



Early Successional Habitat Management - Shrub/Young Forest Management

Vermont Conservation Practice Job Sheet **VT-647**

Client Name:	Town:
Land Units:	Acres of Young Forest to be Managed (Patch size):
Planned By:	Date:

Target Species/Groups: Shrub/Young Forest Species _____

Patch Cutting _____ **Alder Strip Cutting** _____ **Species Specific*** _____
*List species above

Site Specific Comments and Recommendations for Successful Implementation

For Land Units and Management Dates Refer to your 'Conservation Plan'

Note to Planner: Attach a map with the specific location of this practice if the conservation plan map does not clearly indicate where this practice will be applied.

Background and Purpose

Early successional habitats are typically transitional and require different levels of disturbance to be maintained. Examples of early successional habitats include weedy areas, grassland, old fields, shrubby thickets, and young forest. If these habitats are not mowed, brush hogged, burned, cut, grazed or disturbed in some other fashion, they will eventually become forest over time. Grasslands will revert to old fields. Old fields will eventually grow into young forest. Young forest will grow into mature forest. This process is referred to as *succession*. As such, grasslands, old fields, and young forests are often referred to as *early-successional habitats*.

Early successional habitats are of concern because many species that depend on these habitats are experiencing population declines across the Northeast. This is probably due to a variety of factors but changes in land use and the vegetation succeeding toward mature forest has resulted in less available quality habitat for these species.

Shrublands and Young Forest

“*Shrublands and Young Forest*” are terms that apply to transitional habitats (transitioning to more mature forest) but in general these are areas that are dominated by small trees (seedlings and saplings) and shrubs with some grass and forbs. Some sites such as wetlands, sandy sites and ledge areas can support a relatively stable shrub cover; however, most shrub communities in the northeast are successional. The vegetative make up of shrub and young forest habitats is variable based on the management history, soils (poor or rich, wet or dry), previous or existing vegetation and many other

factors Their use by wildlife will depend on their size, configuration, vegetation height, percent woody vegetation cover, density, and composition.

Shrub and young forest habitats in Vermont are important for *shrubland* birds; shrubland birds use shrub and young forest areas with or without open herbaceous areas. These habitats are also important for a variety of other wildlife such as butterflies and bees, black bear, deer, moose, snowshoe hare, bobcat, garter snakes, frogs and others. Shrubland birds are the focus of many management plans because 22 of the 40 birds associated with shrubland habitats are undergoing significant population declines in eastern North America. Shrubland bird species in Vermont include common or locally common species such as chestnut-sided warbler, white-throated sparrow, ruffed grouse, Eastern towhee, American woodcock, brown thrasher, Nashville warbler, and more rare species such as prairie warbler and golden-winged warbler.

While small areas of shrub and young forest habitat (<2 acres) can be important to a variety of wildlife, priority is given to managing large blocks (5 or more acres) or managing within large blocks of early successional habitat. Some shrubland birds are “*area sensitive*” which means they prefer and select large areas of contiguous habitat for breeding. Birds such as the chestnut-sided warbler will use smaller cut areas (<2 acres) but the more uncommon species such as golden-winged warblers require areas of 25 acres or more. In general, large blocks of any habitat (grassland, shrubland, mature forest, wetland, etc.) are more valuable to wildlife because they tend to support both the common species and the uncommon species that may depend on larger blocks of habitat. This approach will provide quality habitat that will lead to enhanced reproduction and survival.

Area Selection

Before planning any management in your forest it is advisable to work with your County or consulting forester. Foresters will help you develop a management plan for you entire woodlot that may help you realize other objectives (e.g. timber production and income, forest health, recreation, etc.) and make your operation more sustainable. They will likely help you identify areas to manage for wildlife based upon site conditions (tree species, age, past use, soils, etc.).

If your objective is to provide for a variety of wildlife then be sure to maintain some older forest stands where snags and woody debris on the forest floor can continue to develop. Many species of wildlife nest or den in cavity trees and the larger the tree the better (larger trees will support both small and large wildlife). Also, large woody debris on the forest floor is important for cover for small mammals, salamanders and insects. Do not plan cuts in stands with important mast trees (produce nuts or fruit) such as beech or oak if you have few of these on your property or nearby. These are likely an important food source for local wildlife. Take a broad view to see what else is available on the landscape as your property may be providing some habitat elements that are important or uncommon in your area.

When evaluating your property to determine where to focus your efforts, decide where you can provide the best wildlife habitat for the least amount of effort. Focus cutting on stands with “pioneer” species such as pin cherry, aspen, alder, and birch or stands that have been “high graded” (i.e. all the best trees have been selected out). Focus on areas with poor, low fertility soils. When these stands are cut, the trees and shrubs will grow more slowly and provide young forest habitat for a longer period of time than areas with rich, productive soils.

Choose areas where you can cut in blocks of at least 2 acres in size. The habitat quality is reduced in

smaller cuts and the vegetation will tend more toward intermediate or tolerant (tolerant of shade) species such as sugar maple. Large cuts provide ample sunlight to encourage thick, vigorous growth (see Figure 1) of shade intolerant species that provide good cover and food (insects, fruit, and browse). Cuts should be 5 acres or more in forested landscapes with little young forest. This will provide suitable habitat for species that use smaller areas and for species that need larger areas such as woodcock. It is best to site cuts near other early successional habitats (old fields, pasture and hayland, power line rights-of-ways, managed forest, etc.) to maximize the size and ability to support a variety of wildlife. Smaller cuts (2 acres) can be beneficial when sited near these other habitats.



Fig. 1 (left) This cut area is experiencing significant growth of pioneer species that provide good cover and food in the form of fruit, insects and browse.

Fig. 2 (below) Woodcock will use open areas after harvest for courtship display and shrubby areas for feeding, nesting and brood rearing.



Large, blocky cuts are favored because they have a large area for the amount of *edge*. Long narrow cuts have a low amount of area to the amount of *edge*. *Edge* is considered the contact zone where two different habitats come together. Edges can concentrate predators, particularly in field edges, but are less of an issue in forested settings. There is also evidence that many shrubland species may avoid mature forest edges and select for interior shrub habitat. ‘Soft edges’ that provide a transition between habitat types are generally considered better for wildlife than ‘hard edges’ where there is an abrupt change in habitat.

Management Techniques and Guidelines

Typical management for this practice is accomplished either through manual or mechanical cutting or a combination. It is wise to schedule this practice concurrent with a commercial harvest in another part of the stand to improve the cost efficiency (time and equipment). Manual work would involve a person operating a chainsaw and dropping the trees in place. Mechanical work could include using heavy equipment such as brontosaurus, gyrotrac, or feller buncher which would either grind down or drop trees. In most management scenarios, the area will be allowed to grow for 10-15 years or more and will not receive additional short term disturbance. In some cases, as for woodcock singing grounds, small areas may be brush hogged on a 2-4 year rotation to meet required habitat needs.

Generally, managing a number of large blocks on a rotation is ideal. The prime age class for shrubland birds is the 0-15 year age classes. This provides for a wide variety of wildlife species that use open areas (e.g. bluebirds) to species that use thick vegetation (e.g. ruffed grouse). Intersecting rotational cuts is a good practice to maximize the functional area and provide a variety of early successional age classes (See Figure 3). Cutting cycles of 5, 10, 15 or 20 years are beneficial. Be aware that these are general recommendations for a variety of early successional species. Consult with a wildlife biologist

or other resource professional for species-specific guidelines that are available for species such as woodcock and grouse. An example of a species specific practice for woodcock is to cut 60-80 foot wide strips through old stands of alder (identified by thick stems and horizontal growth) to improve cover in feeding areas.

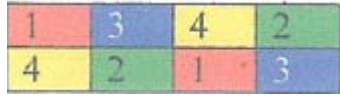


Fig. 3 – Five year staggered cutting sequence, 5 acres each block. 1st entry cut red, 2nd entry after 5 years green, etc. Example from Woodcock BMPs nesting/brood rearing habitat (WMI).

When possible, management should occur outside the primary nesting season of April 15-August

1. Cutting should be done in winter when the ground is frozen and plants are dormant. This will encourage vigorous sprouting of trees, provide an increased number of stems per acre as well as protect the soil and duff layer from disturbance. The duff layer, including the organic soil horizon and leaf litter, provides important habitat for salamanders and feeding areas for species such as towhees. It should be noted that some tree species need bare mineral soil for regeneration and non-winter harvesting may be preferable.

Wildlife reserve trees will be marked for retention prior to activities that could cause their removal. Wildlife reserve trees include snags (standing dead or partially dead trees 6 inches dbh or greater), den trees (live or dead trees with natural cavities used by wildlife), nest tree (trees containing large nests that may be used by owls or hawks), or replacement trees (live or partially dead tree left to become a snag). A minimum of four snags per acre will be maintained; replacement trees (can be girdled) may be substituted if there are no snags. This requirement may not apply if cutting primarily small stem species such as alder. A minimum of four logs per acre will be left on site to provide large woody debris cover. At least two of these logs should be >12 inches in diameter. Larger logs are encouraged to improve habitat quality for a variety of species. Brush piles may be constructed to further enhance the cover value in the managed areas.

If invasive species are present on the site, they must be controlled prior to harvest because they will likely spread and may dominate the site. Control of invasive plants will only be allowed after a harvest if the current site conditions and management prescription for the invasives call for post harvest treatment.

Maintenance

The early successional wildlife habitat benefits of shrub and young forests decline over time as trees grow tall and shade out forbs, shrubs and other small trees. Consider setting back the succession after 20 years or plan other habitat cuts. Also, continue to monitor for invasive plant species that are becoming a serious problem in many forests both for wildlife habitat and forest regeneration. Learn how to identify these species and control them where possible. Any land use or use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice which is improved early successional habitat. Be sure to follow all label requirements when using herbicides.

Resources for More Information -

Scrub-shrub Birds – USDA NRCS WHMI and the WHC Fish and Wildlife Habitat Management Leaflet #42, 2007.

<http://www.whmi.nrcs.usda.gov/technical/leaflet.htm>

Managing Grasslands, Shrublands and Young Forests for Wildlife – Northeast Upland Habitat Technical Committee, 2006: Chapter 4.

Managing Shrublands and Old Fields and Chapter 5. Managing Young Forest.

http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm

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