



Early Successional Habitat Management - Grassland Management

Vermont Conservation Practice Job Sheet VT-647

Client Name:	Town:
Land Units:	Acres of Contiguous Grassland to be Managed:
Planned By:	Date:

Target Species/Groups: Grassland Birds & other species that use grasslands

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.

Plant Species Seeded – See Wildlife Seeding Tech Note for seeding recommendations

Species	Cultivar (if any)	Lbs./Acre Seeded

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 transform into another habitat type 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.

Grasslands and Grassland Birds

“Grasslands” is a broad term that applies to many open land habitats but in general these are areas that are dominated by grasses with some forbs and have no trees or shrubs. Their use by wildlife will depend on their size, configuration, vegetation height, density, and composition.

Grassland habitats in Vermont are important for grassland nesting songbirds and a variety of other wildlife such as meadow voles, butterflies, fox, turkey, deer, green and rat snakes, wood turtles, hawks, rabbits, frogs and others. Grassland birds are the focus of most management plans because a number of these species have experienced significant population declines at the continental scale over the last thirty years. Grassland bird species in Vermont include fairly common species such as bobolink, savannah sparrow, Eastern meadowlark and more rare species such as grasshopper sparrows, upland sandpipers and short-eared owls.

While small areas of grassland (10 acres or less) can be important to a variety of wildlife, priority is given to managing large blocks of habitat. Grassland birds are “*area sensitive*” which means they prefer and select large areas of grassland for breeding. Birds such as bobolink will use smaller fields (~10 acre) but the more uncommon species such as upland sandpipers generally require areas of 100 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 the both the common species and the uncommon species that may depend on larger blocks of habitat.

Area Selection

When evaluating your property to determine where to focus your efforts, decide where you can provide the best wildlife habitat for the effort. Don’t try to create grassland bird habitat in areas not conducive to this habitat type. If you have an old field that is full of shrubs, this may be providing important habitat for shrubland birds which are also in decline in the Northeast. You will spend a lot of time and effort reclaiming that for grassland species when you may already have other important species using your property. Focus on areas that are still primarily open and have grasses and that are 10 acres or more. Smaller fields (~5 acres or less) may be better managed as an “old field”. Actual field size for grassland birds becomes less important when the field is located in a grass-dominated landscape.



Fig 1 - Good Field Configuration for Grassland Birds Fig 2 - Poor Field Configuration for Grassland Birds

Consider the surrounding landscape when determining your management plan. If you are in an area dominated by agriculture then this is an excellent place to manage for grassland birds. They

are drawn to this landscape; especially in areas with large acreages of pasture and hayland. Wise grazing is very compatible with grassland bird management. If your land is in a forest-dominated landscape, this may be a less suitable management option. However, it should be recognized that maintaining some grassy openings in these forested areas is important to species such as turkey, deer, reptiles, butterflies, and others.

Field configuration is important (see Figure 1 and 2 above). Large blocky fields have a large area for the amount of *edge*. Long narrow fields have a low amount of area to the amount of *edge*. Grassland birds generally do not like to nest near edges. Edges often concentrate predators (raccoons, skunks, foxes, etc.) as they travel these areas searching for food. *Edge* is considered the contact zone where two different habitats come together. Soft edges are generally considered better for wildlife than are hard edges. An example of a soft or “feathered” edge would be a grassland habitat that transitions into an old field that may have similar species and similar vegetative heights. An example of hard edge would be grassland that butts up against a mature forest.

Management Techniques and Guidelines

Manage the field to maintain or establish grass so that it comprises 50-75% of the cover with forbs comprising the remainder. This is in the range of preference for most grassland birds. Areas of reed canary grass will not meet the needs of grassland birds. These grass stands provide feeding areas but they are so dense and tall that it provides poor nesting habitat. Grasses require frequent disturbance (every 1-2 years) and good fertility to be maintained. Consider getting a soil test for your fields to determine if it is lacking any important nutrients. Lime and fertilizer may be applied to improve the growing conditions for grasses. Dry grasslands (occur on very dry soils) can be very important to grassland birds. These areas may have pronounced bunch grasses (grow in clumps) interspersed with bare ground which is a key feature for some species. While much of State grows cool season grasses best because of the cool, wet climate, there are areas where an investment in warm season grasses may be beneficial. Generally these are areas with soils that are excessively well drained where cool season grasses cannot compete.

Mowing or brush hogging must occur outside the primary nesting season which is April 15-August 1. Minimum mower height will be 4-6 inches. If warm season grasses are present then mower height will be 6 inches or greater. Where wood turtles, rat snakes or other reptiles of concern are known to occur, mow after October 1st with a mower height of 6 inches or greater. Depending on the site conditions and nearby management styles, consider practicing rotational mowing so that no more than 50 percent of the stand is cut in any given year. Rotational mowing consists of mowed strips separated by unmown strips (see Grassland Birds – WHMI Leaflet). The intent is to maintain grassland and early successional communities in various stages of growth and vegetative diversity. Another option can be to mow half a field one year and the other half the following year or in subsequent years depending on the management.

Vegetation heights within and surrounding the management area are important. Some species such as Northern harrier (also known as marsh hawk) prefer tall grasses while others such as Eastern meadowlark and savannah sparrows like short and medium height grasses. Management decisions should be based upon what is surrounding the property and what is the potential for a variety of species. Leaving tall grasses may be important in areas of intensive agriculture because this may be the only undisturbed nesting areas. Conversely, if all the surrounding area is tall grasses then a management scenario favoring short or medium grasses through the growing

season may be preferable. Planning management near pastures can provide a nice mix of habitats that will support a greater variety of grassland birds.

Seeding can be used to establish new stands or enhance existing stands. When establishing grass stands by seeding, the seed mix and rate shall be based on site conditions and habitat preferences of targeted species. Select a mix of tall and short growing grasses to provide enough density for good nesting habitat. Plantings shall include at least 3 species and should consist of predominantly bunch grasses. Timothy-orchard grass mixes are good choices for cool season grasses. Tall fescue and reed canary grass shall not be planted. The inclusion of forbs and legumes in grassland plantings improves the structural diversity of the stand and increases the invertebrate abundance. The inclusion of forbs can also improve the stand for various pollinators such as butterflies, moths and bees. See Wildlife Seeding Tech Note for specific seed mixes based upon your soils. Seek assistance from the NRCS field office if seeding.

Maintain old fence posts in fields if possible. These can serve as perches for singing males and “hawking” sites for birds such as kingbirds that swoop to capture flying insects. Maintain and encourage large snags which are dead or partially dead trees. These can provide perches for hawks, roosting sites for bats (under exfoliating bark) and cavity sites for birds such as kestrels.

Maintenance

The wildlife habitat benefits of grasslands decline over time as litter accumulation increases and plant diversity decreases. Reduce litter where possible through removal of cuttings if 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.



Savannah Sparrow Nest



Grassland Habitat in the Champlain Valley

Resources for More Information -

Grassland Birds – USDA NRCS WHMI and the WHC Fish and Wildlife Habitat Management Leaflet #8, 1999.

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

Managing Grasslands, Shrublands and Young Forests for Wildlife – Northeast Upland Habitat Technical Committee, 2006: Chapter 3. Maintaining and Restoring Grasslands

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

Grassland Conservation Program of Massachusetts Audubon

http://www.massaudubon.org/Birds_&_Beyond/grassland/index.php

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