

A3715

# Grassland birds: Fostering habitats using rotational grazing

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## Western Meadowlark

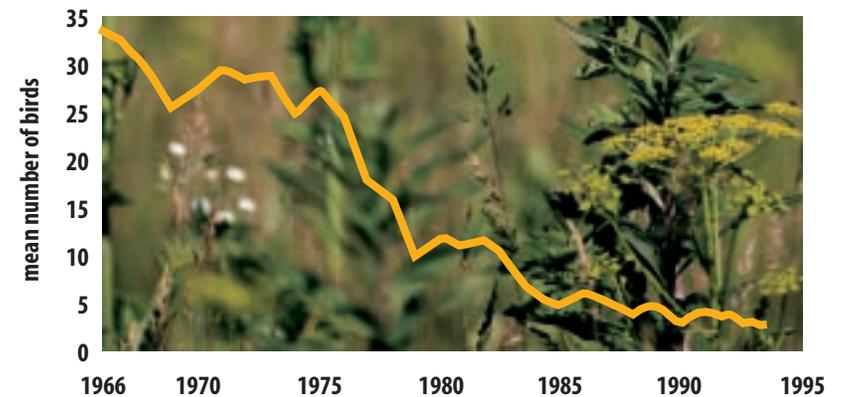
Pastures and other dry upland grasslands are favorite habitats of the western meadowlark.

This bird seems to prefer slightly shorter grassland vegetation and more open, treeless landscapes than its “eastern” cousin. Its song is a series of abrupt, clear flute-like notes and is more complicated than the plaintive, slurring whistle of the Eastern meadowlark. If it weren’t for their different songs, these two species would be very difficult, if not impossible, to separate in the field. The female lays five eggs and the young chicks fledge about 12 days after hatching.

Grassland birds are birds that require some open grassy areas, such as prairies, hayfields, small grain fields, or pastures, during the breeding season. Over 40 species of grassland birds breed in Wisconsin. In the last 30 years this group of birds has declined more than any other group of birds in North America and is most in need of help. Annual bird counts have documented the losses: western meadowlark populations in Wisconsin, for example, fell by nearly 90% (figure 1) between 1966 and 1994. The shrinking populations of grassland birds can be traced primarily to the loss of grassland habitat as row crop acreage has increased. Also, the timing and frequency of hay harvesting destroys many nests before the young birds have fledged.

Increased use of rotational grazing by dairy, sheep, and beef farmers has opened an opportunity to help increase the populations of grassland birds at little or no cost to the farmers.

**Figure 1.** Decline of western meadowlark populations in Wisconsin between 1966 and 1994.



# Benefits of rotational grazing

In rotational grazing systems, pastures are subdivided into small paddocks. Livestock are concentrated into one or two groups, each of which is allowed to graze only one paddock at a time for 2 days or less rather than roam freely over the entire pasture throughout the grazing season. Resting the paddocks between grazing periods allows plants to renew energy reserves and rebuild plant vigor for increased forage production. The rest period also increases ground cover which benefits wildlife.

Rotational grazing offers many benefits for farmers as well as for the general public, wildlife, and the environment.

## Benefits to farmers

**Economic benefits.** Many farms have become unprofitable due to increasing capital costs without similar changes in farm produce prices. Grazing reduces the cost of feed, fuel, fertilizer, pesticide, labor, and equipment since less machinery is required and the dairy confinement system needs to be operated only during the cold months.

**Time savings.** Moving livestock to new pastures takes less time than feeding the animals in a confinement system—especially if you factor in the time needed to make hay or silage. On average, moving the fence each day takes 15–30 minutes, the same amount of time it takes to feed hay. Large herds (greater than 100 animals) take longer to feed but moving them to new pastures takes about the same time as moving smaller herds.

**Increased pasture productivity.** Rotational grazing can help improve long-term pasture quality and fertility by favoring desirable pasture species that have continuously high yield throughout the season. Moving livestock from paddock to paddock ensures that manure is spread evenly throughout the pasture, which reduces stream pollution and stimulates plant growth. As a result, more and higher quality forage can be harvested from rotationally grazed pastures than from continuously grazed pastures. This translates to greater milk or meat production. And finally, due to the staggered rest periods, rotationally grazed pastures can carry animals through a drought longer than continuously grazed pastures.

## Benefits to everyone

**Environmental advantages.** Any type of perennial pasture dramatically decreases soil erosion—especially on hilly land—which in turn lowers pollution of streams and lakes. And since there is no feedlot, pasturing also lessens the problem of feedlot runoff.

**Wildlife advantages.** Grasses (especially warm-season grasses which aren't grazed until midsummer) are prime nesting habitat for a variety of game birds (such as pheasants and quail) and songbirds (such as upland sandpiper, meadowlarks, savannah sparrow, and bobolink). A greater variety and number of birds are attracted to rotationally grazed pastures than to row crop fields and, even, continuously grazed pastures.

**Aesthetics and human health benefits.** One of the greatest advantages is that rotational grazing is a more “peaceful way of farming.” It is quieter and less stressful than mechanical harvesting. Farmers have the opportunity to





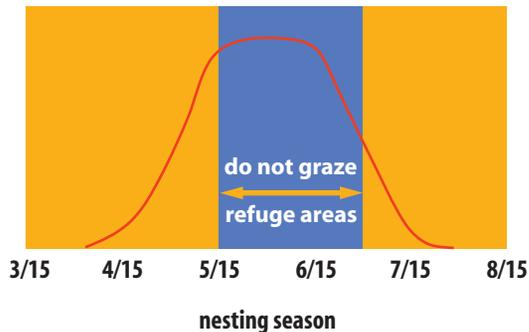
hear birds singing or see deer grazing as they move the fence. All of society can appreciate the peacefulness and the greater quantities of songbirds and game birds.

## Rotational grazing and grassland birds

**I**t takes about 4–5 weeks for grassland birds to build a nest, hatch the eggs, and raise their young. Nesting generally begins in early May and continues through mid-July, when most hatchlings leave the nest (figure 2).

During this same period, pastures are growing rapidly. Typically, livestock graze a paddock and are back to graze it again in approximately 3 weeks, which is less than the nesting interval needed by birds. Some people have expressed concern that concentrating higher numbers of animals in small paddocks will destroy more nests than if the entire pasture is conventionally grazed. A survey of fields with high, moderate, and low cattle densities on pasture

**Figure 2. Nesting season for grassland birds.** Peak nesting periods will vary depending on the weather conditions and the species.



found that nests were trampled randomly—cattle are not attracted to them. The amount of nest damage is based on animal-days (number of animals x number of days) on pasture. In other words, 10 cows grazing for 10 days will cause the same amount of damage as 100 cows grazing for 1 day in the same land area.



### Bobolink

The bobolink's bright black and white markings and loud, bubbling song have made it a familiar bird to many of Wisconsin's farm residents. The bobolink spends the winter in South America. Its preferred habitats include lush grasslands of medium height, such as hayfields, lightly grazed pastures, and wet meadows. The female lays a clutch of five to six eggs.





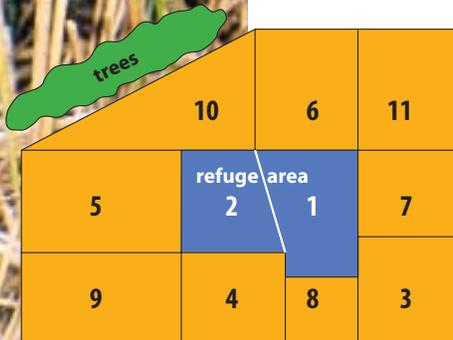
With minor management changes, pastures can be grazed to minimize damage to nests. Below are some suggestions on how to manage rotationally grazed pasture to benefit both livestock and grassland birds.

- Any interval between grazing periods improves overall nesting success and the longer the better. If possible, allow longer non-grazing intervals in pastures that have high populations of grassland birds (open pastures that are farther from trees).
- Leave at least 4 inches of growth to increase bird nest success. Often farmers follow a “take half, leave half” grazing strategy which can remove too much cover. A 4-inch harvest height not only provides needed cover to hide nests from predators, it also speeds the rate of plant recovery and increases yield.
- Graze alternate paddocks across a pasture to increase bird nest success (see figure 3). This practice leaves greater ground cover in some portion of each bird’s territory than if paddocks were grazed sequentially.



### Upland Sandpiper

This graceful bird was once a relatively common denizen of Wisconsin’s prairies and pastures. It is now uncommon to rare and occurs only on large open grassland habitats where its distinctive “wolf whistle” song can be heard over a long distance. It winters in Argentina and migrates north each year to nest in our northern grasslands. The parents incubate their four eggs for about 21 days, and lead the downy young away from the nest shortly after hatching.



**Figure 3.** A “bird-friendly” pasture system. An ideal refuge is surrounded by pastures rather than trees or buildings and is not grazed between May 15 and July 1. Grazing alternate paddocks, as shown, will leave some cover on each bird’s territory.



## Creating a bird-friendly grazing system

**P**roper management of deferred grazing areas during spring and early summer can greatly affect the number of birds that successfully fledge. During this time, pasture growth is so fast that it cannot all be grazed. Farmers often defer a portion of their pastures for summer forage, legume seed production, or hay production. This acreage may account for up to half of the total pasture acreage. Appropriate site selection and management of the deferred acreage can significantly improve bird nest success, essentially creating a bird refuge.

A few considerations will greatly increase the value of the refuge to nesting birds:

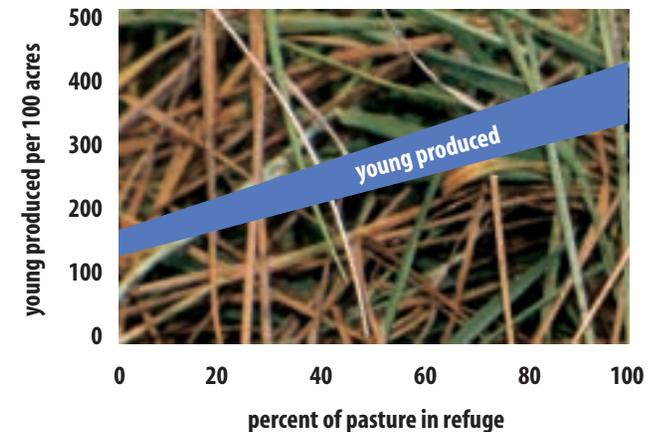
**Location.** Grassland birds prefer to nest in open areas as far away as possible from trees and buildings. Situating refuges in desirable nesting areas will help to protect birds from predators and from being trampled by livestock. Figure 3 provides a sample layout. When the refuge area is surrounded by pastures rather than trees, the birds will include the paddocks in their territory, effectively increasing the size of the refuge.

**Size.** Larger refuges are better as some grassland birds will only nest in large open areas. Also, as shown in figure 4, the number of offspring increases as the size of the nesting area increases. Thus, by combining the deferred acreage into a single large pasture, more species will be able to reproduce in greater numbers than if the same acreage is spread throughout the farm in small parcels.

**Harvest timing.** Leaving fields undisturbed from mid-May through mid-July will increase the number of young that fledge (figure 2). However, this date may be too late for farmers who need to harvest hay with adequate quality to maintain animals through the winter. Several management practices may be used to obtain good quality hay while still providing an effective refuge for birds:

- Select pastures to defer that contain 40–50% legume plants to increase the quality of the hay. Legumes do not lose forage quality as fast as grasses and will have higher quality at later harvest dates. This hay will meet the forage quality needs of dry cows and growing heifers.
- Graze the refuge pasture until May 15 to provide extra pasture in early spring when forage supply is short. This will also delay maturation of the forage so that the field can be harvested later without sacrificing quality.

**Figure 4.** The effect of refuge size on bird populations.





- Wait until July 1 to harvest. Harvesting on July 1 represents the best compromise between hay quality and nest production. While harvesting at this date will reduce the population of young birds by 10–15% compared to mid-July, the remaining bird population will still be much higher than it would with other farming practices.

### Summary of a bird-friendly rotational grazing system:

#### Management tips for grazed pastures:

- Move livestock to new paddocks frequently—at least every other day—to minimize trampling damage.
- Graze alternate, not adjacent, paddocks across the pasture.
- Leave at least 4 inches of growth following grazing.

#### Management tips for refuge areas

- Create a single large refuge rather than multiple small refuges.
- Place refuge in the center of the pasture, away from woods and buildings.
- Select a pasture with high legume content (40–50%) to improve the quality of late-harvested hay.
- Graze areas to be deferred until May 15 if planning to harvest hay later.
- Defer grazing between May 15 and July 1 (July 15 is better).
- Wait until July 1 to harvest or graze; then graze as desired for the remainder of the season.



### Eastern Meadowlark

Meadowlarks are artful nest-builders. They often create woven domes over the nest, leaving a “side door” for entry and exit. They are perhaps the most brightly colored of our grassland birds and have a clear slurred whistle. The eastern meadowlark occurs throughout the state where suitable habitats exist, though it is nowhere near as common as it was 30–40 years ago. Preferred habitats include old fields, hay fields, and lightly grazed pastures. Females lay three to five eggs.



## Grassland birds that breed in Wisconsin pastures\*

Species	Abundance		
	Common	Uncommon	Rare
<b>Birds that prefer short grass (&lt;4 inches)</b>			
Killdeer	■		
Common nighthawk			■
Horned lark	■		
<b>Birds that prefer medium-height grass (4–6 inches)</b>			
Blue-winged teal <sup>w</sup>		■	
Upland sandpiper		■	
Mourning dove		■	■
Savannah sparrow	■		
Grasshopper sparrow	■		
Bobolink	■		
Eastern meadowlark	■		
Western meadowlark		■	
Brewer's blackbird		■	
Brown-headed cowbird	■		
<b>Birds that prefer tall grass (&gt;6 inches)</b>			
Green-winged teal <sup>w</sup>		■	■
Mallard <sup>w</sup>		■	
Northern pintail <sup>w</sup>			■
Gadwall <sup>w</sup>			■
American wigeon <sup>w</sup>			■
Northern harrier <sup>o</sup>		■	
Gray partridge		■	
Ring-necked pheasant		■	
Greater prairie-chicken <sup>c,o</sup>			■
Northern bobwhite		■	
Short-eared owl <sup>o</sup>			■
Sedge wren			■
Dickcissel			■
Henslow's sparrow			■
Swamp sparrow			■
Red-winged blackbird		■	■
American goldfinch		■	

\*This list does not include species that require the presence of trees or shrubs to breed in pastures.

<sup>c</sup>restricted to parts of central and north central Wisconsin

<sup>o</sup>requires large open areas, <sup>w</sup>requires nearby body of water

## Additional resources

The following publications contain more information about rotational grazing practices and grassland birds.

- Pastures for Profit: A Guide to Rotational Grazing (A3529) available from Cooperative Extension Publications
- Managing Habitat for Grassland Birds: A Guide for Wisconsin email: [SamplD@dnr.state.wi.us](mailto:SamplD@dnr.state.wi.us)
- National Geographic Society Field Guide to the Birds of North America available at bookstores





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