United States Department of Agriculture
Natural Resources Conservation Service

2016 – 1
2017 – 1 Renewal

Animal Enhancement Activity – ANM42 -Forest stand improvement for wildlife habitat and soil quality

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

Land Use Applicability
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 as a rooting medium that retains moisture during dry periods.

Conditions Where Enhancement Applies
This enhancement applies to all forest land use acres.

Criteria
Develop a Forest Management Plan and implement each of the following actions by managing existing live trees, dead snags and woody debris:

1. Retention or creation of snags
   a. At each stand entry, retain all standing dead trees that are not a safety hazard
   b. Where the number and distribution of existing snags is not similar to that described in the natural community phase of the correlated Ecological Site Description (ESD), girdle or kill trees to bring the snag component to within ranges identified in the ESD.
2. Suitable den/cavity trees distributed throughout the area being treated
   a. At each stand entry, retain all den/cavity trees
   b. Where the number and distribution of existing den/cavity trees is not similar to that described in the natural community phase of the correlated Ecological Site Description (ESD), retain future den/cavity trees (i.e., trees that have potential to develop cavities in the near future) to within ranges identified in the ESD.

3. Stand structural diversity restoration
   a. Implement forest management practices to facilitate the restoration pathway described in the ESD (e.g., apply practices suitable for restoring the forest type, which may include creating patch structure, developing a multilayered canopy, or concentrating growth on larger-diameter trees)
4. Downed woody debris on the forest floor
   a. Retain all downed tops and other unharvested materials for ground cover, nutrient recycling, and organic matter retention
   b. Avoid disturbing woody debris, forest litter, and the soil surface

Note: The levels and distribution of snags, downed wood, and den/cavity trees must be within the range of levels described in comparable natural community phases in the correlated ESD.

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

Adoption Requirements

This enhancement is considered adopted when each criteria has been implemented on the land use acre.

Documentation Requirements

Following implementation of this activity, the landowner must document:

1. The average number of snags per acre
2. An estimate of percentage of the forest floor covered by downed wood.
3. The average number of den/cavity trees per acre
4. Representative digital pictures of snags, downed wood, and den/cavity trees
5. Map and description of structural restoration activities completed during Forest Stand Improvement.
6. Representative digital photographs of stand attributes created during structural restoration activities.

References

D'Eon, R. 2006. Variable retention: maintaining biodiversity through planning and operational practices. SFM Network Research Note Series No. 25. Sustainable Forest Management Network, University of Alberta, Edmonton, AB.

DeGraaf, R.M., and A.L. Shigo. 1985. Managing cavity trees for wildlife in the Northeast. Gen. Tech. Rep. NE-101. USDA Forest Service, Northeastern Forest Experimental Station, Broomall, PA.

Franklin, J.F., R.J. Mitchell, and B.J. Palik. 2007. Natural disturbance and stand development principles for ecological forestry. Gen. Tech. Rep. NRS-19. USDA-Forest Service, Northern Research Station, Newtown Square, PA.

Hunter, M.L., and F.K.A. Schmiegelow. 2010. Wildlife, forests, and forestry: Principles of managing forests for biological diversity (2nd ed.). Prentice Hall, Upper Saddle River, NJ.

North, M.P., and W.S. Keeton. 2008. Emulating natural disturbance regimes: an emerging approach for sustainable forest management. In: R. Lafortezza, et.al., editors, Patterns and Processes in Forest Landscapes - Multiple Use and Sustainable Management. Springer, The Netherlands. Pages 341-372.

Utah State Supplement 2015 for ANM42

Do not create snags or downed wood during the primary nesting/fawning season (Apr 1 – July 15). When manipulating trees for this enhancement, targeted Diameter Breast Height (DBH) of snags, den/cavity trees, and downed wood should be similar to reference conditions.

Operations & Maintenance, Conservation Measures, and Client Acknowledgement

Operation and Maintenance
Operation: Maintenance:
Conservation Measures
Actions that must be implemented by the landowner/manager during enhancement implementation:
Client's Acknowledgement Statement
The Client acknowledges that: a. They have received a copy of the enhancement and understand the contents and requirements. b. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this enhancement. **Biologist:** _____ **Date:** _____ **Planner:** _____ **Date:** **Client:** _____ **Date:**