



Timber Harvesting



Riparian areas are areas adjacent to intermittent and perennial streams, lakes, and other bodies of water. They protect water quality by filtering sediment and pollutants from overland and subsurface flow. They also reduce bank erosion and provide habitat for fish and wildlife.

In Kansas, our most valuable timber resources are often located in riparian areas. Improper timber harvesting may have negative effects on these areas.

These effects are usually a result of poorly located roads and landings, removing trees that are stabilizing the banks, or crossing streams with heavy equipment. By properly planning a timber harvest and applying the best management practices, a landowner can ensure the future productivity of the land is not threatened.

Timber harvesting best management practices are a set of guidelines to reduce effects to water resources and improve efficiency of harvesting operations. These practices must be tailored to meet the individual harvesting site. The best management practices listed may not apply to all sites, but are things to consider before any timber is cut.

Roads

- Roads and landings should be located a minimum of 25 feet away from streams and

wet areas. This prevents eroding soil from washing directly into the water (Figure 1).

- Design roads to minimize erosion.
- Use old roads. It is often possible to use existing roads and thereby reduce costs and soil erosion.
- On steep slopes, a properly installed culvert (Figure 2) may be needed. One cross drain culvert should be located every 400 feet on a road with a 3 percent slope.
- Use the narrowest width road that will do the job.
- Install grade dips or rolls in the road to minimize the down-road flow of surface water. There should be one grade dip every 300 feet on a road with a 2 percent grade.

Stream Crossings

- Minimize the number of stream crossings and ground disturbance.
- Where a stream crossing is necessary, consider installing



Figure 1. Proper road design with riparian filter strip.

a temporary crossing with an adequate culvert (one that will handle a 25-year flood event).

- Cross streams at a 90 degree angle and at areas where the streambed and banks are composed of cohesive soils or lined with rock.
- Use bridges to cross streams that are too big for culverts or low water crossings.

Harvesting

- Consider harvesting when soils are frozen or dry.
- When harvesting directly adjacent to a stream, limit cutting to not more than 25 percent of the streamside forest.
- Restrict activities in the water to periods of low flow.
- Keep traffic off roads during wet periods and spring break-up to reduce maintenance.

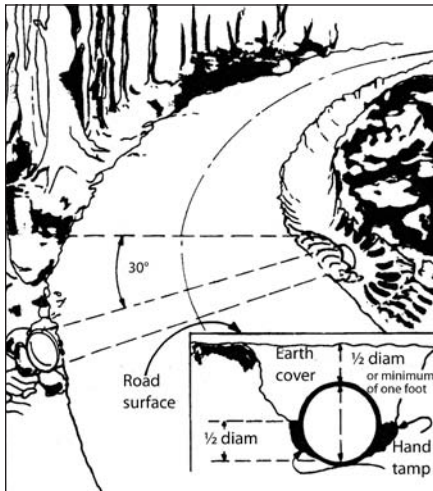


Figure 2. Proper design for culvert installation.

- Do not push logging debris from roads into streams.
- Consider the erosion control benefits of trees on streambanks. These trees are preventing erosion, and their timber value may not justify the damage done by harvesting.
- Keep logging residue (tops and branches) out of streams.
- Check and clean out culverts regularly to assure they are open and functioning.
- Do not skid logs or trees across streams.
- Assure that the logger clearly understands the sale boundaries, trees to cut, and road layout.

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- Stop using a road if it becomes excessively eroded or rutted. Regrade the road, install water bars and drainage dips or close and reseed the road if necessary.
- Designate a specific area for equipment maintenance. All waste lubricants should be collected and stored for off-site recycling or disposal.
- Do not mix, store, or rinse hazardous substances where they might enter drainages or flowing water.

After Harvest

- Stabilize bare soil to reduce erosion. Disturbed soil should be seeded as soon as practical after harvest operations are complete.
- Restore water courses to approximate their natural condition by removing temporary crossings and drainage structures.
- Reseed cut areas and plant with adapted seedlings to assure a healthy valuable forest in the future.

These best management practices suggestions are meant to give you ideas about controlling erosion. Many of them simply require applying common sense to harvesting operations.

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Roads are the biggest contributor to soil erosion. Minimize the number and length of roads to get the job done. Kansas riparian areas produce high-quality timber species. Help assure that they will continue to provide this resource to future generations.

For additional information on timber harvesting, cost-share opportunities, or technical assistance, contact the Kansas Forest Service, your local conservation district office, K-State Research and Extension office, Natural Resources Conservation Service office, or the Kansas Department of Wildlife and Parks.

References

- Controlling Erosion and Sedimentation from Timber Harvesting Operations.* Pennsylvania State University, College of Agriculture. Cooperative Extension Service. University Park, Pennsylvania.
- Water Quality in Forest Management, Best Management Practices in Minnesota.* Minnesota Department of Natural Resources, Division of Forestry.
- Clean Streams Handbook for Forest Landowners.* West Virginia Department of Agriculture. Forestry Division.
- Montana's Forestry BMPs Forest Stewardship Guidelines for Water Quality.* Montana Department of State Lands.



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