

Torch Lake Yacht Club

What is the condition of TLYCC's shoreline?

Terms:

Shoreline—soil, shrubs, grasses, and trees that grow down to the edge of the rocks. Rocks usually are the last 2-3 feet before the water's edge. The gravel at water's edge—what we think of as our 'rocky beach'—is not considered shoreline.

Soft barriers—when ice builds up in the winter, it rolls over the top of soft barriers of grasses, small shrubs, and smaller boulder outcroppings. When it recedes, it leaves these areas relatively unaffected by the ice, especially when soil and plant roots hold everything in place. The goal of shoreline preservation is to increase soft barriers as the most effective way to hold a shoreline as much as possible. Winter ice will inevitably move around the gravel. Winter ice moves soft barriers less than it moves gravel.

Erosion—once impact happens and soil washes away, then the exposed rocks don't give the trees, grasses, and shrubs anything to feed on. The plants die. The rocks are loose and are moved easily by the wind, ice, and water. Erosion results.

Greenbelt— a buffer consisting of 25-30 feet of green shrubbery, grasses, trees along the shoreline. A greenbelt provides a buffer between human activities on the land and the water's edge. It allows the shoreline to 'hold' because it has many roots holding the soil.

High water mark—along most of Torch Lake, it is the 2-3 feet of rocks (called 'gravel') at the water's edge.

Impact—human use—how we pack down soil which prevents trees/shrubs from getting good footholds with their roots, and the way we accidentally kick off existing soil from tree roots and plants as we tramp around.

Pollution filter—Pollutants can be airborne or there can be other particles (like oil/antifreeze dripping from cars) that enter the lake both through rain and 'run-off' from shore. The 'small hair' fiber parts of tree and shrub roots soak in the water run-off, then filter out and trap pollutants. Therefore, trees and shrubs at shoreline are an excellent source of pollution filter for the lake.

Water table—what we think of as the 'water's edge.'

Questions TLYCC Board asked about our shoreline:

1. How long is the greenbelt? It should wrap around the point. Most of the TLYCC shoreline does not have a greenbelt, except on the new property.

2. How deep is it? It should be at least 25 feet deep as a minimum. Even 10-15 feet would help in places. Most of the TLYCC shoreline does not have a greenbelt.

3. What is the condition of the shoreline greenbelt at the TLYCC?

TLYCC Point: no greenbelt, no depth, no diversity- some struggling grasses, a few trees. There is evidence of severe erosion on the north side because more than 10 feet of the stable ground has washed away in the last 10-15 years. We don't have as many grasses or solid ground off our north deck anymore, but instead have more bare rocks—called gravel. The solid shoreline is now about 20 feet off of the deck.

TLYCC South shore: no greenbelt, no depth, no diversity. Fewer than 10 maple and white ash, planted probably 50 years ago with the expansion of the parking lot at that time. All are struggling, many gouges in the trunks, exposed roots, dead branches. Most will die within 10 years. There is evidence of moderate erosion around the trees on the south shore.

4. Do we have groundcover to slow runoff and ease erosion? Small patches.

5. Do we have a shrub layer to slow runoff and ease erosion? None.

6. Do we have a canopy layer of trees to hold the soil in place? Some. White ash and maple—most of what we have—are upland species and do not do well in moist conditions. If you look at photos from 25 years ago, there were more trees. We have not replaced any trees as they've died other than a black locust by the front porch. Black locust trees are fast growing, poor shade trees and attract bees.

Native species for shoreline are cedar, birch, willows, alders and poplars. They like 'wet feet.' We have approximately 3 native cedar trees left on the tip of the point. Some of our trees have increasingly exposed roots, which eventually kills trees. The soil around all the trees is compacted. No roots can function in compacted soil. Compaction happens because of heavy foot traffic as well as driving over areas that are not designated drive areas. For instance, there is evidence of some off-season driving by cars/trucks/snowmobiles on the point.

Canopy refers to the branch width and its ratio to the 'reach' of roots. Roots extend in a 1:3 ratio to the canopy of the tree. If a tree's canopy is 20 feet out from the trunk, the roots will extend out and hold soil for 60 feet from the trunk. So trees are a great asset for shorelines and greenbelts.

7. What is the problem? There is no greenbelt buffer to slow shoreline erosion, slow runoff from hard surfaces (parking lot, tennis court, clubhouse roof, and driveway).

1928-1978 First 50 years, few changes to the shoreline

1978-2008 Last 30 years, many changes to the shoreline, including bigger parking lot, second tennis court, larger roof, additional decking, larger fleets for E and butterfly, added MC fleet, added sailing school fleet, increased membership

8. What are the recommendations to restore the shoreline and halt erosion?

Stewardship at the point: Yacht club members love the lake and the point. They use the land, and they know they have a responsibility to keep the lake clean and clear. But most don't know what they can do as stewards of the lake and the land. Here are some questions for stewardship:

How do we protect our trees since they keep our shoreline from eroding and help keep the yard on the point? How do we maintain the natural shoreline?

Possible Stewardship Actions To Take :

To maintain and hold a shoreline and avoid too much compaction, think about:

- 1) Protect and preserve the trees and yard we have
- 2) Think about installing native plants and trees where current native plants and trees are dying
- 3) Think about resting the north shore and possibly having a 'no mow' zone on the point
- 4) Consider trying to replant some gravel areas near existing birch trees on north shore. Use of DEQ and Antrim County Soil Erosion guidelines for preserving shoreline through two or three 'best practice models' to see which method—if any—might preserve shoreline, save existing trees, or in some cases rebuild shoreline. Since we are not sure that we can re-establish shoreline in gravel area, no TLYCC funds to be used in this section; only donations.

Possible zone specific recommendations. These were recommended by the forester/local nurseries/Grand Traverse Watershed Council—all of whom have walked the shoreline with us to help us understand our unique circumstances and possible solutions

The following is divided into sections by North shore, End of the point, Swimming beach area, Boardwalk/butterfly area, Shade Maple at the Tennis Courts, Parking Lot:

North Shore: North shore's shoreline has suffered erosion and the shoreline behind the gravel is destabilized. The shoreline/yard needs stabilization so that more shoreline is not lost to 'gravel.'

Resting entire area will be helpful. In addition, the gravel around the trees might be stabilized with addition of shrubby natural plants in 'islands' around the trees. Move sailing school fleet to southeast shore. Limit foot traffic until shrubs and grasses take better hold.

Point: Address possibility of relocating slabs of concrete. Although they were originally placed to provide 'stability' to the point, they actually may not help, are considered somewhat dangerous if someone should fall on them. They prevent growth of grasses. As a 'hard barrier' they can actually cause erosion on either side of a piece of cement slab. Eventually consider planting grasses and shrubs that are natural like dune grass, shrubby cinquefoil, and similar vegetations around the existing three cedars to reinforce holding shoreline. Continue to protect trees near dining room's west deck.

Swimming beach area: Current shade tree may die due to emerald ashborer problem. Several trees in Antrim County already have the disease. Consider adding shade tree to 'get started' now.

Boardwalk/butterfly boat area: What to do with all the butterfly sailboats? Current use of area contributes to destabilization of shoreline and creates more 'gravel' that can be moved around by ice and water. Possibly limit number of boats here, or consider putting boats on 'dollies' which are not as hard on shoreline. Perhaps divide up fleet in several 'locations' for the boats. Ask the Butterfly sailors to participate in coming up with a solution to congestion/compaction problem. Take time to figure it out so that it reflects what the sailors think is 'doable.'

Plant low shrubby plants along inner side of boardwalk next to tennis court to encourage roots taking hold and reinforcing shoreline. Possibly consider planting a tree or two.

Near our shade maple at the tennis court: Everyone likes to sit in the shade but we are oblivious to the damage we're doing to the tree. Possibly cover roots with soil, remove gravel, amend soil, and possibly make some area near the trunk 'protected' by decking over the roots to protect them. At some point in next 5 years, the maple tree may pop roots up through the tennis court, so that will have to be 'watched.'

Parking lot trees: Save the trees and consider planting new trees in some places. Following DEQ/Soil Erosion guidelines, stabilize the ground around trees and cover tree roots. Amend soil. Plant shrubs around several. Trim dead branches. In fall, pile docks/lifts on parking lot and not on tree roots.

Check to see 'whose boat lift is whose' and see if there are any boat lifts that are not being used anymore and could possibly be removed from the parking lot.