

Turtle Rock Rag

Turtle Lakes Chain Association

Fall 2025

Shoreline Preservation & Restoration

Short Version

Shoreline Preservation/Restoration

Cathy Higley from Vilas County Land & Water Conservation recently presented information on protecting our lakes at the Winchester Town Lakes Committee. This presentation was summarized at the TLCA Annual Meeting in July. I think it is worthwhile to share this information with TLCA Members who were not able to attend.

One of the most beneficial things that lake property owners can do is to keep nutrients such as nitrogen (N) and phosphorus (P) out of the lakes. When you hear nutrients, think of fertilizer. Most lakes in Wisconsin (80%) are phosphorus limited which means that if additional P is added to the lake, it will stimulate rapid plant and bacterial growth which can lead to large algae and Cyanobacteria (blue green algae) blooms which are always undesirable. Figure 1 shows the impact of adding the limiting nutrient (P) on algae growth.

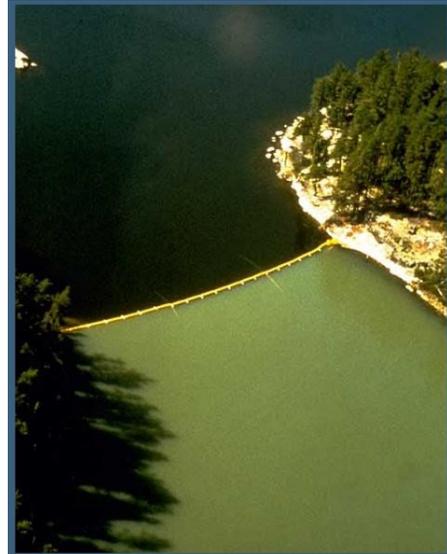


Figure 1: Carbon & Nitrogen added to Top Lake portion. Carbon, Nitrogen and Phosphorus added to bottom portion.

The P comes from increased run-off from developed lake properties along with increased sediment. Figure 2 shows the changes in run-off volume, phosphorus and sediment input as you move from undeveloped shoreline (base case) to semi-natural to urbanized.



Figure 2: Increase in run-off volume, P input and sediment as a function of development type.

The 6X increase in P input for the urbanized shoreline is significant versus the other two examples. Every pound of phosphorus

added to the lake is capable of generating 500 pounds of algae! What prevents the increase of P in the other examples? The maintenance of the “Shoreline Buffer”.

The Shoreline Buffer consists of vegetation layers from the Ordinary High-Water Mark (OHWM) up to 35 feet inland (Figure 3).

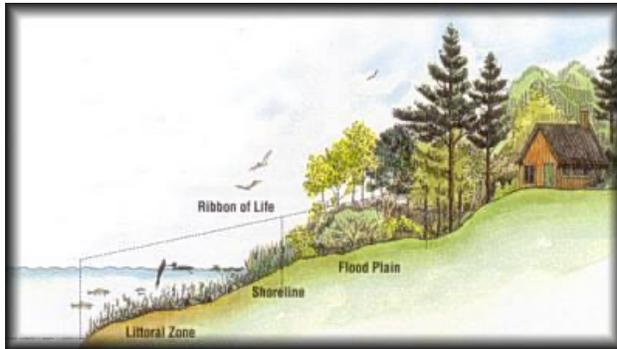


Figure 3: Shoreline Buffer Zone Setback

The idea is to move away from the highly urbanized shoreline (Figure 4):



Figure 4: Urbanized Shoreline

To more of a developed natural shoreline (Figure 5):



Figure 5: Developed Semi Natural Shoreline

This can be accomplished by reestablishing as much of the 35-foot Buffer Zone as possible on your property with native plants and no cut zones.

The benefit for moving back to trees and native plants is the result of enhanced root systems which assist in soil stabilization and run-off control. The root system comparisons for various native plants and Kentucky Blue Grass are shown in Figure 6.

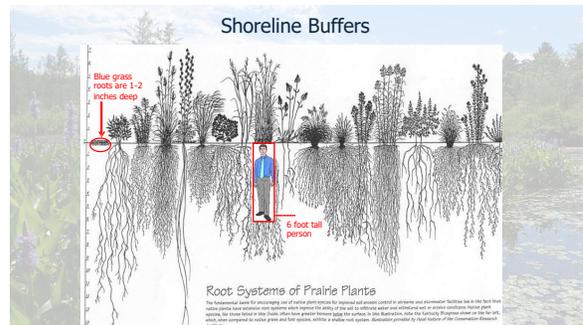


Figure 6: Native Plant Root System Comparison

Regulations & Requirements

Shorelines are protected in Vilas County by Vilas County Zoning within 300 feet landward of the lake. They should be contacted before planning any:

- Tree/stump removal
- Vegetation removal
- Mowing
- Soil disturbance or adding sand/soil fill
- Buildings
- Driveways

The Wisconsin DNR regulates activity below the lake's OHWM. Contact them before planning any:

- Aquatic plant removal
- Dredging
- Docks/piers
- Rip rap/seawalls
- Culverts/bridges
- Wetland impacts

Vilas County has also put together a Shoreland Zoning Regulation & Requirements Ordinance Guidance Brochure which should be available on their website at www.vilascountyzoning.com.

When it comes to protection of the Buffer Zone, the following information applies:

NO CUT ZONE

Land extending from the OHWM to 35 feet inland is a vegetative buffer zone.

No removal of trees, shrubs, or undergrowth is permitted within the vegetative buffer zone except for the creation of a shoreline recreational area (viewing corridor).

VIEWING CORRIDOR

May be a maximum of 35 feet per 100 feet of shoreline frontage. May run contiguously for the maximum width, extending from the OHWM. **Select cutting of trees and shrubbery** in this area is permitted to create a recreational area if one does not exist naturally.

So, what can you do to control run-off and the corresponding phosphorus loading to the lake?

- Protect the 35-foot buffer zone
- Manage stormwater on the uplands from driveways, patios, building roofs, etc.
- Keep as much shoreline habitat as possible
- Leave wood in the water when possible
- Restore eroded or manicured lawn areas

Can establishment and maintenance of the buffer zone help protect the lake? A picture is worth a thousand words (Figure 7).



Figure 7: Cyanobacteria (Blue-Green Algae) growth in non-buffered, high run-off shoreline zone.

Gary Engstrom – Rock lake