



Training notes from the woods & the classroom

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Biomass Harvesting Guidelines

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How Much Biomass Can be Used, While Still Maintaining Wildlife Habitat, Soil Productivity and Water Quality? Concerns over maintenance of soil productivity, some forms of wildlife habitat, and riparian area function have resulted in the recent development in Minnesota of new Minnesota Forest Resources Council (MFRC) guidelines for harvest of woody biomass. These guidelines supplement current timber harvesting guidelines.

New MFRC guidelines to direct the harvest of biomass from forest harvest sites and brushlands were developed over the past year. The new Guidelines have been approved by MFRC, but are undergoing a process to incorporate them into the current guidelines. Fully integrated versions of the guidelines are scheduled for distribution this fall.

Current Harvesting Guidelines Relevant to Woody Biomass Harvest

Current guidelines relevant to biomass harvest include those that deal largely with three issues:

1) wildlife habitat, 2) soil productivity, and 3) riparian areas and water quality. The following are very brief guideline summaries. Managers need to review actual guidelines in order to see the full text, rationale and context. Current guidelines are available online at:

<http://www.frc.state.mn.us/FMgdline/Guidebook.html>

1) With regard to wildlife habitat:

--Guidelines require retention of some down woody debris, snags and leave trees.

2) With regard to maintenance of soil productivity:

--Guidelines suggest that two types of sites are of greatest concern for removal of tops and logging residue: A) Lowland conifer sites on organic soils. These types of sites are largely occupied by black spruce. B) Aspen and other hardwoods on very sandy, or very shallow, soils.

3) With regard to riparian areas and water quality:

--Guidelines recommend retaining significant amounts of live vegetative cover.

New Biomass Harvesting Guidelines

On most harvested sites, there are volumes of logging residue in excess of that needed to address guideline recommendations. The newly developed biomass harvesting guidelines allow for the removal of some of this "excess" biomass, while still maintaining wildlife habitat, soils, and water quality. The newly developed biomass guidelines supplement current guidelines. A few highlights follow. *These are brief summaries of a few highlighted portions of the biomass guidelines for forest management sites. Managers need to review actual guidelines in order to see the full text, rationale and context.* Draft copies of the new biomass harvesting guidelines are available online at: <http://www.frc.state.mn.us/>.

1) Biomass Harvest on Sensitive Sites

--Avoid biomass harvest in native plant communities that are listed in Appendix J of the guideline book, and within specific sites where Endangered or Threatened Species are known to exist. Biomass harvesting may be appropriate in these areas if used as a tool to improve management of potentially impacted communities or species. For assistance with locations and management of sensitive native plant communities or endangered or threatened species, consult the local DNR Office.

2) Managing Water Quality and Riparian Management Zones (RMZs)

--Avoid harvest of additional biomass from within RMZs, and within 25 feet of a dry wash bank when managing near a dry wash in southeast Minnesota, over and above the tops and limbs of trees normally removed in a roundwood harvest under existing timber harvesting guidelines.

3) Managing Soil Productivity

--Do not remove the forest floor, litter layer and/or root systems for utilization as biomass (Some silvicultural prescriptions may call for disturbance of forest floor, but removal of this material or piling should be avoided).

--Plan roads, landings, and stockpiles to occupy no more than 1-3% of the site.

--Avoid additional biomass harvest from erosion prone sites (e.g., those sites on steep slopes of 35% or more) over and above the tops and limbs of trees normally removed in a roundwood harvest under existing timber harvesting guidelines.

--Ensure that landings or on-site areas used to store biomass are in a condition that favors regeneration and growth of native vegetation and trees after use.

4) Re-entry into Previously Harvested Sites to Remove Biomass

--Residue from timber harvests and other forest management activities often remain on-site either scattered or piled, after management activities are completed. The preference is to remove biomass at the time of harvest. If re-entry is necessary, caution should be used so that future forest regeneration is not reduced and infrastructure rehabilitation efforts are not compromised.

Additional Consideration: Piles left on site for an extended period may be inhabited by species such as Canada lynx, black bears, and other wildlife known to den in slash piles. Retain the slash piles showing evidence of use and consider retaining those that are difficult to access.

5) Managing / Retaining Wildlife Habitat and Structural Diversity

--Retain stumps and uprooted stumps.

--Retain snags and pre-existing coarse woody debris.

--Retain and scatter tops and branches from 20% of trees harvested in the general harvest area (1 “average-sized” tree out of every 5 trees harvested).

--Avoid removing tops and limbs resulting from incidental breakage left in the general harvest area.

--If harvesting brush and small trees for biomass associated with a timber harvest, leave 20% of this material on the site (this material can be run over or cut, but should remain on the site).

--The over-all goal for Fine Woody Debris (FWD) retention is to retain about 1/3 of the FWD on a site. This is achieved by intentionally retaining 20% of the FWD (tops and limbs from 1 “average sized” tree out of every 5 trees harvested), with an additional 10 –15% achieved by incidental breakage during skidding. Usually more breakage occurs in winter than in summer.