Animal Enhancement Activity – ANM24 - Upland forest wildlife structures

Enhancement Description
Habitat loss is one of the leading causes of declines in upland wildlife populations. This enhancement is for the construction of suitable physical wildlife structures necessary to meet the needs of an identified wildlife species.

Land Use Applicability
Forestland

Benefits
Artificial structures can be developed to enhance habitat for many species of wildlife including cavity-nesting birds, bats, bees, raptors, reptiles, amphibians, and waterfowl. Artificial structures are only appropriate where existing forest stand characteristics fail to meet the lifecycle requirements of a target species.

Criteria for Upland Wildlife Structures
Wildlife structures will be developed and maintained for at least one species or group of species native to the forest type. Landowners should determine their target wildlife species, assess what structural habitat components are not provided by the existing forest stand characteristics, and specifically design structures to meet those life stage needs. Artificial structures should be a considered temporary measure to provide habitat until natural habitat can become established.

Actions to provide upland wildlife structures include:

1. Installation of artificial nest boxes or platforms for species such as cavity-nesting birds, raptors, bats, and pollinators
2. Construction of artificial cover such as brush piles, rock piles, root wads
3. Manipulation of natural cover, such as girdling trees or blasting of tree tops to encourage snag development

1. <u>Nest Boxes</u>
The number of nest boxes per acre will be based on NRCS State requirements for identified species or a minimum of two structures per 10 acres of suitable habitat enrolled if no state specific criteria are available. Guidelines for specific wildlife species are as follows:

Birds
Structures for birds will be built and installed in accordance with the details in the publication "Artificial Nesting Structures" (NRCS Biology Tech. Note 20).

Bats
Bat boxes will be built and installed in accordance with the details in the publication "Bats" (NRCS Biology Tech. Note 5) or Bat Conservation International guidelines.

Bees
Bee nesting structures will be built and installed in accordance with the details in the publications "Nests for Native Bees" or visit the The Xerces Society Pollinator Resource Center.

2. Snags

General recommendations for maintaining snags in most timber stands to benefit wildlife include:

- One snag/acre larger than 20-inch dbh for use by larger woodpeckers and owls.
- Four snags/acre between 10- and 20-inch dbh for small mammals such as flying squirrels and smaller raptors such as American kestrels
- Two snags/acre between 6- and 10-inch dbh for smaller birds such as chickadees and nuthatches

Snags and den trees for nesting will be managed in accordance with the details in the publication "Managing Forests for Fish and Wildlife" (NRCS Biology Tech Note 18)

3. Brush Piles

The term "brush pile" describes a mound of woody vegetative material constructed to furnish additional wildlife cover. Each structure will provide habitat for up to 1/2 acre. Brush piles can be fashioned in many different ways to meet various cover needs for targeted wildlife species where natural ground cover is limited or difficult to establish.

Brush piles for cover be managed in accordance with the details in the publication "Managing Forests for Fish and Wildlife" (NRCS Biology Tech Note 18)

4. Root Wads & Basking Logs

Each structure will provide habitat for up to 40 acres. Place large root wads or logs with limbs attached into wetlands, ponds, and lakes to provide basking areas and underwater cover for reptile and amphibian species such as the Northwestern Pond Turtle (minimum of one structure per wetland, pond or lake). Root wads and logs must extend above the high water level. Anchoring may be required to keep root wads and logs stationary.

Structures for amphibians and reptiles will be built and installed in accordance with the details in the publication "Farm Pond Ecosystems" (NRCS Biology Tech. Note 29).

Operation and Maintenance:
Structures will be maintained and monitored as described in relevant publications above. Operator will complete yearly status review of the practice to track the use of the structures. A map will be developed to depict actual locations of structures. Re-install structures if annual inspection reveals that structures are no longer functional.

Documentation Requirements

1. Identify the objectives for the treatment, i.e. what wildlife species is to benefit, What habitat feature is being addressed, how many trees will be retained for snag/den trees, how many brush piles will be created, how many nest boxes will be installed, etc.
2. Brief written documentation detailing the pre-treatment habitat conditions and post-treatment habitat conditions.
3. Representative digital images/photos of the structures.
4. Map of area indicating location and type of each structure installed.

ANM24 - Upland Forest Wildlife Structures

Practice	Target Species	Density per Habitat Type	References
Brush Pile	Rabbits; Quail; ground-nesting songbirds; small mammals	1 per 200 ft. of edge habitat, or 1 per 2 acres of woodland	IN Wildlife Brush Pile Job Sheet (http://www.in.nrcs.usda.gov/technical/biology/645%20Wildlife%20Brushpile%20Jobsheet.doc)
Nest Box	Wood Ducks	1 nest box per 2 acres of adjacent wetland or 1,000 ft. of linear stream bank	Artificial Nest Structures (http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18483.wba)
Nest Box	Cavity-nesting Birds	2 per 10 acres	Artificial Nest Structures (http://directives.nrcs.usda.gov/OpenNonWebContent.aspx?content=18483.wba)
Bat House	Bats	1 per 2 acres of woodland	Bat Houses (http://www.batcon.org/index.php/get-involved/install-a-bat-house.html)
Bee Nest	Native Bees	2 (50-tunnel) nests per acre	Tunnel Nests for Native Bees: Nest Construction and Management (http://www.xerces.org/wp-content/uploads/2009/11/tunnel-nest-management-xerces-society.pdf)
Snags	See National Guidance on previous pages. Note: snags can also be created by girdling live trees of the appropriate diameter.		
Root Wads & Basking Logs	See National Guidance on previous pages.		

USDA is an equal opportunity provider and employer.