

Songbirds

Songbirds are an important part of our wildlife heritage. They consume great quantities of pest insects and weed seeds each year. Their aesthetic value is immeasurable. They enrich the lives of millions with their interesting habits, brilliant plumages, and beautiful songs. They also serve as excellent biological indicators of the health of our environment. This fact sheet describes the characteristics, history, habitat, and management of songbirds.

Physical Characteristics

Most songbirds have a breeding (nuptial) and a winter (alternate) plumage. Breeding plumages are brighter than winter plumages. They serve to attract a mate and aid in territory establishment and defense. Songbirds undergo a feather molt after the breeding season;

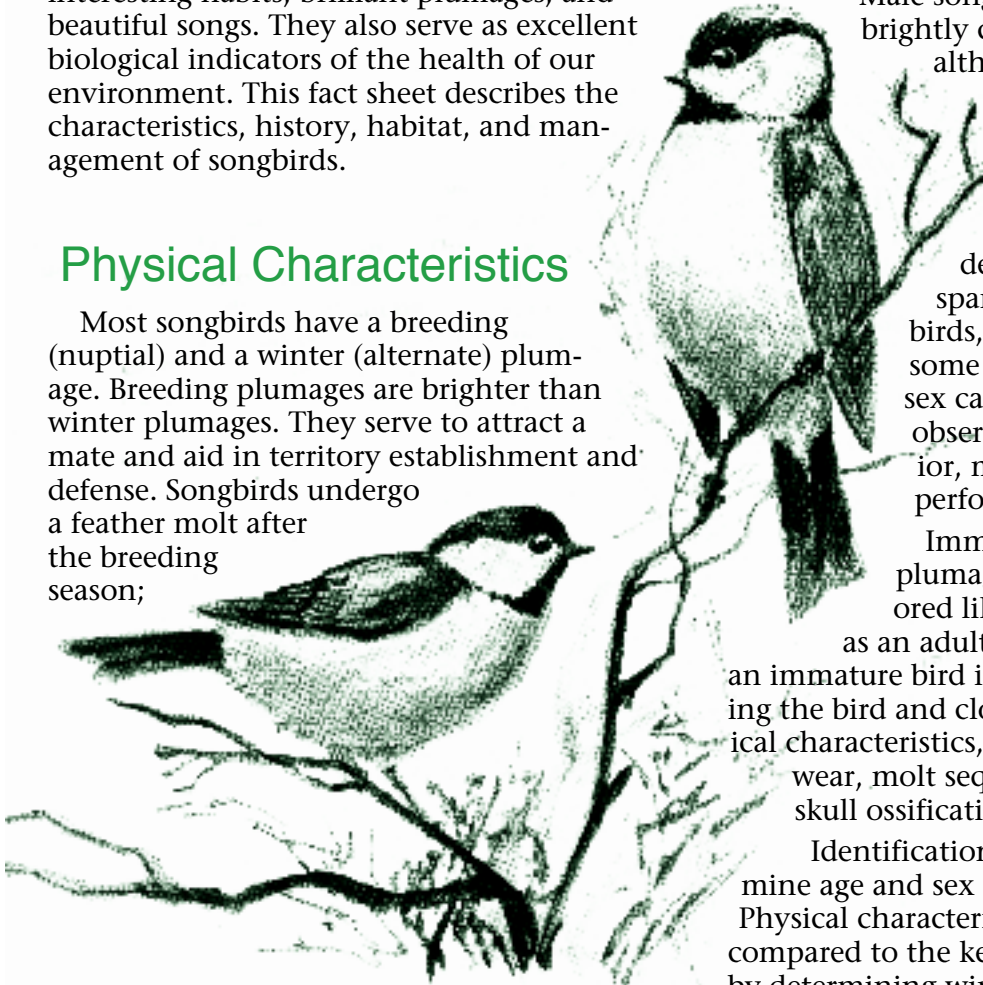
the bright feathers of summer are replaced by the drab feathers of winter. There is another molt just before the breeding season when the feathers again become brightly colored. The timing of molts varies according to species.

Male songbirds are generally more brightly colored than females

although in many species plumage is similar between the sexes, particularly among the flycatchers, vireos, shrikes, creepers, chickadees, titmice, crows, jays, sparrows, thrashers, mockingbirds, wrens, meadowlarks, and some swallows. In these species, sex can only be determined by observing reproductive behavior, measuring a captive bird, or performing a necropsy.

Immature songbirds may have plumage distinct from adults, colored like the female, or the same as an adult. Determining the age of an immature bird is difficult without capturing the bird and closely observing other physical characteristics, such as eye color, feather wear, molt sequence, or the degree of skull ossification.

Identification keys are used to determine age and sex in captive songbirds. Physical characteristics are measured and compared to the key. Birds often can be sexed by determining wing length and weight. Age determination categories are limited to



hatch year, after hatch year, second year, after second year, third year, and after third year. It should be noted that federal permits are required to capture or possess any native songbird, as stated in the Migratory Bird Treaty Act of 1918.

Abundance and Distribution

Songbirds in Maryland can be divided into four groups, based on residency: birds that breed here but winter farther south, birds that winter here but breed farther north, birds that pass through during migration, and birds that are permanent residents. (Refer to R.T. Peterson's *A Field Guide to the Birds* for breeding and wintering distributions of individual species.)

Taxonomically, songbirds belong in the order Passeriformes. More than 150 species from 17 different families breed, winter in, or migrate through the mid-Atlantic region. These include blackbirds, buntings, cardinals,

chickadees, creepers, crossbills, crows, finches, flycatchers, gnatcatchers, grosbeaks, jays, kinglets, larks, meadowlarks, mockingbirds, orioles, pipits, shrikes, sparrows, starlings, swallows, tanagers, thrashers, thrushes, titmice, towhees, vireos, waxwings, wood warblers, and wrens. Refer to Peterson's guide for a description of each species. Table 1 provides a brief description of some songbirds found in Maryland, and Figure 1 depicts several songbirds found in Maryland.

Population estimates of songbirds are derived from breeding bird surveys, breeding bird atlas projects, Christmas bird counts, and capture data from banding stations. Information from these sources indicates that many species, including grassland-dependent songbirds and many forest interior songbirds, are declining. Neotropical migrants (birds that migrate in winter to tropical regions of Central and South America) are declining at alarming rates. The reasons for these declines are not always known, but they include tropical deforestation, changing

Table 1. Descriptions of Some Songbirds in Maryland.

Species	Plumage	Body length (cm)	Incubation period (days)	Clutch size	Breeding season	Broods per year	Habitat category	Nest site	Primary food
Carolina wren	Rusty brown back, wings, and tail; buffy underside; white throat and eye stripe; sexes similar	14	14	4–8	March–September	1–3	Edge	Cavity	Insects
Northern parula	Gray-blue above with yellow-green upper back; two white wingbars; white eye ring broken by black eyeline; throat and breast bright yellow; belly white; male has red and black bands across breast	11	12	3–7	April–June	1	Forest interior	Tree (below canopy)	Insects
Eastern meadowlark	Upperparts dark and dusky; black V-shaped breast band on yellow underparts; white outer tail feathers; sexes similar	24	14	3–5	May–August	2	Grassland-dependent	Ground	Insects
Vesper sparrow	Brown above with chestnut shoulder patch; light streaked underparts; white eye ring; white outer tail feathers; sexes similar	16	13	3–6	April–August	2	Grassland-dependent	Ground	Seeds
Northern cardinal	Red overall; conspicuous crest; male has black face; female buffy olive with red wings, crest, and tail	22	13	2–5	April–August	2–4	Edge	Shrub	Seeds

agricultural practices, forest fragmentation, cowbird parasitism, predation, pesticides, and increasing urbanization. Habitat loss appears to be the major problem. Conversely, birds that respond well to disturbed habitats and increased forest edge are flourishing.

Life History of Songbirds

Songbirds have a variety of mating systems and reproductive strategies. They are primarily monogamous although in some species, such as the red-winged blackbird, the male breeds with more than one female (polygyny). Songbirds usually do not mate for life; instead, they select a new mate each breeding season.

The nesting season for songbirds in Maryland occurs between late winter and early fall, primarily from mid-May to mid-August. Specific environmental cues that trigger the onset of reproduction, such as day length, occur at distinct times for each species throughout this period.

In most songbird species, the males arrive on the breeding grounds in the spring before the females and begin to set up territories. When the females arrive, the males try to attract a mate with feather displays, sexual chases, and song.

Nest construction is part of the courtship ritual. Nest site selection varies with species. Songbirds may nest on or near the ground, in tree cavities, in burrows, in shrubs and trees, on cliffs, in buildings, or they may make no nest at all. Most are solitary nesters, requiring considerable space between their nest and that of another bird of the same species. Some—such as purple martins, Henslow's sparrows, blackbirds, and most swallows—nest in colonies.

Egg laying follows copulation and nest building. Clutch size varies with species—many songbirds lay three to six eggs per clutch. Most songbirds will re-nest if their first nest is destroyed, and some species raise more than one brood per year. Clutch size decreases through subsequent nesting attempts within the same breeding season.

Incubation does not begin until the last egg in the clutch is laid. Eggs are incubated for about 2 weeks, usually by the female although

the male incubates some of the time in some species. Some birds, such as the brown-headed cowbird, are brood parasites, laying their eggs in another bird's nest. The host bird incubates the eggs and raises the parasitic young at the expense of its own young.

Young are born naked or with a light covering of downy feathers and with their eyes closed. Both parents feed the young. The diet of nestling songbirds is primarily insect matter. Insects are high in protein, a major nutritional requirement of rapidly growing young birds. Soft fruits are also consumed when available.

Nestlings leave the nest (fledge) a few weeks after hatching. The male feeds the young for up to 5 weeks after fledging until they learn to fend for themselves while the female lays another clutch (in species that raise more than one brood per season). In some species, young from the first brood, known as "nest helpers," help raise subsequent broods. This phenomenon has been observed among jays, swallows, and bluebirds.

Mortality Factors

The mortality rate is high among songbirds: more than 75 percent of all young birds die within their first year. Major mortality factors are disease, weather, predation, and humans.

Songbirds are susceptible to a number of diseases, including avian cholera, botulism, avian tuberculosis, salmonellosis, chlamydiosis, avian pox, and aspergillosis. Some diseases may occur as epidemic outbreaks (epizootics), killing many birds. Nestlings also are weakened or killed by parasitic insects.

Extended periods of severe cold or rainy weather, particularly during winter and early spring, can cause widespread mortality and nest failure. Many birds also succumb during migration, an increasingly common occurrence because the chain of forests extending from the Temperate Zone to the tropics is fragmented or lost, and migrating birds have fewer safe resting and feeding areas.

Many songbirds are killed by predators, and the number is increasing as forests are fragmented. Developed lands surrounding forests often harbor large, uncontrolled populations of animals that prey on eggs and nestlings,

such as skunks, raccoons, and domestic cats and dogs.

Hunting is not a mortality factor among songbirds in the United States. Shooting songbirds has been illegal since the Migratory Bird Treaty Act was passed. However, humans are directly and indirectly a major mortality factor through nest disturbance, pesticide use, introduction of exotic pests, and destruction of habitat.

Habitat

Songbirds, like other wildlife, need four basic elements for survival: food, water, cover, and space. Each songbird species uses one or more specific habitats containing these elements along a continuum of habitat types from grasslands to old-growth forests and from riparian to upland sites.

For simplicity, we can categorize songbirds into three groups based on nesting habitat requirements: grassland-dependent species, forest interior species, and edge (or backyard) species. Grassland-dependent songbirds require large grassy areas with less than 35 percent shrub cover. Many species are sensitive to any tall woody vegetation beyond that needed for song perches. Eastern meadowlarks are an example of grassland-dependent birds. Forest interior species require relatively large forested tracts in which to breed successfully. Northern parulas (warblers) belong to this group. Backyard birds require edges, such as clumps of woody vegetation among grassy areas. Northern cardinals are an edge species.

Each category can be divided further into subcategories based on winter food requirements: seed eaters (granivores), insect eaters (insectivores), and fruit eaters (frugivores). Granivores rely on seeds during winter and early spring, but they shift to a primarily insect diet during summer and early fall. Field sparrows are an example of a granivorous grassland-dependent species. Insectivores have a seasonally restricted diet and thus must migrate to warmer climates when consistently low temperatures limit insect availability. The black-and-white warbler is a typical insectivorous forest interior bird. Frugivores are intermediate in their migratory behavior, depending on how specific their requirements are for fruit-bearing food species. If they eat

only certain fruits, they must migrate when fruits are no longer available. The northern mockingbird is a frugivorous edge species. These categories are important when managing for songbirds. It should be noted that many species feed on a wide array of food materials.

Cover requirements for songbirds include nesting cover, escape cover, and winter cover. Nesting cover includes areas in which to reproduce and raise young. Cover can be a hedgerow, a stand of trees, a shrubland, a brush pile, or a clump of standing herbaceous vegetation. Thick hedgerows and evergreens provide excellent cover from high winds and inclement weather. Additional habitat needs for some songbirds include an area of bare ground for dust bathing and elevated song perches for displaying and singing.

Managing Songbirds

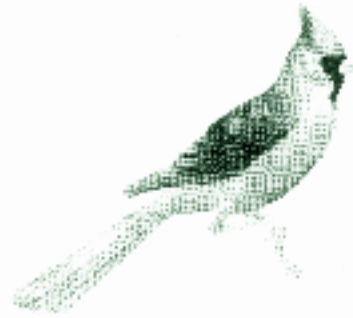
You can attract songbirds to your land whether you own a suburban lot, a small farm, or a large estate. The first step in managing any area for songbirds is to identify habitat elements that already exist, such as food-producing plants, dense shrubs for cover, and a source of water. Next, assess what you need to attract additional species.

Habitat diversity is the key to attracting a variety of songbirds. Attempt to provide a variety of vegetation to ensure that you will meet the year-round food, cover, and nest site requirements of many species. This could include providing food plants, herbaceous vegetation, shrubs and saplings, hedgerows, thickets, brush piles, water, nest boxes, and feeding stations. Create layers in the vegetation, from herbs at the lowest level to shrubs at the intermediate level to saplings and trees at the highest level. Maintain existing large forests; do not fragment them.

Place food, cover, and nest sites near each other. Many of the plants you can provide are ornamentals; thus, you can aesthetically enhance your property while attracting songbirds. A list of plants used by some common songbirds is provided in Table 2. Contact your local nursery to determine what plants are suitable for your area.



Yellow-bellied Sapsucker



Northern Cardinal



Northern Oriole



Eastern Meadowlark



Hooded Warbler



Blue jay



White-breasted Nuthatch

Figure 1. These are a few of the more common songbirds that breed, winter in, or migrate through Maryland.

Table 2. Plants Used by Common Songbirds for Food, Cover, and Nesting.

Plant	Bird												
	Bluebird Thrush	Bunting	Cardinal Grosbeak	Catbird Thrasher	Finch Siskin	Jay	Mocking- bird	Oriole Tanager	Robin	Sparrow Junco	Tit Nuthatch	Towhee	Waxwing
Ash			•	•	•				•				
Autumn olive	•	•	•	•	•		•		•	•	•	•	•
Bayberry	•		•	•			•			•			
Bittersweet	•	•	•	•			•		•				•
Blackberry	•	•	•	•	•	•	•	•	•	•	•	•	•
Blueberry	•	•	•	•	•	•	•	•	•	•	•	•	•
Cedar	•		•	•	•		•		•				•
Cherry	•		•	•	•	•	•	•	•	•	•	•	•
Crabapple	•		•	•	•	•	•	•	•	•	•	•	•
Dogwood	•		•	•	•	•	•	•	•	•	•	•	•
Elderberry	•		•	•	•	•	•	•	•	•	•	•	•
Grape	•	•	•	•	•	•	•	•	•	•	•	•	•
Hawthorn	•	•	•	•	•	•	•	•	•	•	•	•	•
Holly	•	•	•	•	•	•	•	•	•	•	•	•	•
Honeysuckle	•	•	•	•	•	•	•	•	•	•	•	•	•
Maple					•				•				
Millet		•	•		•	•			•	•	•	•	
Mulberry	•		•	•	•	•	•	•	•	•	•	•	•
Oak		•	•	•	•	•	•	•	•	•	•	•	•
Pine	•		•	•	•	•	•	•	•	•	•	•	•
Plum			•	•	•	•	•	•	•	•	•	•	
Pokeberry	•		•	•	•	•	•	•	•	•	•	•	•
Pyracantha	•	•	•	•	•	•	•	•	•	•	•	•	•
Rose	•		•	•	•	•	•	•	•	•	•	•	•
Sassafras	•		•	•	•	•	•	•	•	•	•	•	
Service- berry	•	•	•	•	•	•	•	•	•	•	•	•	•
Spicebush	•		•	•	•	•	•	•	•	•	•	•	
Spruce		•	•		•	•	•		•	•	•	•	•
Sumac	•		•	•	•	•	•	•	•	•	•	•	•
Sunflower		•	•		•	•	•		•	•	•	•	
Viburnum	•	•	•	•	•	•	•	•	•	•	•	•	•
Virginia creeper	•	•	•	•	•	•	•	•	•	•	•	•	•

Maintain areas of your land, either a section of your yard or a border around hayfields or croplands, in unmowed native grasses. These are important foraging and nesting areas for some songbirds. Plant these areas next to permanent cover, such as hedgerows on a farm or ornamental plantings of conifers in your backyard. Grass areas must be mowed a minimum of every 3 years to keep out shrubs.

Plant food plots of seed-producing plants, such as sunflower, lespedeza, and millet. These can be long, narrow strips on field or yard edges or scattered small plots intermixed with woody cover.

Leave dead trees standing (if they are not a safety hazard) to provide insect food and nest cavities. Nest sites are often limiting for cavity nesters. By also providing nest boxes, you can attract many of our cavity-nesting species, such as bluebirds. Nest boxes should have a predator guard if possible. Supplemental feeding stations can be provided and stocked with fruit, seeds, suet, and sugar water. These should always be placed near cover. Plans for nest boxes and feeders can be obtained from the wildlife office in your area and are often available through local gardening outlets.

If less common or rare species are your management objective, a different approach will be needed. For example, if you want to attract a rare grassland-dependent species, you will have to maintain large areas in warm- or cold-season grasses. If your management objective is to attract rare forest interior species, then large areas should be maintained in mature hardwood forests.

Adapted from:

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Fact Sheet 612	Canada Geese
Fact Sheet 613	Songbirds

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