

Watershed Wisdom –Large Woody Debris

We have been talking lately about the benefits of vegetated buffers and what a wonder of efficiency Mother Nature's basic watershed design is. This week, we will discuss additional benefits provided by her Transpiring, Recyclable, Energy Efficient Stormwater System, or TREES for short. I got the idea for this column from a recent phone call to my office from a woman who reported that a tree had fallen into the water along the edge of her property and was "creating a nuisance." She wanted to know what government agency she should call to have them come remove the tree.

I told her that unless the tree was a safety hazard or a hazard to navigation, e.g., blocking a channel or access to her dock, the official recommendation of the Department of Environmental Protection (DEP) and Division of Inland Fisheries and Wildlife (IFW) was to leave the tree in place to provide habitat for turtles, fish, and other aquatic organisms (see, e.g., <http://www.maine.gov/dep/blwq/docstream/team/riparian.htm>). She told me that was the problem- there were so many turtles and fish around the tree that nuisance fishermen were now spending too much time fishing in "her" part of the lake. I explained that under Maine State law governing surface waters of great ponds (> 10 acres), the lakes belong to everyone and fishermen had every right to fish there although they should certainly display common courtesy and not intrude on anything on the shoreline.

Fisheries biologists and watershed managers refer to trees and large branches that fall into streams, rivers, and lakes as "large woody debris," or LWD for short. In small headwaters streams, this LWD provides important nutrients and habitat for aquatic insects that form the basis for the food chain in the stream. It also provides shelter for fish and helps form channels and pools that slow erosion and trap sediments, while helping to provide turbulence that oxygenates the water. Many studies have correlated the amount of LWD with the number of fish in the stream.

Along lakeshores, these downed trees act as critter magnets. Terrestrial insects such as ants and beetles will crawl out, often falling into the water and becoming fish food. Turtles will climb out of the lake and bask in the sun on the exposed branches. Fish such as bass and black crappie will take shelter in the shady structure provided by the submerged part of the tree and feast on the small minnows, crawfish, and other aquatic invertebrates that are attracted to the LWD. As the woman who called me noted, LWD also attracts fishermen who understand the habitat value provided by this structure.

Less appreciated is the role that the downed trees play in protecting the shoreline by helping to dissipate wave (and even ice) action, just as a jetty helps protect the shore at the beach. Incoming waves will break over the tree and hit the shore with a lot less energy than along the unprotected shore. This is one reason you never see the BRCA youth Conservation Corps out rip-rapping natural shorelines.

Mother Nature considers LWD such an important component of her watershed design that she has a special corps of Busy, Eager, and Very Energetic Recyclers, or BEAVERS for short, who make it their life work to increase the amount of LWD in Maine streams, rivers, and lakes. Sometimes their actions are not fully appreciated, such as when they dam up culverts under roads, but they are very good at what they do. They create a lot of great fish habitat. The bottom line? If a tree falls in the lake, unless it is a hazard, just leave it where it is and all the creatures in the lake will be much happier.