible rate, while looking like it has always been there.

Taken together, these and other sustainable development approaches to lakeshore living will minimize your negative impact on your lake as well as your land, and add to the scenic shorelines of the Kawartha Lakes.

From KLSA's 2007 Annual Report Making a Splash: <http://www.lakefieldherald.com/KLSA/KLSABookweb.pdf>  
Kawartha Lake Stewards Association: <http://klsa.wordpress.com/>