

MEET YOUR VIRGINIA GRASSLAND BIRDS

The Virginia Grassland Bird Initiative

A collaboration supporting bird-friendly practices on working landscapes



A first-of-its-kind booklet featuring:

- the diverse suite of birds that rely on Virginia's grassland ecosystems and
- a vetted list of best management practices that can be adopted to help reverse their declines

Photo of Bobolink by Scott Keys

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Photo of Eastern Meadowlarks by Brooke McDonough

The Plight of Grassland Birds

Virginia farms have always been a place for birds. So much so that you might be hard-pressed to find a farmer who doesn't have an anecdote about any number of our iconic bird species.

Many Virginians are familiar with the sharp look and melodious song of the Eastern Meadowlark perched on a fence post, the hauntingly beautiful face of a Barn Owl gliding over a hayfield at dusk, and the unmistakable, nostalgic bob-WHITE call echoing from the edge of a field. Many are also familiar with other “barnyard favorites,” including Short-eared Owls, Northern Harriers, American Kestrels, Barn Swallows, Purple Martins, and Red-winged Blackbirds. But when it comes to the full suite of birds that can be found on Virginia's agricultural hayfields, cattle pastures, fallow fields, and the like — well... that list goes on... Bobolinks, Grasshopper Sparrows, Savannah Sparrows, Field Sparrows; and on... Indigo Buntings, Yellow-breasted Chats, Horned Larks, Loggerhead Shrikes; and on...

In fact, over 60 species of birds rely on Virginia's working grasslands for either breeding, nesting, foraging, and/or refuge throughout the calendar year. And just as these species need grasslands, the grasslands need them. These birds offer priceless and irreplaceable ecosystem services that keep grasslands healthy and balanced, from insect and rodent control to seed dispersal and nutrient recycling. However, the majority of grasslands in Virginia have, over time, been converted to “working landscapes.” And over the last century, those landscapes have been worked harder and harder, resulting in native grasslands having suffered the most intense impact by humans of any of North America's terrestrial ecosystems. This has resulted in grassland birds experiencing a steeper decline than any other group of birds, with some species seeing declines of more than 75% over the past 50 years.

It's getting quiet out there. Too quiet...

Photo of Eastern Meadowlark by Amy Johnson



Working Farms: An Essential Part of the Solution

Agriculture covers more than 8 million acres in Virginia, roughly a third of the entire landscape. Such an extensive presence makes working landscapes a dominant “habitat” in our state. Therefore, the opportunity to make this habitat more productive for a diversity of wildlife, including the suite of grassland birds that fully depend upon it, is one that we must seize.

Recognizing that balancing the needs of grassland bird conservation with the demands of working agricultural lands can be a complex conservation challenge, Virginia Working Landscapes (part of the Smithsonian’s National Zoo and Conservation Biology Institute), The Piedmont Environmental Council, American Farmland Trust, and Quail Forever came together to develop solutions. This collaboration, aptly named the Virginia Grassland Bird Initiative (VGBI), draws on locally-derived scientific research and partner expertise in regenerative grazing, habitat restoration, and biodiversity conservation to develop best management practices that have been vetted to simultaneously benefit grassland birds, farms, and farmer livelihoods.

VGBI is centered on the principle that wildlife conservation and production agriculture are not mutually exclusive. In fact, everything we are learning points to the opposite. Good farming practices naturally build functional ecosystems for wildlife, and wildlife help build functional landscapes for better farming.

VGBI has identified practices for agricultural lands that promote habitat within grasslands, mitigate drought and flood events, improve soil health, lower health risks for livestock, and sequester carbon. Together, these outcomes improve the productivity and bottom line for producers, build landscape resiliency in a changing climate, and allow grasslands to once again become functional ecosystems within the larger mosaic of Virginia’s forests, rivers, wetlands, and mountains.

Photos by Brooke McDonough



Virginia's Grassland Birds

More than 60 species of birds rely on grasslands in Virginia throughout the year. Some are entirely dependent on our grasslands for nesting. Others will briefly stop at our fields to rest and refuel before continuing a northward migration in the spring and southward migration in the fall. And others will shift down from northern climates to winter in our grasslands, where they seek shelter and food during many of the colder months of the year.

Here we have compiled a list of bird species that commonly interact with grassland habitats in Virginia, grouping them by major characteristics that they share, including nesting strategy, foraging behaviors, and annual movement. We have simplified the list in a way that only lists each species once — to emphasize its most obvious characteristics — even though some birds could be listed across multiple categories. Ultimately, the goal of this list is to showcase the breadth and diversity of species that depend on grasslands in Virginia for at least one critical element of their annual life cycle.

No matter how or when birds are using grasslands, the common link is this — if grasslands continue to diminish in size or quality, or if their management adversely changes, all of these birds will feel the impact. Most grassland birds cannot shift to alternative habitats, so reversing the declines of these at-risk grassland bird species is directly tied to how we value and manage the state of our grassland ecosystems and working landscapes.



Photo of Red-winged Blackbird by Christopher Rademacher



Photo of Tree Swallows by Christopher Rademacher



Photo of Savannah Sparrow by Bernadette Rigley



Photo of Chipping Sparrow by Christopher Rademacher



Photo of Blue Grosbeak by Bernadette Rigley

Obligate Grassland-Nesting Species

Exclusively nest in grasslands, including livestock pastures, hayfields, & fallow fields

- Horned Lark
- **Grasshopper Sparrow**
- Savannah Sparrow
- **Bobolink**
- **Eastern Meadowlark**

Facultative Grassland-Nesting Species

Frequently nest in grasslands as well as in shrublands, along field edges, and/or wetland habitats

- **Northern Bobwhite**
- Wild Turkey
- **Loggerhead Shrike**
- Field Sparrow
- Song Sparrow
- Red-winged Blackbird
- Common Yellowthroat
- Blue Grosbeak

Rare Breeders

Nest in grasslands, but nesting is rarely observed in Virginia

- Upland Sandpiper
- Vesper Sparrow
- Henslow's Sparrow
- Dickcissel

We have selected seven species that represent the diversity of grassland birds in Virginia. These species are **bolded** in the lists above and will be featured in the subsequent pages of this booklet.

Overwintering Species and Migrants

Birds that utilize grasslands during winter and migration seasons

- **Northern Harrier (rare breeder in VA)**
- Short-eared Owl (rare breeder in VA)
- American Pipit
- Lapland Longspur
- American Tree Sparrow
- Dark-eyed Junco
- White-crowned Sparrow
- White-throated Sparrow
- Fox Sparrow

Grassland Foragers

Nest in structures or in other habitats adjacent to grasslands, but reliably forage in and over grasslands

- Canada Goose
- Mourning Dove
- Yellow-billed Cuckoo
- Black-billed Cuckoo
- Common Nighthawk
- Chimney Swift
- Ruby-throated Hummingbird
- Killdeer
- American Woodcock
- Cooper's Hawk
- Red-shouldered Hawk
- Red-tailed Hawk
- Barn Owl
- Downy Woodpecker
- Northern Flicker
- **American Kestrel**
- Eastern Phoebe
- Eastern Kingbird
- American Crow
- Purple Martin
- Tree Swallow
- Barn Swallow
- Brown Thrasher
- Northern Mockingbird
- Eastern Bluebird
- American Robin
- House Finch
- American Goldfinch
- Chipping Sparrow
- Eastern Towhee
- Orchard Oriole
- Brown-headed Cowbird
- Yellow-breasted Chat
- Prairie Warbler
- Northern Cardinal
- Indigo Bunting

Highlighted Species

The following seven species have been selected to showcase the diversity of Virginia's grassland birds.



Northern Bobwhite
Pages 8-9



Eastern Meadowlark
Pages 10-11



Bobolink
Pages 12-13



American Kestrel
Pages 16-17



Grasshopper Sparrow
Pages 14-15


















Northern Harrier
Pages 18-19



Loggerhead Shrike
Pages 20-21

Key

Much of the information in the species highlights is depicted graphically. Please familiarize yourself with this key to help you interpret what you see.

Diet		Population Trends		Nesting Habitat	
 Fruits	 Small Animals	 Decreasing		 Cavities	 Meadow
 Insects	 Seeds	 Increasing		 Fallow Fields	 Shrubs or Forest
 Plant Matter		 Stable		 Hay Fields	 Wetland
				 Livestock Pastures	

Best Management Practices

For more detailed information about these practices, please see pages 23–26.

Flushing Bar	Raise Blade	Volunteer	Stockpile	Non-lead Ammunition	Dark Skies Lighting	Cats Indoors	Eliminate Pesticides	Winter Habitat	Prescribed Fire	
										
Delay Hay	Avoid Mowing at Night	Mow Toward Refugia	Allocate Unmowed Areas	Cooperative Management	Manage Fields in Patches	Nest Boxes	Remove Invasives	Edge & Shrub Habitat	Plant Natives	Stream Exclusion & Buffers
										

NORTHERN BOBWHITE (*Colinus virginianus*)



"poor...bob-WHITE!"



♂

Photo by Don Danko

♀

Photo by Matt Felperin

Fun Fact:

Quail are known as the "Firebird" because of their positive response to using prescribed burning as a habitat management tool.

Nesting Habitat



Diet



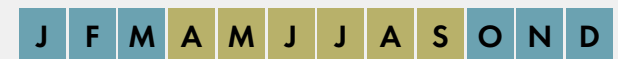
Conservation Status



Size



Presence & Breeding in Virginia



Present

Not Present

Nesting



Photo by Joshua Rector

How To Identify This Species

Description: Medium-sized bird with a short, curved bill; large, plump body with a short neck and a short tail; males have characteristic black and white banding on their face, while females have brown face banding; both sexes have dappled brown and white plumage, and a cinnamon-colored belly with white spotting.

Behavior: Almost always seen running or walking on the ground, as they are inefficient fliers; will occasionally perch on low branches or fence posts to sing; congregate in coveys (i.e., large groups) outside of the breeding season.

Foraging: Ground foragers that search for insects and plant matter; forb and grass seeds compose the largest part of an adult quail's diet, but chicks and nesting hens require larger numbers of insects.



Photo by Robert Gundy

Nesting Information

Nesting location: Nests are directly on the ground and are usually made of dead grasses and leaves; usually built alongside or within bunch (i.e., tussock) grasses, shrubs, or tall forbs to provide umbrella cover.

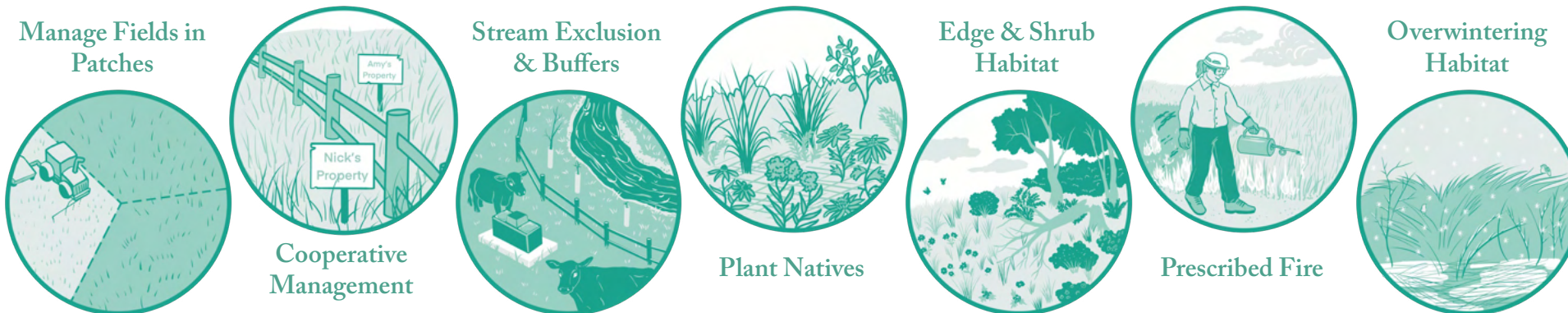
Number of eggs: 12-15 eggs

Incubation: Both parents help incubate for 22-24 days.

Nestling period: Only 1 day in the nest (chicks are born in an advanced state), but rely on parents to lead them to food and keep them warm; capable of flight between 14-16 days old.



Best Management Practices For This Species



EASTERN MEADOWLARK (*Sturnella magna*)



"Spring of the year!"

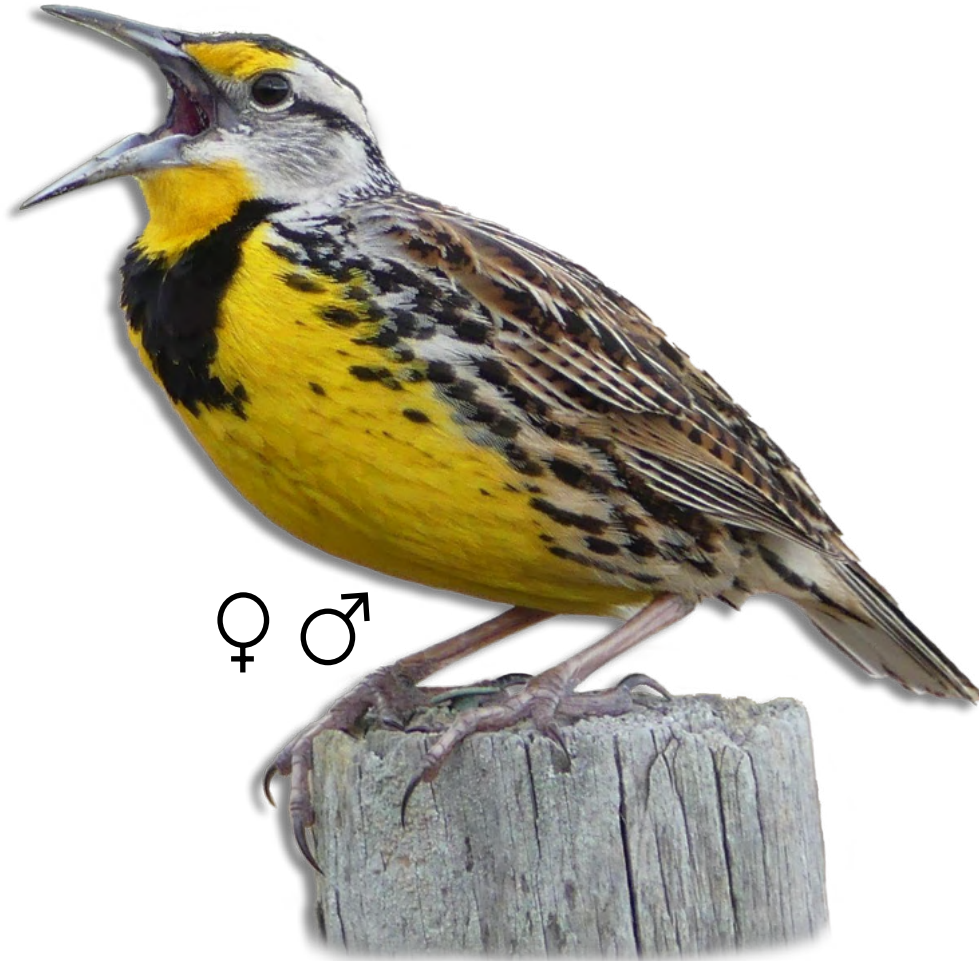


Photo by Shelley Rutkin

Fun Fact:

Meadowlark nests have a roof, creating a cave-like structure on the ground, making them nearly impossible to see from above.

Nesting Habitat



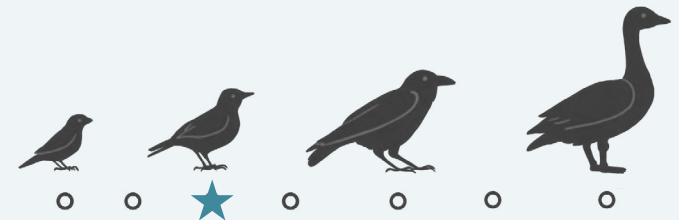
Diet



Conservation Status



Size



Presence & Breeding in Virginia

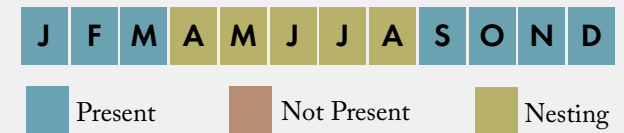




Photo by Percy Ulsamer

How To Identify This Species

Description: Medium-sized, round songbird with bright yellow belly and black V-shaped marking on the chest; long, slender bill; back is mottled brown and tan; outer tail feathers are white and easily seen in flight.

Behavior: Often seen conspicuously singing from fences or trees surrounding fields; outside of breeding season they congregate in small groups, usually remaining hidden on ground.

Foraging: Ground foragers; feeding occurs while walking on ground, occasionally using a probing action with their bill to catch invertebrates.



Photo by Bernadette Rigley

Nesting Information

Nesting location: Nests directly on the ground; rounded nest with opening facing the side; made of dead grasses and leaves; often hidden with a "roof" in medium to tall grasses.

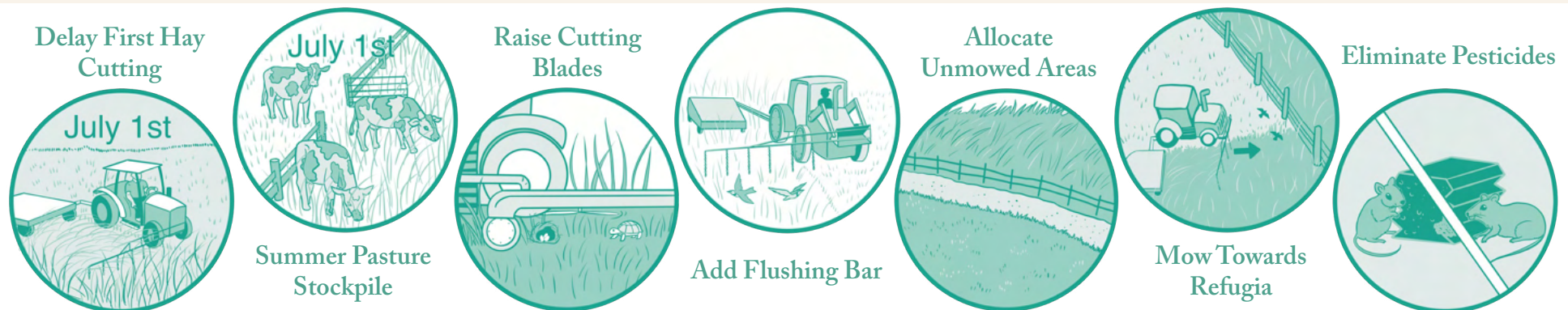
Number of eggs: 4-5 eggs

Incubation: Females incubate for 12-14 days.

Nestling period: 10-12 days in the nest; then walking on the ground until they are fully flight-capable at 21 days old.



Best Management Practices For This Species



BOBOLINK (*Dolichonyx oryzivorus*)



"Bubbling delirium of ecstatic music"

Photo by Scott Keys



Photo by Max McCarthy

Fun Fact:

Bobolinks have one of the longest migrations of any songbird, traveling up to 12,500 miles roundtrip each year from as far south as Argentina to as far north as Canada!

Nesting Habitat



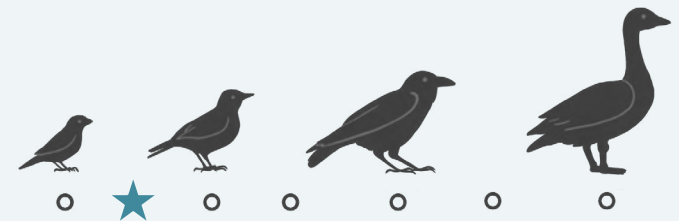
Diet



Conservation Status



Size



Presence & Breeding in Virginia





Photo by Amy Johnson

How To Identify This Species

Description: Medium-sized songbird with thick, conical bill; males are black with white highlights and a yellow patch on back of head; females are yellow-buffy below with a bold/buffy back, distinguishing them from the darker and more brown female Red-winged Blackbirds; during late summer, males molt into buffy plumage, resembling females.

Behavior: Males seen singing while perched or during conspicuous display flight, fluttering wings while singing; females often hidden among tall grass and vegetation; congregate in small to large flocks outside of the breeding season.

Foraging: Opportunistic foragers; hunt for invertebrates on the ground and also pluck seeds from the seed heads of grasses and forbs.



Photo by Bernadette Rigley

Nesting Information

Nesting location: Open-cup nests are constructed directly on the ground; woven from dead grasses and leaves and placed beneath large, flowering plants.

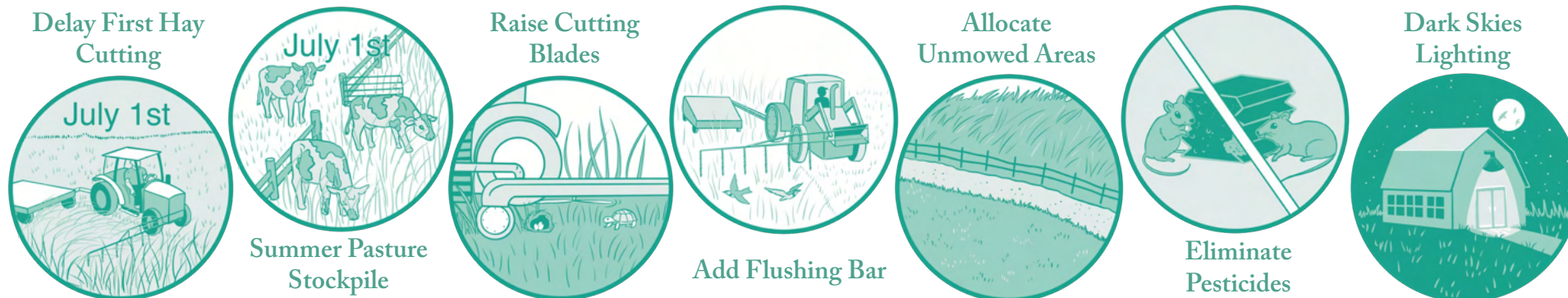
Number of eggs: 4-6 eggs

Incubation: Females incubate for 11-13 days.

Nestling period: 9-11 days in the nest; walking on ground until they are fully flight-capable at 16 days old.



Best Management Practices For This Species



GRASSHOPPER SPARROW (*Ammodramus savannarum*)



"Pi-tup-zeeeeeee!"



Photo by Scott Keys

Nesting Habitat



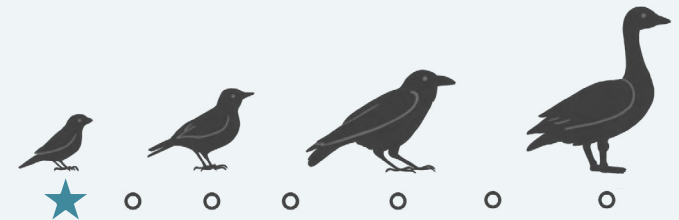
Diet



Conservation Status



Size



Presence & Breeding in Virginia



Fun Fact:

The Grasshopper Sparrow was named after the grasshopper-like quality of its song. Serendipitously, its preferred food was later discovered to be grasshoppers!



Photo by Christopher Rademacher

How to Identify This Species

Description: Small songbird with pale brown plumage; unstreaked below with rusty streaking on the back; both sexes have an orange-yellow stripe in front of the eye and a yellow tip occasionally visible on the wing edge; difficult to visually distinguish males from females.

Behavior: Heard more often than seen; spending most of their time on the ground hidden amidst vegetation; tend to walk rather than fly; males can be spotted singing, perched on tall, protruding vegetation and on fences adjacent to fields.

Foraging: Ground foragers that target insects, with a preference for grasshoppers.



Photo by Bernadette Rigley

Nesting Information

Nesting location: Nests are directly on the ground; made of grasses and typically dome-shaped, with the entrance facing the side.

Number of eggs: 4-5 eggs

Incubation: Females incubate for 11-13 days.

Nestling period: 8-9 days in the nest; then walk along the ground for a short period; capable of flight at 12-13 days old.



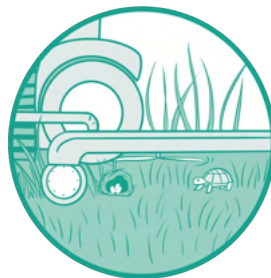
Best Management Practices For This Species



Delay First Hay Cutting



Summer Pasture Stockpile



Raise Cutting Blades



Add Flushing Bar



Eliminate Pesticides

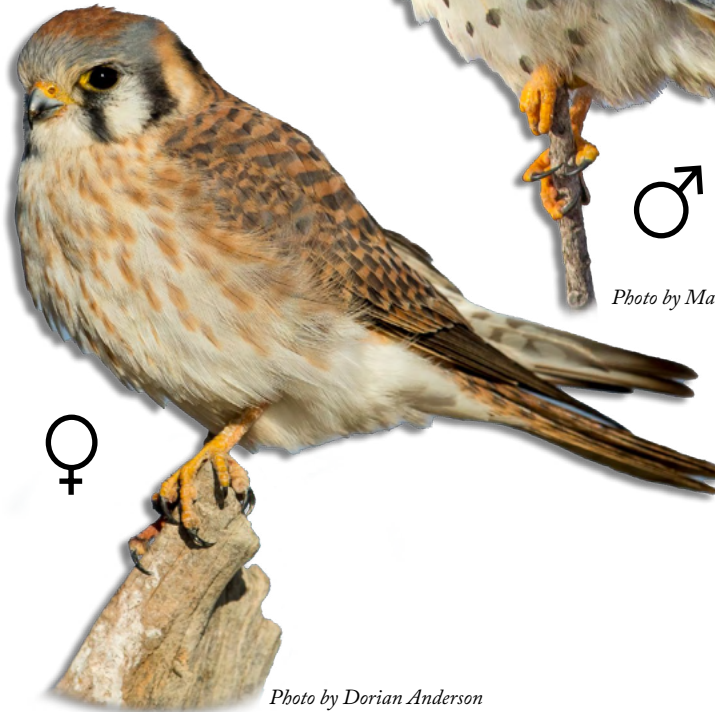


Keep Cats Indoors

AMERICAN KESTREL (*Falco sparverius*)



“Kily-kily-kily-kily”



Fun Fact:

American Kestrels are North America’s smallest falcon, weighing about the same as a deck of cards.

Nesting Habitat



Diet



Conservation Status



Size



Presence & Breeding in Virginia





Photo by Hugh Kenny



Photo by October Greenfield

How To Identify This Species

Description: Smallest falcon in North America with a size between that of an American Robin and a Crow; males have chestnut backs and slate grey wings; females have warm brown backs and wings with dark brown stripes (i.e., barred); both are light-colored below and have bold black markings on the face below the eyes and on the sides of the head.

Behavior: Often seen perching on telephone wires, nest boxes, snags, and in the middle of fields on isolated trees.

Foraging: Bird of prey that hunts from both perches and the sky; known to “hover” in place in the air (called “kiting”) while eyeing up prey that they then dive for; grab prey with one or both feet and bite the head and or neck to finalize the kill; may consume their meal where it was struck on the ground or fly to a perch and consume it there.

Nesting Information

Nesting location: Nests in cavities of dead or living trees on the edge of woodlands or tree “islands;” now more commonly found utilizing tall nest boxes placed in or next to grasslands and livestock pastures.

Number of eggs: 4-5 eggs

Incubation: Both parents help incubate, though females tend to incubate more, for 26-32 days.

Nestling period: 28-31 days in the nest until fledging, at which point they are flight-capable.



Best Management Practices For This Species



Summer Pasture Stockpile



Manage Fields in Patches



Cooperative Management



Allocate Unmowed Areas



Eliminate Pesticides



Install Nest Boxes

NORTHERN HARRIER (*Circus cyaneus*)



"Kek-kek-kek-kek"



Photo by Scott Keys



Photo by Scott Keys

Fun Fact:

Adult males have earned the nickname "gray ghosts" due to their gray plumage and sometimes eerie presence, suddenly appearing over a field as if out of nowhere.

Nesting Habitat



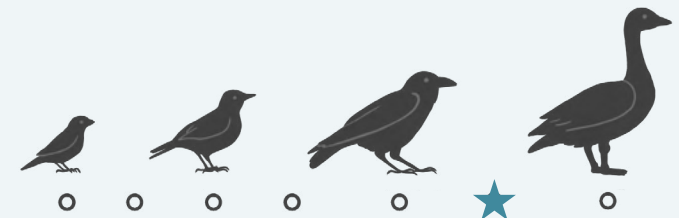
Diet



Conservation Status



Size



Presence & Breeding in Virginia





Photo by Scott Keys

How To Identify This Species

Description: Medium-size raptor with owl-like face and obvious white rump; males, also referred to as “gray ghosts,” are white below with grey back and black wingtips; females are pale below with streaky brown back.

Behavior: Flight pattern is graceful and low over open fields; often seen in gliding flight, but can also be seen perched on short posts in fields or in trees on field edges.

Foraging: Bird of prey that flies low to the ground while hunting, gliding back and forth over fields scanning for prey.



Photo by Nancy Stotz

Nesting Information

Nesting location: Nests are platform-shaped and located directly on the ground in open fields, shrublands, and wetlands; nests are lined with grasses and often found within patches of taller vegetation.

Number of eggs: 4-5 eggs

Incubation: Females incubate for 30-32 days.

Nestling period: About 14 days in the nest; then walk on the ground in surrounding vegetation, gradually using the nest less; capable of flight between 27-35 days old.



Best Management Practices For This Species



Add Flushing Bar



Allocate Unmowed Areas



Plant Natives



Overwintering Habitat



Eliminate Pesticides



Use Non-Lead Ammunition

LOGGERHEAD SHRIKE (*Lanius ludovicianus*)



"Hiccup-like chirp"



Photo by Joe Mabaffy

Nesting Habitat



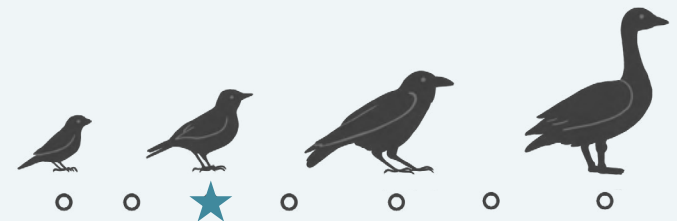
Diet



Conservation Status



Size



Presence & Breeding in Virginia



Fun Fact:

Known affectionately as the "Butcher Bird", Loggerhead Shrikes impale their prey on barbed wire fences, thorns, or other sharp edges to immobilize and kill it, often saving the impaled prey for later consumption.



Photo by Lisa Ware



Photo by Amy Johnson

How To Identify This Species

Description: Large-headed songbird with a black mask and thick hooked bill; white below and grey above, with black wings and tail; white patch on wings is visible in flight; often confused with Northern Mockingbirds from a distance; leave behind food caches — prey items “stored” on thorns or barbed wire.

Behavior: Perches on and sings from twigs and power lines at the interface of open and edge habitats; flight pattern is bullet-like.

Foraging: Bird of prey; searches from a perch or while flying, attacking the back of the neck and killing or paralyzing the prey, which is then impaled on sharp spines of plants or barbed wire.



Photo by Ryan O'Donnell

Nesting Information

Nesting location: Nests are typically found 1-2 meters off the ground; a thick, open-cup nest with soft lining material often found in trees with thorns, brush piles, or other woody plants; nest is hidden on branches or in the crotch of a tree below leaf cover.

Number of eggs: 4-6 eggs

Incubation: Females incubate for 15-17 days.

Nesting period: 17-20 days in the nest until fledging, at which point they are flight-capable.



Best Management Practices For This Species

Summer Pasture Stockpile



Manage Fields in Patches

Allocate Unmowed Areas



Stream Exclusion & Buffers

Edge & Shrub Habitat



Overwintering Habitat

Eliminate Pesticides



The Future of Virginia's Grassland Birds

How we manage our lands over the next several decades will determine the fates of our grassland bird species. Either we continue on our current trajectory and allow these birds to slip away, or we make a concerted effort to transition more fully toward regenerative landscaping and farming practices that will bring these birds — and the healthy, functional ecosystems they represent — back to our Virginia landscapes.

The latter option is a success story that many landowners, farmers, researchers, conservationists, nonprofits, land trusts, and state and federal agencies are working collaboratively to make a reality. This “all-hands-on-deck” approach is how we’re going to have a fighting chance. We need to provide farmers with easier access to technical assistance and robust cost-share programs. Simultaneously, farming communities need to pursue these opportunities to improve the long-term productivity and resiliency of Virginia farmland, in addition to the financial viability of their agricultural businesses.



Photo by Brooke McDonough

We are fortunate here in Virginia that so many different management practices can co-benefit farms and birds. Some are as simple as committing to not using rodenticides (e.g., bait blocks) on the landscape to avoid poisoning our birds of prey. Others may require more logistical preparation and support, such as installing exclusion fencing, water troughs, and a riparian buffer to protect a stream while simultaneously offering livestock cleaner, more reliable water across paddocks.

In some cases, you may be the first person in your community experimenting with one or more of these practices. However, more likely than not, there is someone nearby that has already explored some of these ideas, and could offer helpful insight on what has worked well in a local context. Learning from each other and being open to trying new practices will be the catalysts we need to make beneficial, tangible change on our Virginia landscapes.

The following pages highlight a suite of best management practices that have been locally vetted to truly make a difference when it comes to reversing the decline of our grassland birds. Not every practice will work for every operation, and that’s ok. But a concerted effort by everyone to try a few of these practices is how we will build the momentum needed to make large-scale change.

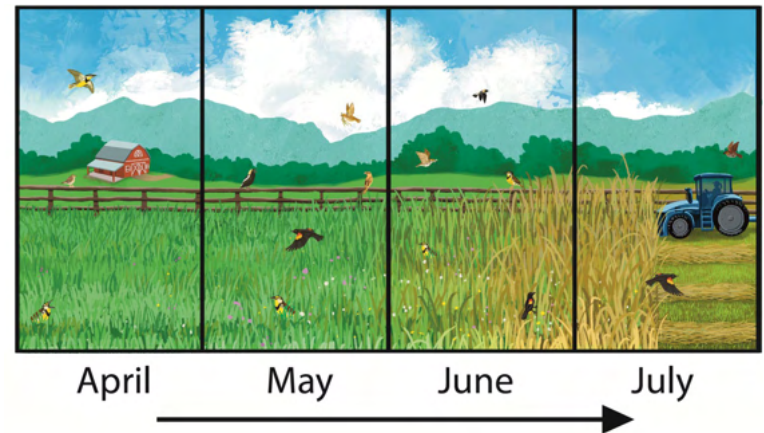
Best Management Practices (BMPs) For Grassland Birds

The following pages highlight some of the highest-impact ways to help conserve grassland birds in Virginia.



Delay the year's first cutting of hay

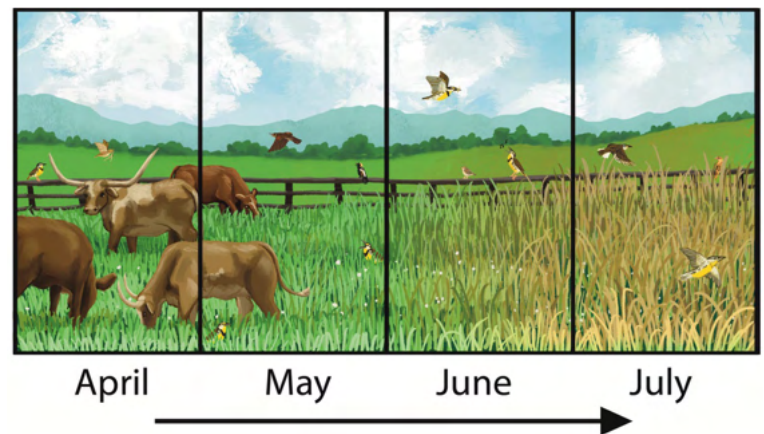
Local researchers have found that 80% of successful nests fledge by July 1st. Therefore, delaying the first spring hay cutting until July 1st in select fields can significantly boost nest success rates. The resulting higher-fiber, more mature hay produced in early July is suitable for many hay operations, including those that are producing forage for dry cows and retired animals, as well as for mushroom hay and bedding for animals.

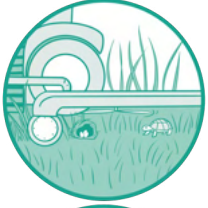


Summer pasture stockpiling

Local research has also shown that summer stockpiling forage (resting select pastures in the spring to then be grazed in late summer) produces critical nesting habitat for grassland birds on fields that are most attractive for nesting due to their size, shape, and types of forages present. Remaining pastures that are grazed during the spring and summer can then be rested in the fall for winter stockpile while livestock transition to grazing the summer stockpiled pastures. This practice of stockpiling select fields throughout the year extends the grazing season, reduces reliance on feeding hay, and thus reduces production costs.

It is important to note that summer stockpiling still allows for cattle to graze these pastures up until early May, to take advantage of early spring, high-protein forage.





Raise cutting blades

Raise machinery cutting blades to eight inches, or as high as possible, when cutting/clipping fields to avoid destroying grassland bird nests and injuring turtles. This practice is best intended for landowners and producers clipping livestock pastures or bush-hogging fields to maintain grassland habitat.



Add a flushing bar

Flushing bars (a horizontal bar with dangling chains) can be added to tractors when fields are hayed/mowed/clipped during the nesting season. This allows adult and recently fledged birds (as well as other wildlife, such as deer) an opportunity to escape before the cutting machinery passes through, ultimately reducing mortality.



Manage fields in patches

Managing only a few sections of a field at a time better replicates natural landscape disturbance and increases the diversity of plant structure. Managing in sections also ensures there is always available habitat on the landscape. A common approach is to divide fields into thirds and manage one-third each year.



Cooperative management

Some of the biggest conservation impact comes from working with neighbors to align management practices across property lines. Cooperative management builds out much larger tracts of functional habitat, while also fostering a greater sense of local community pride and stewardship.



Allocate unmowed areas

"No-mow" areas leave habitat available for grassland birds, pollinators, and other wildlife while mowing occurs in other areas. In the case of smaller landscapes, coordinate the staggering of mow dates with neighbors (see BMP above) to achieve the same impact.



Mow towards refugia

When mowing, allocate unmowed areas that the wildlife you disturb can flee into, and mow towards those areas so as to flush wildlife into an area that provides cover and food.



Avoid mowing at night

Wildlife is less capable of responding to disturbances at night, resulting in higher mortality. It's best to manage/disturb fields during daylight hours.

Stream exclusion and buffers



Streams and rivers are critical ecosystems for wildlife, and the health of those waterways is deeply intertwined with the health of the adjacent land. These waterways are a shared resource for entire communities, so the collective goal is to implement BMPs that ensure the water leaving one's property is cleaner than when it arrived. Removing livestock from a waterway and subsequently installing exclusion fencing and water troughs at key locations results in healthier livestock, more capacity for rotational grazing, and the opportunity to buffer that waterway with native grasses, shrubs, and trees. Those riparian buffers are unique habitats that produce food, shelter, and nesting structure for many bird species, and act as safe travel corridors across private lands for an even more diverse suite of wildlife.

Plant natives



Native warm season grasses can be used for livestock forage, hay, field buffers, or riparian buffers. These grasses are deep-rooted, resulting in higher drought resistance, increased carbon sequestration deeper in the ground, and increased organic material added to the soil. Meanwhile, native wildflowers should be integrated into any available habitats, including working fields, buffers, and riparian areas, to provide critical resources for pollinators.

Edge and shrub habitat



Diverse edges and patches of shrubs are some of the habitats that have seen the most decline, as landowners trend towards a “cleaner” aesthetic and as agriculture intensifies. The majority of wildlife we're aiming to protect require transitional habitats between field and forest, and also benefit from shrubby “islands” and/or fencerows, which can be achieved by planting patches of native flowering shrubs in fields and/or around field edges, hinge-cutting select trees (i.e., edge feathering), and/or reducing management in those areas to allow native plants to grow and establish wherever possible.

Remove non-native species



Invasive (i.e., non-native and aggressive) species outcompete our native plants, removing critical food resources and habitat from our landscapes. Invasives can be controlled with mechanical and chemical removal, and sometimes using more aggressive native plants as competition.

Provide overwintering habitat



We often focus on providing quality habitat during the nesting season, but winter is an equally important time to provide habitat and food. Time any management in the autumn months to allow for plant regrowth before the dormant winter season sets in. Additionally, plant trees and shrubs that naturally produce nuts, berries, and seeds later in the year to provide food during the colder months.

Prescribed fire



While once a natural, widespread, and necessary disturbance, small-scale fires on our landscapes have been largely suppressed, which has reduced the diversity of our plant communities. Prescribed (i.e., controlled) fires are an excellent management tool for restoring the health of our grassland and meadow ecosystems.



Eliminate the use of pesticides, including insecticides and rodenticides

Few, if any, pesticides solely target a single species without causing wider-spread damage. Birds rely heavily on insects for their diet, especially when raising young, so killing or poisoning insects can create a dire food limitation for birds. Bait blocks (poisons targeting mice and rats) should never be used whether they're placed inside or outside a house or barn. These poisons weaken rodents, causing them to become easier targets for our birds of prey, who then ingest the poisons.



Install nest boxes

Many cavity-nesting birds have become more cavity-limited as forest composition changes and dead trees are removed from landscapes. To counter this, leave dead trees (i.e., snags) standing whenever they don't pose a safety risk. These attract woodpeckers, which in turn create cavities for other birds to use. Additionally, artificial nest boxes can be added to your landscape to create safe nesting opportunities for dozens of species.



Keep all cats indoors

Free-roaming cats are one of the most significant threats to wildlife, killing millions of birds in the United States every year. By keeping cats indoors, you protect birds, small mammals, and amphibians from unnecessary predation while also safeguarding your pets from wildlife-related diseases, injuries, and road hazards. For effective pest control, fostering a diverse ecosystem — supported by the practices outlined in this booklet — can attract birds of prey, such as owls, which are far more effective at controlling small rodent populations than free-roaming cats.



Upgrade all outdoor lighting to be dark skies compliant

All outdoor lighting, whether around the home, barn, or roadside, should be downshielded. Downshielding increases the amount of light cast towards the ground where it is needed while reducing or eliminating light that is unnecessarily cast upwards, preserving the darkness of our night skies. This benefits everyone from star-gazers to migrating birds. Also switch outdoor “white” lights for amber-colored lights, which further reduce light pollution and protect our beneficial native insects.



Transition to non-lead ammunition

Lead ammunition often fragments inside of a carcass and is toxic to both humans and wildlife, setting the stage for unknowing consumption and poisoning. The ballistics of copper bullets are nearly identical to lead bullets, but copper does not fragment. Many major ammunition manufacturers now offer non-lead alternatives for most commonly used hunting calibers.



Volunteer as a community scientist

Volunteering with a local conservation organization is an excellent way to engage with nature in new ways, contribute to local research and outreach efforts, make new friends, share your own knowledge and skill sets, and help promote good land and water stewardship practices throughout your community.



Photo of Bobolink by Brooke McDonough

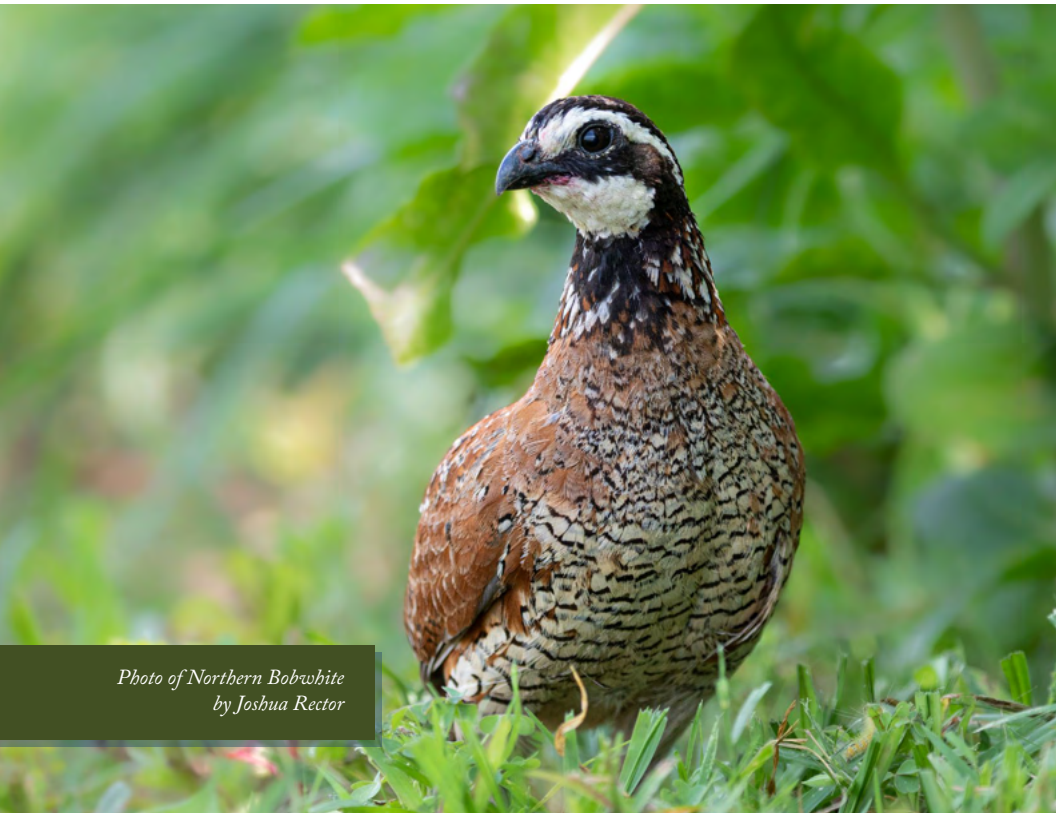


Photo of Northern Bobwhite by Joshua Rector



Photo of American Kestrel by Joshua Rector

Closing Statements

The intention of this booklet is to highlight an incredible group of birds that has, until recently, been largely overlooked. The first crucial step in addressing their decline is recognizing their reliance on our hayfields, livestock pastures, grasslands, and meadows. Next comes a renewed understanding that the presence, abundance, nesting success, and survival of these birds is closely linked to our efforts to work in harmony with the land, rather than against it.

Some may question why we should tailor our landscape management to benefit grassland birds. The primary goal isn't just to support these birds, but to use their presence as an indicator of Virginia's progress toward adopting more regenerative farming and land management practices. Protecting these birds is also crucial for the health of our grasslands, as they provide essential ecological services, including pest control, seed dispersal, pollination, and help balance a complex food web that supports a diverse range of wildlife.

With the majority of remaining grasslands in Virginia currently held in private hands and under agricultural use, the future of grasslands and grassland bird conservation depends heavily on the actions of landowners and producers. The Virginia Grassland Bird Initiative is here to help, as are a long list of state and federal agencies, land trusts, and conservation organizations. If we can continue to move this effort forward as a team, Virginia is primed to be a leader in the restoration of its grasslands and the return of its grassland birds.

Visit us at vagrasslandbirds.org for more information or to get involved.

Photo by Justin Proctor



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*Photo of Bobolink by Brooke
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