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TABLE OF CONTENTS

Introduction **11**
Getting Started 12

Birding 101 **15**
Four Keys to Bird Identification 16
Using Field Marks to Identify Birds 28
Use Merlin to See the Possibilities 30
Tips for Beginning Bird Watchers 31
Listening to Birds 34
Photographing Birds 36
Digiscoping 38

Attracting Birds to Your Yard **41**
Birdscaping 42
Bird Feeders 44
Feeder Placement & Safety 46
Bird Food 47
Water Sources 51
Features of a Good Birdhouse 52

Getting Involved **57**
Citizen Science 58
eBird 59
Great Backyard Bird Count 62
Bird Academy 63
Project FeederWatch 64
NestWatch 66
Celebrate Urban Birds 67
Seven Simple Actions to Help Birds 68

Guide to Species **71**
Snow Goose 72 **GEESE • DUCKS**
Canada Goose 73
Wood Duck 74
Northern Shoveler 75
Gadwall 76
American Wigeon 77

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Mallard	78	**GEESE • DUCKS**
Mexican Duck	79	
Northern Pintail	80	
Canvasback	81	
Redhead	82	
Lesser Scaup	83	
Ruddy Duck	84	
Scaled Quail	85	**QUAIL • TURKEY • GROUSE**
California Quail	86	
Gambel's Quail	87	
Wild Turkey	88	
Greater Sage-Grouse	89	
Dusky Grouse	90	
Ring-necked Pheasant	91	
Pied-billed Grebe	92	**GREBES**
Eared Grebe	93	
Western Grebe	94	
Rock Pigeon	95	**PIGEONS • DOVES • CUCKOOS**
Band-tailed Pigeon	96	
Eurasian Collared-Dove	97	
Inca Dove	98	
Common Ground Dove	99	
White-winged Dove	100	
Mourning Dove	101	
Greater Roadrunner	102	
Yellow-billed Cuckoo	103	
Lesser Nighthawk	104	**NIGHTJARS**
Common Nighthawk	105	
Chimney Swift	106	**SWIFTS • HUMMINGBIRDS**
White-throated Swift	107	
Black-chinned Hummingbird	108	
Anna's Hummingbird	109	
Costa's Hummingbird	110	
Broad-tailed Hummingbird	111	
Calliope Hummingbird	112	
Rufous Hummingbird	113	
Sora	114	**RAILS • GALLINULES • COOTS**
Common Gallinule	115	
American Coot	116	
Sandhill Crane	117	**CRANES • STILTS**
Black-necked Stilt	118	

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Killdeer	119	**PLOVERS • SANDPIPERS**
Long-billed Curlew	120	
Western Sandpiper	121	
Spotted Sandpiper	122	
Willet	123	
Franklin's Gull	124	**GULLS • TERNS**
Ring-billed Gull	125	
California Gull	126	
Herring Gull	127	
Forster's Tern	128	
Neotropic Cormorant	129	**CORMORANTS • PELICANS**
Double-crested Cormorant	130	
American White Pelican	131	
Great Blue Heron	132	**HERONS • IBISES**
Great Egret	133	
Snowy Egret	134	
Cattle Egret	135	
Green Heron	136	
Black-crowned Night-Heron	137	
White-faced Ibis	138	
Black Vulture	139	**VULTURES**
Turkey Vulture	140	
Osprey	141	**KITES • HAWKS • EAGLES**
Golden Eagle	142	
Mississippi Kite	143	
Northern Harrier	144	
Cooper's Hawk	145	
Bald Eagle	146	
Harris's Hawk	147	
Swainson's Hawk	148	
Red-tailed Hawk	149	
Rough-legged Hawk	150	
Western Screech-Owl	151	**OWLS**
Great Horned Owl	152	
Burrowing Owl	153	
Belted Kingfisher	154	**KINGFISHERS**
Red-naped Sapsucker	155	**WOODPECKERS**
Red-headed Woodpecker	156	
Acorn Woodpecker	157	
Gila Woodpecker	158	
Downy Woodpecker	159	

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Ladder-backed Woodpecker	160	**WOODPECKERS**
Hairy Woodpecker	161	
Northern Flicker	162	
Gilded Flicker	163	
Crested Caracara	164	**FALCONS**
American Kestrel	165	
Peregrine Falcon	166	
Western Wood-Pewee	167	**TYRANT FLYCATCHERS**
Least Flycatcher	168	
Black Phoebe	169	
Say's Phoebe	170	
Vermilion Flycatcher	171	
Ash-throated Flycatcher	172	
Western Kingbird	173	
Eastern Kingbird	174	
Warbling Vireo	175	**VIREOS**
Loggerhead Shrike	176	**SHRIKES**
Northern Shrike	177	
Canada Jay	178	**JAYS • MAGPIES • CROWS**
Pinyon Jay	179	
Steller's Jay	180	
Blue Jay	181	
Woodhouse's Scrub-Jay	182	
Black-billed Magpie	183	
Clark's Nutcracker	184	
American Crow	185	
Common Raven	186	
Black-capped Chickadee	187	**CHICKADEES • TITMICE**
Mountain Chickadee	188	
Juniper Titmouse	189	
Verdin	190	**VERDINS**
Horned Lark	191	**LARKS**
Purple Martin	192	**SWALLOWS**
Tree Swallow	193	
Violet-green Swallow	194	
Barn Swallow	195	
Cliff Swallow	196	
Bushtit	197	**BUSHTITS**
Golden-crowned Kinglet	198	**KINGLETS**
Ruby-crowned Kinglet	199	
Red-breasted Nuthatch	200	**NUTHATCHES**

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White-breasted Nuthatch	201	**NUTHATCHES**
Pygmy Nuthatch	202	
Brown Creeper	203	**CREEPERS**
Blue-gray Gnatcatcher	204	**GNATCATCHERS**
Rock Wren	205	**WRENS**
Canyon Wren	206	
House Wren	207	
Bewick's Wren	208	
Cactus Wren	209	
American Dipper	210	**DIPPERS**
European Starling	211	**STARLINGS**
Gray Catbird	212	**CATBIRDS**
Curve-billed Thrasher	213	**THRASHERS • MOCKINGBIRDS**
Brown Thrasher	214	
Northern Mockingbird	215	
Eastern Bluebird	216	**THRUSHES**
Western Bluebird	217	
Mountain Bluebird	218	
Townsend's Solitaire	219	
Hermit Thrush	220	
American Robin	221	
Cedar Waxwing	222	**WAXWINGS**
Phainopepla	223	**SILKY-FLYCATCHERS**
House Sparrow	224	**OLD WORLD SPARROWS**
Evening Grosbeak	225	**FINCHES • CROSSBILLS**
House Finch	226	
Cassin's Finch	227	
Red Crossbill	228	
Pine Siskin	229	
Lesser Goldfinch	230	
Lawrence's Goldfinch	231	
American Goldfinch	232	
Black-throated Sparrow	233	**SPARROWS • JUNCOS • TOWHEES**
Lark Sparrow	234	
Lark Bunting	235	
Chipping Sparrow	236	
Brewer's Sparrow	237	
Fox Sparrow	238	
Dark-eyed Junco	239	
White-crowned Sparrow	240	
White-throated Sparrow	241	

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Savannah Sparrow 242 **SPARROWS • JUNCOS • TOWHEES**
Song Sparrow 243
Lincoln's Sparrow 244
Canyon Towhee 245
Abert's Towhee 246
Rufous-crowned Sparrow 247
Green-tailed Towhee 248
Spotted Towhee 249
Yellow-breasted Chat 250 **BLACKBIRDS • ORIOLES • GRACKLES**
Yellow-headed Blackbird 251
Western Meadowlark 252
Eastern Meadowlark (Lilian's) 253
Hooded Oriole 254
Bullock's Oriole 255
Red-winged Blackbird 256
Bronzed Cowbird 257
Brown-headed Cowbird 258
Brewer's Blackbird 259
Common Grackle 260
Great-tailed Grackle 261
Orange-crowned Warbler 262 **WOOD-WARBLERS**
Common Yellowthroat 263
Yellow Warbler 264
Yellow-rumped Warbler 265
Wilson's Warbler 266
Summer Tanager 267 **CARDINALS • GROSBEAKS • BUNTINGS**
Western Tanager 268
Northern Cardinal 269
Pyrrhuloxia 270
Black-headed Grosbeak 271
Blue Grosbeak 272
Lazuli Bunting 273
Indigo Bunting 274

Photo Credits 275
Index 279
Acknowledgments 283

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ATTRACTING BIRDS TO YOUR YARD

Cedar Waxwing © Jay McGowan/Macaulay Library

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BIRDSCAPING

You can watch birds anywhere.

American Goldfinch

Parks, nature preserves, and wildlife refuges provide some of the most diverse species, but the easiest place to watch birds is your own backyard. Enhancing your yard to attract and support birds is called "birdscaping."

Putting up a feeder is an easy way to attract birds. But if you'd prefer a more natural approach or you want to satisfy more than birds' nutritional needs, consider landscaping your yard—even just a part of it—to be more bird friendly. Even a small yard can provide vital habitat. The core concept is simple—all birds need three basic things from their habitats.

1 Food

Your birds can get food from feeders that you put up. Landscaping your yard to provide the fruit, seeds, beneficial insects, and other small animals that birds feed on adds natural food sources for birds, too.

2 Water

All living things need water to survive. Providing this habitat necessity is one of the quickest ways to attract birds to your property. If there is a water source in your yard, such as a pond, creek, birdbath, or even a puddle, you've probably noticed birds using it. If you don't have a water feature yet, a birdbath is an easy way to provide this habitat need.

3 Shelter

Whether it's protection from the elements, safe places to hide from predators, or secure locations to hide nests, providing shelter is one of the best ways to make your property bird-friendly.

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Improve Your Yard

Take a "bird's-eye" look at your backyard. Does it provide those things? If not, there are plants you can grow and many other ways you can enhance your yard to make it safe and inviting for birds. Here are some tips to help you:

1 Evaluate Your Yard

First, take stock of what you already have. Draw a map of your property including buildings, sidewalks, fences, trees, shrubs, feeders, and nest boxes. Note sunny or shady sites, low or wet areas, sandy sites, and plants you want to keep.

2 Start With a Plan

Before you start digging holes and rearranging your yard, develop a planting plan. Draw each new plant onto a piece of tracing paper, then place that over the map of your yard. Once your plants are in, use your map as a reminder about which ones need to be watered and weeded, especially in the first year after planting. Mulch is great for keeping moisture in and weeds out.

3 Think Variety

Try to include variety and year-round value in your planting plan. Look for places to include grasses, legumes, hummingbird flowers, plants that fruit in summer and fall, winter-persistent plants, and conifers for shelter. Plant native species instead of exotics, and look for places to create shelter with a brush pile or standing dead tree.

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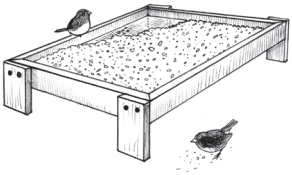
BIRD FEEDERS

Fifty million people in North America feed birds and it's a great way to attract birds to your backyard. But feeders are not one size fits all—different species are attracted to different designs. Here are the main types of feeders and the types of birds they attract.

Ground

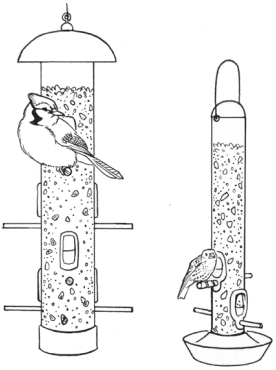


Many species of birds, including sparrows and doves, prefer to feed on large, flat surfaces and may not visit any type of elevated feeder. Song Sparrows and many towhee species, for instance, will rarely land on a feeder, but they will readily eat fallen seed from the ground beneath your feeders. To attract these species, try spreading seed on the ground or on a large surface such as the top of a picnic table. Ground feeders that sit low to the ground with mesh screens for good drainage can also be used. Make sure that there are no predators around, including outdoor cats.

Large and Small Hopper

A hopper feeder is a platform on which walls and a roof are built, forming a "hopper" that protects seed against the weather. Large hoppers attract most species of feeder birds and will allow larger species, such as doves and grackles, to feed. Small hoppers will attract smaller birds while preventing those larger species from comfortably perching and monopolizing the feeder.

Large and Small Tube



A tube feeder is a hollow cylinder, often made of plastic, with multiple feeding ports and perches. Tube feeders keep seed fairly dry. Feeders with short perches accommodate small birds such as finches but exclude larger birds such as grackles and jays. The size of the feeding ports varies as well, depending on the type of seed to be offered. Note that special smaller feeding ports are required for nyjer (thistle) seed to prevent spillage.

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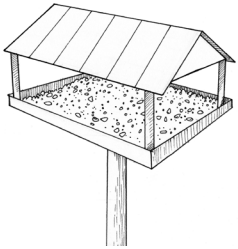
Sugar Water

Sugar-water feeders are specially made to dispense sugar water through small holes. Choose a feeder that is easy to take apart and clean, because the feeder should be washed or run through the dishwasher frequently.

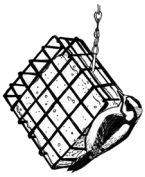
Platform

A platform feeder is any flat, raised surface onto which bird food is spread. The platform should have plenty of drainage holes to prevent water accumulation. A platform with a roof will help keep seeds dry. Trays attract most species of feeder birds. Placed near the ground, they are likely to attract juncos, doves, and sparrows.



Suet Cage

Suet or suet mixes can be placed in a specially made cage, tied to trees, or smeared into knotholes. Cages that are only open at the bottom tend to be starling-resistant but allow woodpeckers, nuthatches, and chickadees to feed by clinging upside down.

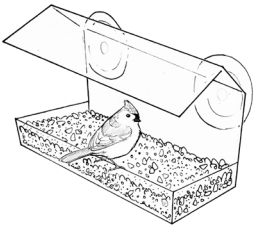


Thistle Sock

Thistle "socks" are fine-mesh bags to which birds cling to extract nyjer or thistle seeds. Seed within thistle socks can become quite wet with rain, so only use large ones during periods when you have enough finches to consume the contents in a few days.

Window Feeder

Small plastic feeders affixed to window glass with suction cups, and platform feeders hooked into window frames, attract finches, chickadees, titmice, and some sparrows. They afford wonderful, close-up views of birds, and their placement makes them the safest of all feeder types for preventing window collisions.



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FEEDER PLACEMENT & SAFETY

Place feeders in a quiet area where they are easy to see and convenient to refill. Place them close to natural cover, such as trees or shrubs. Evergreens are ideal, as they provide thick foliage that hides birds from predators and buffers winter winds. Be careful not to place feeders too close to trees with strong branches that can provide jump-off points for squirrels and cats. A distance of about 10 feet is a good compromise.

Hummingbird Feeders

Place hummingbird feeders in the shade if possible, as sugar solution spoils quickly in the sun. Don't use honey, artificial sweeteners, or food coloring. If bees or wasps become a problem, try moving the feeder.

Clean and refill hummingbird feeders every few days in a dishwasher or very hot water to prevent dangerous mold. Keep seed and suet feeders clean by washing them periodically in a dishwasher, with soap and very hot water, or with a diluted bleach or vinegar solution.

Window Strikes

Ornithologists estimate that up to ***one billion*** birds are killed by hitting windows in the United States and Canada each year. Placing feeders close to your windows (ideally closer than three feet) can help reduce this problem. When feeders are close, a bird leaving the feeder cannot gain enough momentum to do harm if it strikes the window.

You can prevent more window strikes by breaking up reflections of trees and open space, which birds perceive as a flight path through your home. Techniques include attaching streamers, suction-cup feeders, or decals to windows, crisscrossing branches within the window frames, or installing awnings or screens. Acopian Bird Savers are closely spaced ropes that hang down over windows. They do the work of tape or decals but are easier to install and can be aesthetically pleasing.

Another method is to attach netting to the outside of the window to buffer the impact. Deer netting (the kind used to keep deer from eating plants in your yard) works well, pulled taut to prevent any entanglements.

To learn more about window crashes, how to prevent them, and more specific solutions to this problem, visit ***https://tinyurl.com/preventing-window-crashes***.

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BIRD FOOD

Sunflower seeds attract the widest variety of birds and are the mainstay food used in most bird feeders. Other varieties of seed can help attract different types of birds to your feeders and yard and this section highlights many of them. When buying mixtures, note that those that contain red millet, oats, and other fillers are not attractive to most birds and can lead to a lot of waste.

Sunflower Seeds

There are two kinds of sunflower—black oil and striped. The black oil seeds ("oilers") have very thin shells, easy for virtually all seed-eating birds to crack open, and the kernels within have a high fat content, which is extremely valuable for most winter birds. Striped sunflower seeds have a thicker shell, much harder for House Sparrows and blackbirds to crack open. So, if you're inundated with species you'd rather not subsidize at your feeder, before you do anything else, try switching to striped sunflower. Sunflower in the shell can be offered in a wide variety of feeders, including trays, tube feeders, hoppers, and acrylic window feeders. Sunflower hearts and chips shouldn't be offered in tube feeders where moisture can collect. Since squirrels love sunflower seeds, be prepared to take steps to squirrel-proof your feeder if needed.

Safflower

Safflower has a thick shell, hard for some birds to crack open, but is a favorite among cardinals. Some grosbeak chickadees, doves, and native sparrows also eat it. According to some sources, House Sparrows, European Starlings, and squirrels don't like safflower, but in some areas they seem to have developed a taste for it. Cardinals and grosbeaks tend to prefer tray and hopper feeders, which ma these feeders a good choice for offering safflower.

Nyjer or Thistle

Small finches including American Goldfinches, Lesser Goldfinches, Indigo Buntings, Pine Siskins, and Common Redpolls often devour these tiny, black, needlelike seeds. As invasive thistle plants became a

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recognized problem in North America, suppliers shifted to a daisylike plant, known as *Guizotia abyssinica*, that produces a similar type of small, oily, rich seed. The plant is now known as niger or nyjer, and is imported from overseas. The seeds are heat-sterilized during importation to limit their chance of spreading invasively, while retaining their food value.

White Proso Millet

White millet is a favorite with ground-feeding birds including quails, native sparrows, doves, towhees, juncos, and cardinals. Unfortunately, it's also a favorite of House Sparrows, which are already subsidized by human activities and supported at unnaturally high population levels by current agricultural practices and habitat changes. When these species are present, you may want to stop offering millet; virtually all the birds that like it are equally attracted to black oil sunflower. Because white millet is so preferred by ground-feeding birds, scatter it on the ground or set low platform feeders with excellent drainage.

Shelled and Cracked Corn

Corn is eaten by grouse, pheasants, turkeys, quail, cardinals, grosbeaks, crows, ravens, jays, doves, ducks, cranes, and other species. Unfortunately, corn has two serious problems. First, it's a favorite of House Sparrows, starlings, geese, bears, raccoons, and deer. Second, corn is the bird food most likely to be contaminated with aflatoxins, which are extremely toxic even at low levels. Never buy corn in plastic bags, never allow it to get wet, never offer it in amounts that can't be consumed in a day during rainy or very humid weather, and be conscientious about raking up old corn. Never offer corn covered in a red dye. Corn should be offered in fairly small amounts at a time on tray feeders. Don't offer it in tube feeders that could harbor moisture.

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Peanuts

Peanuts are very popular with jays, crows, chickadees, titmice, woodpeckers, and many other species, but are also favored by squirrels, bears, raccoons, and other animals. Like corn, peanuts have a high likelihood of harboring aflatoxins, so must be kept dry and used up fairly quickly. Peanuts in the shell can be set out on platform feeders or right on a deck railing or windo feeder as a special treat for jays. If peanuts, peanut hearts, or mixtures of peanuts and other seeds are offered in tube feeders, make sure to change the seed frequently, especially during rainy or humid weather, and be sure to completely empty out and clean the tube every time you do so.

Milo or Sorghum

Milo is a favorite with many western ground-feeding birds. On Cornell Lab of Ornithology seed-preference tests, Steller's Jays, Curve-billed Thrashers, and Gambel's Quails preferred milo to sunflower. In another study, House Sparrows did not eat milo. Milo should be scattered on the ground or on low tray feeders.

Golden Millet, Red Millet, Flax, and Others

These seeds are often used as fillers in packaged birdseed mixes, but most birds shun them. Waste seed becomes a breeding ground for bacteria and fungus, contaminating fresh seed more quickly. Make sure to read the ingredients list on birdseed mixtures, avoiding those with these seeds. If a seed mix has a lot of small, re seeds, make sure they're milo or sorghum, not red millet.

Mealworms

Mealworms ae the larvae of the mealworm beetle, *Tenebrio molitor*, and they provide a high-protein treat for many birds. Some people provide live mealworms, while others prefer offering dried larvae. Birds such as chickadees, titmice, wrens, and nuthatches relish this fc and mealworms are one of the few food items that relia attracts bluebirds. Offer mealworms on a flat tray or in a specialized mealworm feeder.

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Fruit

Various fruits can prove quite attractive to many species of birds. Oranges cut in half will often attract orioles which will sip the juice and eat the flesh of the orange. Grapes and raisins are a favorite of many fruit-eating birds such as mockingbirds, catbirds, bluebirds, robins, and waxwings. You can also provide a dish of grape jelly for these species, but be sure to avoid jellies containing artificial ingredients like preservatives or sweeteners. Several species are also attracted to the dried seeds of fruits such as pumpkins or apples. Be sure to dispose of any fruit that becomes moldy because some molds create toxins that are harmful to birds.

Sugar Water or Nectar

To make nectar for hummingbirds, add one part table sugar to four parts boiling water and stir. A slightly more diluted mixture can be used for orioles (one part sugar to six parts water). You may want to use regular granulated white sugar rather than raw or cane sugar, which may contain additional ingredients that have unknown effects on hummingbirds. Allow the mixture to cool before filling the feeder. Store extra sugar water in the refrigerator for up to one week (after that it may become moldy, which is dangerous for birds). Adding red food coloring is unnecessary and possibly harmful to birds. Red portals on the feeder, or even a red ribbon tied on top, will attract the birds just as well.

Grit

Birds "chew" their food in the muscular part of their stomac' called the gizzard. To aid in the grinding, birds swallow small, hard materials such as sand, small pebbles, ground eggshells, and ground oyster shells. Grit, therefore, attracts many birds as a food supplement or even by itself. Oyster shells and eggshells have the added benefit of being a good source of calcium, something birds need during egg laying. If you decide to provide eggshells, be sure to sterilize them first. You can boil them for 10 minutes or heat them in an oven (20 minutes at 250°F). Let the eggshells cool, then crush them into pieces about the size of sunflower seeds. Offer the eggshell in a dish or low platform feeder.

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WATER SOURCES

Like all animals, birds need water to survive. Though they can extract some moisture from their food, most birds drink water every day. Birds also use water for bathing, to clean their feathers and remove parasites. After splashing around in a bath for a few minutes, a bird usually perches in a sunny spot and fluffs its feathers out to dry. Then it carefully preens each feather, adding a protective coating of oil secreted by a gland at the base of its tail.

Because birds need water for drinking and bathing, they are attracted to water just as they are to feeders. A dependable supply of fresh, clean water is very important. In fact, a birdbath may even bring in birds that don't eat seeds and won't visit your feeders otherwise. Providing water for birds can improve the quality of your backyard bird habitat and should provide you with a fantastic opportunity to observe bird behavior.

Blackburnian Warbler

Birds seem to prefer baths that are at ground level, but raised baths will attract birds as well and may make birds less vulnerable to predators. Change the water daily to keep it fresh and clean. You can also arrange a few branches or stones in the water so that birds can stand on them and drink without getting wet (this is particularly important in winter). Birdbaths should be only an inch or two deep, with a shallow slope.

One of the best ways to make your birdbath more attractive is to provide dripping water. You can buy a dripper or sprayer, or you can recycle an old bucket or plastic container by punching a tiny hole in the bottom, filling it with water, and hanging it above the birdbath so the water drips out. In freezing climates, a birdbath heater will keep ice from freezing. Don't add antifreeze; it is poisonous to all animals, including birds.

To learn more about birdbaths: ***https://tinyurl.com/learn-more-birdbaths.***

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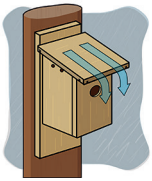
FEATURES OF A GOOD BIRDHOUSE

IT'S WELL CONSTRUCTED

Untreated Wood – Use untreated, unpainted wood, preferably cedar, pine, cypress, or for larger boxes (owls) non-pressure-treated CDX exterior grade plywood.

Galvanized Screws – Use galvanized screws for the best seal. Nails can loosen over time, allowing rain into the nest box. Screws are also easier to remove for repairs or maintenance. Do not use staples.

IT KEEPS BIRDS DRY



Sloped Roof – A sloped roof that overhangs the front by 2–4″ and the sides by 2″ will help keep out driving rain, while also thwarting predators. Add 1/4″-deep cuts under the roof on all three edges to serve as gutters that channel rain away from the box.

Recessed Floor – A recessed floor keeps the nest from getting wet and helps the box last longer. Recess the floor at least 1/4″ up from the bottom.

Drainage Holes – Add at least four drainage holes (3/8″ to 1/2″ diameter) to the floor to allow any water that enters the box to drain away. Alternatively, you can cut away the corners of the floorboard to create drainage holes.

IT HELPS REGULATE TEMPERATURE

Thick Walls – Walls should be at least 3/4″ thick to insulate the nest properly. (Note that boards sold as 1″ are actually 3/4″ thick.)

Ventilation Holes – For adequate ventilation, there should be two 5/8"-diameter holes on each of the side walls, near the top (four total).

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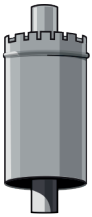
IT KEEPS OUT PREDATORS

No Perches – A perch is unnecessary for the birds and can actually help predators gain access to the box.

Types of Predator Guards – Although predators are a natural part of the environment, birdhouses are typically not as well concealed as natural nests and some predators can make a habit of raiding your boxes. Adding a baffle or guard helps keep nestlings and adults safe from climbing predators. Below are some time-tested options.

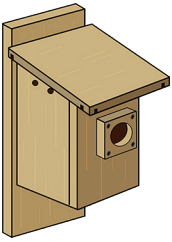
←Collar Baffle

A metal collar of about 3 feet in diameter surrounding the pole underneath the nest box.



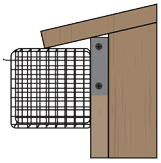
Stovepipe Baffle→

A more complex pole-mounted baffle. These baffles are generally 8″ in diameter and 24″–36″ long.



←Hole Guard

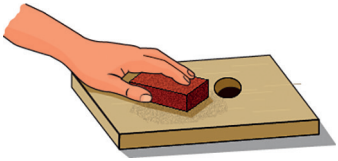
A wooden block over the entrance hole that extends the depth of the entrance hole. You can also use an entrance hole guard in combination with a pole-mounted baffle (preferred), or attach it to boxes installed on trees.



Noel Guard→

A wire mesh tube attached to the front of the nest box.

IT HELPS FLEDGLINGS LEAVE THE NEST



Rough Interior Walls – The interior wall below the entrance hole should be rough to help nestlings climb out of the box. For small boxes (wrens and chickadees), plain wood is usually rough enough, but you can roughen smooth boards with coarse sandpaper.

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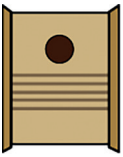
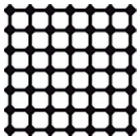


Interior Grooves – A series of shallow horizontal cuts, like a small ladder, works well in medium-sized boxes meant for swallows and bluebirds. Swallows, in particular, need a little help climbing out of boxes.



Duck Boxes – For duck boxes, staple a strip of 1/4"-mesh hardware cloth from floor to hole to help ducklings escape deep boxes.

IT HAS THE RIGHT ENTRANCE SIZE FOR THE RIGHT BIRD

By providing a properly sized entrance hole, you can attract desirable species to your birdhouses while excluding predators and unwanted occupants. Below are the requirements for entrance-hole size for some common species that nest in boxes.

HOLE SIZE	SPECIES
3"	Screech-owls, American Kestrel
2 1/2"	Northern Flicker
1 9/16"	Ash-throated Flycatcher, Great Crested Flycatcher, Mountain Bluebird
1 1/2"	Eastern Bluebird, Western Bluebird, Bewick's Wren, Carolina Wren
1 3/8"	White-breasted Nuthatch, Tree Swallow, Violet-green Swallow
1 1/4"	Prothonotary Warbler, Red-breasted Nuthatch, Tufted Titmouse
1 1/8"	House Wren, chickadees

IT MAKES PLACEMENT AND MAINTENANCE EASY

Extended Back
A few extra inches at the top and bottom of your birdhouse can make it easier to mount on a metal pole. Alternatively, you can predrill mounting holes in the back panel before assembly and use a short-handled screwdriver to install the box.

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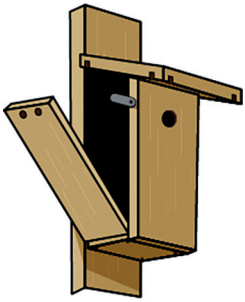


Hinged Door with a Sturdy Closing Mechanism

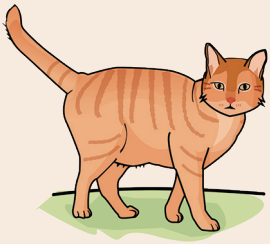
A hinged side gives you access for cleaning and monitoring your nest box, both of which are important for a successful nesting season. A latch or nail keeps the box securely closed until you are ready to open it.

COMMON NEST BOX PREDATORS

SNAKES – Many snakes are excellent climbers and can easily surmount an unguarded pole. Snakes most likely to climb into birdhouses are generally nonvenomous (such as racers and rat snakes) and helpful at controlling rodents. Avoid installing nest boxes next to brush piles or trees.

RACOOONS – Raccoons are intelligent and can remember nest box locations from year to year. They can be abundant in populated areas. Mount nest boxes on a metal pole equipped with a baffle; avoid mounting them on trees or fence posts.

CHIPMUNKS / MICE – Chipmunks and mice are both nest predators and competitors for nest boxes. To keep chipmunks and mice out, mount boxes away from trees on a metal pole equipped with a baffle.



CATS – Cats are excellent jumpers and can leap to the top of a nest box from a nearby tree or from the ground. Mount your box high enough and far enough from trees so cats cannot spring to the top of the box in a single leap. Keep pet cats indoors for their own safety and that of birds.

INTO DIY?

Visit ***nestwatch.org/birdhouses*** to get FREE downloadable nest-box plans.

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Marbled Godwit ©Luke Seitz/Macaulay Library

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GETTING INVOLVED

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CITIZEN SCIENCE

Each month, bird watchers report millions of bird observations to citizen-science projects at the Cornell Lab of Ornithology, contributing to the world's most dynamic and powerful source of information on birds.

The Cornell Lab of Ornithology has been at the forefront of citizen science since 1966. Today, the birding community can use our innovative online tools to tap into millions of records and see how their own sightings fit into the continental picture. Scientists can analyze the same data to reveal striking changes in the movements, distributions, and numbers of birds across time, and to determine how birds are affected by habitat loss, pollution, and disease.

If you enjoy watching birds, you can help and contribute to science, whether you are a beginner or a seasoned birder. Participating can take as little or as much time as you want—you decide!

There's a Project for Every Bird Watcher

Our fun and meaningful citizen-science projects enable people to watch birds at their favorite locations and share their sightings:

- **eBird** is a powerful tool for keeping track of your sightings and for exploring what others have seen—with global coverage and millions of sightings recorded per month for science and conservation.
- **Great Backyard Bird Count** is possibly the easiest project of all and the best one to start with—a global effort to count birds over one long weekend each February.
- **Project FeederWatch** is a winter project where you count birds at your feeders to help track bird populations and distributions.
- **NestWatch** asks you to report on the nests of birds breeding around you—training and best practices for visiting nests are provided.
- **Celebrate Urban Birds** combines art and science, and encourages participants in urban and rural settings to share their knowledge of local birds and culture.

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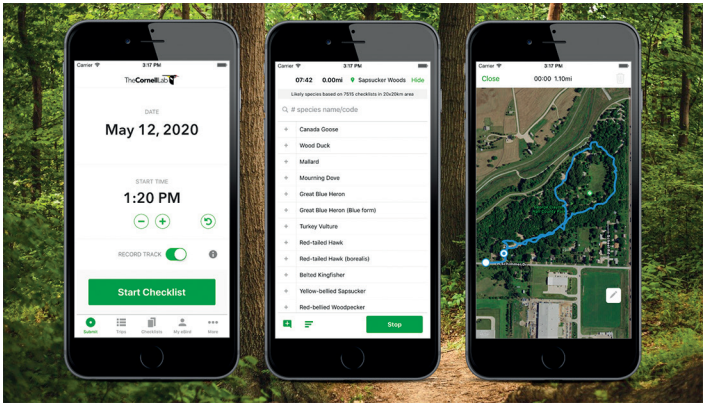
eBIRD

Since its inception in 2002, eBird has grown into one of the world's largest data sources about living things—thanks to birders contributing a billion or more sightings of birds.

eBird gives birders a convenient, free way to enter, store, and organize their sightings. And it makes those sightings available to others, turning it into a useful resource for studying or finding birds anywhere in the world. Not only that, your sightings power science and conservation, helping scientists identify which species are declining and where best to direct conservation efforts.

Use eBird to start or maintain your birding lists—or use it to find out where and when to go birding. It works all over the world and provides endless ideas about what to do and where to go next. And it's free.



eBird provides easy-to-use online tools for birders and critical data for science. With eBird, you can:

- Record the birds you encounter
- Keep track of birding activity and lists
- Learn where to find birds near you
- Share sightings with other birders
- Contribute to science and conservation

Record and Store Sightings in eBird

eBird allows you to easily record the birds you find. Simply enter when, where, and how you went birding, then fill out a checklist of all the birds you

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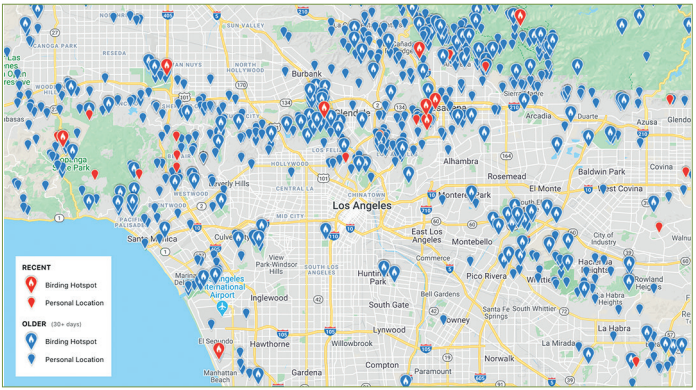
identified with confidence by sight or sound. A free mobile app allows you to create and share checklists faster than ever. Data quality filters check all submissions automatically and local experts review unusual records before they enter the database.

eBird automatically organizes your bird observations into local and national lists, year lists, and more. You can also add photos and sound recordings to your checklists, so you can share your experiences with friends while also powering Merlin Bird ID, an automatic bird identification tool that can help you build skills for better birding. All these features work in any country in the world and are available in many languages.

Explore Data and Learn with eBird

One of eBird's greatest strengths is its ability to show you where and when birds occur, using innovative visualization tools. These free tools are used annually by millions of birders, scientists, and conservationists worldwide. Here are a few:

- **Species Maps:** Choose a species, then explore a map of everywhere it has been reported. Filter the map by date or zoom in to anywhere in the world with pinpoint precision.



- **Photo and Sound Archive:** Each month, eBirders upload thousands of images and sounds. All of them are searchable in the Macaulay Library archive, so you can explore birds both familiar and new.
- **Explore a Region:** See the full species list, plus recent sightings, photo and audio recordings, best hotspots, and top birders for any county, state, province, or country. The Illustrated Checklist is a living field guide for any region!

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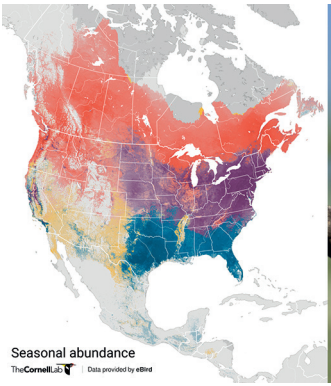
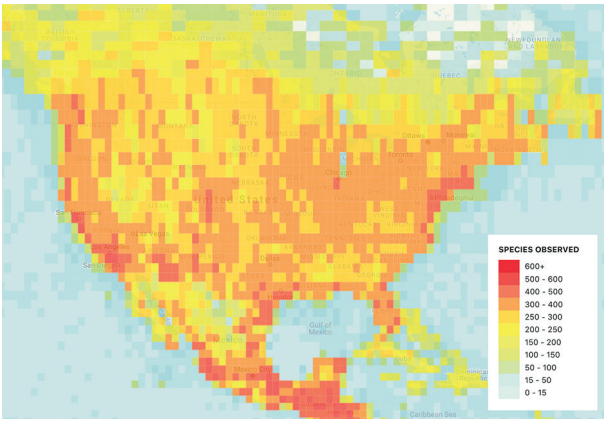
- **Seasonal Occurrence Graphs:** Create a customized species list for any region and season. This tool tells you which species to expect when; bars tell you how rare or common each bird is throughout the year.



Cedar Waxwing (*Bombycilla cedrorum*) © Brian Sullivan / Macaulay Library

- **Hotspot Explorer:** Use an interactive map to explore popular birding spots anywhere in the world—a great tool for travelers looking for local tips on where to go birding.



Your Sightings Support Science and Conservation

Every checklist you submit helps scientists better understand when and where birds occur, helping pinpoint where conservation is likely to have the greatest impact on bird populations. Your checklists also help scientists track the health of our bird populations; eBird data helps identify which species may be in trouble and in need of attention. Learn more about eBird and the birds recently seen in your area at ***eBird.org***.

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GREAT BACKYARD BIRD COUNT

In 1998, the annual four-day Great Backyard Bird Count (GBBC) began in the United States and Canada. It was the first citizen-science program to collect and display bird observation data online on a large scale. Today, the GBBC is one of the most popular annual events among bird watchers and has expanded to include the whole world. More than 200,000 people of all ages and walks of life take part. In 2020, 249,444 counts flooded in, recording a total of 6,942 species of birds—more than half of all bird species in the world!

Why Count Birds?

Scientists and bird enthusiasts can learn a lot by knowing where the birds are. No single scientist or team of scientists could hope to document and understand the complex distribution and movements of so many species in such a short time. Scientists use information from the GBBC, along with observations from other citizen-science projects, to see the big picture about what is happening to bird populations. You can help scientists investigate far-reaching questions, such as these:

- How does weather and climate change influence bird populations?
- Some birds appear in large numbers during some years but not others. Where are these species from year to year, and what can we learn from these patterns?
- How does the timing of bird migrations compare across years?
- What kinds of differences in bird diversity are apparent in cities versus suburban, rural, and natural areas?

Why Is the GBBC in February?

Originally the GBBC was held in the U.S. and Canada each February to create a snapshot of the distribution of birds just before spring migrations ramped up in March. Scientists at the Cornell Lab of Ornithology, National Audubon Society, Birds Canada, and elsewhere can combine this information with data from surveys conducted at different times of the year. In 2013, the count went global, creating snapshots of birds wherever they are in February, regardless of seasons across the hemispheres.

How to Participate

We invite you to participate! Visit ***birdcount.org*** to find out when the next GBBC is happening (it falls in February during the U.S. Presidents' Day weekend). If you're new to citizen science, you'll need to register for a free online account to enter your checklist counts. If you have already participated

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in another Cornell Lab citizen-science project, you can use that login information for GBBC.

Once registered, simply tally the numbers and kinds of birds you see for at least 15 minutes on one or more days of the count every February. You can count from any location, anywhere in the world, for as long as you wish. During the count, you can explore what others are seeing in your area or around the world.

To learn more and participate in the Great Backyard Bird Count, visit ***birdcount.org***.

The Great Backyard Bird Count is led by the Cornell Lab of Ornithology and National Audubon Society, with Birds Canada and many international partners. The Great Backyard Bird Count is powered by eBird.

BIRD ACADEMY

Whether you're newly curious about the bird songs in your backyard, an avid birder with a life list to tend, or a budding ornithologist, Bird Academy has a course for every bird enthusiast.

Bird Academy courses are entirely online. You can learn at your own pace, return to the material as often as you wish, and there is no deadline to complete them. Take advantage of exclusive learning tools and friendly video tutorials created by our team of expert birders, ornithologists, and educational designers. *The Wonderful World of Owls*, *How to Identify Bird Songs*, *Nature Journaling and Field Sketching*, *Understanding Bird Behavior*, and *Sparrow Identification* are just a few of the courses on offer.

To find out more, visit ***Academy.AllAboutBirds.org.***

Barn Owl

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PROJECT FEEDERWATCH

Northern Cardinal

Project FeederWatch is a survey of birds that visit feeders in backyards, nature centers, community areas, and other locales in North America. Each year, tens of thousands of people participate in Project FeederWatch. Annually, FeederWatchers report more than 7 million birds, providing valuable data for monitoring changes in the distribution and abundance of backyard birds. Participants gain from the rewarding experience of learning about birds at their feeders and contributing their own observations to reveal larger patterns in bird populations across the continent.

Why Are FeederWatch Data Important?

With each season, FeederWatch increases in importance as a unique tool to monitor bird species in North America. What sets FeederWatch apart from other monitoring programs is the detailed picture that FeederWatch data provide about weekly changes in bird distribution and abundance. Because participants count and identify all their birds multiple times from the same location, FeederWatch data are extremely powerful for detecting gradual changes in bird populations and ranges through time. FeederWatch data tell us where birds are as well as where they are not, which enables people to piece together accurate population maps. Finally, FeederWatch data provide information on a spatial and temporal scale that could not be collected by any other method than through the efforts of many participants over many years.

How Are FeederWatch Data Used?

The massive amounts of data collected by FeederWatchers across the continent help people understand:

- Long-term trends in bird distribution and abundance
- Invasive species dynamics continent-wide
- Behavioral interactions of birds at feeders
- The timing and extent of winter irruptions of winter finches and other species

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- Expansions or contractions in ranges of feeder birds
- How supplementary food and backyard habitat affect birds
- How disease is spread among birds that visit feeders

How to Participate

Anyone interested in birds can participate, including people of all skill levels and backgrounds. FeederWatch is a great project for children, families, individuals, classrooms, retirees, youth groups, nature centers, and bird clubs. You can count birds as often as every week, or as infrequently as you like—the schedule is very flexible. All you need is a bird feeder, birdbath, or plantings that attract birds.

Participants submit their counts using the FeederWatch mobile app or website (***FeederWatch.org***) and have access to a variety of digital resources including detailed counting instructions; information about birds and bird feeding; tools to explore personal and continental data; Winter Bird Highlights, FeederWatch's year-end report; and the digital version of Living Bird, the Cornell Lab's award-winning magazine. There is a small annual participation fee for U.S. residents, and Canadians can join by making a donation of any size to Birds Canada. The participation fee covers staff support, web design, data analysis, and the year-end report. Without the support of our participants, this project wouldn't be possible.

To learn more about Project FeederWatch, visit ***FeederWatch.org***.

Project FeederWatch is operated by the Cornell Lab of Ornithology and Birds Canada.

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NESTWATCH

NestWatch is a nationwide monitoring program designed to track status and trends in the reproductive biology of birds, including when nesting occurs, how many eggs are laid, how many hatch, and how many young survive. The database is used to study the current condition of breeding bird populations and how they may be changing over time.

Nest of a Song Sparrow.

By finding and monitoring bird nests, NestWatch participants help scientists track the breeding success of birds across North America. Participants witness fascinating behaviors of birds at the nest, and collect information on the location, habitat, species, number of eggs, and number of young. Launched in 2007 with funding from the National Science Foundation, NestWatch has collected more than 400,000 nesting records. Combined with historic data, this information will help scientists address how birds are affected by large-scale changes such as global climate change, urbanization, and land conversion.

How to Participate

Participating in NestWatch is free and just about anyone can do it (children should always be accompanied by an adult when observing bird nests). Simply follow the directions on the website to become a certified NestWatcher, find a bird nest using the helpful tips, visit the nest every 3–4 days to record what you see, and then report this information on the website, or use the mobile app. Your observations will be added to those of thousands of other NestWatchers in a continually growing database used by researchers to understand and study birds. While you contribute extremely valuable information to science, you will also learn firsthand about the breeding behaviors of birds.

To learn more about NestWatch, visit ***NestWatch.org***.
Download the mobile app on Google Play or the App Store.

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CELEBRATE URBAN BIRDS

Celebrate Urban Birds is a year-round project developed by the Cornell Lab for people in cities, suburbs, and rural areas. It is an easy, fun project for the entire family; no prior knowledge of birds is required, and your data will help scientists understand how birds use green spaces in cities. Since 2007, Celebrate Urban Birds has partnered with 11,000 community organizations and distributed 400,000 educational kits. Educational materials and online trainings are offered in both English and Spanish.

How to Participate

1. Visit ***CelebrateUrbanBirds.org*** and click "Get Started Now."
2. Learn to identify 16 focal species. You can get additional species lists online at ***CelebrateUrbanBirds.org/regional***.
3. Pick a place to watch birds in an area that is 50 feet by 50 feet (the size of half a basketball court).
4. Spend 10 minutes watching birds in the selected area.
5. Repeat observations three times in the same area in one month.
6. Share data online or send to the Cornell Lab by mail.

Every year Celebrate Urban Birds awards dozens of mini-grants to community organizations, including Alzheimer's support groups, youth clubs, oncology centers, businesses, and rehabilitation centers throughout the Americas to lead community activities focused on birds, greening, and the arts. Any community-based organization, especially those led by minoritized communities, are encouraged to apply for a grant. Visit ***CelebrateUrbanBirds.org*** to order educational materials, apply for a community grant, or find hundreds of fun, creative activities that involve the arts, greening, and birds for people of all ages.

To learn more about CUBs, visit ***CelebrateUrbanBirds.org***.

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SEVEN SIMPLE ACTIONS TO HELP BIRDS

In 2019, scientists documented North America's staggering loss of nearly three billion breeding birds since 1970. Helping birds can be as simple as making changes to everyday habits.

1 Make Windows Safer, Day and Night

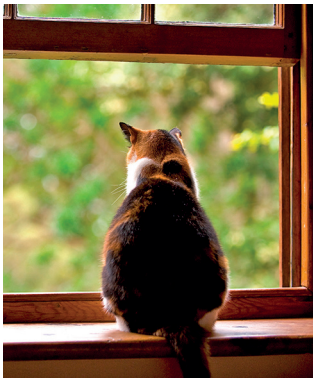
The challenge: Up to one billion birds are estimated to die each year after hitting windows in the United States and Canada.

The cause: By day, birds perceive glass reflections in glass as habitat they can fly into. By night, migratory birds drawn in by city lights are at high risk of colliding with buildings.

These simple steps save birds: On the outside of the window, install screens or break up reflections using film, paint, Acopian BirdSavers or other string spaced no more than two inches high or four inches wide.

2 Keep Cats Indoors

The challenge: Cats are estimated to kill more than 2.6 billion birds annually in the U.S. and Canada. This is the #1 human-caused reason for the loss of birds, aside from habitat loss.



The cause: Cats can make great pets, but more than 110 million feral and pet cats now roam in the United States and Canada. These nonnative predators instinctively hunt and kill birds even when well fed.

A solution that's good for cats and birds: Save birds and keep cats healthy by keeping cats indoors or creating an outdoor "catio." You can also train your cat to walk on a leash.

3 Reduce Lawn, Plant Natives

The challenge: Birds have fewer places to safely rest during migration and to raise their young: More than 10 million acres of land in the United States were converted to developed land from 1982 to 1997.

The cause: Lawns and pavement don't offer enough food or shelter for many birds and other wildlife. With more than 40 million acres of lawn in the U.S. alone, there's huge potential to support wildlife by replacing lawns with native plantings.

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Add native plants, watch birds come in: Native plants add interest and beauty to your yard and neighborhood, and provide shelter and nesting areas for birds. The nectar, seeds, berries, and insects will sustain birds and diverse wildlife.

4 Avoid Pesticides

The challenge: More than one billion pounds of pesticides are applied in the United States each year. The continent's most widely used insecticides, called neonicotinoids or "neonics," are lethal to birds and to the insects that birds consume. Common weed killers used around homes, such as 2, 4-D and glyphosate (used in Roundup), can be toxic to wildlife, and glyphosate has been declared a probable human carcinogen.

The cause: Pesticides that are toxic to birds can harm them directly through contact, or if they eat contaminated seeds or prey. Pesticides can also harm birds indirectly by reducing the number of available insects, which birds need to survive.

Orange-crowned Warbler

A healthy choice for you, your family, and birds: Consider purchasing organic food. Nearly 70% of produce sold in the U.S. contains pesticides. Reduce pesticides around your home and garden.

5 Drink Coffee That's Good for Birds

The challenge: Three-quarters of the world's coffee farms grow their plants in the sun (source), destroying forests that birds and other wildlife need for food and shelter. Sun-grown coffee also often requires using environmentally harmful pesticides and fertilizers. On the other hand, shade-grown coffee preserves a forest canopy that helps migratory birds survive the winter.

The cause: Too few consumers are aware of the problems of sun coffee. Those who are aware may be reluctant to pay more for environmentally sustainable coffee.

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Enjoy shade-grown coffee: It's a win-win-win: it's delicious, economically beneficial to coffee farmers, and helps more than 42 species of North American migratory songbirds, including orioles, warblers, and thrushes, that winter in coffee plantations.

6 Protect Our Planet from Plastics

The challenge: It's estimated that 4,900 million metric tons of plastic have accumulated in landfills and in our environment worldwide, polluting our oceans and harming wildlife such as seabirds, whales, and turtles that mistakenly eat plastic, or become entangled in it.

The cause: Plastic takes more than 400 years to degrade, and 91% of plastics created are not recycled. Studies show that at least 80 seabird species ingest plastic, mistaking it for food. Cigarette lighters, toothbrushes, and other trash have been found in the stomachs of dead albatrosses.

Reduce your plastics: Avoid single-use plastics including bags, bottles, wraps, and disposable utensils. It's far better to choose reusable items, but if you do have disposable plastic, be sure to recycle it.

7 Watch Birds, Share What You See

The challenge: The world's most abundant bird, the Passenger Pigeon, went extinct, and people didn't realize how quickly it was vanishing until it was too late. Monitoring birds is essential to help protect them, but tracking the health of the world's 10,000 bird species is an immense challenge.

The cause: To understand how birds are faring, scientists need hundreds of thousands of people to report what they're seeing in backyards, neighborhoods, and wild places around the world. Without this information, scientists will not have enough timely data to show where and when birds are declining around the world.

Enjoy birds while helping science and conservation: Join a project such as eBird, Project FeederWatch, Breeding Bird Survey, or the International Shorebird Survey to record your bird observations. Your contributions will provide valuable information to show where birds are thriving—and where they need our help.

If you don't yet know how to use eBird, we have a free course to help you get the most out of the project and its tools: ***https://academy.allaboutbirds.org/product/ebird-essentials/.***

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SNOW GOOSE *(Anser caerulescens)*

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JUVENILE (WHITE MORPH)

ADULTS (WHITE MORPH)

IMMATURE (DARK MORPH)

ADULT (DARK MORPH)

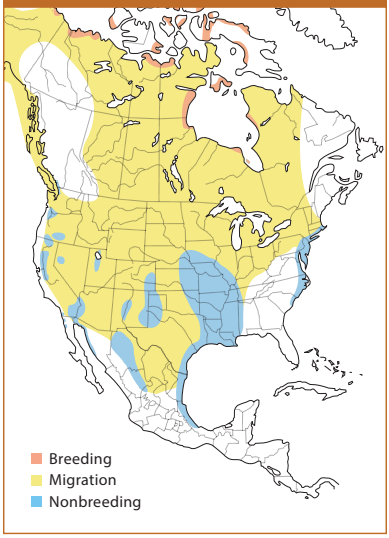
SIZE & SHAPE A medium-sized goose with a hefty bill and long, thick neck. Juveniles are slightly smaller than adults in the fall, and this can be noticeable in flocks during fall and early winter.

COLOR PATTERN The white morph of the Snow Goose is white with black wingtips that are barely visible on the ground but more noticeable in flight. You may also see a dark morph Snow Goose, or "Blue Goose," with a white face, dark brown body, and white under the tail.

BEHAVIOR Snow Geese don't like to travel alone and can form flocks of several hundred thousand. Family groups forage together on wintering grounds, digging up roots and tubers from muddy fields and marshes. In flight, they are steady on the wing with even wingbeats.

HABITAT Snow Geese use agricultural fields, which is one reason their populations are doing so well. During winter and migration, look for them in plowed cornfields, wetlands, lakes, ponds, and marshes where they roost and bathe along shorelines and in open water.

RANGE MAP



Watching huge flocks of **Snow Geese** swirl down from the sky, amid a cacophony of honking, is a little like standing inside a snow globe. These loud, white-and-black geese can cover the ground in a snowy blanket as they eat their way across fallow cornfields or wetlands.

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INDEX

A

Accipiter cooperii, 145
Actitis macularius, 122
Aechmophorus occidentalis, 94
Aeronautes saxatalis, 107
Agelaius phoeniceus, 256
Aimophila ruficeps, 247
Aix sponsa, 74
Amphispiza bilineata, 233
Anas
  acuta, 80
  diazi, 79
  platyrhynchos, 78
Anser caerulescens, 72
Antigone canadensis, 117
Aphelocoma woodhouseii, 182
Aquila chrysaetos, 142
Archilochus alexandri, 108
Ardea
  alba, 133
  herodias, 132
Athene cunicularia, 153
Auriparus flaviceps, 190
Aythya
  affinis, 83
  americana, 82
  valisineria, 81

B

Baeolophus ridgwayi, 189
Blackbird,
  Brewer's, 259
  Red-winged, 256
  Yellow-headed, 251
Bluebird,
  Eastern, 216
  Mountain, 218
  Western, 217
Bombycilla cedrorum, 222
Branta canadensis, 73
Bubo virginianus, 152
Bubulcus ibis, 135
Bunting,
  Indigo, 274
  Lark, 235
  Lazuli, 273
Bushtit, 197
Buteo
  jamaicensis, 149
  lagopus, 150
  swainsoni, 148
Butorides virescens, 136

C

Calamospiza melanocorys, 235
Calidris mauri, 121
Callipepla
  californica, 86
  gambelii, 87
  squamata, 85
Calypte
  anna, 109
  costae, 110
Campylorhynchus
  brunneicapillus, 209
Canvasback, 81
Caracara, Crested, 164
Caracara cheriway, 164
Cardellina pusilla, 266
Cardinal, Northern, 269
Cardinalis
  cardinalis, 269
  sinuatus, 270
Catbird, Gray, 212
Cathartes aura, 140
Catharus guttatus, 220
Catherpes mexicanus, 206
Centrocercus urophasianus, 89
Certhia americana, 203
Chaetura pelagica, 106
Charadrius vociferus, 119
Chat, Yellow-breasted, 250
Chickadee,
  Black-capped, 187
  Mountain, 188
Chondestes grammacus, 234
Chordeiles
  acutipennis, 104
  minor, 105
Cinclus mexicanus, 210
Circus hudsonius, 144
Coccothraustes vespertinus, 225
Coccyzus americanus, 103
Colaptes
  auratus, 162
  chrysoides, 163
Columba livia, 95
Columbina
  inca, 98
  passerina, 99
Contopus sordidulus, 167
Coot, American, 116
Coragyps atratus, 139
Cormorant,
  Double-crested, 130
  Neotropic, 129
Corvus
  brachyrhynchos, 185
  corax, 186
Cowbird,
  Bronzed, 257
  Brown-headed, 258
Crane, Sandhill, 117
Creeper, Brown, 203
Crossbill, Red, 228
Crow, American, 185
Cuckoo,Yellow-Billed, 103
Curlew, Long-billed, 120
Cyanocitta
  cristata, 181
  stelleri, 180

D

Dendragapus obscurus, 90
Dipper, American, 210
Dove,
  Common Ground, 99
  Eurasian Collared-, 97
  Inca, 98
  Mourning, 101
  White-winged, 100
Dryobates
  pubescens, 159
  scalaris, 160
  villosus, 161
Duck,
  Mexican, 79
  Ruddy, 84
  Wood, 74
Dumetella carolinensis, 212

E

Eagle,
  Bald, 146
  Golden, 142
Egret,
  Cattle, 135
  Great, 133
  Snowy, 134
Egretta thula, 134
Empidonax minimus, 168
Eremophila alpestris, 191
Euphagus cyanocephalus, 259

F

Falcon, Peregrine, 166
Falco
  peregrinus, 166
  sparverius, 165
Finch,
  Cassin's, 227
  House, 226
Flicker,
  Gilded, 163
  Northern, 162

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Flycatcher,
Ash-throated, 172
Least, 168
Vermilion, 171
Fulica americana, 116

G

Gadwall, 76
Gallinula galeata, 115
Gallinule, Common, 115
Geococcyx californianus, 102
Geothlypis trichas, 263
Gnatcatcher, Blue-gray, 204
Goldfinch,
American, 232
Lawrence's, 231
Lesser, 230
Goose,
Canada, 73
Snow, 72
Grackle,
Common, 260
Great-tailed, 261
Grebe,
Eared, 93
Pied-billed, 92
Western, 94
Grosbeak,
Black-headed, 271
Blue, 272
Evening, 225
Grouse,
Dusky, 90
Greater Sage-, 89
Gull,
California, 126
Franklin's, 124
Herring, 127
Ring-billed, 125
Gymnorhinus cyanocephalus, 179

H

Haemorhous
cassinii, 227
mexicanus, 226
Haliaeetus leucocephalus, 146
Harrier, Northern, 144
Hawk,
Cooper's, 145
Harris's, 147
Red-tailed, 149
Rough-legged, 150
Swainson's, 148
Heron,
Black-crowned Night-, 137
Great Blue, 132
Green, 136
Himantopus mexicanus, 118
Hirundo rustica, 195
Hummingbird,
Anna's, 109
Black-chinned, 108
Broad-tailed, 111
Calliope, 112
Costa's, 110
Rufous, 113

I

Ibis, White-faced, 138
Icteria virens, 250
Icterus
bullockii, 255
cucullatus, 254
Ictinia mississippiensis, 143

J

Jay,
Blue, 181
Canada, 178
Pinyon, 179
Steller's, 180
Woodhouse's Scrub-, 182
Junco, Dark-eyed, 239
Junco hyemalis, 239

K

Kestrel, American, 165
Killdeer, 119
Kingbird,
Eastern, 174
Western, 173
Kingfisher, Belted, 154
Kinglet,
Golden-crowned, 198
Ruby-crowned, 199
Kite, Mississippi, 143

L

Lanius
borealis, 177
ludovicianus, 176
Lark, Horned, 191
Larus
argentatus, 127
californicus, 126
delawarensis, 125
Leiothlypis celata, 262
Leucophaeus pipixcan, 124
Loxia curvirostra, 228

M

Magpie, Black-billed, 183
Mallard, 78
Mareca
americana, 77
strepera, 76
Martin, Purple, 192
Meadowlark,
Eastern (Lilian's), 253
Western, 252
Megaceryle alcyon, 154
Megascops kennicottii, 151
Melanerpes
erythrocephalus, 156
formicivorus, 157
uropygialis, 158
Meleagris gallopavo, 88
Melospiza
lincolnii, 244
melodia, 243
Melozone
aberti, 246
fusca, 245
Mimus polyglottos, 215
Mockingbird, Northern, 215
Molothrus
aeneus, 257
ater, 258
Myadestes townsendi, 219
Myiarchus cinerascens, 172

N

Nighthawk,
Common, 105
Lesser, 104
Nucifraga columbiana, 184
Numenius americanus, 120
Nutcracker, Clark's, 184
Nuthatch,
Pygmy, 202
Red-breasted, 200
White-breasted, 201
Nycticorax nycticorax, 137

O

Oriole,
Bullock's, 255
Hooded, 254
Osprey, 141
Owl,
Burrowing, 153
Great Horned, 152
Western Screech-, 151
Oxyura jamaicensis, 84

P

Pandion haliaetus, 141
Parabuteo unicinctus, 147
Passer domesticus, 224
Passerculus sandwichensis, 242
Passerella iliaca, 238
Passerina
amoena, 273
caerulea, 272
cyanea, 274

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Patagioenas fasciata, 96
Pelecanus erythrorhynchos, 131
Pelican, American White, 131
Perisoreus canadensis, 178
Petrochelidon pyrrhonota, 196
Pewee, Western Wood-, 167
Phainopepla, 223
Phainopepla nitens, 223
Phalacrocorax
auritus, 130
brasilianus, 129
Phasianus colchicus, 91
Pheasant, Ring-necked, 91
Pheucticus melanocephalus, 271
Phoebe,
Black, 169
Say's, 170
Pica hudsonia, 183
Pigeon,
Band-Tailed, 96
Rock, 95
Pintail, Northern, 80
Pipilo
chlorurus, 248
maculatus, 249
Piranga
ludoviciana, 268
rubra, 267
Plegadis chihi, 138
Podiceps nigricollis, 93
Podilymbus podiceps, 92
Poecile
atricapillus, 187
gambeli, 188
Polioptila caerulea, 204
Porzana carolina, 114
Progne subis, 192
Psaltriparus minimus, 197
Pyrocephalus rubinus, 171
Pyrrhuloxia, 270

Q

Quail,
California, 86
Gambel's, 87
Scaled, 85
Quiscalus
mexicanus, 261
quiscula, 260

R

Raven, Common, 186
Redhead, 82
Regulus
calendula, 199
satrapa, 198
Roadrunner, Greater, 102
Robin, American, 221

S

Salpinctes obsoletus, 205
Sandpiper,
Spotted, 122
Western, 121
Sapsucker, Red-naped, 155
Sayornis
nigricans, 169
saya, 170
Scaup, Lesser, 83
Selasphorus
calliope, 112
platycercus, 111
rufus, 113
Setophaga
coronata, 265
petechia, 264
Shoveler, Northern, 75
Shrike,
Loggerhead, 176
Northern, 177
Sialia
currucoides, 218
mexicana, 217
sialis, 216
Siskin, Pine, 229
Sitta
canadensis, 200
carolinensis, 201
pygmaea, 202
Solitaire, Townsend's, 219
Sora, 114
Sparrow,
Black-throated, 233
Brewer's, 237
Chipping, 236
Fox, 238
House, 224
Lark, 234
Lincoln's, 244
Rufous-crowned, 247
Savannah, 242
Song, 243
White-crowned, 240
White-throated, 241
Spatula clypeata, 75
Sphyrapicus nuchalis, 155
Spinus
lawrencei, 231
pinus, 229
psaltria, 230
tristis, 232
Spizella
breweri, 237
passerina, 236
Starling, European, 211
Sterna forsteri, 128
Stilt, Black-necked, 118
Streptopelia decaocto, 97
Sturnella
magna lilianae, 253
neglecta, 252
Sturnus vulgaris, 211
Swallow,
Barn, 195
Cliff, 196
Tree, 193
Violet-green, 194
Swift,
Chimney, 106
White-throated, 107

T

Tachycineta
bicolor, 193
thalassina, 194
Tanager,
Summer, 267
Western, 268
Tern, Forster's, 128
Thrasher,
Brown, 214
Curve-billed, 213
Thrush, Hermit, 220
Thryomanes bewickii, 208
Titmouse, Juniper, 189
Towhee,
Abert's, 246
Canyon, 245
Green-tailed, 248
Spotted, 249
Toxostoma
curvirostre, 213
rufum, 214
Tringa semipalmata, 123
Troglodytes aedon, 207
Turdus migratorius, 221
Turkey, Wild, 88
Tyrannus
tyrannus, 174
verticalis, 173

V

Verdin, 190
Vireo, Warbling, 175
Vireo gilvus, 175
Vulture,
Black, 139
Turkey, 140

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