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Managing Streamside Forests for Profit and Clean Water

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Healthy stream systems provide the clean water we all require. A forested corridor along streams, rivers, and lakes helps to prevent water pollution. These corridors can also yield a variety of timber products that may provide income for a landowner. The key is to maintain a healthy forest corridor, which in turn will help maintain a healthy stream system. All forest management decisions need to keep the health of the stream system in mind.



Shade from the tree canopy moderates stream temperatures.

Water Quality Functions of the Forest

Forests protect water quality by stabilizing banks, shading the water, taking up nutrients, and filtering pollutants.

The extensive network of tree roots holds the soils of the bank in place, reducing erosion and keeping the streambanks and shoreline stable. The shade helps reduce water temperatures and maintain high oxygen levels that benefit many kinds of aquatic wildlife. Fallen leaves and other organic debris deposited in the water provide “food energy” to aquatic life.

Many nutrients, sediment, and pollutants contained in storm runoff are filtered out before they reach the water and are held in the leaf and humus layer on the forest floor. The nutrients are used for tree growth while pollutants are broken down into harmless compounds. Additionally, porous soils of the forest floor readily allow water to infiltrate, increasing groundwater recharge and reducing the potential for flash floods.

Can Forests Be Managed While Protecting Water Quality?

Trees can be harvested from a waterside forest area while preserving water quality if guidelines or Best Management Practices (BMPs) are followed. Here are several important rules of thumb.



Sturdy root systems can support tree canopies, stabilize banks, and provide habitat even if the tree is leaning toward sunlight.

Rule of Thumb #1: If a tree casts shade on the water, leave it.

A tree that shades the water probably has greater value standing than being sold as a log. Of these water-shading trees, only remove those that are at great risk of falling into the water. Trees whose root systems are more than 50% undercut by the stream are the only “leaners” that should be considered for removal. Those trees that are leaning in order to reach available sunlight should not be cut.

Rule of Thumb #2: Maintain at least a 50-foot-wide strip of waterside forest area.

A 50-foot-wide forest corridor on slopes of 4% or less can filter out the majority of pollutants before they reach the water body. Slopes greater than 4% require wider forest corridors. A forest strip of 120 feet or more is desirable next to national and state scenic rivers and other water bodies with special values.

Rule of Thumb #3: Single-tree selection harvesting is the only cutting method that should be used in the waterside forest area.

In selection cutting, individual trees are removed based upon their current health, future health, and future contribution to the forest. Enough trees should be retained in the waterside forest to maintain its water quality functions. To prevent bank erosion, the booklet *BMP's for Erosion Control on Logging Jobs in Ohio* recommends a 25-foot no-cut or light-cut zone measured from the top of the stream bank.

Rule of Thumb #4: Avoid creating roads for equipment in the waterside forest area and avoid running equipment in a stream bed.

Harvested trees should be removed by cable and winch to minimize the number of roads needed and the disturbance to the site. Heavy equipment can compact the soil and expose it to erosion, reducing the water quality functions of the waterside forest area. Equipment in the stream bed adds mud to the water and destroys wildlife habitat.

Rule of Thumb #5: If a stream must be crossed in a harvest operation, use a bridge.

If it is not feasible to use a temporary, portable bridge, try to find another access to the timber on the other side of the stream or use other Best Management Practices to keep sediment from getting in the stream.

Rule of Thumb #6: If you use forest management chemicals, carefully follow the label instructions.

Make sure that the chemical is not sprayed on the water and use personal protective equipment such as a mask and gloves. Most of all, be sure the chemical is labeled for the intended use.

Rule of Thumb #7: File a Timber Harvest Plan (THP) and/or a Notice of Intent (NOI) with the local Soil and Water Conservation District (SWCD).

These voluntary documents help both the logger and the landowner understand how the harvest will be done and the BMPs that will be used. The local SWCD will have



A portable logging bridge provides easy access to the forest on both sides of the stream.

the plan on hand for reference should there be any questions related to compliance with the Agricultural Pollution Abatement Law (also known as House Bill 88).

Rule of Thumb #8: Use a written contract when selling timber or using vendors for forestry services.

This contract should clearly state the responsibilities of each party, which trees are to be harvested, what equip-

ment may or may not be used, the requirement to use Best Management Practices, and other job specifications.

Need Help in Managing Your Streamside Forest?

Professional foresters can help you apply these rules of thumb in your forest. They can also help you maximize income while protecting the water quality functions of the waterside forest.

Need More Information?

You can obtain additional information or assistance on managing your streamside forest by contacting the following groups or individuals.

Water Quality

- Local OSU Extension offices
- Local Soil & Water Conservation Districts
- Ohio Department of Natural Resources
Division of Soil & Water Conservation
2045 Morse Road
Building B-3
Columbus, OH 43229-6693
614-265-6610

Woodland Owner Education & Management

- OSU Extension
Ohio Woodland Stewards Program
210 Kottman Hall
2021 Coffey Road
Columbus, OH 43210
614-688-3421
<http://woodlandstewards.osu.edu>
- Ohio Department of Natural Resources
Division of Forestry
2045 Morse Road
Building H-1
Columbus, OH 43229-6693
614-265-6694
<http://ohiodnr.com/forestry>
- Ohio Society of American Foresters
Listing of private consulting foresters and industry foresters
<http://www.osafdirectory.com>
- Call Before You Cut
1-877-424-8288
<http://www.callb4ucut.com>

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