# LAKE LINGO

## Riparian Buffer Zones

*The riparian buffer on this shoreline property has been carefully protected.*

Riparian buffer zones, while not situated *within* a body of water, are a vitally important componant of aquatic ecosystems. They are the transition area between the water and the adjacent land. Riparian areas can be wet for part of the year because they are often situated in flood plans with poorly drained soils, and because of their proximity to the shoreline. Riparian buffers are largely terrestrial in character, but some transition plant species may occur in them. Riparian buffer zones exist naturally along the shorelines and banks of lakes, ponds, rivers, streams, and wetlands.

Although not part of the aquatic system per se, riparian buffers have a major influence on lakes and ponds, and the streams that flow into them. Another term that is used somewhat synonymously, and more commonly, to describe this area is "buffer zone," a term that implies one of the important functional aspects that these vegetated areas play in protecting water quality.

Buffer zones in their natural state are typically composed of a broad assemblage of vegetation, including ground cover species, low and medium height shrubs, and trees. Another extremely important component of the buffer zone is the decomposing layer of organic matter on the forest floor, commonly referred to as the "duff." Buffer vegetation plays a critical role in protecting water quality, because it acts as a filter barrier between the water body and areas that have been developed or disturbed in the watershed.

Stormwater runoff from developed areas often contains an assortment of pollutants. Soil particles and the nutrient phosphorus are generally the most threatening of these to lakes and ponds. Buffer zone vegetation effectively traps soil particles as runoff is slowed-down by the plants, duff, and the irregularities of the forest floor. Some pollutants that are dissolved in the runoff are adsorbed to soils beneath the duff as the water filters into the ground. Through a complex interaction of microbes and physical and chemical changes, phosphorus and some other pollutants are eventually cycled through the natural buffer vegetation. Riparian buffers also provide important habitat for amphibians, nesting waterfowl and other birds, and they provide access corridors to the water for many other animals.

Lakeshore development can dramatically impair the beneficial functions of riparian buffers. The construction of camp roads, seasonal and year round dwellings, and other structures, along with the replacement of natural buffer vegetation and the absorbent duff with manicured, fertilized lawns causes buffers to "short circuit." Contaminated runoff can then flow directly into streams, lakes and ponds, degrading water quality over time.

The next time you are taking a Secchi disk reading, take a moment to view the shoreline of the lake from your monitoring station. Wherever you can clearly see buildings, lawns and large cleared areas along the shoreline, the riparian buffer has been seriously impaired. Unless measures are, or have been taken to mitigate runoff from these areas, thelake may experience a decline in Secchi transparency over time.

For more information on measures that you can take to protect, enhance, and even re-create a riparian buffer to protect water quality, contact the VLMP, or the Maine DEP Nonpoint Source Center at 207-287-3901.