

**PART FIVE:**  
Grassland  
and Field Habitat  
Management



## 15. GRASSLAND HABITAT MANAGEMENT

Some of Vermont's most imperiled birds rely on the fields that many Vermonters manage as part of homes and farms. These birds, including the iconic bobolink and meadowlark, migrate north for the summer to breed in Vermont's fields. Due to a century of fields growing back into forests, increased development, and intensified agriculture, many of these species are declining across the continent. They depend on large, grass-dominated fields with other herbaceous plants, and few woody plants. In addition, fields should have a period of minimally disturbed time each summer for birds to breed and be located in open landscapes. By managing your land for grassland habitats through a variety of strategies, including the timing and location of mowing and grazing, you can maintain or enhance these features, and may reduce the challenge of supporting breeding birds in a working landscape.

### VERMONT'S GRASSLANDS AND GRASSLAND BIRDS

Before European settlement, New England was mostly forested, and grasslands dotted the landscape in small areas of floodplains, beaver meadows, sandplains, barrens, and Native American settlements. From the 1600s through the late 1800s, as much of the land was cleared, grasslands came to dominate the northeast. In Vermont, populations of grassland birds likely reached their peak in the late 1800s, when a large part of the state was managed as open land for grazing sheep. However, the total area of grasslands useable by nesting birds declined greatly in the last century in Vermont and in the northeast. Fields became overgrown with woody vegetation, were converted to row crops such as corn, or were lost entirely as a result of development.

Other grasslands have declined in quality due to more frequent cutting of hay, more intense grazing, or fragmentation from development. These changes have caused the direct loss and decreased quality of grassland habitat.

Currently, most of Vermont's grassland habitats are associated with agriculture in the Champlain Valley and, to a lesser extent, the Connecticut River Valley and the area around Lake Memphremagog. Grassland habitats in Vermont vary in their size, shape, and plant species. They can be wet or dry depending on soil type and topography. Vegetation is typically dominated by nonnative cool season forage grasses and forbs but may also include native cool season grasses and forbs (herbaceous plants). Fields that are cut for hay are often dominated by grasses, while fields that are cut less frequently tend to have a high percentage of forbs.

Many bird species rely on Vermont's grasslands. Returning each spring from wintering grounds in the southern U.S. and Central and South America, these birds establish territories, build nests, breed, and raise their young — all in grasslands. Some of the better-known grassland birds include bobolink, meadowlark, killdeer, savannah sparrow, northern harrier, and American kestrel. Many of these species are experiencing range-wide population declines and are considered species of greatest conservation need in Vermont's Wildlife Action Plan. In addition, some of the less well-

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**Figure 15.1**  
Bobolinks thrive in unmown pastures.

Even smaller patches of grassland habitat may provide suitable nesting conditions for grassland birds if situated within a landscape of other large, high quality grassland habitats.

known grassland birds are facing even more grave threats: Three species, Henslow's sparrow, upland sandpiper, and sedge wren, are listed as endangered in Vermont. The grasshopper sparrow is listed as threatened. Overall, grassland birds are some of the fastest declining species across the northeast.

In addition to the grassland specialist birds, many other birds take advantage of grasslands for part of their habitat requirements, including short-eared owl, blue-winged teal, and eastern bluebird. This guide, however, focuses on management for grassland specialists including upland sandpiper, bobolink, eastern meadowlark, and grassland sparrows. Other species will benefit too, but may also require some other conditions such as proximity to wetlands and presence of cavity trees or nest boxes for nesting. See **Chapters 6** and **7** on songbirds and early successional habitat for more information.

## HABITAT REQUIREMENTS

The habitat requirements for grassland birds vary from species to species, but in general, include large, grass-dominated communities, with other herbaceous plants, few woody plants, and occur in generally open landscapes, often dominated by agriculture. More specifically, these habitats are characterized by:

- **Size (large and wide):** Grasslands larger than 25 acres will be most productive for birds. Grasslands as small as 10 acres, however, will support some birds (especially in open landscapes, as described below). In addition, grassland birds avoid edges with forests and development, so circular or square fields provide more prime interior habitat than long, narrow fields with a greater degree of edge.
- **Vegetation Condition (Grass-dominated):** Grassland birds prefer a habitat with 50 to 75 percent grass cover and the remainder as forbs. Grasslands composed primarily of grasses will support more birds than those dominated by goldenrods, thistle, and other forbs or row crops such as corn (row crops are not considered quality habitat for grassland birds). In addition, the absence of woody plants such as shrubs (e.g., dogwood, alder, cherry) create better quality habitat for grassland birds (see Figure 15.2). These species require the open character provided by the low, dense nature of grasses and forbs.
- **Landscape:** Grasslands surrounded by other open fields, or located within a region where other large, open grasslands occur will support more birds than those surrounded by forests or development. Even smaller patches of grassland habitat may provide suitable nesting conditions for grassland birds if situated within a landscape of other large, high quality grassland habitats. Generally speaking the Champlain Valley and parts of the Lake Memphromagog watershed provide important focus areas for grassland habitats and the birds that require them.
- **Limited Disturbance:** Grassland birds also need a period of time when they can breed with risk of disturbance from agricultural equipment and farm practices. Birds typically arrive in early May, and initiate breeding almost immediately. After 49 to 52 days, young birds should be developed enough to escape mowing equipment, livestock, predators, or other disturbances. Because some birds will breed multiple times in one year, and others will start new nests after failed attempts, a field will be continuously used for breeding until about early to mid-August. Since much of the suitable grassland habitat

in Vermont is supported by working farms, this is perhaps the most important consideration when managing for the benefit of birds like bobolink, meadow lark, and vesper sparrow.

## MANAGEMENT RECOMMENDATIONS

Managing grasslands for bird habitat involves three basic steps. These include:

- **Maintain or restore large grasslands.** Size of grassland habitats is a critical component to the quality of the area for grassland birds. Bobolink and other grassland dependant birds typically require grasslands of at least 50 acres, although they will utilize smaller patches of habitat if they are of high quality, free of disturbance during the critical nesting period, and are within a larger framework of other larger patches of grassland habitat. Therefore, an important consideration is to identify and maintain those large patches of good quality grassland habitat.
- **Manage fields for grasses.** Mowing fields annually, or semi-annually, will maintain dominant grasses, preventing the establishment of shrubs and colonizing saplings. In addition, removing grass cuttings after mowing will provide the best conditions for grasses to regrow the following season. In large areas, rotational mowing and/or burning can provide a mosaic of grassland types, attracting a greater diversity and abundance of grassland birds.
- **Avoid or minimize nest loss from mowing.** The timing of management activities is perhaps the most crucial factor for the successful breeding of grassland birds. Management of fields that are not used to grow hay for livestock forage should be mowed after August 15 to allow for successful breeding of grassland birds. If this is not feasible, delaying mowing until mid-July allows most birds to successfully raise young to the point of being fledged and able to fly and avoid mowing equipment.

Where forage is desired, managers should consider late-cut refuges and delayed second cuts. Late-cut refuges are certain areas of fields left uncut until August, to allow some successful breeding on the property. These refuges may be chosen for their wet or poor soils, to minimize any lost forage production, but should be centrally located in the field away from edges. Delayed second cuts allow a window for birds to breed throughout the property in early summer. Early/first cuts are made before June 1, then the second cut is delayed 65 days after the first, to allow time for the grass to regrow (14 days), the birds to nest (42 days), and young to develop flight (9 days). On productive sites, a third cut may still be possible.



**Figure 15.2**

An ideal grassland for birds includes large, wide-open landscapes with few woody stems.

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Although not a replacement for delayed mowing, other mowing strategies can help reduce the loss of birds and nests, as well as impacts to other wildlife such as newborn deer fawns and wild turkey poults, including: avoid mowing areas where birds are frequently seen, and instead mow field edges first (edges of fields are not the highest quality habitat), raise mower blades to 6 inches or more, avoid mowing at night while birds and other wildlife sleep, and use flushing bars on haying equipment to encourage birds and other wildlife to escape mowing equipment.

Where grazing is a primary management strategy, fallow paddocks may be left to allow birds to breed undisturbed. Because grazing animals may trample or cause birds to abandon nests, more concentrated and frequent grazing will prevent birds from breeding. Like late-cut refuges discussed above, leaving certain areas free from grazing for at least 50 days will allow birds to breed successfully.

By following these guidelines, you can maintain and enhance crucial grassland bird habitats. Landowner incentives may also be available for some practices. Contact the Natural Resources Conservation Service for more information about the programs available to landowners who wish to manage wildlife habitat. (See **Resources** for links.)



## RESOURCES

U.S. Department of Agriculture, Natural Resources Conservation Service. *Management Considerations for Grassland Birds in Northeastern Haylands and Pasturelands*. <http://www.nrcs.usda.gov/wps/portal/nrcs/main/vt/technical/ecoscience/bio/>

Vermont Fish and Wildlife Department. "Vermont's Wildlife Action Plan." [http://www.vtfishandwildlife.com/SWG\\_home.cfm](http://www.vtfishandwildlife.com/SWG_home.cfm)