Cool Season Grassland Habitat Management for Wildlife

If you, as a landowner or farm manager, are interested in attracting and producing pheasants, bobolinks, dickcissels, or other grassland dependent wildlife, you must establish and manage grassland habitat. This publication provides basic information that will help you. In it is a description of the value and general management of grassland habitats, including detailed discussions of cool season grasses.

WHAT IS GRASSLAND HABITAT?

Description

Grassland is land on which grasses and/or legumes are the dominant vegetation. An abandoned pasture field that is reverting to a mixture of broadleaf plants, briars, shrubs, and small trees is called an old field habitat. It is important to distinguish between these habitat types. Certain species of wildlife such as pheasants and bobolinks prefer a "mixed" stand of grassland for nesting cover, as opposed to the old field habitat preferred by bobwhite quail and cottontail rabbits.

Cool season grasses are nonnative grasses, such as timothy and orchardgrass, and begin growth in the cool, wet, early spring. They reach maturity by early summer if not mowed, pastured, or harvested. During the hot summer months, cool season grasses lose their vitality and decline rapidly. Any farmer who manages a pasture knows that the forage quality of cool season grasses declines as the summer progresses and increases again in fall with the return of cooler, damper weather.

The Value of Grassland Habitat

Grasslands' greatest wildlife value is usually as nesting cover. However, they also furnish food in the form of seed, succulent green plant parts, and prey animals that they attract, such as rodents and insects. These prey species in turn supply food to predators. The barn owl, an Ohio endangered animal, is particularly fond of the meadow voles that thrive in grassland habitat.

One of Ohio's best known wildlife species associated with grassland habitat is the ring-necked pheasant. Pheasants will not nest in woodland or dense brushland. They are strictly grassland nesters. Other wildlife species heavily dependent upon grassland habitat include the bobolink, grasshopper sparrow, meadowlark, Henslow's sparrow, and savannah sparrow. About one-third of Ohio's wildlife need grassland to prosper.

Many Ohio farms are no longer productive sites for pheasants, bobolinks, or meadowlarks as they were in the 1940s and '50s. These birds will rarely nest in any cover except unmowed grass. Their populations have declined in proportion to the amount of grassland that has been converted to cropland and other land uses. Maintaining existing and creating new grassland habitat will be essential if we are to reverse the downward trends of Ohio's grassland dependent wildlife populations. The following information will help you get started with a grassland habitat recovery management plan.

General Grassland Management Guidelines

The first step is to select a suitable site—a field that is well drained, fertile, and free of trees, and that meets the size requirements for the species you wish to attract. Most grassland nesting species prefer large fields surrounded by more or less open edges. For example, pheasants need at least 10-15 acres, bobolinks at least 20-25. However, fields smaller than 10 acres, as well as grass waterways, field borders, wetland buffer strips, and grass field dividers, all have the potential to produce grassland wildlife if managed properly, but will not be as productive as larger fields.

The next step is to conduct a soil test to determine lime and fertilizer requirements. If no fertilizer is required, don't apply any. Don't guess—soil test! For a reasonable cost, a soil sample can be submitted to the USDA research lab through the OSU Cooperative Extension Service. Contact your County Extension agent for advice.

The final step before planting is to select the type of grass or grass/legume mixture best suited to the site and the desired wildlife species. The following section gives information on cool season grass types; the second section considers warm season grasses.

COOL SEASON GRASSLAND MANAGEMENT

Table 1 lists the most common cool season grassland legumes and grasses planted in Ohio and their recommended seeding rates and planting dates.

Timothy

Timothy makes excellent nesting cover for pheasants and is equally attractive to ground nesting songbirds. It is much easier to plant than brome grass or orchardgrass, but over time it doesn't compete as well. Once weeds invade the field, it becomes less desirable for pheasants and other "pure" grassland nesters, but more desirable for rabbits, quail, and a few songbirds, such as the common yellowthroat, which prefer old fields.

Orchardgrass

Orchardgrass provides good cover for pheasants and songbirds, but is the best of the three grasses for bobwhite quail. Quail are less likely to nest in dense sod-forming grasses than in bunch grasses such as orchardgrass that have small patches of bare ground beneath. However, orchardgrass is no substitute for old fields, the preferred cover type for quail.

Like brome grass, orchardgrass has a light, fluffy seed that needs to be stirred frequently in a grain drill, or mixed with some fertilizer, cracked corn, or oats to carry it through the drill.

Legumes

Legumes such as sweetclover, alfalfa, and red clover seeded without a grass are recommended only for short-term (less than three years) seedings and should not be considered for long-term grassland cover. Short-term seedings are useful in crop rotations because they not only provide nesting cover, but also improve cropland by adding nitrogen and organic matter, and improve soil tilth and aeration with their deep root systems. Legumes with no grass usually will not persist more than a few years without frequent mowing. Weeds will soon overtake legume-only fields, resulting in the loss of high quality nesting cover. Their best use is for fields enrolled in annual cropland set-aside programs administered by the county Farm Service Agency (FSA) office.

Sweetclover is the best choice for a one-year seeding because it establishes quickly and usually does not need mowing to control the weeds the first year. However, this clover will often be taken over by weeds in two years. Moreover, it is not as highly utilized by wildlife as alfalfa or red clover in subsequent years.

Alfalfa and red clover furnish high quality wildlife nesting cover, but usually require an early mowing during the year of seeding to control weeds. As a result, no cover is provided until the second year. Use these legumes for a field that will be idle for two to three years, but use sweetclover to provide temporary cover for one or two years. For long-term nesting cover, always seed a grass with a legume.

Establishment

These grasses and legumes can be planted by using either no-till or conventional methods. No-till seedings require specialized equipment and herbicides, so advice should be sought from your local Natural Resources Conservation Service (NRCS) or Cooperative Extension agent (CES).

For conventional seeding, the field should be tilled to a fine, firm, level, weed-free seedbed. A simple broadcast seeding will work for timothy and all legumes, but light, fluffy seeds such as orchardgrass are difficult to broadcast accurately. Light seeds should be planted with a grain drill, and fertilizer, cracked corn, or oats should be mixed with the seed to prevent lodging in the seedbox. Whether the seeds are broadcast or drilled, the field should be packed with a cultipacker after seeding to improve seed-soil contact.

Excellent stands can also be obtained by seeding into a small grain cover crop of oats or wheat. Timothy should be seeded in the fall with winter wheat, but orchardgrass and legumes should be drilled into the wheat as early as possible the following spring. If using oats as a cover crop, seed the grasses and legumes with the oats in the spring.

Oats and wheat can compete severely with the grass/legume seeding, so reduce the seeding rates of oats and wheat and harvest or mow these small grains as early as possible. If you wait too long to remove the cover crop, the grass/legume seedlings will not survive.

Seeding Dates and Depth

Spring seedings should be made as early as the seedbed can be prepared. Recommended dates for most grasses and legumes are late March and April for southern Ohio, and April and early May for northern Ohio. Summer or fall seedings should be done only in August. Midsummer (June-July) seedings usually fail because of dry weather and weed competition. Plant seed no deeper than 1/4 inch. Ideally, only seed and soil contact is necessary, so don't disk the seed in, cultipack it.

Mowing

It often takes two years to get a solid stand of grassland cover established. Mowing the first year is usually a must (except for sweetclover) or else weeds may flourish and outcompete the new grass/legume seedlings. Plan to mow two or three times the first year if weeds are persistent. You will lose the first year of nesting cover, but higher quality grassland cover will be available for many more years. After the cover is established, do not mow unless necessary. If mowing is needed to control weeds, it should be done only from August 1-15, not before or after. Mowing too early causes nest destruction, and mowing too late allows too little time for regrowth before winter. Lack of regrowth prior to winter can cause winter-kill of

Figure 1. Cool season grasses and legumes.

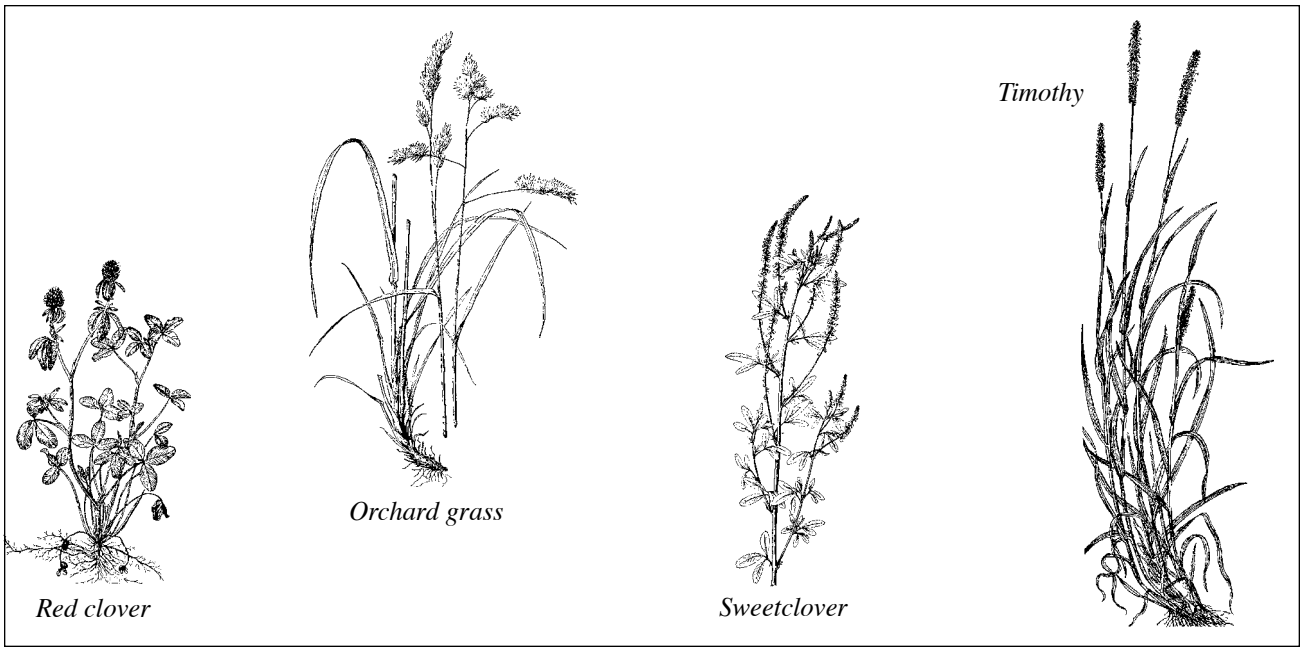

Table 1. Cool season grass/legume mixtures for wildlife.

Mixture	Pounds/Acre	Planting Dates
No. 1:		
Timothy	4	Aug-Sept
& red clover	8	or Mar-Apr
No. 2:		
Orchard grass	8	Mar-Apr
& ladino clover	1	or Aug
or red clover	6	
No. 3:		
Orchard grass,	4	Mar-Apr
timothy	2	or Aug
& alsike clover	2	
No. 4:		
Partridge Pea,	4	Aug-Sept 15
timothy	2	or
& red clover	4	Mar-Apr
Short-term seedings (seed alone or combine & reduce rates):		
Sweetclover	10-12	Mar 15-Apr 30
Alfalfa	12	Mar-May or Aug-Sept
Red clover	10	Mar-Apr or Aug

Note: Fescue should not be used in any seeding mixture, except in areas with severe erosion problems. Fescue does not attract wildlife and it tends to discourage and even reduce wildlife populations.

Do not mix different-size seeds together when seeding (for example, orchardgrass with alfalfa or timothy). They will flow through the seeder at different rates, causing uneven seed distribution and bare spots.

grasses and legumes, and create areas with insufficient winter cover for wildlife.

Maintenance

The goal of grassland maintenance is to control weeds and avoid destroying wildlife nests. Weeds will constantly strive to overtake a grassland, so periodic mowing is essential. However, it should not be overdone.

Once the grass field is established, you will need to maintain high quality grass, yet still provide unmowed cover. Do not mow the entire field every year or you will leave the field barren of cover. Mow only part of each field each year. Frequency of mowing will depend on the type of grass and the number of weeds in the field, but most areas should need mowing only once every two to three years. It is best to spot mow problem areas and to mow no more than one-third to one-half of each field each fall.

Many birds, especially pheasants, use grass fields as protective cover and roosting sites in fall and winter. If the entire field is mowed in fall, these birds will have to find other grass fields for winter cover. In addition, most birds prefer to nest in the dead grasses from last year's growth. When the entire field is mowed, no grass residue is left, and fewer birds can nest in the grassland cover the following spring.

Summary of Steps for Cool Season Grass Establishment

1. Select a large, open field that is free of trees and has moderate to good fertility and drainage.
2. Soil test the field and apply adequate lime and fertilizer for grassland plantings. If no fertilizer is necessary, do not apply.
3. If using conventional tillage, prepare a fine, firm seedbed in March for spring seeding, in late July for fall seeding.
4. Plant the seed only during the recommended time periods. Broadcast method (timothy and legumes only). Spread seed over prepared seedbed, then cultipack field for good seed-soil contact. Drill method (useful for all grasses and legumes). Drill seed shallowly into prepared seedbed, then cultipack field if grass drill does not have presswheels.
5. If weeds flourish before the grasses and legumes become established, mow the field at a height of six inches as many times as needed to control the weeds. This usually means mowing after July 15th.
6. After the grassland is established, mow only when needed to control weeds, and do not mow during the nesting season. If needed, mow only from August 1-15. It is best to mow only part of the field each year.
7. Herbicides can also be used to control weed invasion. Contact the Cooperative Extension Service for advice.

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