

Animal Enhancement Activity – ANM15 -Forest Stand Improvement for Habitat and Soil Quality



A recent thinning creates downed wood and opens the stand which will increase forest understory growth and diversity. Two to 3 live trees per acre will be girdled to create snags based on community phase data in the Ecological Site Description. About 1 to 2 snags per acre are already present. Den/cavity trees have been retained throughout the thinned area.

Forest Stand Improvement - Habitat and Soil Quality

This enhancement consists of the creation of snags, den trees, and coarse woody debris on the forest floor to a level optimum for native wildlife usage and long-term forest soil health. It may be implemented during thinning or harvesting or it can be implemented separately.

Land Use Applicability

This enhancement is applicable on forestland.

Benefits

The natural abundance and distribution of snags, den trees (trees with cavities) and coarse forest floor wood have been altered by decades of land conversion, fire suppression, and timber and firewood harvest. Creating an optimum level of such materials provides nesting and hiding cover and substrate for bird, mammal, reptile, and amphibian species while also providing the insects and detritus on which they feed. Downed wood is a preferred growing medium for various species of bryophytes, lichens, and fungi. Rotting wood found on the forest floor and later integrated in the soil surface layer by decomposition provides seedbeds for a variety of tree, shrub, and herbaceous species as well a rooting medium that retains moisture during dry periods.

Criteria for Forest Stand Improvement - Habitat and Soil Quality

This enhancement requires:

- Creation of snags
- Downed wood
- Suitable den/cavity trees distributed throughout the area being treated.

The levels and distribution of materials must be equal to levels found in similar natural community phases indicated in the correlated Ecological Site Description (ESD).

If a suitable ESD has not been developed, NRCS State Offices will develop an example site description that defines the number of snags, the amount of downed wood and number of den trees expected per acre.



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This enhancement is implemented mainly by managing existing live trees, dead snags and woody debris. It may be implemented during thinning or harvesting operations or may be undertaken separately. Refer to Conservation Practice Standard Forest Stand Improvement-666 for criteria on the creation of snags, den/cavity trees, and downed wood.

Documentation Requirements for Forest Stand Improvement - Habitat and Soil Quality

Following implementation of this activity, the landowner must document:

- The average number of snags per acre
- An estimate of percentage of the forest floor covered by downed wood.
- The average number of den/cavity trees per acre
- Delineations on a map or aerial photo of the areas having the distribution of snags per acre, percent cover downed wood, and/or den/cavity trees per acre
- Representative digital pictures of snags, downed wood, and den/cavity trees



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IDAHO ADDENDUM 2009

Animal Enhancement Activity – ANM15 – High Level Forest Stand Improvement for Habitat and Soil Quality

Additional guidance for forest stand improvement for habitat:

Creation and Retention of Snags

Snags consist of standing dead trees which provide habitat for a variety of forest wildlife, most commonly as nesting and roosting sites for cavity nesting birds. Snags serve as one source of recruitment for eventual downed wood. Maintaining a viable snag component to forest stands requires landowners to implement methods to replace snags as they deteriorate and fall over in time.

Snag Management Guidelines:

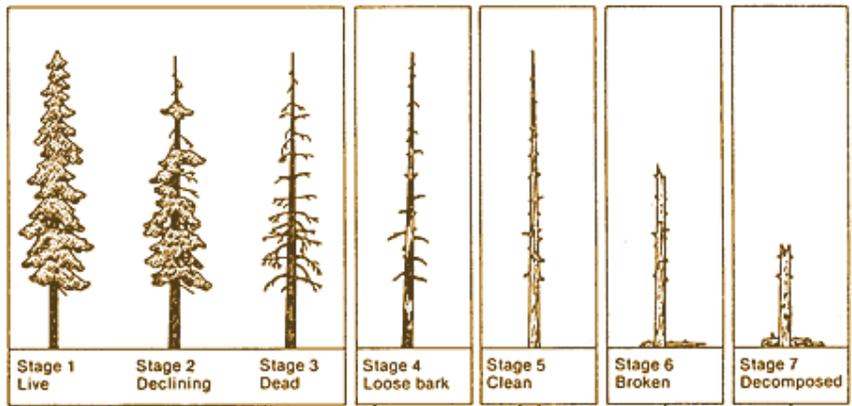
- **Snags will be managed to achieve the density of 3 snags/acre, and a minimum 10" DBH, and a minimum of 15' tall.**
- Distribution--snags at the recommended density levels will be represented across eligible forestland. Snags will be managed across forested landscapes, and can be expressed on all aspects and slope positions.
- Larger diameter snags (> 20" DBH) provide optimum wildlife habitat and longer snag persistence than smaller diameter snags.
- Snag replacement trees can come from standing cull or pulp trees left on site, or from trees that are nearly dead, spike top, damaged, in advanced decay, or poorly formed trees. Create snags by girdling live trees or otherwise inflicting damage which will lead to mortality. Living trees that are presently used by wildlife are also preferred as replacement candidates.
- Snag safety issues will be identified and addressed where snags pose a threat to life and property.

How to Inventory Snags:

Sampling can be difficult due to the relatively small target density of snags. Fixed-radius plots of 1 acre will be used to inventory snags (a 1 acre circular plot has a radius of 118 feet). Plots will be randomly pre-located and marked on a field map prior to making a field visit. Count the number of eligible snags within the plot.

TABLE 1: Number of Sample Plots per Stand Size:

Size of Forest Stand	Number of 1 Acre fixed plots needed:
0-25 acres	2
25-100 acres	4
100-200 acres	5
200+ acres	5+ one additional plot per each 100 additional acres



Maser, et al 1979-Snag Stage Diagram (1-7)

Creation and Retention of Downed Wood

Downed wood is dead woody materials on the ground in various stages of decay. It is often referred to as “Coarse Woody Debris” (CWD). Downed wood are materials larger than 3” in diameter.

Downed Wood does not include:

- Woody pieces < 3.0 inches in diameter
- Dead shrubs, self-supported by their roots.
- Trees showing any sign of life.
- Stumps that are rooted in the ground (i.e., not uprooted).
- Dead foliage, bark or other non-woody pieces that are not an integral part of a bole or limb. (Bark attached to a portion of a piece is an integral part).
- Roots or main bole below the root collar.

Downed Wood Management Guidelines:

- Downed wood will be managed to achieve the guideline shown in Table 2
- Downed wood recruitment can come from materials left on the ground following harvest activities, and materials generated by active management in order to provide eventual downed wood benefits..

TABLE 2: Target Downed Wood for Maintaining and Improving Forest Soil Quality:

Broad Forest Grouping	Habitat Types	Percent of forest floor covered with downed wood
All Forests	All Habitat Types	4 %

How to Inventory Downed Wood:

A line transect inventory will be used to determine percent cover of forest floor in downed wood. Line transects will begin at the same center point of the snag transect and will be taken at 30⁰ (true north azimuth) from the plot center. Inventory along a 100 foot tape at each foot.

TABLE 3: Number of Sample Plots per Stand Size:

Size of Forest Stand	Number of 1 Acre fixed plots needed:
0-25 acres	2
25-100 acres	4
100-200 acres	5
200+ acres	5+ one additional plot per each 100 additional acres

Creation and Retention of Den Cavity Trees

Den trees are live trees with cavities that typically form in deciduous trees and coniferous trees. **At least 1 den tree will be retained per acre on average.** Tree size will be a minimum of 10" DBH and 15' tall.

How to Inventory Den/Cavity Trees.

Use same procedure as described under snag inventory (Addendum page 1).

For additional information, refer to:

Idaho NRCS, Forestry Technical Note 3, *Management of Snags and Course Woody Debris in Idaho Forests (DRAFT)*. <http://www.id.nrcs.usda.gov/technical/forestry.html>

NRCS Contact:

Frank Gariglio, State Forester
1630 23rd Ave., Suite 1101-B
Lewiston, ID 83501
(208) 746-9886 ext. 113
Frank.gariglio@id.usda.gov