
Appendix C

Standard Management Requirements

Standard management requirements are based on Forest Plan standards and guidelines, Minnesota Forest Resources Council (MFRC) Forest Management Guidelines, federal laws and regulations, and Forest Service policies. They are required for all treatments listed and are intended to limit or avoid potential adverse effects. Additional mitigation may be developed for specific treatment units.

Standard Management Requirements Common to All Harvest Treatments

Threatened, Endangered, and Sensitive Species

Where adverse impacts to known TES species can be minimized or avoided, a site-specific design criteria/mitigation measure would be identified. Examples of unit specific design criteria/mitigations include measures such as seasonal restrictions or protective buffers. Where identified, follow unit specific design criteria and mitigations to protect TES, MIS or other species of interest that are known to occur in or adjacent to a treatment unit and are likely to be affected by management activities.

Retain any tree with a large stick nest and buffer it with a two chain radius (132') until the District biologist can be consulted and a determination is made. Look for opportunities to incorporate nests into reserve tree clumps or legacy patches.

If management activities threaten any known, active wolf or lynx dens, these activities would be delayed until after the wolves or lynx have finished using the den site.

If any threatened, endangered, sensitive or other plant and animal species of interest or their nests, dens or roost trees are found during planning, layout, or operations, activities would be temporarily halted in the area. The District Biologist would be consulted and appropriate mitigation measures would be carried out prior to restarting operations. The Forest Plan, recovery plans and conservation strategies will be used when making mitigation recommendations.

Vegetation for Wildlife and Diversity

In stands 20 acres or larger that were regenerated with clearcuts, retain a minimum of 5% of the stand in legacy patches of live trees where no harvest occurs. Legacy patches should be at least two acres in size wherever possible and no less than ¼ acre. When locating patches consider including important features such as wetland inclusions, seasonal ponds, riparian areas, forested corridors, den trees, cavity trees, trees with stick nests, large mature white pine, rare plant locations and rare native plant communities.

In general, retain a minimum of 6-12 live leave trees per acre to provide present and future benefits including shelter, resting sites, cavities, perches, rest sites, foraging sites, mast, and coarse woody debris. The trees will be at least six inches in diameter for hardwoods and 5 inches in diameter for conifers, and include at least two trees per acre from the largest size classes available on site. A variety of species would be selected for within-stand species and structural diversity. In clear-cut harvest units reserve trees are retained in addition to legacy patches.

In general, all standing, live, healthy cedar, white pine, and tamarack are designated as leave trees and are not to be cut except for trees needed to be removed because of safety hazard concerns or

where specified on the unit card. These trees would count towards the 6-12 leave trees except where jack pine or black spruce are required for the Three-Toed Woodpecker (O-WL-23).

Unmerchantable trees, dead standing trees and trees not designated for harvest will be left. The operator will be allowed to fell (and leave in place) a portion of these trees in areas where deemed necessary to facilitate the logging operations, as well as for safety reasons. Dead trees do not count towards the 6-12 live trees/acre reserved in clearcuts.

If seasonal ponds are identified during layout they will generally be protected with a minimum 50-foot buffer. Seasonal ponds have an identifiable edge caused by annual flooding and may be identified during dry periods by the lack of forest litter in the depression.

Invasive Plants

In areas where revegetation is required, only native or desirable non-native species that are certified as being free of noxious weed seeds would be planted or seeded.

An annual or short-lived perennial species that would serve as a cover crop may be included in the seed mix.

For occurrences of tansy, Canada thistle, spotted knapweed, leafy spurge, and St. John'swort: either re-locate skid trails, temporary roads, or landings if infested with one of these species and use will be in summer, OR treat (e.g. mow or pull) before use if use will be in summer. Plants of these species located within 50 feet of treatment units would be mowed before mechanical site preparation occurs.

Wetlands

Wetlands can be used for temporary roads and skid trails only under frozen conditions. No fill is to be placed in the wetlands. Roads in wetlands will be the minimum length and width to accomplish the treatment objectives.

Equipment will not be fueled or maintained within wetlands. Debris will not be concentrated around any wetlands.

Any stand designated for harvest that borders a wetland will have the unit boundary located so that the wetland is excluded.

Riparian Areas: Lakes, Streams, and Open Water Wetlands

Equipment crossing of stream channels will be avoided during harvest operations. If stream crossings are unavoidable they will be limited to the absolute minimum number of crossings needed to conduct the activity.

Equipment will not be fueled or maintained in riparian areas or filter strips.

Filter strips of appropriate widths will be applied to all perennial and intermittent streams, lakes, open water wetlands and seasonal ponds. Filter strip widths are dependent upon the slope of the land between activity and water body:

- 0-10% slope: 50-foot filter strip
- 11-20% slope: 70-foot filter strip
- 21-40% slope: 110-foot filter strip
- >40% slope: 150-foot filter strip

If even-age harvest occurs within 100 feet of lakes or of streams greater than or equal to 5 feet wide or within 50 feet of streams less than 5 feet wide, then an average residual basal area of 25-80 sq. ft./acre will be retained in that zone immediately adjacent to the stream. Leave trees should favor long-lived species.

If uneven-age harvest occurs within 100 feet of streams ≤ 10 feet wide or within 200 feet of lakes or of streams >10 feet wide then an average residual basal area of 80 sq. ft./acre will be retained in that zone immediately adjacent to the stream. Leave trees should favor long-lived species.

Even-aged harvests immediately adjacent to designated trout streams or designated trout lakes will provide for the retention of an average basal area of at least 60 square feet per acre within 150 feet of the water's edge. Uneven-age harvests immediately adjacent to designated trout streams or designated trout lakes will provide for the retention of an average basal area of at least 80 sq. ft./acre within 200 feet of the water's edge.

Soils

Site preparation techniques will follow Table G-WS-8 in 2004 Forest Plan for the Superior National Forest where practicable.

Temporary roads and trails and whole tree logging are generally not permitted on ELT 12, 17, 18.

Conduct mechanical activities during normal dry period or frozen ground or remove from unit (ELT 1, 3, 10, 14, 15).

Conduct mechanical activities during frozen ground conditions or remove from unit (ELT 2, 4, 6).

Activities for timber production purposes not permitted – remove area from unit. Other activities are strongly discouraged (ELT 5, 12, 18).

Generally conduct mechanical activities on the lower end of slopes and avoid creating long uninterrupted equipment “paths” on slopes greater than 18% (possible on ELT 7 - 18).

Design management activities that employ equipment and techniques that minimize operations on slopes greater than 35% (possible on ELT 7 – 18).

Generally retain/return slash, woody debris, bark, stumps on site where appropriate during whole tree logging (ELT 7, 8, 9, 11, 12, 16, 17, 18).

Landings are generally not permitted (ELT 9, 12, 18) or are strongly discouraged (ELT 5, 17).

Visuals

In units bordering private land, no logging debris would be permitted on National Forest System land within 25 feet of a boundary with private land. In the remainder of the unit, slash would be lopped and scattered and would not exceed a height of 3 feet. The Forest Service would dispose of slash piles where appropriate.

Harvest units adjacent to lakes may receive treatments specifically designed to reduce negative visual effects.

Harvest units *along Concern Level 1 and 2* travelways, lakes and waterways, and use areas* will be designed to ensure a natural appearance of treated areas is achieved within a reasonable length of time. Treatment strategies would include:

- Layout unit to ensure that apparent size of opening is minimized (i.e. use curvilinear edges and adequately-sized leave islands).
- Visible edges should avoid abrupt transitions between cut area and adjacent uncut stand. Leave mid-story shrub-layer species in the transition zones between cut areas, and adjacent stands and leave islands.
- Within 100 feet of either side of *Concern Level 1 and 2* travelways, lakes and waterways, and use areas, slash or residue created by logging operations should be removed *to the greatest practical extent*. If not possible, then slash depth should be less than 12" in depth. In the remainder of the unit, slash would be lopped and scattered and would not exceed a height of 3 feet. Suggested techniques include, but are not limited to, complete removal, chipping, lopping and scattering, and piling and burning.
- Special road and landing design techniques. Curve access roads to prevent views into the unit from the main road.
- Retain existing and potential specimen trees, groups of trees, flowering trees and shrubs, and conifers in the immediate foreground of views from roads and trails.
- Paint marks on trees would be located so they are not visible along visually sensitive travelways or viewpoints.

Generally, newly constructed landings would be located out of sight from visually sensitive travelways or viewpoints.

Heritage Resources

If any new heritage resource sites are located during the course of project activities, work in the new site location will be immediately halted and a Heritage Resource professional consulted and appropriate mitigation measures would be carried out prior to restarting operations.

Ground disturbing activities will not be conducted adjacent to water in areas with heritage concerns as identified on the treatment unit cards and road unit cards, until a field review has been conducted by heritage resource personnel.

Standard Management Requirements for Prescribed Burns

Planning and Operations

A burn plan will be prepared that explains the objectives and conditions under which the burn can occur, an operations plan for conducting the burn, a contingency plan and a complexity analysis.

Each burn will have some type of fire (control) line or fuel break that could include the following:

- Hand Line: Control line that is established using hand tools including chainsaws. All combustible material is removed from the width of the line. Control line width is determined by fire behavior. Lines are cut to the width necessary for a fire to be held to a certain area.
- Wet Line: Control line that is created using a pump with a hose or sprinkler system to wet down an area, preventing fire from crossing. The wetting increases humidity along the line, slowing down the rate of spread of fire when fire reaches the line.

- **Machine Line:** Control line created by removing combustible materials by a machine such as dozer or skidder. The width of the line is determined by fire behavior, but is limited to the width of the machinery.
- **Explosive Line:** Combustible materials are removed from the control line area with the use of explosive devices. This creates a two to three foot wide line that may be more natural in appearance than other lines due to its irregular shape.
- **Natural Barrier Line:** Natural boundaries (lakes, streams, or wet bogs) are used as a control line. These areas have higher humidity and combustible materials with higher fuel moistures. Both these elements create an environment in which fire intensities decrease when in these areas, making control of fire easy. Prescribed burns are designed not to burn the boundary areas of streams and lakeshores but are allowed to creep into the area and be put out or go out on their own. Natural Barrier Lines (streams, lowland areas, etc.) or roads will be used wherever possible. This may result in the burned area being slightly larger than the harvest area.
- **Road or Trail:** Existing and/or old roads or trails may be used for control lines. Trails may need to be cleared to wider widths to hold fire. Old roads may need to be reopened, but will be returned to their previous status after the prescribed burn.

A spot weather forecast will be requested to ensure prescription parameters are favorable to meet objectives. A test fire will be used to determine fire behavior and whether burn objectives can be met with the observed fire behavior.

Minimum Impact Management Tactics (MIMT) will generally be used to reduce adverse effects. MIMT will be utilized in all operational and logical functions.

If any bearing markers are found, a specialist will be consulted and appropriate mitigation measure will be taken to protect them. Mitigation measure may include clearing around the bearing markers and/or not directly lighting near markers. The specific mitigation measure will be outlined in the burn plan.

Threatened, Endangered, and Sensitive Species

Follow threatened, endangered and sensitive species design features for harvest treatments during burn preparations.

Pre-burn treatments would occur around supercanopy red and white pine (potential eagle nest trees) where fuel loading is high. Treatments would involve removal of fuel concentrations from the base of trees and/or wetting of remaining fuels around the trees prior to burning.

Burn plans will include specific smoke management measures designed to prevent the incident of unacceptably high concentrations of smoke and pollutants at known or newly discovered active nest sites OR conduct activities between August 15th and February 15th which is outside of the eagle's nesting period.

Riparian

Avoid delivery of chemical retardant, foam, additive, or gray water to all surface waters and riparian areas.

Soils

Conduct mechanical fuels treatment and fire line construction during normal dry period or frozen ground or remove from unit (ELT 1, 3, 10, 14, 15).

Conduct mechanical fuels treatment and fire line construction during frozen ground conditions or remove from unit (ELT 2, 4, 5, 6).

Develop burn plan to minimize loss of forest floor using G-WS-10. Minimize forest floor disturbance during mechanical fuels treatment and fire line construction (ELT 5, 7, 8, 9, 11, 12, 16, 17, 18).

Recreation

Prescribed fire will minimize conflicts with recreation uses by 1) placing safety signs to warn recreationists of activities in the area, 2) scheduling activities during low recreation periods and 3) piling slash out of view of recreation sites and system trails.

Safety

The burn plan will specify who (publics) will be notified before a burn. Adjacent property owners and businesses will be notified as well as any individuals with health problems who have asked for prior notification.

Air Quality

Prescribed burning activities will comply with the most current version of the Minnesota Smoke Management Plan. Burn plans will use appropriate smoke modeling techniques to estimate potential smoke impacts.

Heritage Resources

Heritage resource sites within the burn area will be identified during the burn plan writing process and mitigation measures identified within the burn plan based on the type of site.

If any new heritage resource sites are located during the course of project activities, work in the new site location will be immediately halted and a Heritage Resource professional consulted.

Ground disturbing activities will not be conducted adjacent to water in areas with heritage concerns as identified on the treatment unit cards until a field review has been conducted by heritage resource personnel.