Logging in the vicinity of streams

This article explains how loggers and landowners can harvest selected timber near streams while minimizing sediment runoff and protecting the stream during a timber harvest.

Timber harvesting should be avoided or well-controlled near streams of all sizes, to preserve a "streamside management zone." In the Finger Lakes, most streams enter one of the major lakes after a short distance. Logging can have a profound effect on the quality of drinking water, wildlife habitat, and stream health.

A special zone exists around the edges of creeks and shores of ponds or lakes. This zone, from 50 to 100 feet wide, affects what kind of timber management is appropriate. Many people in the forestry industry know these as Streamside Management Zones.

At a timber harvest, Streamside Management Zones help:

*Filter sediment and nutrients from runoff.* As runoff water moves through plants and the duff layer (needles, leaves and decaying matter), it slows and drops sediment that has been carried along. This settling process keeps sediment and nutrients from flowing into streams and lakes. It also allows plant roots to take up the nutrients that have dissolved in the runoff and soaked into the soil, further reducing the amount of pollution flowing into lakes and streams.

*Allow water to soak into the ground.* Trees and plants, leaves and twigs slow surface runoff, allowing the water to soak into the soil. This helps to reduce peakflow levels in streams and replenishes the groundwater that helps maintain lake levels and stream flows.
Stabilize streambanks and lakeshores. Trees and plants along streambanks and lakeshores can reduce soil erosion because their roots hold the soil together, making it more difficult for waves, currents and runoff to wash the soil away. Plants also reduce the impact of raindrops on exposed soil, decreasing erosion.

Shade streams. In most cases, plants and trees along streambanks are necessary to shade streams, keeping the water from becoming too warm for aquatic life in the summer.

Provide food and habitat for aquatic organisms. Fallen leaves and other organic debris from trees are the base of the food chain for aquatic organisms in small forest streams. Large woody debris (large fallen logs, generally at least 12 inches in diameter with an anchored root ball) create riffle areas and plunge pools, critical habitat for fish and other aquatic organisms. The pools trap leaves and twigs long enough for microorganisms to decompose them. These microorganisms become food for insects and other invertebrates, which in turn become food for fish. (From Wisconsin Department of Natural Resources. 1995. Wisconsin's Forestry Best Management Practices for Water Quality. Publication number FR093.)

**Best Management Practices when logging near streams**

**Identify the location of streams and adjacent areas.**
During a walk-through or meeting with a forester or logging crew, take a few minutes to physically identify these special management areas around streams. Use surveyor's flagging if appropriate to mark the boundary of any streamside areas where special care is needed. For example, if the stream course can not be seen due to slope or vegetation, the flagging will make it easier for a busy logging crew to avoid coming too close to a stream. Flagging is a form of communication between logging workers, foresters, and landowners.

Landowners are partly responsible for ensuring logging activities do not cause environmental harm to streams and lake waters.

**Plan roads, skid trails, and landings to avoid streamside zones.**
Using your maps and knowledge of the site, refrain from making roads or log landings within the special streamside zones. This is an important area to avoid soil compaction. Of course, stream crossings are constructed to allow roads to pass through streamside zones.

**Maintain a wide strip of intact trees, seedlings and shrubs on either side of a stream.**
More vegetation in streamside zones is better. Some merchantable and cull trees may be removed, but a significant amount of timber should remain standing. Advise your forester to plan for at least 60 square feet of basal area per acre along the edges of streams.

**Do not allow machinery to enter steep gullies.**
In almost every gully in the Finger Lakes region, the streamside zone extends far up the sides. Large logging machinery should not be operated on this terrain. To extract timber from these areas, use winches or small-scale equipment, like ATV logging devices. Drag logs cross slope and immediately repair or divert water from tracks. In most cases, large
trees in gullies are essential for keeping the soil intact and should not be harvested at all. Remember, landowners are partly responsible for ensuring logging activities do not cause environmental harm to streams and lake waters.

**Use directional felling techniques to keep treetops away from streams.**
Loggers should be able to direct the fall of trees being harvested. Treetops can clog stream courses, causing unexpected flooding and new erosion. Some large woody debris in streams is acceptable, even beneficial, for fish and insect habitats. However, the amount of small branches and limbs should be minimized to prevent flooding.

Keep skidding equipment 50 feet or more from stream banks (100 feet or more on sloping terrain.)

**Keep fuels and other chemicals out of the streamside zone.**
Each logging job, even weekend projects, should have a special protected area for refueling equipment. Gasoline, oil, hydraulic fluids, and pesticides often spill or leak unexpectedly. These mishaps can have tragic consequences for the wildlife and ecology of streams. Make sure such materials are contained, stored and transported safely, always outside the streamside zone.