

7. SHRUBLAND AND YOUNG FOREST HABITAT MANAGEMENT

Shrubland habitat and young forest differ in vegetation types and food and cover they provide, as well as where and how they are maintained on the landscape.



Figure 7.1
Regeneration-shrub habitat.
Courtesy of John Gobeille, VFWD.

“Shrublands” and “Young Forest” are terms that apply to areas that are transitioning to mature forest and are dominated by seedlings, saplings, and shrubs with interspersed grasses and forbs (herbaceous plants). While some sites such as wetlands, sandy sites and ledge areas can support a relatively stable shrub cover, most shrub communities in the northeast are successional and change rapidly to mature forest if left unmanaged.

Shrub and young forest habitats in Vermont provide important habitat functions for a variety of wildlife including shrubland birds, butterflies and bees, black bear, deer, moose, snowshoe hare, bobcat, as well as a variety of reptiles and amphibians. Many shrubland species are in decline due to loss of habitat. Shrubland bird species in Vermont include common species such as chestnut-sided warbler, white-throated sparrow, ruffed grouse, Eastern towhee, American woodcock, brown thrasher, Nashville warbler, and rarer species such as prairie warbler and golden-winged warbler. These habitat types are used by 29 Vermont Species of Greatest Conservation Need.

While small areas of shrub and young forest habitat can be important to some wildlife, managing large patches of 5 acres or more provides much greater benefit to the wildlife that rely on the associated habitat conditions to meet their life requirements. Birds such as the chestnut-sided warbler will use smaller areas of young forest, but less common species such as golden-winged warbler require areas of 25 acres or more.

AREA SELECTION

To practically meet the needs of wildlife that use shrub and young forest habitat, maintain 8 to 10 percent of the property in shrub or young forest cover. As with managing other habitats, managing for young forest or shrubland habitat can be

challenging. In order to promote diversity in the age structure of your forest and wildlife therein, maintain large areas of older forest stands with snags and various sizes of coarse woody debris on the forest floor to provide important cover for small mammals, salamanders, and insects. Cut selectively to promote trees that are important food sources for wildlife such as beech, oak, cherry, and apple.

Working with your county or consulting forester or wildlife biologist can help. Professional foresters and wildlife biologists can provide expertise in managing young forests that will improve



Figure 7.2
American woodcock are in decline due to lack of habitat. Courtesy of Kathy Declar, VFPR.

your chances for successfully accomplishing your habitat management goals, especially since selecting appropriate sites with appropriate tree and shrub species is essential for realizing your wildlife goals.

Shrubland habitat and young forest differ in the vegetation types and food and cover they provide, as well as where and how they are maintained on the landscape. For these reasons the habitat types will be considered separately.

SHRUBLAND MANAGEMENT TECHNIQUES AND GUIDELINES

Shrubland is generally considered to be an area with high sunlight exposure that remains permanently in a state of low plant cover, ranging from herbaceous plants to woody plants less than 20 feet tall. Shrublands are nature's pantry, providing myriad insects, fruits, seeds and nuts. Dogwoods, serviceberry, chokecherry, blueberry, blackberry, hazelnut, mountain holly, and wild cranberry are just a few of the numerous shrubs of high value to wildlife. Although a few shrublands such as alder stands are naturally stable, most shrub areas will require periodic brush mowing to maintain their productivity and prevent invading tree species from converting them to forest.

A shrubland is initially established on a forested site by cutting all trees, either by harvesting marketable timber and requiring all smaller trees to be cut, or by contracting a mechanical rotary cutter to chop up non-merchantable trees. Repeated brush hogging every 5 years will suppress the establishment of tree species, allowing shorter-lived shrubs to colonize the area. Old fields can become shrublands by allowing shrubs to become established naturally over time, then mowing as noted above. The primary goal of shrubland management is to concurrently have half of the area in mature, fruit-producing shrubs, and the other half in younger, regenerating shrubs. This is accomplished by brush-hogging half of the shrubland area every 5 years.

Shrubland size is determined by the your goals, parcel size, and surrounding landscape. For example, if you have a keen interest in conservation of golden-winged warblers you may be able to maintain a 10-acre shrubland adjacent to a neighbor's 10-acre shrubland, paralleled by a 5-acre power line corridor. The combined 25 acres is sufficient for golden-winged warblers, and will benefit many other birds and mammals.

A practical approach for most landowners is to manage 10 percent of a parcel as shrubland by identifying one or more areas to be maintained in permanent shrub cover. Each site should be no smaller than an acre in size (the minimum size of value for many wildlife species), but ideally as large as possible up to 10 percent of the acreage. For example, a 20-acre parcel would have 2 acres in shrubland, and half of the 2 acres would be mowed every 5 years.

YOUNG FOREST MANAGEMENT TECHNIQUES AND GUIDELINES

Young forest is an area dominated by seedlings and saplings of forest trees, such as aspen, maple, oak, pine, spruce, etc., rather than shrubs. Although young forest provides wildlife with many of the same structural habitat elements as shrubland, it differs in two important ways: the dense cover is a temporary condition that quickly transitions to a more open forest as the trees mature, and it normally provides much less forage in the form of fruits and seeds. Young forest is allowed to transition to a mature forest over time, rather than maintained through periodic mowing.

When evaluating property for opportunities for young forest management, first identify any stands with "pioneer" species — the first to colonize old field sites — such as pin cherry, aspen, alder, and paper or

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grey birch, as these sites will produce young forest and shrub habitat very quickly. If creating young forest habitat adjacent to a utility line corridor (power line, pipeline) or existing shrub or young forest cover (old field or orchard, alder or shrub wetland, etc.), this will increase the functional size and benefits of the new habitat patch. If no “pioneer” tree stands exist, then consider stands that have a high percentage of poor quality trees or have been “high graded” (i.e., all the best trees have previously been harvested). They are also good candidates to regenerate and manage as young forest habitat. Keep in mind that not all sites that have been “high graded” or have a high percentage of poor quality trees should be considered for creating young forest conditions. These may also be suitable sites for developing old forest conditions if given enough time, patience and careful stewardship, as discussed previously. Finally, forest stands with high quality trees that have been identified by a professional forester as mature (ready for harvest) can produce income, wood products, and young forest habitat. Regenerating these stands should only be done under the guidance of a forest management plan prepared by a professional forester or wildlife biologist in order to protect water quality, ensure re-stocking with desirable tree species, and meet the landowner’s expectations for wildlife, recreation, and aesthetics.

MECHANICAL AND MANUAL MEANS

The most common management practice for creating young forest habitat is through manual (chainsaw/brush saw) or mechanical cutting of trees and shrubs. Exactly how and when the cutting takes place is critical to successfully regenerating the desired trees on the site. For example, aspen, paper, and grey birch, and northern hardwood stands are efficiently regenerated into young forest by cutting all stems greater than 2” in diameter (clearcutting), in a patch a least ½ acre in size but preferably larger, up to 10 acres. However, an oak or pine forest must be harvested in a manner which carefully retains some shade, (a “shelterwood” cut), timed carefully with the deposition of seeds from the retained trees. Spruce and fir are regenerated in strips or a patchwork of small patches, ½ to 2 acres in size in a manner which accounts for the presence of existing seedlings and saplings. Cedar and hemlock stands are very difficult to regenerate back to the same species, and are not recommended as suitable stands for the creation of young forest habitat. Obviously, proper forest management is complicated and requires application of the science of silviculture by a professional forester or wildlife biologist. Additional information is available in the Resources listed at the end of this chapter, and landowners are strongly advised to consult a professional prior to initiating any work on the ground.

CHECKERBOARD AND NATURAL CUTS

There are a number of ways to configure and distribute new patches of managed young forest. Checkerboard patterns are a traditional approach that can be effective for creating a diversity of interspersed patches of young forest. Alternatively, patches can be configured in a more convoluted fashion. This more closely mimics a natural disturbance and if done correctly can create higher value young forest habitat due to increased forest edge. Figures 73a and b illustrate these approaches.

CUTTING ON ROTATION

For landowners with large parcels (50 acres or more), managing a number of large blocks (5 to 10 acres) on a rotation is ideal to keep 10 percent of the parcel in forest under 15 years of age. This provides for a wide variety of wildlife species that use open areas, such as bluebirds, to species that use thick vegetation, such as the ruffed grouse. When possible, management should occur outside the primary nesting season of April 15 to 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, and 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 rufous-sided towhees.

NEXT STEPS

- In order to promote diversity in the age structure of the forest, maintain large areas of older forest stands with snags and various sizes of coarse woody debris on the forest floor to provide important cover for small mammals, salamanders, and insects.
- Select areas to create young forest (“regenerate”) carefully, in order to retain trees that are important food sources for wildlife such as beech, oak, cherry, and apple.
- Do not cut snags, den trees, or nest trees.
- Leave downed logs and brush piles on the forest floor. These will be used by many different species.
- Follow Vermont Department Forests, Parks and Recreation harvesting guidelines designed to maintain water quality and protect rare or fragile areas or species.
- Control any invasive species such as common buckthorn or honeysuckle prior to harvest because they will likely spread and may dominate the site; continue to monitor for invasive species after harvest.
- Monitor for the presence of invasive plants such as honeysuckle and buckthorn and remove them as the opportunity presents itself.



RESOURCES

Northeast Habitat Technical Committee. “Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast.” http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm

U.S. Department of Agriculture, Natural Resources Conservation Service. “What is Early Successional Habitat?” http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081109.pdf

—. “What are Shrubland Birds?” http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081112.pdf

—. “American Woodcock: Habitat Best Management Practices for the Northeast.” <http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=28815.wba>

The Young Forest Project website. www.youngforest.org

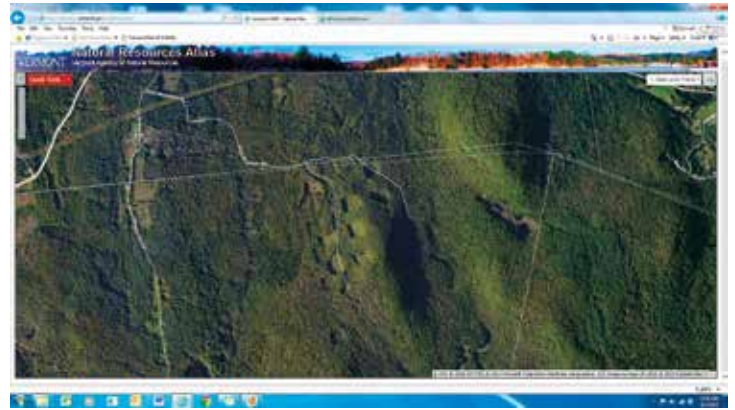


Figure 7.3 a and b

Checkerboard pattern (top) and a more convoluted pattern (bottom) can create a diversity of interspersed patches of young forest.