Structures for Wildlife & Upland Wildlife Habitat Management: NRCS Practice Code 649-645

Refer to: https://efotg.sc.egov.usda.gov/references/public/IL/649IL.pdf
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Structures for wildlife provide loafing, escape, nesting, rearing, roosting, perching and/or basking habitat for a multitude of different species including Bobwhite quail, rabbits, song birds, and others. These structures allow game species to escape predator species as well as places to survive the harsh winter. Wildlife structures can be made while doing other management, such as invasive species removal or timber stand improvement. Woody cover should be 0.1 - 1 ac for every 5 – 40 ac of suitable habitat. Nesting structures and snags can also give species additional places to produce offspring and make den sites.

Brush Piles

The most important function of a brush pile is to leave room for animals to get under it. Brush piles constructed by bulldozer or other machinery are often too large and dense for species like quail or rabbit, but provide great habitat for ground predators such coyotes, skunks, raccoons and opossums. Brush piles that are formed by hand are generally more open and better suited to a variety of wildlife species. A few small scattered brush piles (10 ft. diameter) are often more beneficial than one large one. Additional structures, such a pallets or tiles, can be incorporated into brush piles to leave open structure underneath. It is also very important to kill dense vegetation under and around the edges of the brush piles with glyphosate or another suitable herbicide. Maintaining bare ground ensures easy access for small game. This is especially important in areas with cool-season grasses like tall fescue, brome species and bluegrass species.

Follow these steps to build an effective brush pile:

1. Use glyphosate or another approved herbicide to kill grasses and other vegetation in the location you select for the brush piles.
2. Start with a base layer of parallel logs. Set these logs 8 - 12 in. apart on the ground. A pallet can also server as the base layer. Tiles can also be incorporated on the ground to help maintain structure of the cavities.
3. On top of your base layer, place logs perpendicularly, spacing the logs at 8 -12 in. apart as well. Repeat this step a few times to have several crosshatched layers. You can also stack a couple pallets together to serve as your base layer.
4. Start to cover the outside of the brush pile with smaller woody debris. Cover until there is excess small twigs and leaves built up on top of the brush pile.
5. Start to stack larger pieces of brush around the core of the brush pile. Stack the brush in a pyramid around the center. This brush will not fit tightly together, leaving some opening and structure around it.

You will want to build several brush piles across the property in this manner. Place brush piles strategically so that they will be around and functioning well into the future. Escape cover should never be more than 150 ft. apart. Brush piles will eventually break down and fall in on themselves. It is a good idea to re-build or build new brush piles periodically

Placing a firebreak around a brush pile will be useful in maintaining the brush pile, especially if prescribed burns are taking place on other parts of the property for habitat management. Excluding fire from brush piles is important in maintaining their functionality. Firebreaks should be placed around brush piles and tree plantings as well. These firebreaks can be planted with legume species such as alfalfa and clover, which will also serve as a food source for many wildlife species.

Pushing up brush with a tractor or other implement will make the brush roll up, making it too dense for wildlife to penetrate.

Brush piles can also be formed in the middle of the woods to make additional wildlife cover.

Edge Feathering

Edge feathering is a technique used to create a shrubby transitional zone between the woodland and grassland or cropland. This type of edge habitat is preferred by many wildlife species such as deer, quail, and rabbits. This also benefits the timber because the species generally selected to edge feather are less desirable species. Undesirable species will include Osage orange (hedge), locusts, elms, maples, cottonwoods, and others. An appropriate herbicide should be applied to the stumps of undesirable species and to the vegetation in the areas where the trees will fall.

Edge feathering can be completed by thinning along a forested edge. The area to be thinned should be between 60 and 90 ft. wide. This area should be split into three zones. In the first zone 75% to 100% of the trees should be cut, leaving only the best quality over story trees and any shrubs found. In the second zone 50% of the over story trees should be cut. Finally, in the third zone, 25% of the over story trees should be cut. These trees should be “hinged” or cut completely parallel to the forest edge. Hinge cutting is cutting a tree not all the way through, but leaving a part of the tree connected when it falls. The area that is still connected will sometimes live on for a couple more years creating a living brush pile. The tree will eventually die leaving all the additional woody structure along the edge until natural processes break it down. This leaves woody escape cover for wildlife, help buffer the edge during snow storms, and “soften” the edge for edge species, such as rabbit and quail, to use.

Another way to establish a feathered edge is to plant shrubs and field boarders along the forest. This area should be at least 30 ft. wide; however 50 ft. + is preferred. This area is often very unproductive for row crops and can save the landowner money by being put into field borders. The first half from the

forest edge should be planted in native shrubs on 6 ft. x 6 ft. spacing. Desirable species include grey dogwood, American plum, and hazelnut. The second half should be planted native grass and wildflowers. This method provides a gradual step down from mature trees to shrubs to grasses.

A feathered edge can also be created by natural regeneration. By not mowing or cutting along a forested edge, small trees and shrubs will start to grow and expand away from the forest edge. Special care should be taken to make sure the trees and shrubs using this space are not invasive and are desirable species.

Edge feathering can create escape cover and winter cover for a variety of wildlife species by trimming and cutting undesirable species along the edge.

Hinge Cut Brush Piles

In an interior forest stand situation, brush piles and hinge cut brush piles can be formed. In an area where you have a surplus of trees, poor quality trees or undesirable species, you can cut/hinge cut the trees to fall on top of one another, creating a brush pile and adding light to the ground layer to stimulate herbaceous vegetation and oak/hickory regeneration. These areas will serve as escape cover while providing additional annual plant food resources.

To complete this process, identify several undesirable trees in an area that are in close proximity. No desirable trees should be in the area where you intend to drop the undesirable trees to prevent damage to those trees being left. Then you will cut/hinge cut trees so that they all fall onto the same area. Hinge cuts may be beneficial to leave some of the tree tops living for an additional time.

Undesirable species to target will include Osage orange (hedge), locusts, elms, maples, cottonwoods, and others. Herbicide should be applied to the stumps of undesirable species to prevent re sprouting. Ill formed desirable species can also be cut to form this type of brush pile, especially in areas where better formed desirable trees may be present.

It is not necessary to treat desirable species stumps unless you do not want them to re-sprout. Treating the stumps with herbicide may reduce the ability of the tree to continue to leaf out in the areas that are still connected in a hinge cut. Brush piles can also be formed from tree tops during harvest events on the property by having the logger drop the trees onto each other where possible.

(From: Landscaping for Wildlife in the Pacific Northwest. Drawing by Jenifer Rees.)

Snags and Nesting Boxes

Snags (dead trees left standing) provide an ample amount of nesting and den cavities for a variety of wildlife species to live in. Leaving snags across your property will produce additional nesting and den sites for a variety of species. Snags are provided through natural mortality of trees or through manual girdling and treating with an approved herbicide. This can be done on less desirable trees while preforming other management activities, such as timber stand improvement.

If there are not many snags in an area, it may be beneficial to build artificial nesting structures, such as wood duck nesting boxes. There are a variety of boxes that can be built for multiple species. Be sure to select a box design for a species that is going to be present in the habitat you intend to place the structure (i.e. do not put a structure for a grassland species in a forest). Links on construction of these structures are below:

http://www.illinoisraptorcenter.org/ENewsletter/WOODPROJ.pdf
http://extension.missouri.edu/p/G9413
https://www.extension.purdue.edu/extmedia/FNR/FNR-246-W.pdf
http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/birds%20and%20birding/pub419.pdf

More useful information about brush piles and edge feathering is available at:

Videos:
https://www.youtube.com/watch?v=Gy6hGunlpK8
https://www.youtube.com/watch?v=ZN2OGIOD8c8

Links:
https://dnr.state.il.us/orc/wildliferesources/pubs/guide/management/tipntech.htm
http://dnr.wi.gov/files/pdf/pubs/wm/wm0221.pdf
http://www.in.gov/dnr/fishwild/files/Wildlife_Brushpile_Jobsheet.pdf
http://mdc.mo.gov/your-property/wildlife-your-property/small-game-your-property/better-rabbit-habitat
http://mdc.mo.gov/your-property/problem-plants-and-animals/invasive-plants