Retaining Wall Woes

In the continuing quest to maintain a neat and tidy shoreline, many waterfront owners remove important shoreline vegetation, which inevitably leads to the problem of erosion eating away at their property.

The solution? A retaining wall, of course!

While retaining walls have long been a fixture on many shorelines in Muskoka, many of them were erroneously constructed in the misguided belief that it would solve the property owner's erosion problems, while giving them more room for a lawn.

What many property owners don't realize is that the construction and maintenance of a retaining wall on their shoreline wrecks havoc on their water body's biological processes and aquatic life.

Retaining walls can actually *contribute* to shoreline erosion and can make problems worse over time. They interfere with natural lake processes by altering currents along the shoreline, causing waves to slam against the vertical wall.

As this occurs, the wave energy is deflected upwards, where the wave breaks against the top of the wall. Energy is also deflected downwards, where currents scour out the substrate at the base of the wall. As the ground beneath the wall washes away, the wall will begin to tilt and break up. Eventually, the wall may topple right over.

Not only do retaining walls affect natural processes and currents, but they also affect lake life. "Hardened" shorelines, such as retaining walls, eliminate the filtering capacity of a natural shoreline, degrade water quality, destroy fish and wildlife habitat, and block wildlife access to and from the water.

However, even if you currently have a retaining wall on your shoreline, all is not lost! There are a few things you can do to reduce the pounding your retaining wall takes and improve wildlife habitat along the shore.

Some things you can do to "soften" your shoreline are:

- Restore or plant a strip of deep-rooted native vegetation along the retaining wall. This will help filter runoff before it reaches the water and will reduce the risk of erosion occurring and gullies forming behind your wall since the plant roots act to hold the soil together.
- Plant overhanging native shrubs to help provide shade and keep the water cool. Leaves and woody debris that fall into the water also provide food for species at the base of the food chain.
- Drill planting holes into the retaining wall and plant cuttings or plugs of overhanging plants and vines in them.
- If you have riprap (large, loose stones) along your shoreline, plant shrubs in open spaces among the rocks. A pry bar can be used to create additional spaces within the rocks. Pierce any filter cloth found underneath the riprap to give plant roots access to the soil below.

With appropriate approvals and permits,

- Anchor a log or two against the retaining wall to provide some wildlife habitat and to help break the force of waves and undercurrents.
- Pile stones at a 45-degree angle in front of the retaining wall to add more places for fish to hide and feed. Enough sediment may be trapped by these stones to promote the growth of aquatic plants. The stones will also absorb much of the force of the waves, helping to extend the life of your wall.
- Create shore "ladders" of riprap from the base of the retaining wall to the top to aid wildlife access between the water and the land.

If your retaining wall is falling apart, or you would like to replace it with a more natural shore, here are some steps you can take:

1. Start by digging out the bank behind the wall to restore a slope of 25 degrees or less. Line the slope with filter fabric to keep soil from eroding into the water.
2. If it is not feasible to completely remove the wall, pull it back onto the new slope and break the concrete into cobble-sized pieces of rubble.
3. Add riprap (stones should be 15 to 20 cm in diameter) to fully cover the filter cloth.
4. Plant woody vines and shrubs, such as willow and dogwood, just behind the riprap. This vegetation will eventually grow into the spaces between the stones.

By following these simple steps, you can transform a barren, hardened shoreline back into a productive habitat that controls erosion and provides wildlife habitat.