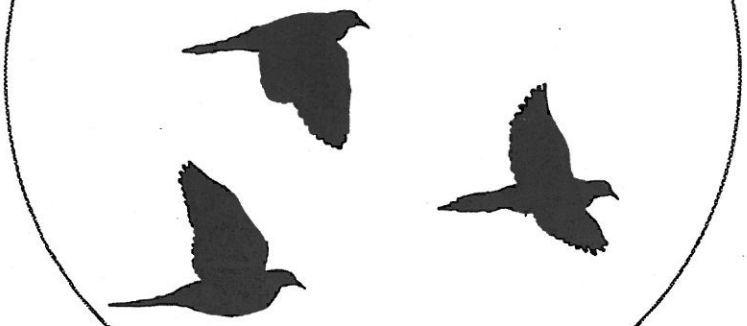
Birds

Songs, Adaptations, and Migration

A Project WILD Supplement



OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF
WILDLIFE

BIRDS: SONGS, ADAPTATIONS, AND MIGRATION

CONTENTS:

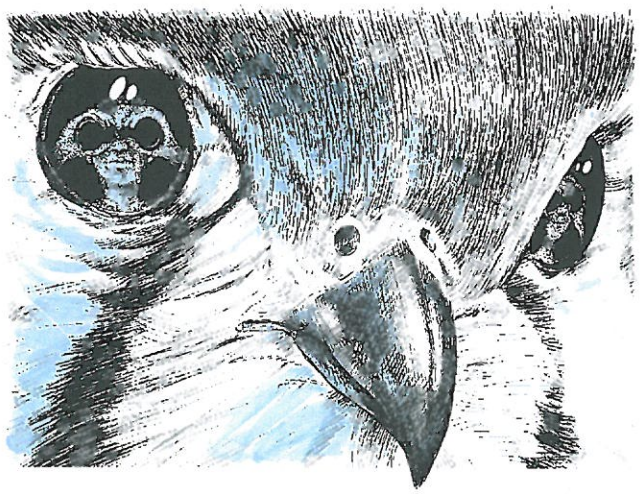
- Bird Banding, Patuxent Wildlife Research Center
- American Crow pub. 219
- American Robin pub.239
- Bald Eagle pub. 383
- Cardinal pub. 114
- Eastern Bluebirds pub. 350
- Great Blue Heron pub. 70
- Great Horned Owl pub. 182
- Ruby-Throated Hummingbird pub. 379
- Bird Species of Concern in Ohio, Grassland Birds
- Bird Species of Concern in Ohio, Wetland Birds
- Waterfowl Identification Key pub.50

BIRD WATCHING Basics

The Florida Fish and Wildlife Conservation Commission

AN INTRODUCTION FOR BEGINNING BIRDERS

Written by Jim Cox
2010 revisions by Mark and Selena Kiser
Design by Marrell Cooper
Illustrated by Clark Frazier



Who's watching whom? An American Kestrel spots a birder.

No one knows the sights and sounds of nature quite like a bird watcher. By taking a half-second look at a small darting assemblage of brown, yellow and white feathers and adding a call note that sounds something like "chip," a "birder" can tell you, not only was that one of 42 different types of warblers in Florida, but it specifically was a Yellow-rumped Warbler.

You too can learn to do this, but it takes practice. To distinguish among the 900+ species of birds found in the U.S., birders must quickly process a great deal of information on color patterns, call notes and even the shapes of bills. They have to know what to key in on when they see a strange bird, noting its overall shape, how it moves through a bush or tree, and the shape of its wings. Such sensory work-outs help to develop great visual and hearing acuity among birders. In fact, birders are generally much more observant than the average person.

To the beginning birder, however, trying to identify even common species can be extremely frustrating, and many people give up before they ever actually begin. A small gray bird flashes up to the top of a bush. Quick, grab your binoculars! Start flipping through your field guide. Take another look at the bird. Flip back a page or two... suddenly the bird is gone, but there is a different one lower in the bush. All that page riffling and binocular lifting begins anew. This pamphlet is intended to help you get beyond this frustrating early stage. It's a crash course in the basics of bird watching, often called "birding" nowadays by experienced watchers. Study this pamphlet carefully and you'll be well on your way to greater enjoyment of the world around you since birding focuses on some of the most spectacular creatures on earth. Birds are highly visual creatures - just like people - and some species don breathtaking combinations of yellows, blues, reds, blacks and greens to make themselves more obvious. They also come in a wide variety of shapes and forms, which adds considerably to the pleasures of bird watching.

Birding will also make you more familiar with the natural beauty of Florida and perhaps will lead you to appreciate how quickly that beauty is being lost. Florida has the fifth greatest number of different bird species of any state in the nation, but the continued existence of many of these species is threatened by the estimated 5,000 new residents that move to Florida each week. Many birds simply do not tolerate the urban landscapes created by these new human residents. Thirty-four species and subspecies are officially listed as being in trouble in Florida, and four species have become extinct - never to be seen again. Birding also coaxes you into new country and enables you to take in all the fresh air and impressive scenery that you can hold. Most important, though, is the fact that birding is simply too much fun to be missed.

The type of information presented here is second nature to an experienced birder, but it can take many months of hard toil for the beginning bird watcher to grasp these concepts and techniques. Even with the information spelled out here, you still have to supply a good bit of patience and sweat to become one of the truly tuned-in nature watchers. We have tried to strip away some of the mystique of birding and expose the bare essentials, but practice and patience are just as important to birding as they are to sports, music and other recreational activities. You can't expect to record 150 different species on your first outing (though this will be possible later on) or to identify all those confusing birds. You'll have to work at it.

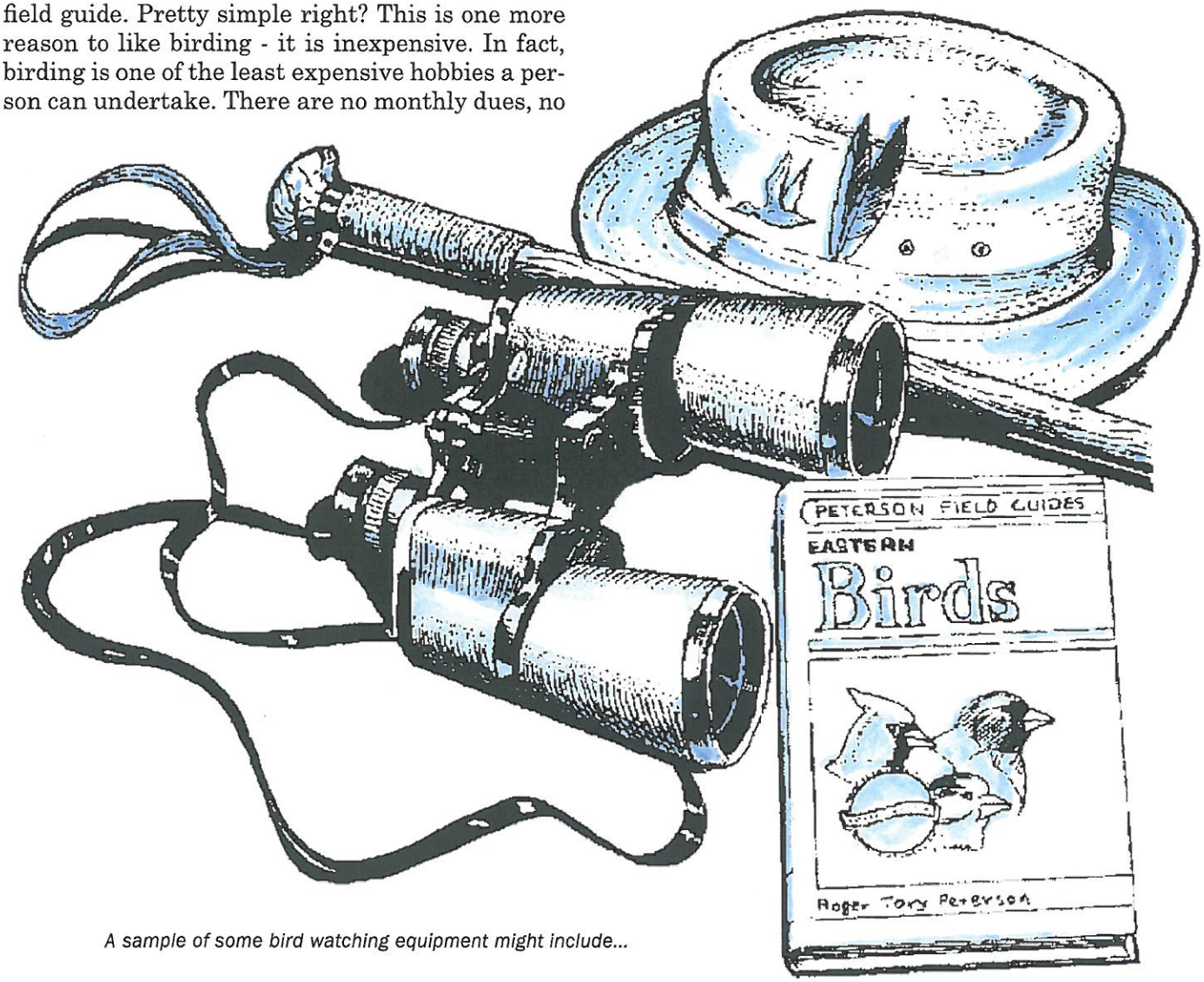
Enough said. Let's get to work.

Part One: **The Equipment**

Let's start with the easiest part of birding, which is deciding what equipment you need. There are only two absolute essentials: binoculars and a field guide. Pretty simple right? This is one more reason to like birding - it is inexpensive. In fact, birding is one of the least expensive hobbies a person can undertake. There are no monthly dues, no rackets to string, no nets to tie up, no golf clubs to buy, no green fees to pay or balls to lose. Binoculars of adequate quality can be purchased for around 100 dollars, a good field guide is around 20 dollars, and with these supplies you are well on your way.

Binoculars

Binoculars are a birder's eyes on the world, and they can greatly affect the quality of a bird outing. Good binoculars make for good birding, while bad binoculars can lead to missed birds and severe headaches induced by blurred images, double vision and eye strain. Binoculars come in many different shapes and forms and carry such descriptions as "roof prism," "close focus," "armor coated," etc. At the outset, you don't need to spend too much time deciphering this arcane lexicon. If you really get hooked on birding, you can learn more about binoculars later and trade in for a bet-



A sample of some bird watching equipment might include...

Backyard birds are accessible and worth watching!

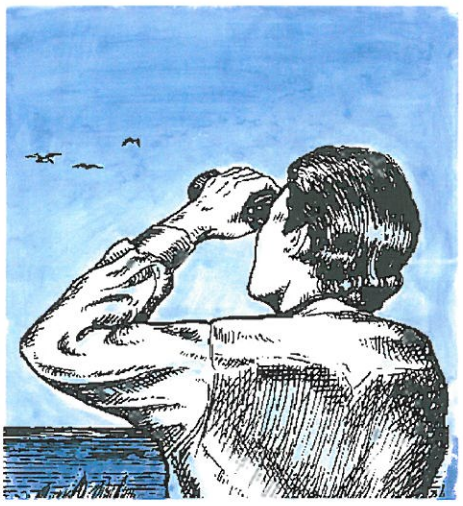
ter pair. There are a few simple rules to consider and questions to ask when purchasing your first binoculars.

1. ***Make sure the power (or magnification) is at least 7-power.*** The power is the first number given in the numerical notation that describes binoculars. For example, a "7 X 35" pair of "glasses" will make objects appear as if they are seven times as close as they actually are. Seven-power binoculars are about the minimum needed to see birds well. Binoculars 10-power or stronger can be difficult for some birders to hold steady.
2. ***Make sure that the second number ("40" for an "8 X 40" pair of glasses) is four to five times as large as the power (e.g., "8 X 40," "10 X 42," etc.).*** This second number describes the diameter, in millimeters, of the large lens that faces the object of interest - the "objective" lens. The larger this lens is, the greater the amount of light the binoculars gather and thus the easier it will be to see characteristics in dim light or on a dull-colored bird. Larger lenses are heavier, however.
3. ***Are the binoculars too heavy for you to carry and use for at least two hours straight?*** Don't end up with a hunchback because your binoculars act like a yoke.
4. ***Can you flex the barrels of the binoculars fairly easily?*** To test to see if they are too flexible, spread the barrels out as far as possible and then hold onto only one of the barrels. Does the free barrel slip or fall from the spread position? It shouldn't.
5. ***When held a foot away, do the large objective lenses reflect a bluish/greenish or purplish tinge?*** If they do, the lenses are color-coated (a good thing). This coating reduces internal glare in the binoculars and increases the amount of light that actually reaches your eyes. Check the lenses to make sure the coatings are free of any blotches or scrapes.
6. ***Can you bring the barrels of the binoculars close enough together so that the image you see merges into a single, clear image within a single, perfect circle?*** If the image isn't singular or clear, the binoculars may be out of alignment or the eyepieces may not come close enough together to accommodate your eyes. These two problems may lead to eye strain and severe headaches. Make sure any pair of optics you buy "fits" your face.
7. ***Do you wear eyeglasses or sunglasses?*** If you do, your binoculars should have rubber eye cups that twist up and down or fold back. This allows you to put your eyeglasses up closer to the eyepieces of your binoculars and gives you a much larger field of view.
8. ***Do the binoculars produce a clear image of an object only 15 feet away?*** Some binoculars do not focus on objects this close, so you may miss the sparrow or warbler that skulks in a nearby bush.
9. ***Look at a sign with large lettering. Do the letters close to the edge of the field of view appear as precise and well-formed as the letters in the center of the field of view?*** Image distortion towards the edge of binoculars is common in bad binoculars - like looking through a fisheye lens. Look for a pair that has minimal distortion.
10. ***When you focus on a license plate or small sign two blocks away, are the letters and numbers clear?*** They should be.

Practicing with your new binoculars

Before using your binoculars, it is important to adjust them so they compensate for the differing strengths of your two eyes. Take a lens cap and cover up the right objective lens with it. Then look through the left lens and focus on an object 30 feet away using the main focusing knob located between the two barrels of your binoculars.

Once you have focused on the object, move the lens cap from the right lens to the left lens. Look through the right lens at the same object (but don't touch the main focusing knob!). If the image you see is not as clear as it looked through the left lens, adjust it using the focusing ring (diopter)



located on the right eyepiece or on the center column of your binoculars. Take note of where you have set the focus on the right eyepiece or center column. Now your binoculars are adjusted to your eyes and are ready for action.

Next, spend some time developing the hand-eye coordination you'll need to spot birds quickly. Most birding is definitely not like watching football. With birding there's much more action - everything is happening at 1/100 the scale and moves 100 times as quickly over an unlimited expanse of space. It takes time for beginning birders to get the knack of spotting birds with their binoculars. The secret is to learn to spot a bird with the naked eye and then lift the binoculars up to your eyes without ever taking your eyes off the bird.

I usually recommend that the fledgling birder find a comfortable spot at a local park and spend time just practicing spotting objects with their binoculars. Initially, set the focus lever on the binoculars so that an object approximately 30 feet away is in clear view. This is a good average distance from which you can learn to focus the binoculars in and out. Next, begin to look for birds with your naked eyes and then find them with your binoculars. Simply follow the bird around for a while, lowering and lifting your binoculars every so often. Don't worry about identifying birds yet. Just watch what they are doing. Soon, you'll be able to spot and focus like a pro.

Field Guides

There has been a veritable explosion in the number of field guides published about birds over the last few years. Until the late 1960s, the guide most widely used was Roger Tory Peterson's original *The Birds of Eastern North America*, the first field guide of its kind produced. This book literally made birding a popular activity by making accurate identifications of birds possible. Today, however, there are specific field guides available for certain regions of the country (most states now have their own field guide) as well as for specific groups of birds, such as hawks, gulls, shorebirds, ducks and others. These specialized books may eventually make their way into the library of a birding enthusiast. Still, beginners need only consider the comprehensive guides when choosing their first field guide.

When purchasing your first guide, it is best to start with one that displays paintings of birds rather than photographs. Paintings allow artists to include all distinguishing features (called "field marks") that help to identify a bird in each illustration. Often, photographs do not show all these marks due to lighting or positioning of the bird. Photographic guides can be a valuable companion reference, however, especially when studying the details of a bird's shape. Of the many comprehensive guides available, here are four of the most popular.

Peterson Field Guide to Birds of Eastern and Central North America. Sixth Edition, 2010. Roger Tory Peterson

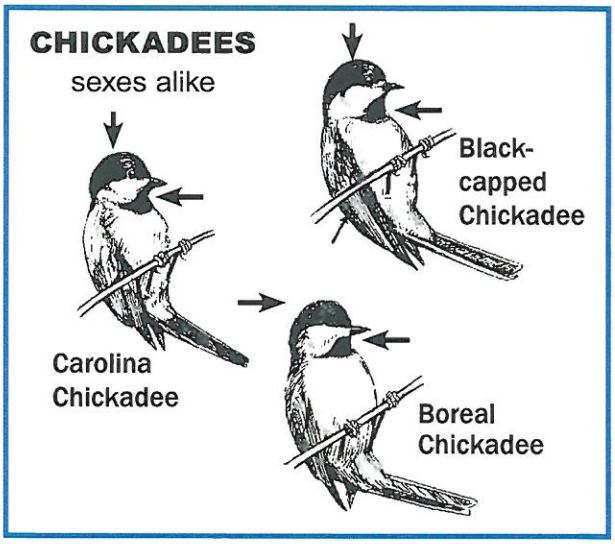
The fully updated "Peterson guide" offers a clarity and consistency hard to find elsewhere. This is because nearly all the paintings in the guide were drawn by Roger Tory Peterson rather than multiple artists as in other guides. In addition, the guide is limited to birds found in the eastern and central United States, which means Floridians do not have to sort through birds that do not occur here very often. Peterson also uses a

With its bright red plumage, the Northern Cardinal is easy to see under any conditions.

simple, effective method of highlighting the field marks of different birds by using arrows to point to them. These simple, visual indications of key features help save valuable identification time in the field. A drawback in previous editions was that range maps describing where each species of bird occurs were grouped at the back, rather than placing each map beside the bird's picture and description. In this edition, however, small "thumbnail" range maps are included on the same page with each species' description (fear not, larger range maps are still found in the back.) A "combined" eastern and western edition (2008) is also available.

Kaufman Field Guide to Birds of North America. 2005. Kenn Kaufman

The Kaufman guide is among the most popular of the photographic guides today. Digitally enhanced images (with distracting backgrounds removed) show identification characteristics that are sometimes not apparent in other field guides using photographs. The guide is organized by bird family groupings instead of by strict taxonomic classification ("phylogenetic" order - discussed later in this booklet). This feature will appeal to beginners but may confuse those used to traditional field guide organization. The text contains clear descriptions on how to identify each bird plus interesting life history information.



Some field guides have arrows to point out slight differences in similar species. Only the Carolina Chickadee occurs in Florida.

National Geographic Field Guide to the Birds of North America. Fifth Edition, 2006. Jon L. Dunn and Jonathan Alderfer

This popular field guide is among the most recently revised guides and includes the current common names of all North American bird species. The National Geographic guide also contains more illustrations and gives better descriptions of the variation that certain birds exhibit in their color patterning. For example, Red-shouldered Hawks in Florida generally are a lighter color than Red-shouldered Hawks in other parts of the country. Most field guides mention this, but drawings in the National Geographic guide actually show this type of variation. For some species, there may be as many as 15 illustrations showing the coloration differences of juvenile birds, subadult birds, males versus females, as well as differences that occur across broad geographic regions. This additional information can help to settle some tricky identification problems, but may also overwhelm beginning birders with more information than is needed to identify the common birds around their neighborhood. Separate eastern and western editions (both published in 2008) are now available.

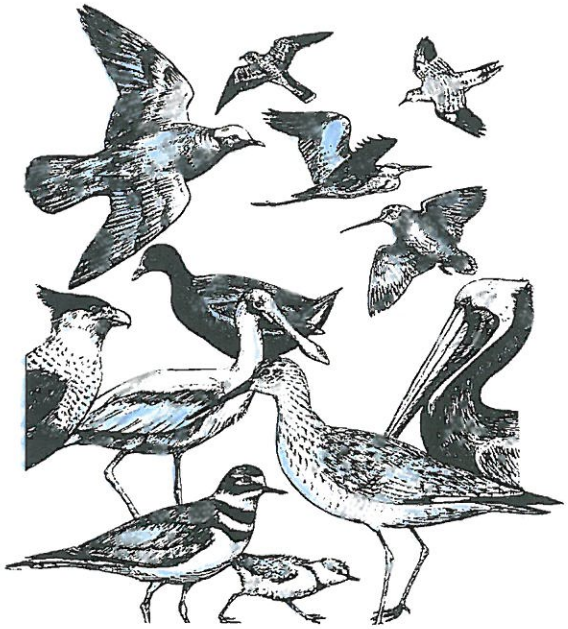
The Sibley Guide to Birds. First Edition, 2000. David Allen Sibley

This landmark guide is a relative newcomer compared to other illustrated guides discussed here. However, Sibley's exceptional, high-quality paintings cover virtually all birds found in the U.S. and Canada. If you travel out west this can be a benefit - you won't have to purchase another field guide. Like the National Geographic guide, it features multiple illustrations which cover the variations in plumage across a species' range and between sexes and age classes. The large size of this book makes it cumbersome to carry in the field. However, smaller and separate eastern and western versions of the guide (both updated in 2003) are available and are much more portable.

A few other guides you may find helpful are:

- All the Birds of North America. Second Edition, 2002. Jack L. Griggs
- National Geographic Field Guide to the Birds of Eastern North America. First Edition, 2008. Jon L. Dunn and Jonathan Alderfer
- Peterson Field Guide to the Birds of North America. First Edition, 2008. Roger Tory Peterson
- The Sibley Field Guide to Birds of Eastern North America. First Edition, 2003. David Allen Sibley
- Smithsonian Field Guide to the Birds of North America. First Edition, 2008. Ted Floyd
- Stokes Field Guide to Birds: Eastern Region. First Edition, 1996. Donald & Lillian Stokes

Once you have selected your field guide, do not - repeat, do not - immediately run off looking for birds, because what you'll actually find instead



Don't let the variety of birds overwhelm you. Birds are more easily identified than you might imagine...

of birds is trouble and frustration. Many a field guide has spent more time collecting dust than helping to identify birds because the owner didn't learn how to use the guide. Sit down with your field guide when you first get it and read through the complete introduction. Next, look at some of the pictures and figure out where some of the common birds you recognize are located in the field guide (i.e., front, back or middle).

Field Guide Organization

I have watched numerous beginners spot a bird and immediately open their field guide to the middle pages. They then look to the right ten pages, look left ten pages, and don't find the bird. Then they look right 20 pages, look left 20 pages, and still don't find the bird. After looking a few more pages left and right, they heave the guide into the air out of disgust and give up the whole enterprise.

This happens because the person hasn't learned how bird species are arranged in the field guide. It's no wonder they get frustrated. Field guides, just like dictionaries and phone books, are ordered according to a precise system that determines where different birds are located in the book. If you were looking up the word "aardvark" in the dictionary, you wouldn't begin somewhere in the middle, would you? Similarly, if you see a sparrow-like bird sitting on the ground, don't start searching through the middle of a field guide because all the sparrows are located in the last quarter of field guides.

Most guides are roughly organized in "phylogenetic order." Phylogenetic order is the way scientists classify all living things (not just birds) based on their evolutionary history - which creatures, according to likenesses in their present-day appearance, most probably evolved from common ancestors. You can learn more about this ordering system by reading your field guide. The point is that birds having similar physical appearances occur very close together in a field guide. You won't find sparrows on the same page with hawks, or a loon facing a warbler. All sparrows, loons, warblers, hawks, and even gulls and blackbirds are located many pages away from one another.

Classification

There are five essential levels of classification by which all birds are grouped. When we refer to birds of the same "species," for example a group of 15 American Robins, we are using the most specific level of classification. Similar species are grouped into a "genus," then different genera (plural of genus) are grouped into a "family," different families are grouped into an "order" of birds, and finally all orders are grouped into just one "class." This is the class "Aves," which in Latin refers to all birds. As you may guess, species in the same genus are more closely related to one another - and look more alike - than species in different genera. Likewise, families grouped in a single order are more similar to one another than families grouped in different orders.

Most field guides covering North America contain about 800-900 species, grouped into more than 300 genera, grouped into more than 70 different families, grouped into just 20 different orders (guides limited to eastern or western North America have about half as many species).

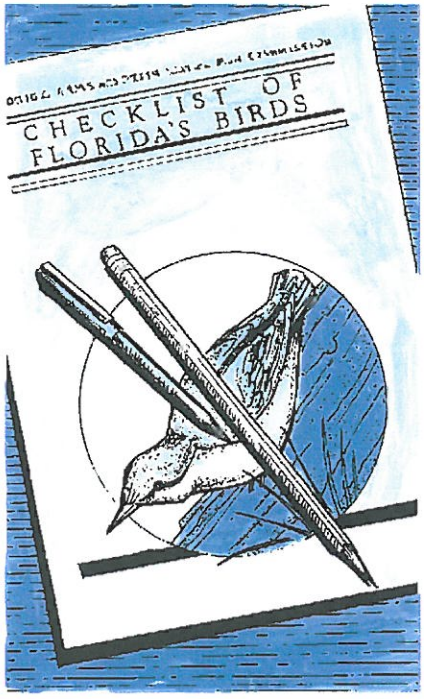
A Burrowing Owl chick.

Bird Families

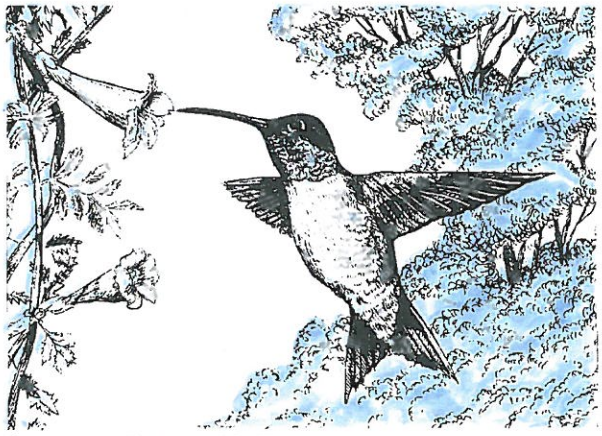
The most convenient and logical classification level for the beginning birder to focus on is the family. There are simply too many genera and species out there for a novice to grasp easily, and identification to a particular order is too broad to be challenging. More importantly, by learning the general shape, size and appearance of the different families of birds, you will develop the powers of observation that characterize a good birder. In fact, you probably know more about some of the families than you realize. For example, if you can recognize a Laughing Gull, you already know a lot about the general sizes and shapes of all the gulls. Similarly, by knowing what a Northern Cardinal looks like, you know a good bit about buntings, grosbeaks and other members of this family - namely that they have very thick, pointed bills. Florida's state bird, the Northern Mockingbird, is in the family of mimic thrushes. All birds in this family have the same approximate size and shape, including that long tail.

Armed with the ability to recognize the shapes of the major bird families and a good local field guide, you can go anywhere in the world and immediately find yourself head and shoulders above non-birders in terms of identification skills - even though you don't have any familiarity or experience with the local birds.

So when you first get your field guide, spend time looking at its organization and the way it



Many birders keep checklists to record the species they see, and to remember when and where they encounter them.



If you see a "hummer" in Florida, chances are it's a Ruby-throated Hummingbird.

groups families of birds. Divide your guide into four sections using tags or sticky notes. The first quarter will contain the families of large water birds, the second quarter the large land birds (ending with the woodpeckers), and the last two quarters will contain the small land birds (all in the order "Passeriformes," commonly called the "passerines" or "perching birds"). Continue to look for common species that you already know and use these as a guide for learning the common characteristics of other species in the family. Remember, you should begin birding using your head, not running around chasing after elusive thrushes and confusing fall warblers. Look casually, not frantically, at birds you don't know. Equipped with your spyglasses and trusty field guide, you can now begin to get acquainted with all those flitting bundles of feathers.

Part Two: **Identifying Birds**

By now you're familiar with the organization of field guides and with some of the different families of birds. You have binoculars and can spot an object with your naked eye and then look at it through the binoculars without having to search for ten minutes. Most importantly, you've avoided the frustration - so far - of trying to associate a particular name with a particular bird. Now, to accomplish this feat, let's go over some helpful techniques for learning to identify families and species of birds.

The first thing to remember is: *don't make bird identification hard on yourself.* There are two general rules to keep in mind during your first few months of birding: 1) eliminate as many species as possible from consideration before you ever attempt to identify anything, and 2) the bird is most likely a species that commonly occurs in your area, not some strange exotic that blew in from a thousand miles away.

A Barred Owl listens and watches for its prey in the moonlight.

These rules are closely tied to one another, and they focus on making birding easier by reducing the number of choices you have to consider. For example, in Florida there is only one type of hummingbird that occurs regularly, the Ruby-throated Hummingbird (verify this from your field guide, if you like). Small numbers of other hummingbird species make their way to Florida (typically in winter), but why worry about trying to identify these uncommon vagrants until you have more experience with our most common species?

I received a long-distance phone call one day from a woman who thought she had a Spotted Owl in her backyard. She wanted to know why she couldn't find the bird in her field guide of eastern birds. It's no wonder! Spotted Owls occur in several western states but they're as rare as two-pound diamonds east of the Rockies. This woman had recently seen a picture of a Spotted Owl in *Natural History* magazine, so when she saw an owl that looked like the picture she immediately went looking for Spotted Owls in her field guide, passing right by Barred Owls, which look similar and, more importantly, are common throughout the Southeast. It took me approximately ten minutes to convince her that it might be a Barred Owl and that perhaps she should look more closely at this bird. She eventually agreed with me, but this was a perfect case of a beginning bird watcher making things harder than they had to be.

One of the easiest ways to exclude birds is to go through your field guide and put an "X" next to those that do not typically occur in your geographic area. Put these aside for the time being. By doing this, you drastically reduce the number of birds you have to worry about identifying from the 900 birds in your guide to the 300 or so birds that are regularly seen in Florida! By the way, don't worry about marking up your field guide. A field guide personally adjusted to meet your needs is the best friend you can have when alone in the field. I kept extensive notes in my first field guide. In fact, on one page it was hard to see the drawings amid all my scribbles. Just make sure to use a pencil or permanent ink so that the words won't smear if you leave the book in the rain or drop it in the mud occasionally.

Another way to eliminate choices is to consider the time of year the bird might occur in your area. The range maps included with field guides display this type of information. Some beginners might even find it beneficial to place colored dots next to birds in their field guides. For example, put a red dot next to birds that are year-round residents, put a blue dot next to birds that are only winter visitors, put a green dot next to birds that are summer visitors, and put a black dot next to birds that only pass through Florida during migration.

These procedures will quickly eliminate a lot of confusing birds from consideration. For example, there are approximately 170 native birds that breed in Florida and another 30 or so that hang around in small numbers during the summer. So, if you see some unknown bird in the middle of July, don't consider the 900 species shown in your field guide. Instead, you only have to choose from 200 or so different birds that occur within Florida during the summer. Simple, right?

Identification Clues

The way that some birds skulk about, you'd think that they were afraid of showing off their pretty colors and didn't want anyone to identify them. And this is the case, no doubt, as they must somehow evade predators from both above and below.

A Red-shouldered Hawk surveys life from a tree top.

Sometimes a silhouette is all you need to identify a bird.

Often, their quick movements allow us only a glimpse. Still, you will be able to identify even the most secretive bird using the key clues to identification described here.

There are five basic clues you can look and listen for that will allow you to solve the bird identification puzzle: 1) the bird's silhouette, 2) its plumage and coloration, 3) its behavior, 4) its habitat preferences, and 5) its voice. This may seem like a formidable amount of information to gather, but in truth you often need only one or two of these clues to identify a bird. Sometimes, the key to identification is simply knowing which clue to look for first when you see an unfamiliar bird. As your birding abilities increase, you will be able to pinpoint the important clues with greater ease and certainty.

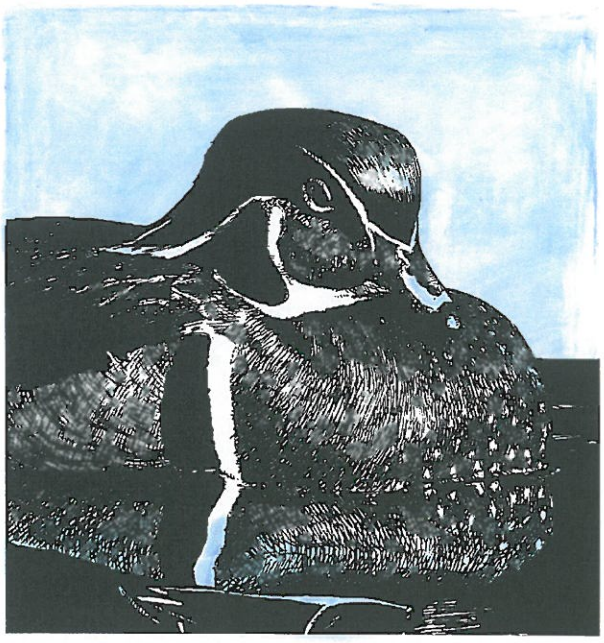
Silhouette - Shape and Size

As you become familiar with your field guide, you will be able to quickly categorize most birds into families using silhouette alone (remember, each family has a diagnostic shape and size). This will immediately put you at an advantage compared to the average observer because by placing the bird you see into a particular family, you have already narrowed down the possible birds you could be seeing from the 900 in your field guide to only about 15 or so birds - the 15 birds within the family you have identified. As mentioned earlier, you can then further eliminate any species in the family that do not occur in Florida during that season. You can do this even in the worst of lighting conditions when birds are backlit, in low light or in shadow. It doesn't matter. The overall shape is unchanged. Many birds are even identifiable to species by outline alone.

Of course, it will not be easy to accomplish this feat at first. You must learn to note carefully all the details of a bird's shape. Is the bird large or small, short-legged or long-legged, crested or not crested, plump or slim and sleek, short-tailed or long-tailed?

The shape of a bird's bill is also an extremely helpful clue that is obvious from a silhouette. Cardinals, finches and sparrows have short, conical bills for crushing seeds. Woodpeckers have chisel-shaped bills for working dead wood. Hawks, eagles and falcons, on the other hand, have sharp, hooked bills that make quick work of meat. Shorebirds have slender bills of all lengths for probing at different depths into the sand and mud.

Size is also an important field mark, and field guides do list the size of birds next to pictures. However, if you don't have some type of scale in mind, these numbers are of little use. The "ruler" I use in the field is a mental association of three familiar birds with three general size classes. For example, a Chipping Sparrow is 5-6 inches in size, a Northern Mockingbird is 8-10 inches in size, and an American Crow is 17-21 inches in size. Now, using phrases like "larger than a crow" or "smaller than a sparrow," you have an immediate impression of the approximate size of any bird. You also have an immediate frame of reference for your field guide if you associate each of these three species with 5-,10- and 20-inch size classes.



A beautiful Wood Duck shows off his own unique plumage.

Plumage

Plumage characteristics are what really draw a lot of people into birding - they like seeing those beautiful colors. The distinguishing plumage clues that identify different species are known as "field marks." These include such things as breast spots, wing bars (thin lines along the wings), eye rings (circles around the eyes), eyebrows (lines over the eyes), eye lines (lines through the eyes) and many others.

Some field marks are best seen when a bird is in flight. A flying Northern Harrier can be identified from nearly a mile away with good binoculars because the bird has a bright white patch on its rump.

Some families of birds can be broken into even smaller groups based on one or two simple field marks. For example, warblers are fairly evenly divided between those that have wing bars and those that do not. So if you see a warbler-like bird, look quickly to see if it has wing bars. Sparrows, on the other hand, can be separated into two smaller groups based on whether or not the breast is streaked. Look for other broad distinctions for other families.

A Pileated Woodpecker searches for insects.

Behavior

A bird's behavior - how it flies, forages or generally comports itself - is one of the best clues to its identity. Hawks have a "serious" demeanor, crows and jays are "gregarious" and cuckoos are... well, not really. Woodpeckers climb up the sides of tree trunks searching for grubs like a lineman scaling a telephone pole. Flycatchers, on the other hand, wouldn't climb a tree trunk if their lives depended on it. They spend most of their time sitting upright on an exposed perch. When they see a bug cruising into range they quickly dart from their perch, snag the meal, then return to the same perch or another one nearby. Finches spend a lot of their time on the ground in search of fallen seeds, as do Northern Mockingbirds, Gray Catbirds and Brown Thrashers. Some wading birds, such as Snowy Egrets and Reddish Egrets, are very active foragers and chase their prey around in shallow waters. Other wading birds, such as Great Blue Herons, are less impetuous and hunt slowly with great patience and stealth.

Even the way a bird props its tail gives some clues as to which species or family it might be. Wrens characteristically hold their tails in a cocked position and often bounce from side to side. Spotted Sandpipers and Louisiana Waterthrushes bounce their tails and rumps rapidly up and down as if doing a stylish dance step. Some thrushes and flycatchers, on the other hand, move their tails frequently but slowly, with a wave-like motion. You can even identify some birds just by the way that they fly. Most finches and woodpeckers move through the air with an undulating flight pattern, flapping their wings for short bursts and then tucking them under for a short rest. One group of raptors, the buteos or soaring hawks, circle the sky suspended on outstretched wings. Most falcons, another group of raptors, fly with strong wing beats and rarely hover. Yet another group, the accipiters or bird hawks, usually fly in a straight line with alternating periods of flapping and floating.

Habitat

Even if a range map shows that a bird occurs in your neck of the woods, this doesn't mean the bird will be common wherever you go. Birds segregate themselves according to habitat type and are sometimes quite picky in selecting an area as home. Wading birds and ducks, for example, prefer watery habitats rather than dry upland areas. Pine Warblers and Brown-headed Nuthatches associate primarily with pine woods and are less common in areas containing large numbers of

oaks, hickories and other deciduous trees. Some Florida birds, like the Snowy Plover, are restricted primarily to the sandy coast, while others, including the Limpkin, occur mostly along river swamps and freshwater marshes.

Beginning birders must usually spend many hours afield before they are able to associate different species with different habitat types. I suggest you develop a key to habitats you frequent and keep notes of where you see different species. Make the habitat key simple at first, using terms like salt and freshwater marsh, pinelands, deciduous forest, beach, urban area, field and pasture, etc. Then elaborate on this key as you learn to distinguish among different Florida habitat types. You can put abbreviations such as "SM" (for salt marsh), "PW" (for pine woods), and "FP" (for field and pasture) next to the pictures of birds in your field guide after you have some feel for where the birds occur. Most field guides actually provide this information in the written description, but this abbreviated system may help you remember the habitats where each bird occurs.

Voice

I've often thought it would be rewarding to teach blind people how to "bird listen." Birds have unique songs and calls, and voice is often all that's needed to identify many of the birds you encounter. If each species didn't have a distinctive call or song, there would be a lot of confusion out there when birds tried to communicate. Just as you can tell that the person on the other end of the phone is Uncle Ted and not Aunt Jill, so too can you learn to distinguish the different voices of birds.

Listening to recordings helps considerably when you are trying to learn bird vocalizations. Many are currently available on CD. Some excellent recordings include: *Peterson Field Guides Birding by Ear* (2002) and *More Birding by Ear* (2000) by Richard Walton, Robert Lawson and Roger Tory Peterson; *Peterson Field Guides A Field Guide to Bird Songs: Eastern and Central North America* (1990); *Stokes Field Guide to Bird Songs: Eastern Region* (1997) by Donald and Lillian Stokes, and Lang Elliot; and *Bird Songs of Florida* by Geoffrey Keller (1997). However, no matter how many recordings you listen to, there is no substitute for going out into the field. There's something about the association of voice and bird that helps to fix both in memory. Plus, bird vocalizations are complex and no set of recordings can hope to encompass all the variety and geographic variations that can be experienced firsthand out in nature.

The Red-winged Blackbird has its own distinctive song.

Additional Tips

Going afield with experienced birders can often help to speed you along the bird identification learning curve, and a variety of private and public groups offer bird tours throughout Florida. Your local chapter of the National Audubon Society is perhaps the best starting place to find out more about birding trips in your area. National organizations such as the American Birding Association also offer a multitude of birding information in the form of magazines, newsletters, annual meetings, guided trips, and retailers of birding books, recordings, binoculars and other equipment. In addition, birding festivals occur throughout Florida and offer an opportunity to participate in guided field trips for a minimal fee.

Birding is always more enjoyable when you have information on where to go and what species to look for. The Florida Fish and Wildlife Conservation Commission (FWC) developed the Great Florida Birding Trail to help you find Florida's birding hot spots and birds of interest. To download or request free copies of these trail guides, visit www.floridabirdingtrail.com.

To keep track of all the birds you encounter, the FWC has prepared a "Checklist of Florida's Birds." Single copies of this publication are available for free by writing to: "Bird Checklist," Great Florida Birding Trail, Florida Fish and Wildlife Conservation Commission, 620 S. Meridian St., Tallahassee, FL 32399-1600. Checklists and other birding information are also available free through the "Wings Over Florida" program which awards certificates at a variety of achievement levels to birders who keep track of their life lists of Florida birds. Write to "Wings Over Florida Application Packet" at the same address.

Birding is not the easiest sport in the world to learn, but it is definitely one of the most rewarding. To offset those first outings when you flipped through your field guide with frustration, there will be many years' worth of pleasant and intriguing field trips. You see, birders experience something new every time they go out. Even if they don't see a new species for the first time, they might see a new behavior, hear a new vocalization, or just explore a new and wild corner of Florida. They might even come across something startling, like a rare European bird that somehow strayed far from home.

The constant variety and challenge of birding are two important attractions, but so too is the camaraderie. About 48 million people in the United States are casual bird watchers, feeding and observing birds around their homes. A smaller number, around 20 million, take trips for the primary purpose of watching birds. Still, that's a lot of people poking their heads into bushes and craning their necks toward the sky!

I've developed a good number of lasting friendships as I've cruised some isolated road and happened across a kindred soul bedecked with binoculars and a field guide. We shoot the breeze for awhile, exchange notes on what we've seen that day, and then walk along together for a short while to find out what new birds are hiding in the bushes ahead. Birding is always filled with a world of new people and new experiences.

Publication provided by:
Florida Fish and Wildlife Conservation Commission
620 S. Meridian St., Tallahassee, FL 32399-1600
www.myfwc.com
www.floridabirdingtrail.com

printed on recycled paper
Revised 2010

Mission Statement:

The American Birding Association
inspires
all people to enjoy
and protect wild birds.

ABA Code of Ethics

American Birding Association Principles of Birding Ethics

1. Promote the welfare of birds and their environment.

1(a) Support the protection of important bird habitat.

1(b) To avoid stressing birds or exposing them to danger, exercise restraint and caution during observation, photography, sound recording, or filming.

Limit the use of recordings and other methods of attracting birds, and never use such methods in heavily birded areas or for attracting any species that is Threatened, Endangered, or of Special Concern, or is rare in your local area.

Keep well back from nests and nesting colonies, roosts, display areas, and important feeding sites. In such sensitive areas, if there is a need for extended observation, photography, filming, or recording, try to use a blind or hide, and take advantage of natural cover.

Use artificial light sparingly for filming or photography, especially for close-ups.

1(c) Before advertising the presence of a rare bird, evaluate the potential for disturbance to the bird, its surroundings, and other people in the area, and proceed only if access can be controlled, disturbance can be minimized, and permission has been obtained from private land-owners. The sites of rare nesting birds should be divulged only to the proper conservation authorities.

1(d) Stay on roads, trails, and paths where they exist; otherwise keep habitat disturbance to a minimum.

2. Respect the law and the rights of others.

2(a) Do not enter private property without the owner's explicit permission.

2(b) Follow all laws, rules, and regulations governing use of roads and public areas, both at home and abroad.

2(c) Practice common courtesy in contacts with other people. Your exemplary behavior will generate goodwill with birders and non-birders alike.

3. Ensure that feeders, nest structures, and other artificial bird environments are safe.

3(a) Keep dispensers, water, and food clean and free of decay or disease. It is important to feed birds continually during harsh weather.

3(b) Maintain and clean nest structures regularly.

3(c) If you are attracting birds to an area, ensure the birds are not exposed to predation from cats and other domestic animals, or dangers posed by artificial hazards.

4. Group birding, whether organized or impromptu, requires special care.

Each individual in the group, in addition to the obligations spelled out in Items #1 and #2, has responsibilities as a Group Member.

4(a) Respect the interests, rights, and skills of fellow birders, as well as those of people participating in other legitimate outdoor activities. Freely share your knowledge and experience, except where code 1(c) applies. Be especially helpful to beginning birders.

4(b) If you witness unethical birding behavior, assess the situation and intervene if you think it prudent. When interceding, inform the person(s) of the inappropriate action and attempt, within reason, to have it stopped. If the behavior continues, document it and notify appropriate individuals or organizations.

Group Leader Responsibilities [amateur and professional trips and tours]

4(c) Be an exemplary ethical role model for the group. Teach through word and example.

4(d) Keep groups to a size that limits impact on the environment and does not interfere with others using the same area.

4(e) Ensure everyone in the group knows of and practices this code.

4(f) Learn and inform the group of any special circumstances applicable to the areas being visited (e.g. no sound devices allowed).

4(g) Acknowledge that professional tour companies bear a special responsibility to place the welfare of birds and the benefits of public knowledge ahead of the company's commercial interests. Ideally, leaders should keep track of tour sightings, document unusual occurrences, and submit records to appropriate organizations.

Please follow this code. Distribute it and teach it to others.

ATTRACTING BIRDS

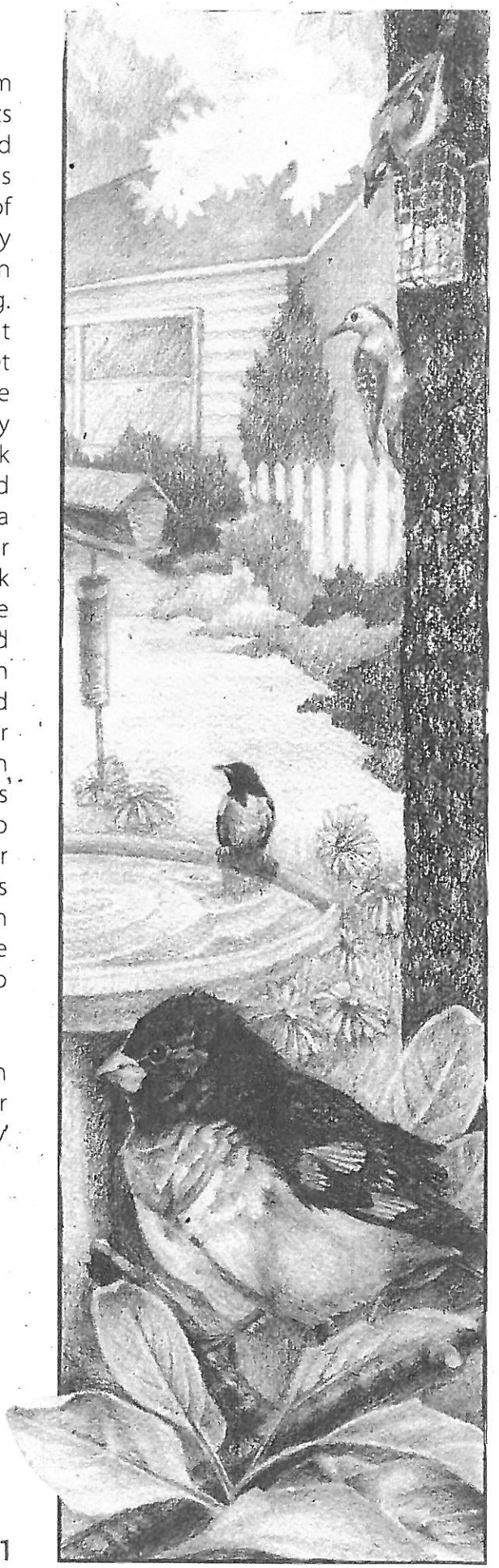
in Ohio

TABLE OF CONTENTS

ATTRACTING BIRDS

Birds are everywhere around us. We see them in our backyards, as we drive along our streets and highways, and even where we work and play. Birds captivate us for many reasons – probably the most obvious is because of their beautiful songs. The flute-like melody of the wood thrush is soothing; the robin singing in February gives us hope of spring. Second to their varied calls are their bright colors—consider the brilliance of the scarlet tanager or the "electric yellow" goldfinch. The drab camouflage of other species is equally intriguing like the near invisible nighthawk roosting on a tree branch. Further, the speed of some (swallows and swifts) and grace (a heron silently wading) of others; or the power and maneuverability of a Cooper's hawk chasing a sparrow through the backyard are more reasons to be in awe of these feathered creatures. Even their differences in size can be captivating from the tiny hummingbird to the enormous trumpeter swan. If their size, colors, and songs aren't enough then there are also their behaviors – the instincts of a killdeer feigning a broken wing to protect its nest, mate feeding of cardinals or nest parasitism of cowbirds are all activities that are interesting. With all the fascination surrounding birds, it is no wonder that people strive to attract birds into their backyards to have them closer to watch and listen to.

Birds can be enticed to share our space in many ways. Like any wildlife species, their needs are basic: food, water, and shelter. By providing these needs we can effectively bring birds into our lives so we can enjoy them more. If you want more birds in your life, read on...

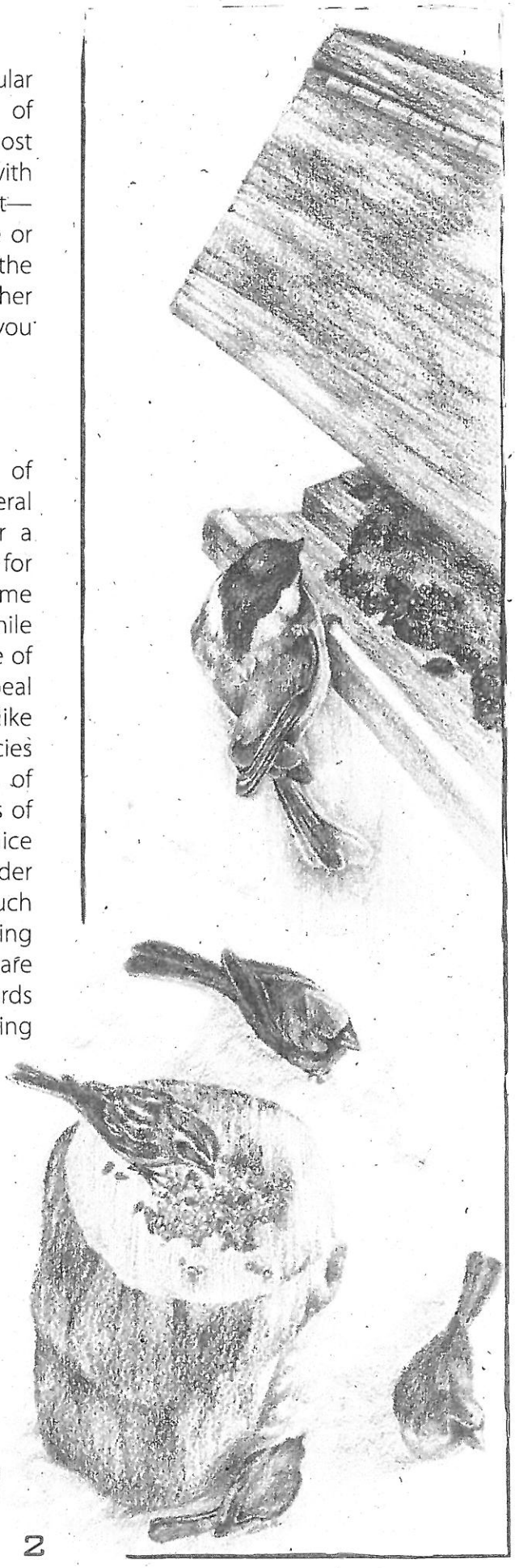


FOOD

Bird feeding is one of the most popular backyard hobbies, enjoyed by millions of people. The effort is quite simple and most always successful—a bird feeder filled with seed placed in just about any environment—city or country—will result in at least one or more types of birds taking advantage of the food source. However, just like any other hobby you can put as much into it as you want.

FEEDER TYPES

There are many, many different types of feeders available. Some are for general seed like a hopper feeder intended for a mixed blend; other feeders are intended for specific seeds, such as a thistle feeder. Some feeders hang, others mount on posts, while still others sit on the ground. A good rule of thumb is to have a variety of feeders to appeal to the largest variety of birds because, like the different feeder types, different species of birds also have their preferred means of obtaining food. For example, some types of birds like chickadees, nuthatches, and titmice are more likely to light on an elevated feeder to get to the seed inside. Other birds, such as juncos and mourning doves, favor feeding on the ground. Of course then there are the generalists like cardinals and blackbirds that will feed either way. By providing an assortment of feeders you can accommodate a diversity of birds.



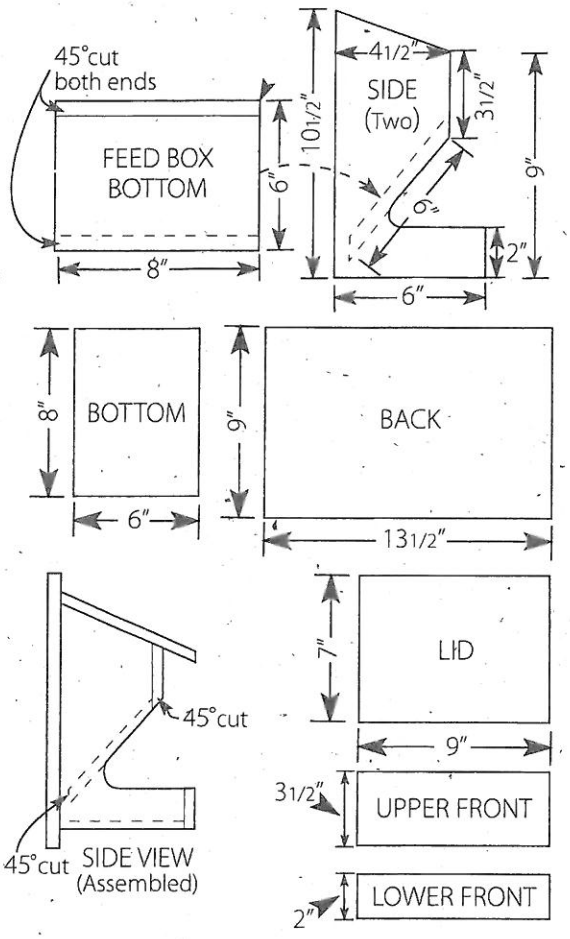
PEANUT BUTTER OR SUET-FILLED LOG

Cut a 15-18" length of a 3-4" diameter branch. Drill holes partway into the log and spread peanut butter or softened suet into the holes. (See illustration on page 3).

METAL GUARD

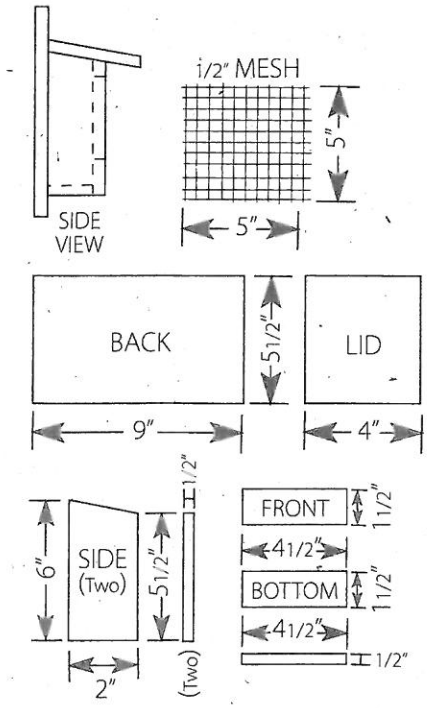
Metal guards on trees keep cats, raccoons, and squirrels away from bird nests and feeding stations.

SINGLE-SIDED HOPPER FEEDER

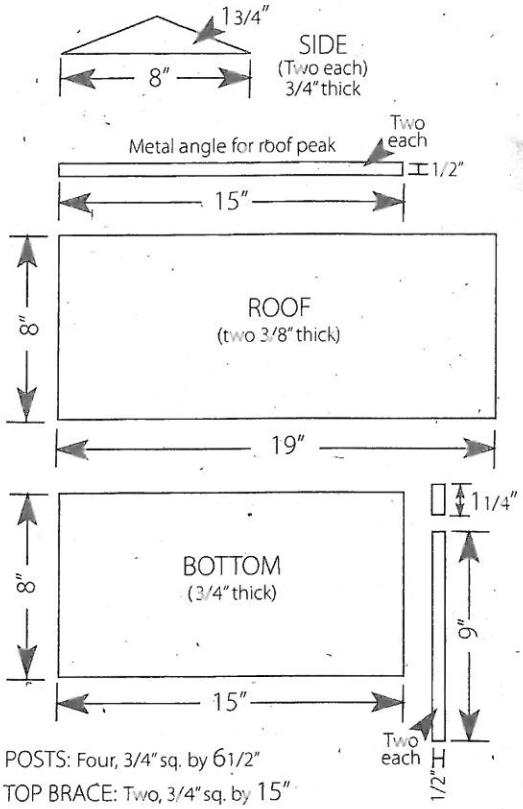


Hopper feeders offer the advantage of holding several days' supply of food, mainly grains. Suet feeders bring the insect eaters in close. Suet is an important winter food for many birds.

SUET BOX



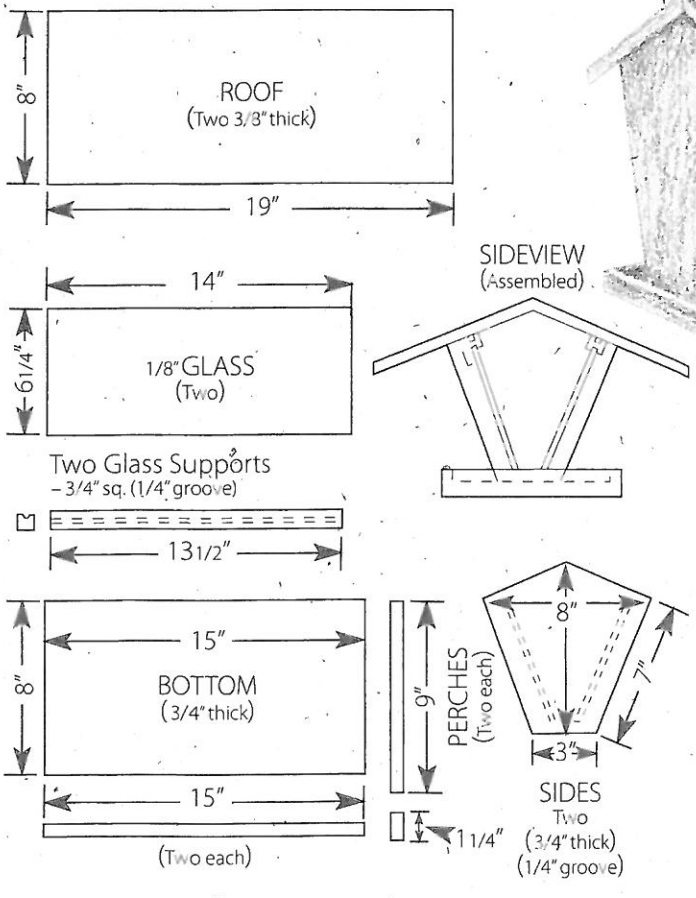
TRAY FEEDER



POSTS: Four, 3/4" sq. by 61/2"

TOP BRACE: Two, 3/4" sq. by 15"

DOUBLE-SIDED HOPPER FEEDING STATION



FOOD TYPES

In addition to feeding preferences, different species of birds also have food preferences. Black oil sunflower is a high energy food and the favorite seed of most birds found in Ohio. A mix of sunflower and white proso millet is a good general mix for many birds. Other seeds such as sorghum (also called milo), wheat, and cracked corn are commonly used in the less expensive seed mixes as filler. While these foods may be eaten by popular game birds such as quail, pheasant and wild turkey they aren't the favorite of most songbirds and in some cases can even attract undesired bird species like the house sparrow. Nyjer seed, or thistle as it is more commonly known, is a small seed and a favorite of goldfinches and house finches.

Other foods can also be offered as a supplement to attract specific types of birds. Peanuts and other nuts will be relished by blue jays and woodpeckers. Chopped apples, raisins, currants, and other fruit will appeal to mockingbirds, some woodpeckers, catbirds, and robins. Mealworms will be gobbled up by bluebirds, wrens, and chickadees. Suet and peanut butter will tempt nuthatches, woodpeckers, and other birds that feed on insects and grubs. There are even specialty feeders to accommodate these specialty foods.

To attract hummingbirds, prepare a nectar solution of 4 parts water to 1 part white, granulated sugar. Boil the mixture for 2 minutes then allow it to cool. A minimal amount of red food coloring may be added to the sugar water mixture, but it is not necessary. Hummingbird feeders require considerable maintenance – the feeder should be thoroughly cleaned (including scrubbing the feeding ports with a cotton swab or pipe cleaner) and fresh solution supplied at least twice a week. A poorly maintained hummingbird feeder will quickly become moldy which can harm the birds.

Myth: *Hummingbird feeders should be taken down by Labor Day so these birds will know to migrate.*

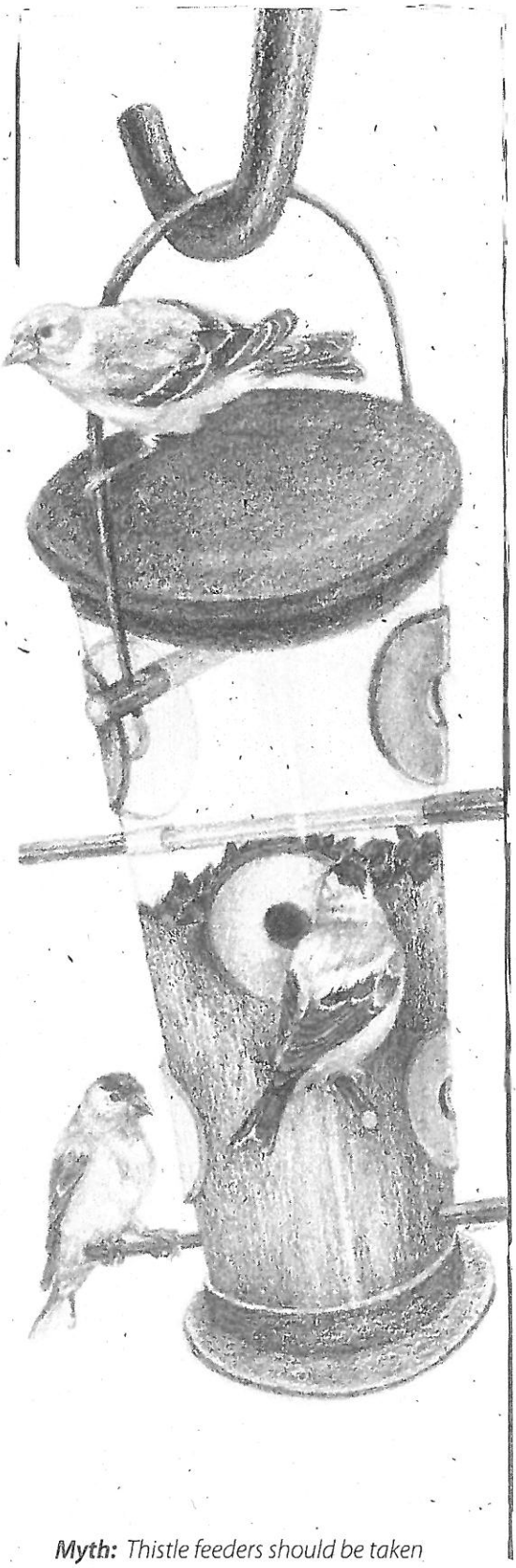
Truth: *Hummingbirds know when to migrate regardless of whether feeders are available or not. Keep your hummingbird feeder up into the fall as long as you can maintain it. In addition to benefiting migrating ruby-throated hummingbirds, you may be lucky to host a rare rufous hummingbird, a Western species that occasionally visits the Midwest.*

FEEDER CLEANLINESS

Whatever feeder or type of food you provide it is a good idea to keep your feeders spaced out from one another. A bird feeding station will likely attract larger numbers of birds into an area than would naturally occur, so to lessen the threat of disease transmission between the birds, provide adequate distance between feeders so the birds aren't crowded. Further, thoroughly scrub feeders at least once a year with a 10:1 ratio of water to bleach for disinfecting. Allow the feeder to dry thoroughly before refilling. Also clean compacted seed and chafe out of the feeding trays on a regular basis, especially if it is damp. It is all right that some seed falls on to the ground below a feeder—this will provide for the bird species that like to feed on the ground. However, if the weather is damp for an extended time the area should be raked clean to help lessen the growth of molds.

WHEN TO FEED

Many people prefer to just feed wild birds in the winter months. But bird feeders can be kept up through all seasons of the year. In either case, keeping feeders full on a regular basis will help maintain consistency with the birds that are visiting. Feeders that remain empty for several days in a row are an unreliable source of food for the birds and so will be an unreliable source to attract birds. It is important to maintain feeders during times of winter snow, cold and ice, particularly in the early morning and late afternoon hours. It is these times that birds will feed the heaviest in order to build or replenish critical fat reserves needed to make it through weather extremes. You will do a tremendous favor to your backyard birds to clean you feeders of snow and ice with the same thoroughness as you do your sidewalk. A fully stocked feeder is of no use to the birds if they cannot get to the food inside because of a layer of snow or ice.

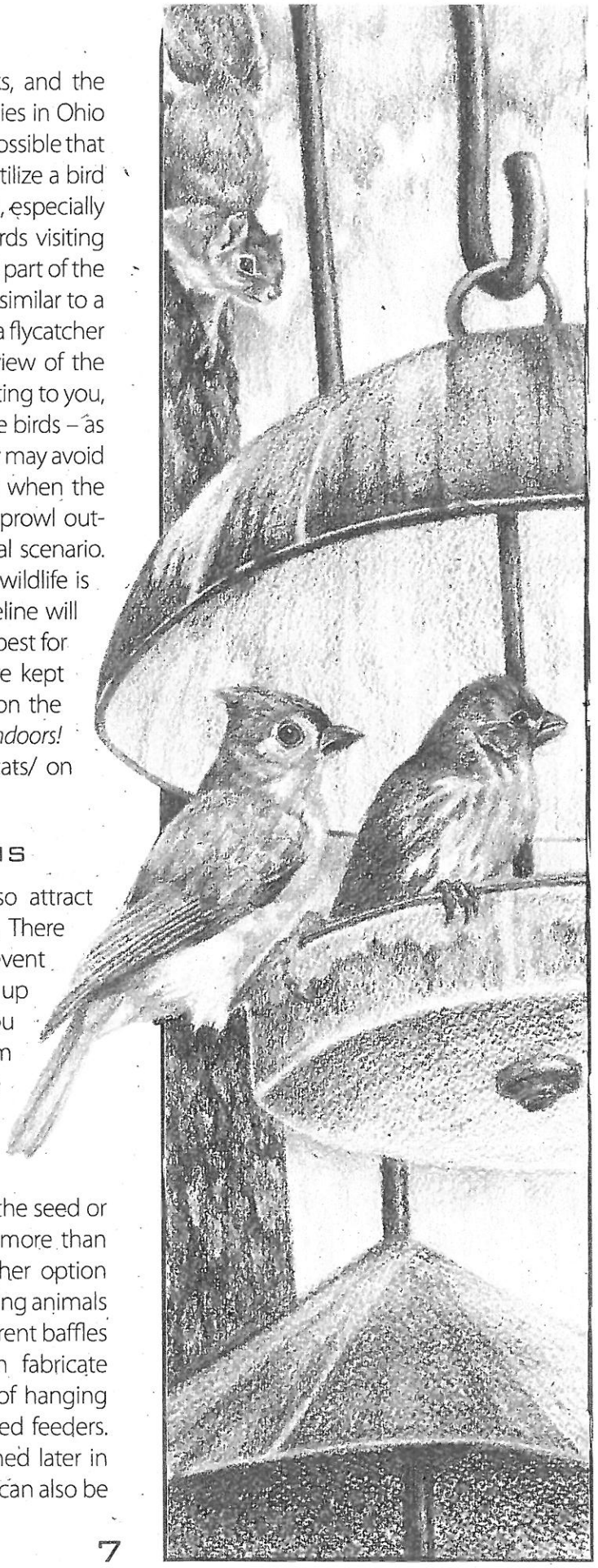


Myth: *Thistle feeders should be taken down in fall because the goldfinches leave.*

Truth: *Goldfinches do not leave Ohio in the fall-they simply molt their bright yellow feathers and appear drab green for the winter. So you can continue to feed thistle through the colder months.*

PREDATORS AT YOUR FEEDING STATION

Cooper's hawks, sharp-shinned hawks, and the American kestrel are three raptor species in Ohio that regularly feed on other birds. It is possible that one or more of these predators may utilize a bird feeding station as its hunting grounds, especially during winter, preying on the songbirds visiting the feeder. This is a natural and normal part of the food chain and should be considered similar to a robin eating worms out of the lawn or a flycatcher "hawking" for insects. If a front-row view of the predator/prey relationship is still upsetting to you, know that the hawk won't eat all of the birds – as the survivors wise up to the threat, they may avoid the feeders for a time, but will return when the hawk moves on. House cats on the prowl out-of-doors however, is a totally unnatural scenario. The negative effect of house cats on wildlife is staggering. Even the most well-fed feline will still kill birds and small mammals. It is best for your pet and wildlife if house cats are kept in the house. For more information on the American Bird Conservancy's *Cats Indoors!* campaign visit: www.abcbirds.org/cats/ on the Internet.



SQUIRRELS & RACCOONS

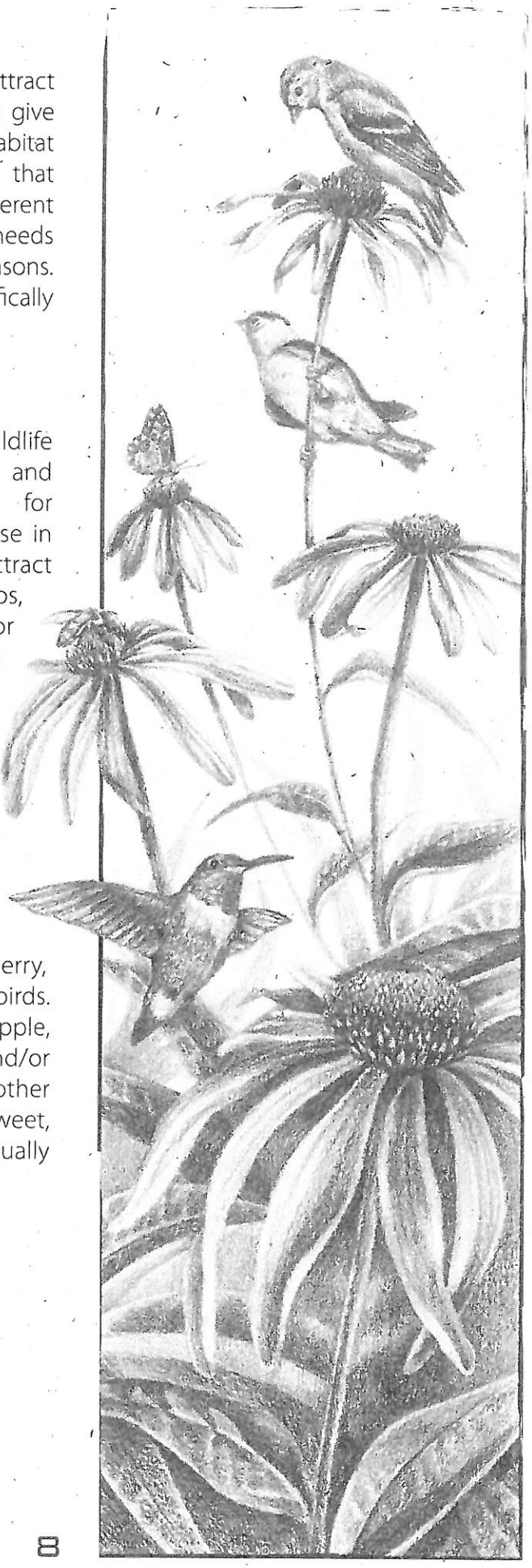
In addition to birds, feeders can also attract squirrels, raccoons, and other animals. There isn't much that can be done to prevent these uninvited guests from cleaning up the spilled seed on the ground, but you might want to take steps to keep them from climbing onto feeders. There are several feeders specifically designed to keep squirrels and larger mammals off. Most are weight activated, either closing off access to the seed or spinning when an animal weighing more than a typical songbird climbs on. Another option would be to use a baffle to keep climbing animals off of the feeder. There are many different baffles available commercially—or you can fabricate your own-- that install over the top of hanging feeders or on a post for pole-mounted feeders. Some of the predator guards explained later in this publication to protect nest boxes can also be used to protect bird feeders.

HABITAT

Bird feeders are a quick and easy way to attract birds, however the best approach is to give more consideration to their long-term habitat needs. Plantings and other features that duplicate natural habitats are a more inherent and permanent way to provide the basic needs of food and shelter throughout the seasons. Further, when you provide habitat specifically for birds, other wildlife will also benefit!

NATURAL FOOD

Gardening and landscaping for wildlife are great ways to beautify our yards and communities while still providing for wildlife. Many of the plants that we use in ordinary landscaping can and do attract wildlife. For instance, annuals like cosmos, zinnia, and sunflower provide nectar for hummingbirds, butterflies, and bees. As a bonus, ripe seeds of these plants are readily eaten by songbirds. Perennials such as purple coneflower, cardinal flower, bee balm, and butterfly milkweed again provide nectar. And, coneflower seed is a favorite of goldfinches plus the milkweed is a host plant for the monarch butterfly caterpillar. Shrubs including serviceberry, dogwood, sumac, elderberry, and chokeberry will supply food for birds. Trees (oak, ash, sweet gum, apple, crabapple, and maple) also produce nuts, fruits, and/or seeds that will be used by birds and other wildlife. Vines such as American bittersweet, scarlet trumpet creeper, and grape are equally valuable.



SHELTER

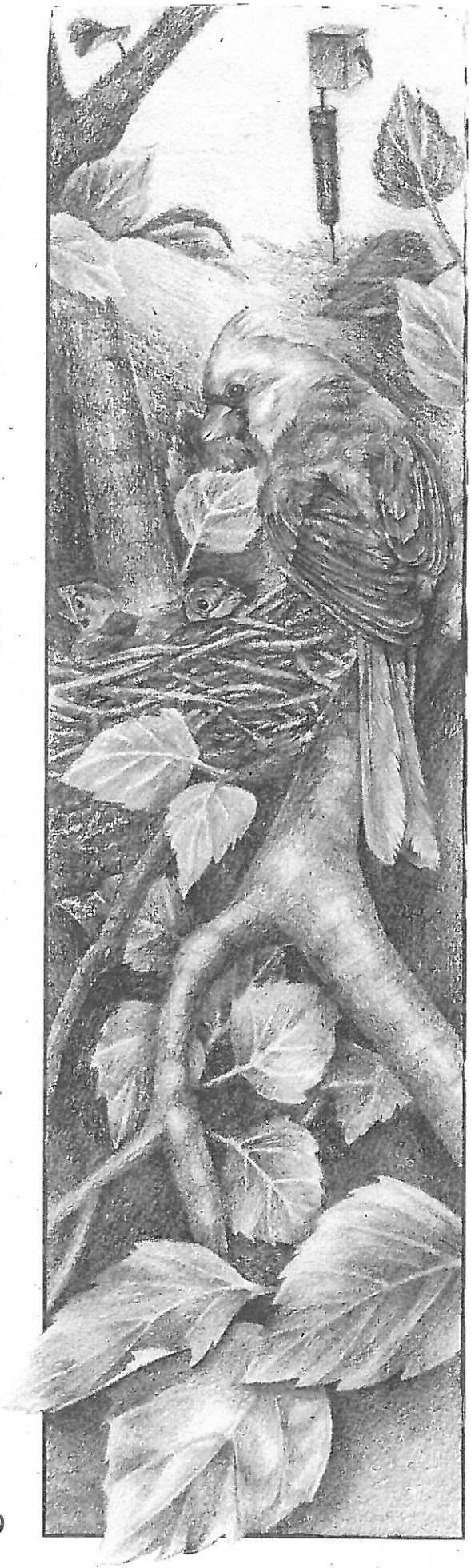
Birds need two kinds of shelter: protection from predators and harsh weather, and cover in which to nest. Trees, shrubs, and vines in our landscapes can provide both kinds of shelter. For example, a firethorn shrub with its thick, prickly branches or a dense spruce tree both will give a cardinal a place to escape a predator or snowstorm as well as a place to build a nest to raise young. By choosing wisely, the species we landscape with can also provide for wildlife. Important note: when selecting plants for your landscape avoid invasive species including bush honeysuckles, buckthorns, and perennials like purple loosestrife.

For more information on attracting wildlife, see Publication #396, *Urban Landscape Management for Wildlife*

Ohio's top 10 invasive plant species to avoid:

1. *Purple loosestrife*
2. *Glossy (or Shining) buckthorn*
3. *European (or Common) buckthorn*
4. *Japanese honeysuckle*
5. *Japanese knotweed*
6. *Autumn-olive*
7. *Common reed grass*
8. *Reed canary grass*
9. *Garlic mustard*
10. *Multiflora rose*

Even with plenty of trees and shrubs available to them, some birds just won't build a nest in such a planting, but instead need cavities in which to raise young. This includes bluebirds, wrens, chickadees, some owls, and wood ducks. They may use a hollow tree or rotted out tree limb. We can duplicate natural cavities by putting up nest boxes of certain dimensions to appeal to particular species. Still other birds like mourning doves and robins may build their nest on a base we provide. Refer to the following plans for various nest boxes and shelves.

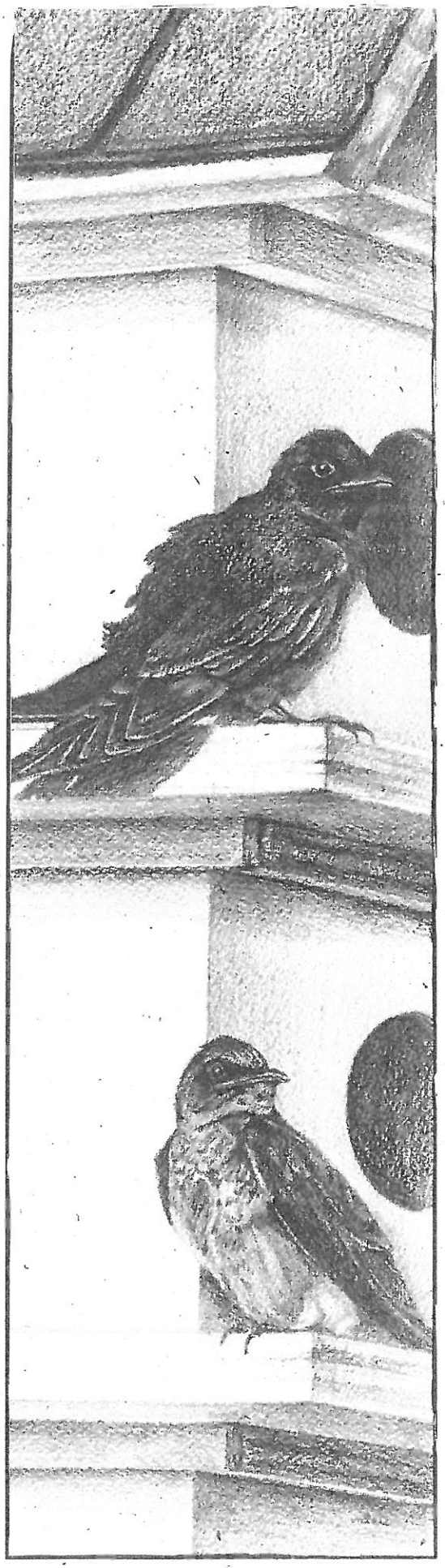


BIRD NEST BOX DIMENSIONS & PLACEMENTS

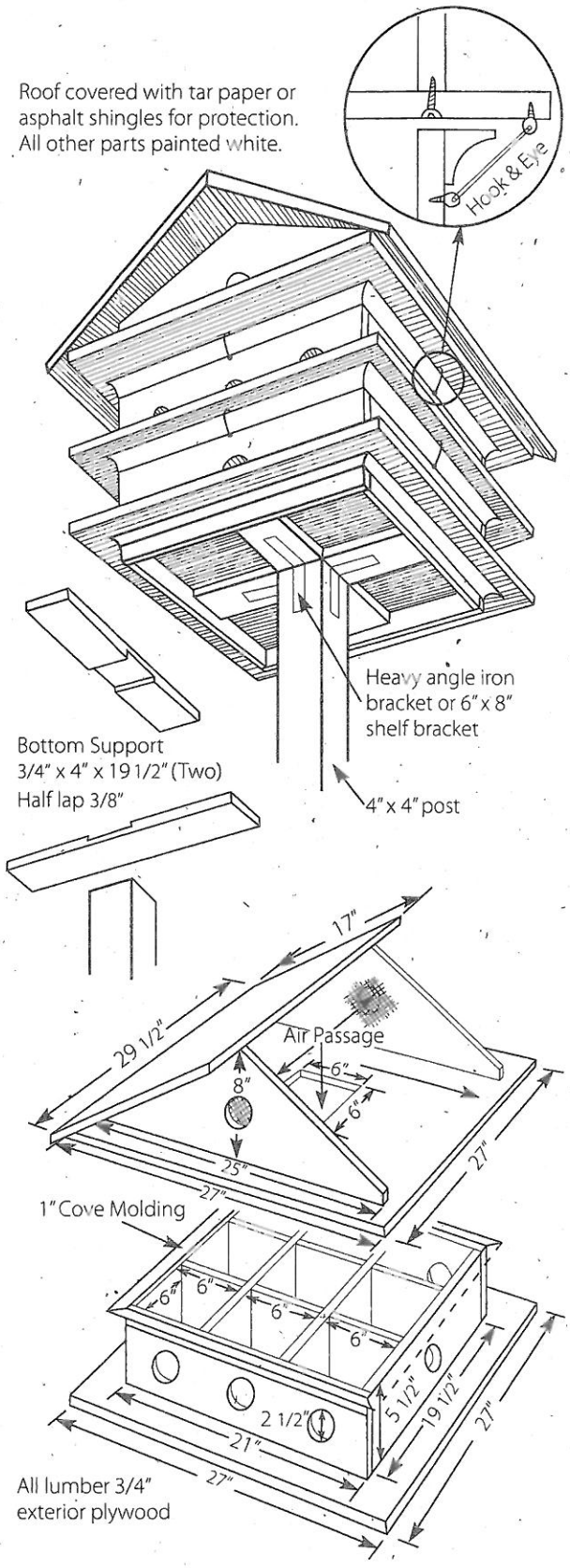
Species	Specifications					
	Inches				Feet Above Ground	Preferred Habitat
	Entrance		Floor Dimensions	House Depth		
	Diameter	Above Floor				
Bluebird	1 ½	6-7	5 x 5	8-9	5-10	Open field
Chickadee, black capped	1 ⅛	6-8	4 x 4	8-10	5-15	Woodland
" Carolina	1 ⅛	6-8	4 x 4	8-10	6-15	Woodland
Flicker	2 ½	14-16	7 x 7	16-18	6-20	Woodland
Flycatcher, great crested	2	6-8	6 x 6	8-10	8-20	Woodland
Kestrel	3	9-12	8 x 8	12-15	10-30	Open field
Martin, purple	2 ½*	1*	6 X 6*	6*	15-20	Open fields AWAY from trees & NEAR water
Nuthatch, white-breasted	1 ¼	6-8	4 x 4	8-10	12-20	Woodland
Owl, barred	7 x 7 arch	12	12 x 12	23	20-23	Woodland
" screech-	3	9-12	8 x 8	12-15	10-30	
" barn	6 x 6	6	12 x 36	15-18	20-25	Open field
Phoebe	Open front & sides		7 x 7	8	8-12	Backyard
Robin	Open front & sides		7 x 7	8	8-12	Backyard
Swallow, tree	1 ½	5	5 x 5	6	6-10	Open field near water
Titmouse, tufted	1 ¼	6-8	4 x 4	8-10	6-15	Woodland edge & interior
Warbler, prothonotary	1 ½	6	5 x 5	8	5-10	Over and near water
Woodpecker, downy	1 ¼	6-8	4 x 4	8-10	6-20	Woodland interior (fill nestbox completely with pine shavings)
" hairy	1 ½	9-12	6 x 6	12-15	12-20	
" red-bellied	2 ½	10-12	6 x 6	12-14	12-20	
" red-headed	2	9-12	6 x 6	12-15	12-20	
Wren, Carolina	1 ½	4-6	4 x 4	6-8	5-10	Near brushy areas & backyards
" house	1 ¼	4-6	4 x 4	6-8	5-10	

*These are the dimensions for one compartment. Martins nest in colonies; therefore, martin houses should have a minimum of six self-contained apartments.

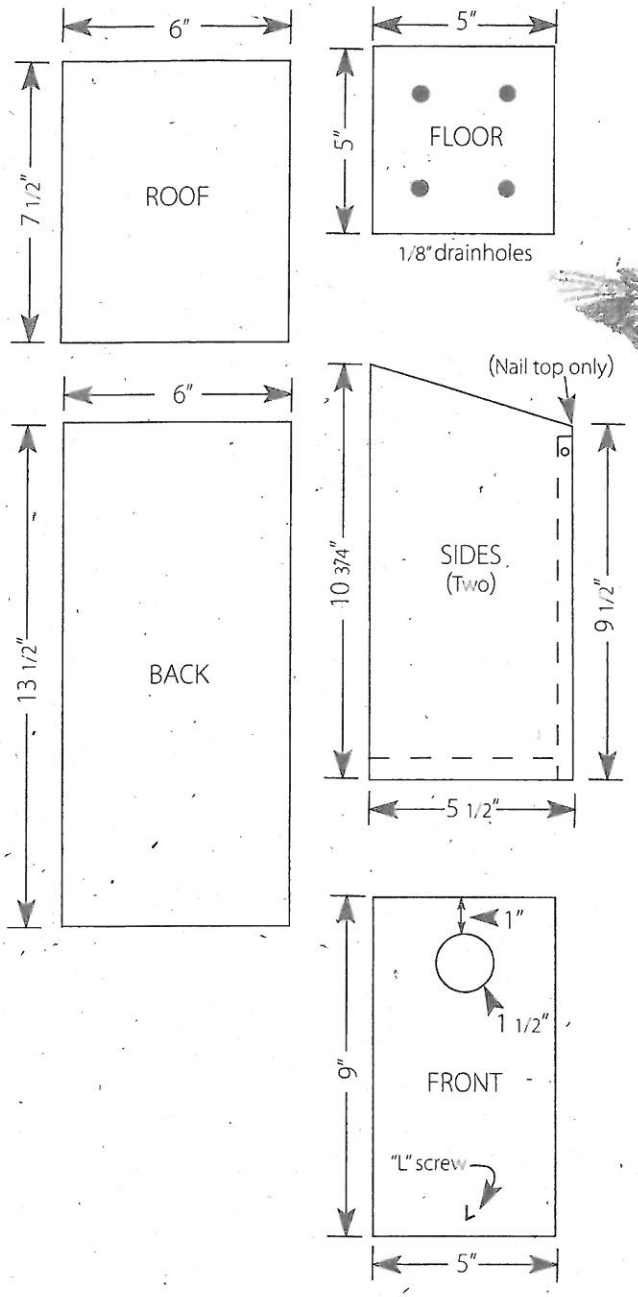
Removing unwanted species such as starlings and house sparrows will increase your chances for nesting success.

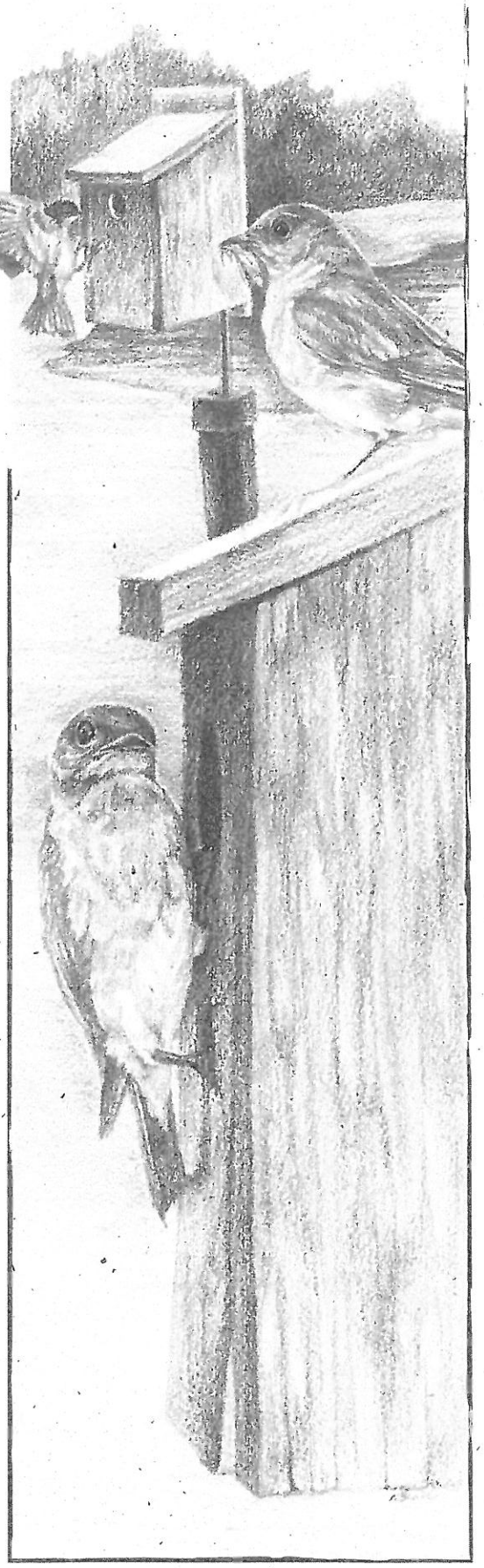


PURPLE MARTIN HOUSE



TREE SWALLOW OR EASTERN BLUEBIRD NEST BOX



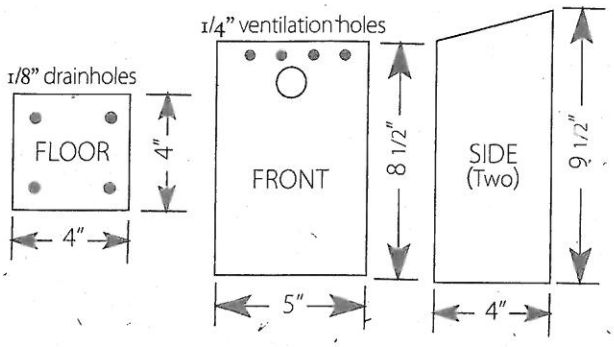


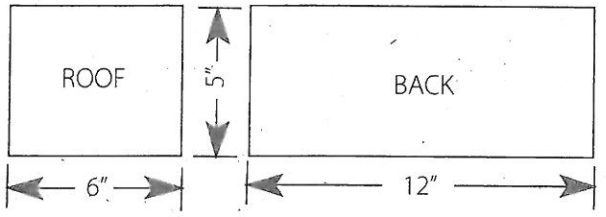
Secured with long nails from sides and an "L" screw at the bottom front. This enables front to swing out for easy cleanining.

Tree swallow boxes should be mounted near water.

SMALL FOREST NEST BOX

CHICKADEE, TUFTED TITMOUSE, NUTHATCH, OR DOWNY WOODPECKER*





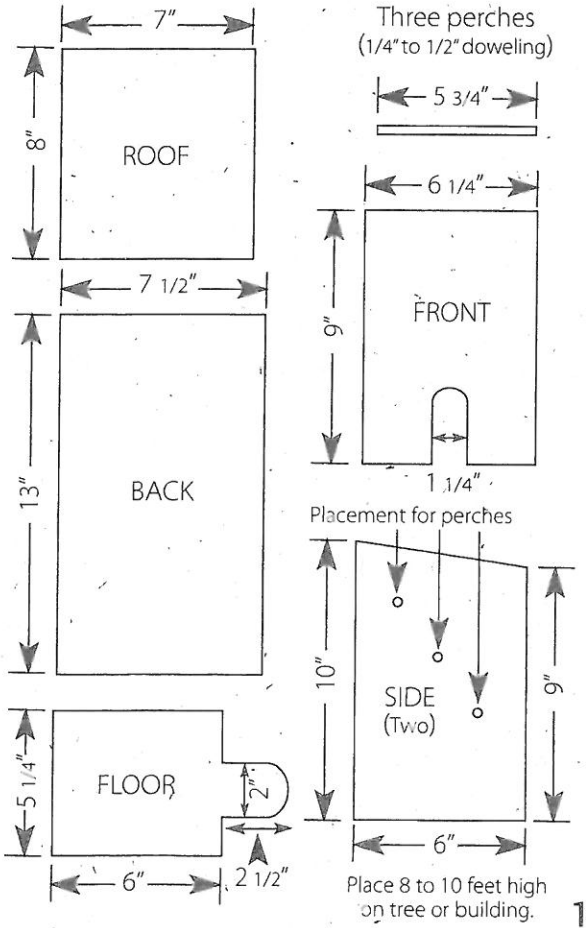
(See Table for entrance dimensions)

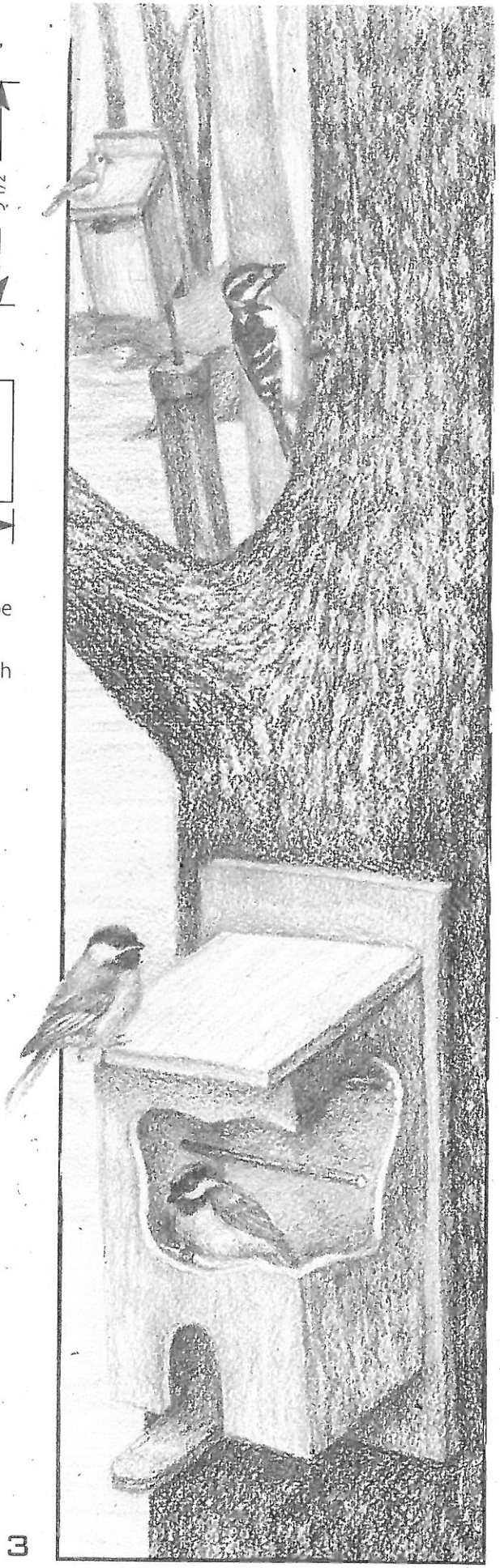
Screws are used to secure bottom so that it may be removed for cleaning.

*To attract woodpeckers, fill box completely with pine shavings.

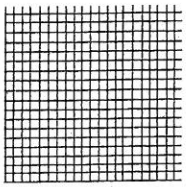
ROOSTING SHELTER

(FOR WINTERING BIRDS)

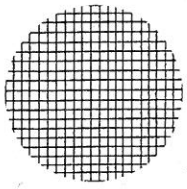




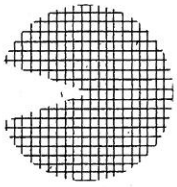
MOURNING DOVE NEST STRUCTURE



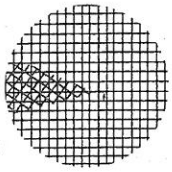
1. Cut a 12" square piece of hardware cloth.



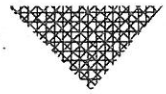
2. Trim the 12" square to form a circle.



3. Cut out a "pie" shape as shown.

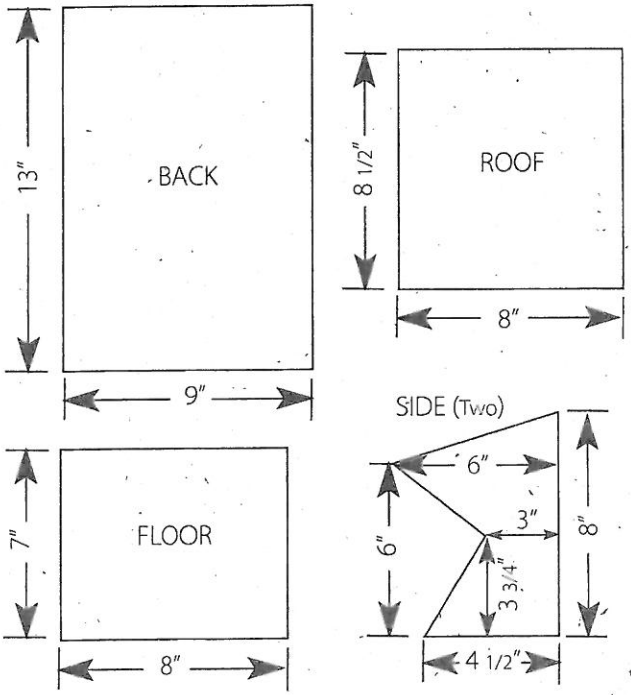


4. Close pie cut by overlapping cut edges about 3".

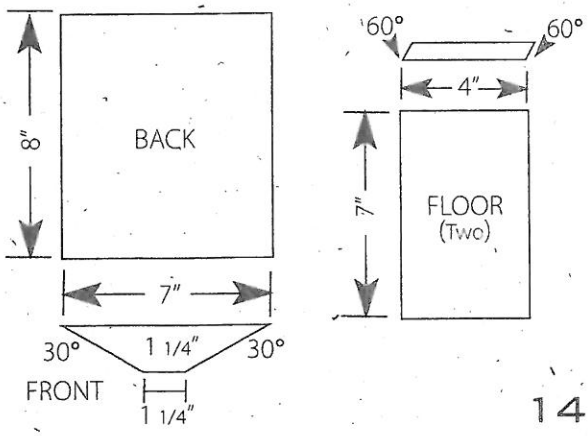


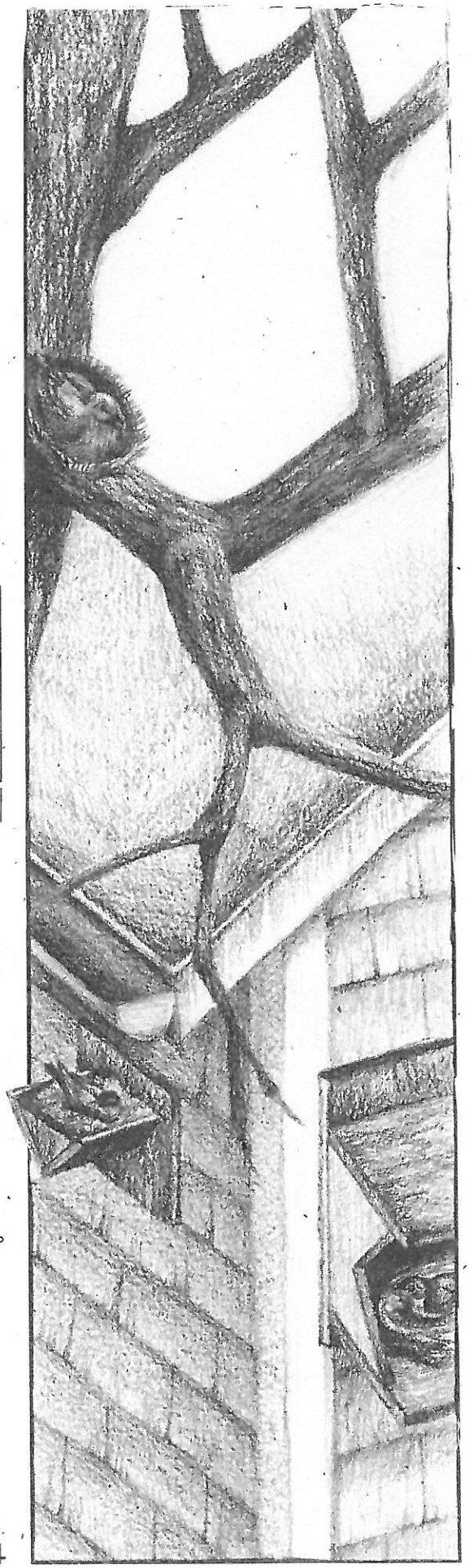
5. Side view of cone nest ready for nailing in tree.

NEST SHELF FOR ROBINS & PHOEBES

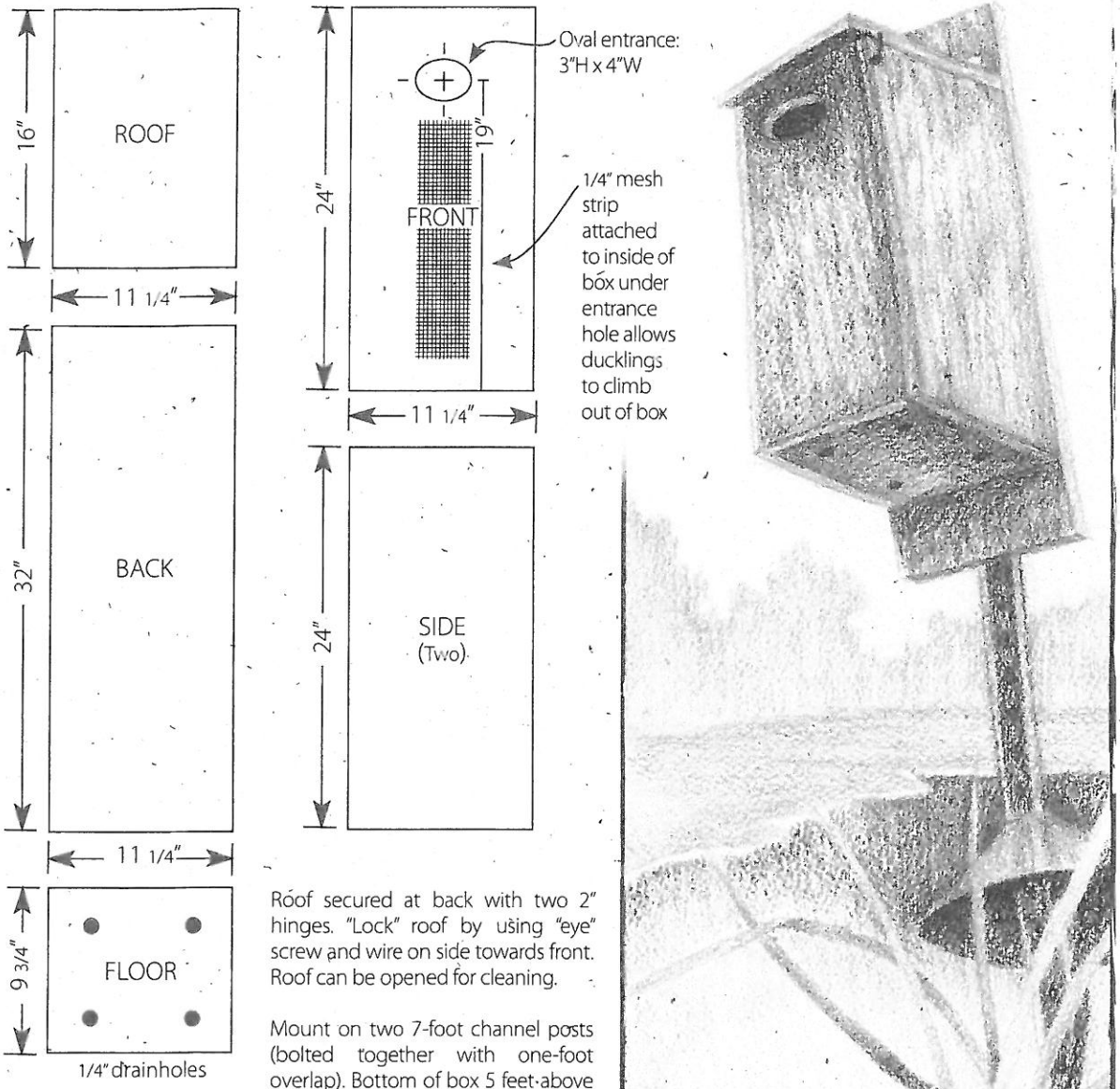


UNROOFED SHELF FOR USE UNDER PROTECTIVE HANGING (FOR ROBINS & PHOEBES)





WOOD DUCK NEST BOX

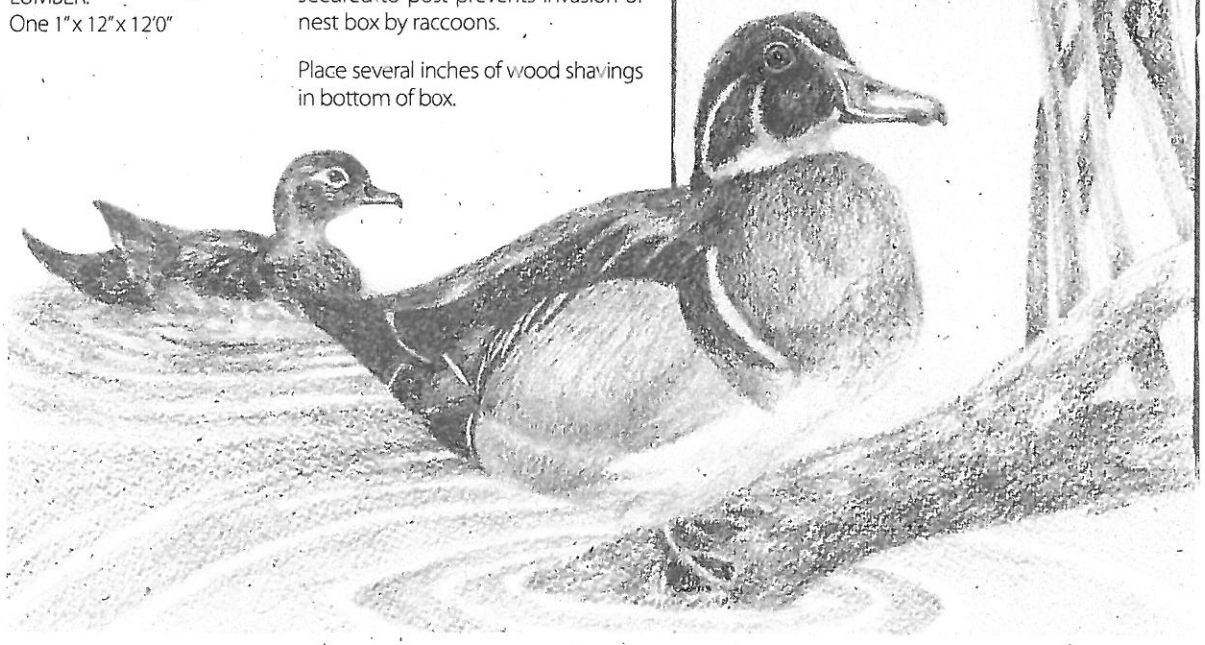


Roof secured at back with two 2" hinges. "Lock" roof by using "eye" screw and wire on side towards front. Roof can be opened for cleaning.

Mount on two 7-foot channel posts (bolted together with one-foot overlap). Bottom of box 5 feet above waterline. Post 3 feet into ground of pond or lake bottom. Metal cone secured to post prevents invasion of nest box by raccoons.

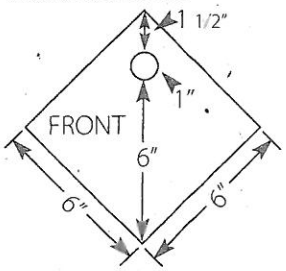
Place several inches of wood shavings in bottom of box.

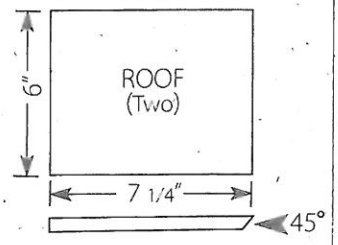
LUMBER:
One 1"x 12"x 12'0"

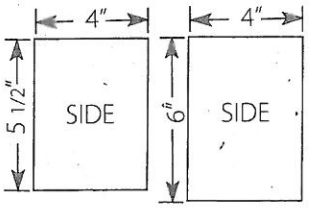


WREN HOUSES

Back same as front, except there is no entrance.

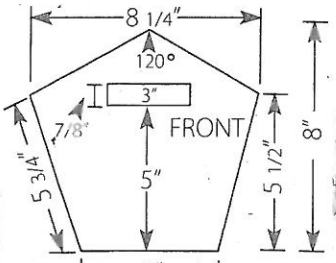


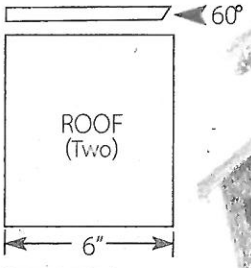


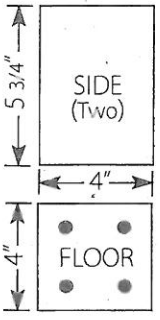


Hinged roof for observation and cleaning.

Back same as front, except there is no entrance.



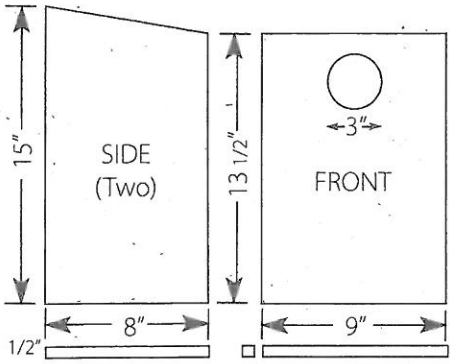


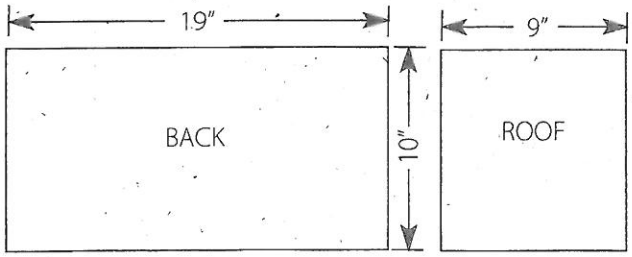


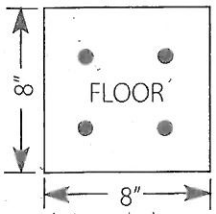
NOTE: Constructed so sides swing out for cleaning. Both sides are secured with an "L" screw.

1/8" drainage holes

AMERICAN KESTREL OR SCREECH OWL NEST BOX





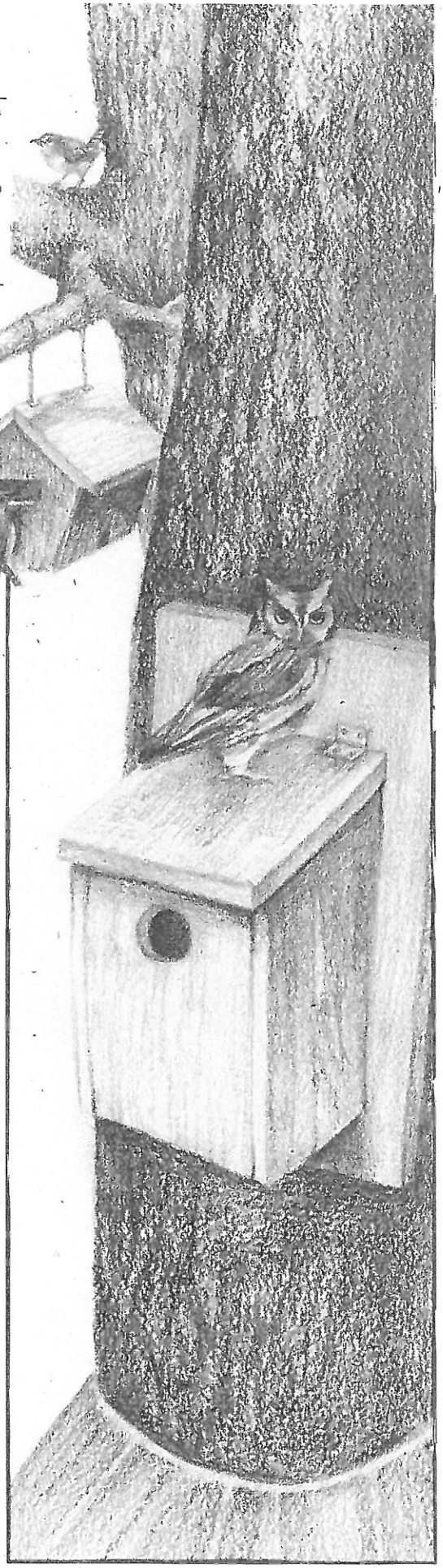


1/4" drainage holes

NOTE: Roof is secured by two 2" hinges, and one hook and eye fastener.

Mount in a wooded location for owls or an open, grassy area for kestrels.

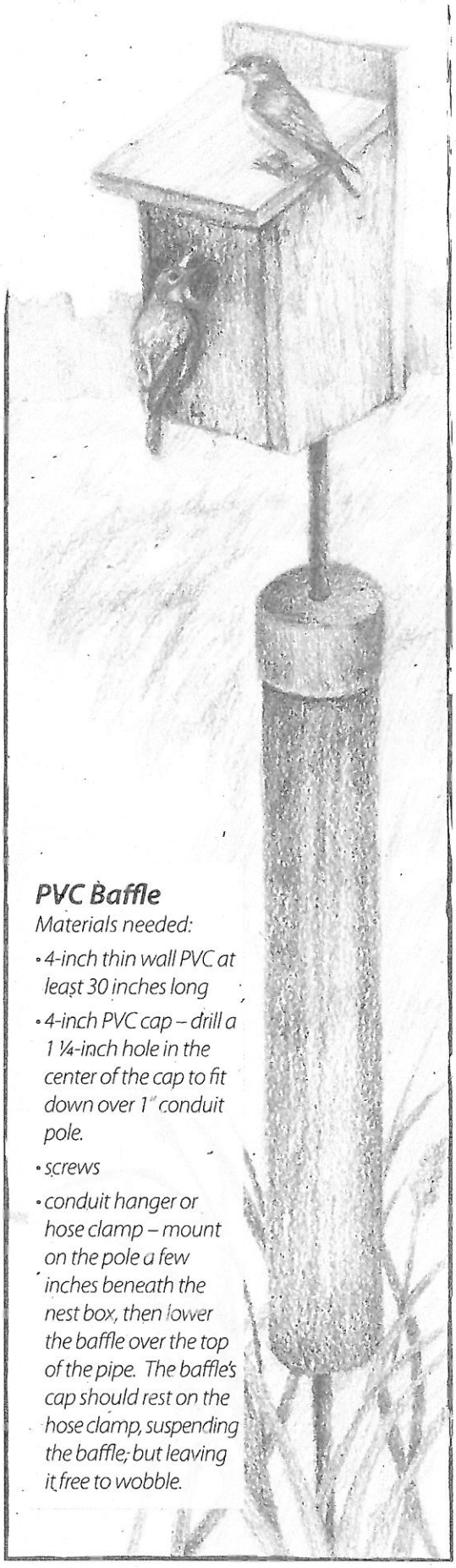
Place several inches of wood shavings in the bottom of box.



If you put up a nest box for birds it is very important, as a landlord, that you make the nesting structure as safe as possible for the inhabitants. The responsibility includes placing the nest box in the proper habitat for the desired species and protecting it from predators. Raccoons are very numerous in all areas of Ohio and will readily investigate a nest box and make a meal of eggs or nestlings. To safeguard against predation by raccoons, snakes, and house cats, always install nest boxes on a post with a predator guard. NEVER simply nail a nest box to a fencepost or tree. For mounting a nest box, either a wood or metal post can be used. A popular choice is one-inch diameter conduit pipe that can be purchased at a hardware store and cut with a hacksaw. An eight-foot section driven two feet into the ground will keep the nest box low enough for easy maintenance, but too high for cats to jump up on to.

PREDATOR GUARDS

Any number of predator guards are available commercially or you can make your own out of common materials found at a hardware store. Whether using PVC pipe or aluminum downspout, predator guards should be at least 30 inches long and placed on the post directly below the nest box. The nature of the materials (PVC and aluminum) is slippery and when mounted properly will wobble and thus retard a raccoon or other predator from gaining a foothold and climbing up to the nest box. A cone type guard should also prevent a predator from scaling a post. The same type of predator guards used to protect nest boxes can also be used to keep raccoons off of post-mounted bird feeders.



PVC Baffle

Materials needed:

- *4-inch thin wall PVC at least 30 inches long*
- *4-inch PVC cap – drill a 1 ¼-inch hole in the center of the cap to fit down over 1" conduit pole.*
- *screws*
- *conduit hanger or hose clamp – mount on the pole a few inches beneath the nest box, then lower the baffle over the top of the pipe. The baffle's cap should rest on the hose clamp, suspending the baffle, but leaving it free to wobble.*

Aluminum Downspout Baffle

Cut a 10-foot downspout into thirds with a hacksaw to make three guards. Attach the downspout to the post or the back of the nest box using screws or wire.

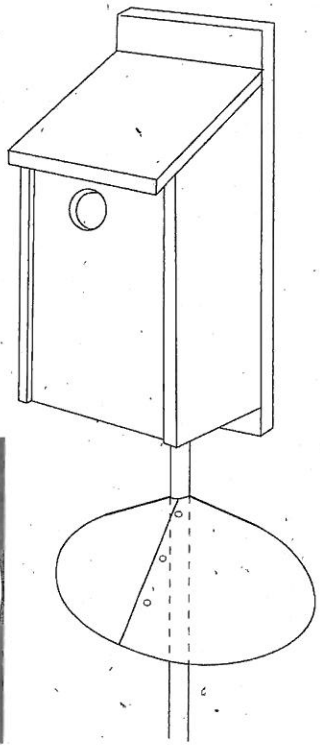
Note: *As described, this downspout is not snake-proof. To add extra protection against snakes, pack wads of steel wool into the top three inches of the guard, directly below the nest box.*

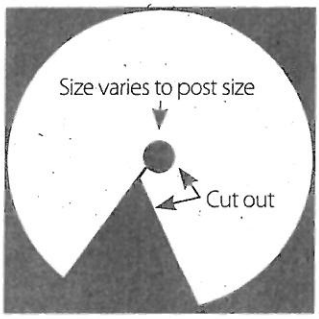
Cone Guard

Materials needed:

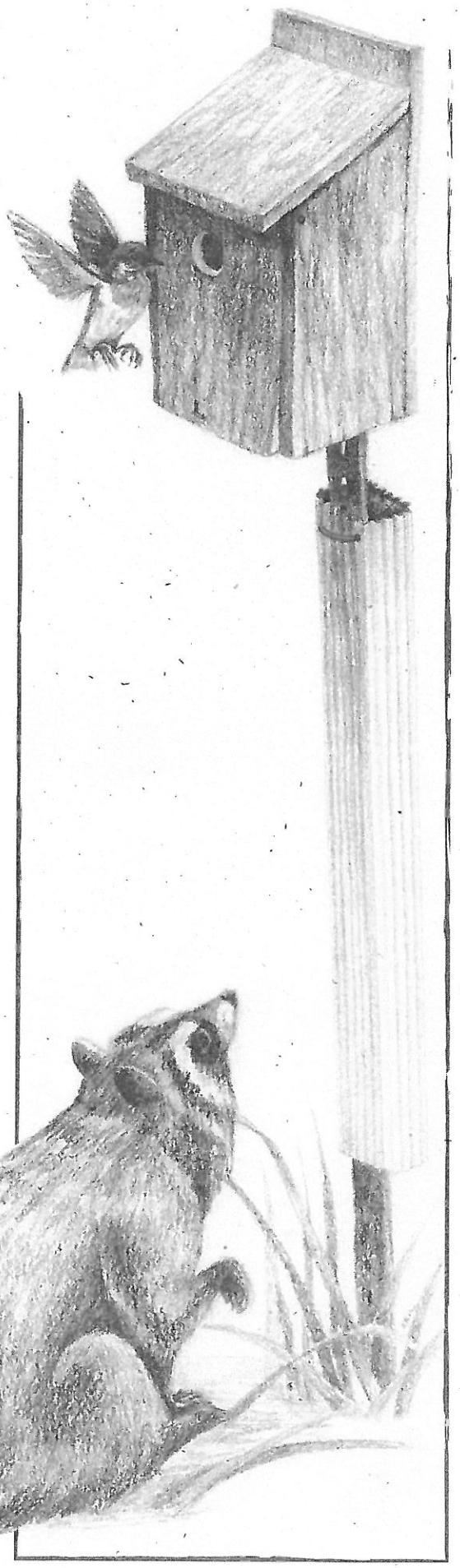
- *3-foot diameter circle of 24- or 26-guage galvanized sheet metal*
- *¼ inch round head stove bolts*
- *2 hanger iron straps*

[refer to drawing]





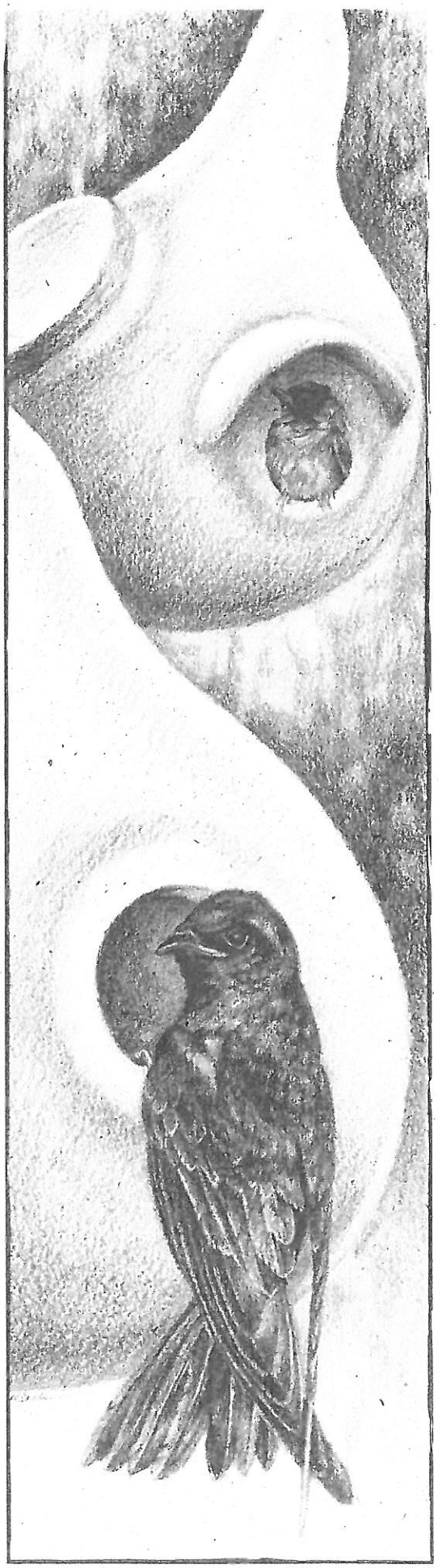
3' x 3' Galvanized sheet metal



GENERAL CARE & MAINTENANCE

Bird houses and nesting boxes should be cleaned at least once each year. This type of maintenance will help keep the nest box useful longer and reduce bird parasite problems. Cleaning should be done prior to March, but is better done in the fall to make the box clean and available for winter roost use. The Bird Nest Box Dimensions and Placements Table gives measurements for bird nest box construction and location. Other tips include: Erect two bluebird houses 25 feet apart in an open, mowed grassy area to increase the odds of attracting both bluebirds and tree swallows. Place several inches of wood chips in houses for owls and wood ducks. Experiment with constructing rustic houses out of sections of tree limbs with natural holes. Gourds may be used for great-crested flycatchers, wrens, tree swallows, and purple martins. Phoebe nesting platforms should be mounted under eaves and near water. Robin platforms should have a roof while tree swallow nest boxes should be placed near water.

Purple martins can be a challenge to attract. Housing or gourds for martins should be located in open areas, near water and be available by mid-April when the juvenile males return to the area. Vital to attracting and keeping purple martins is control of competing species, namely house sparrows and European starlings. For detailed information on how to attract martins, contact the Purple Martin Conservation Association at www.purplemartin.org.



WATER

In Ohio we are fortunate to have adequate rainfall so in general, there is often plenty of water for wildlife. The exceptions occur when there is a summer drought or a winter freeze. During harsh conditions such as these, a bird bath could attract more birds to your yard than a bird feeder! Most birds prefer a shallow bath of 1 1/2 to 2 inches of water. If your bird bath is deeper than this, add flat rocks in the bottom to bring it to the proper depth. In the summer, bird baths should be scrubbed out weekly to keep algae at a minimum, as well as to guard against becoming a breeding pool for mosquitoes. Moving water is even more attractive to birds than still water, so consider a mister or dripper (available commercially or you can make your own) to add more appeal. In the winter an electric bird bath heater will keep the water open and available to the birds.

Easy Milk Jug Dripper

Materials needed:

- Plastic milk jug with screw-on cap
- Sewing needle
- Rope
- Clay pot that will cover the milk jug (optional)

Directions:

1. Wash the empty milk jug well.
2. Using the needle, poke 1 hole in the bottom of the jug
3. Fill the jug with water and replace the cap.
4. Adjust the flow of water by tightening or loosening the cap. A slow drip of water (8-10 drips/minute) is best.
5. Tie the rope to the handle of the jug. If you want the jug to be covered, slip the clay pot (up side down) over the top of the jug. Thread the rope through the hole in the bottom of the pot.
6. Hang the dripping jug from a tree or hook over a birdbath so that the water drips into the birdbath.

IN SUMMARY

Attracting birds to your backyard, office lot, or community park can truly add quality to life and provide endless entertainment and an opportunity to discover more for children and adults alike. Depending on an individual's level of interest the antics of birds at feeders or when nesting can be simple amusement without knowing one species from another, or it can lead to a lifetime of learning as much as possible about birds, including being able to identify species by sight and song. As more and more is learned about bird species – their habits, habitats and relationship to the environment become increasingly interesting which can make one more knowledgeable about wildlife conservation as a whole.

For a list of birds that occur in Ohio, request Publication #363, *Birds of Ohio.*

Ohio Department of Natural Resources

DIVISION OF WILDLIFE

Ted Strickland, Governor • Sean D. Logan, Director • David M. Graham, Chief

PUBLICATION 37 (R-108)

Total copies printed: 25,000 Unit cost: $.203 Publication date: 5/2008

A FIELD CHECKLIST

BIRDS OF OHIO

Lake Erie Birding Trail

www.lakeerieohiobirding.info

Publication 5363 (R0212)
Total Quantities Printed 10,000 Unit Cost $0.215 Publication Date 03/12

Ohio Division of Wildlife

This checklist represents a comprehensive list of all birds seen in Ohio as of January 2012. Only species that have indisputable documentation supporting an unequivocal record are included. At present, the Ohio state list stands at 422 species. Species are arranged taxonomically, and separated by family.

Approximately 180 species breed in Ohio every year, and including historical nesters, 210 species have been documented as breeding in the state. Species which have been validated as nesting are **boldfaced**. Six species are non-native, but established; they are printed in *italics*. Failed introductions such as gray partridge are not included.

Each species is denoted by a number, 1 through 5, or as extirpated or extinct. Some species tagged with a 4 exceed the threshold of a 3 based largely on historical records, and are very difficult to find now. Following are the definitions of these categories, and how many species fall into each:

1 = **ONE RECORD** (35 species)
2 = **TWO TO TEN RECORDS** (49 species)
3 = **ELEVEN TO TWENTY RECORDS** (12 species)
4 = **RARE TO UNCOMMON; MAY NOT OCCUR ANNUALLY** (94 species)
5 = **OCCURS ANNUALLY; EASILY FOUND** (225 species)
EXTINCT = NO LONGER EXISTS ANYWHERE (4 species)
EXTIRPATED = NO LONGER BREEDS IN OHIO, ALTHOUGH FOUND ELSEWHERE (3 species)

The Ohio Division of Wildlife owns and/or manages 139 wildlife areas totaling approximately 195,000 acres. Some of these wildlife areas are among the most iconic birding sites in the state, such as Magee Marsh, Killbuck Marsh, Big Island, Killdeer Plains, Pickerel Creek, and Crown City. Collectively, the Division of Wildlife's holdings support nearly all of the bird species regularly seen in Ohio.

SUPPORT CONSERVATION!

Contact us at: **wildohio.com** or call
1-800-WILDLIFE

Ducks, Geese, Swans

Notes

	Black-bellied	
____	Whistling-Duck 2	____
	Fulvous	
____	Whistling-Duck 3	____
	Greater White-fronted	
____	Goose 4	____
____	Snow Goose 5	____
____	Ross's Goose 4	____
____	Brant 4	____
____	Cackling Goose 4	____
____	**Canada Goose** 5	____
____	*Mute Swan* 5	____
____	**Trumpeter Swan** 5	____
____	Tundra Swan 5	____
____	**Wood Duck** 5	____
____	**Gadwall** 5	____
____	Eurasian Wigeon 4	____
____	**American Wigeon** 5	____
____	**American Black Duck** 5	____
____	**Mallard** 5	____
____	**Blue-winged Teal** 5	____
____	Cinnamon Teal 2	____
____	**Northern Shoveler** 5	____
____	**Northern Pintail** 5	____
____	Garganey 2	____
____	**Green-winged Teal** 5	____
____	**Canvasback** 5	____
____	**Redhead** 5	____
____	Ring-necked Duck 5	____
____	Tufted Duck 1	____
____	Greater Scaup 5	____
____	**Lesser Scaup** 5	____
____	King Eider 4	____
____	Common Eider 2	____
____	Harlequin Duck 4	____
____	Surf Scoter 5	____
____	White-winged Scoter 4	____
____	Black Scoter 5	____
____	Long-tailed Duck 4	____
____	Bufflehead 5	____
____	Common Goldeneye 5	____
____	Barrow's Goldeneye 2	____
____	**Hooded Merganser** 5	____
____	**Common Merganser** 5	____
____	**Red-breasted Merganser** 5	____
____	**Ruddy Duck** 5	____

Quail

Notes

____ Northern Bobwhite 5 _____

Pheasant, Grouse, Prairie-Chicken, Turkey

____ *Ring-necked Pheasant* 5 _____

____ Ruffed Grouse 5 _____

____ Greater Prairie-Chicken (Extirpated) _____

____ Wild Turkey 5 _____

Loons

____ Red-throated Loon 4 _____

____ Pacific Loon 2 _____

____ Common Loon 5 _____

Grebes

____ Pied-billed Grebe 5 _____

____ Horned Grebe 5 _____

____ Red-necked Grebe 4 _____

____ Eared Grebe 4 _____

____ Western Grebe 3 _____

Petrels

____ Black-capped Petrel 1 _____

Storm-Petrels

____ Leach's Storm-Petrel 1 _____

Storks

____ Wood Stork 2 _____

Frigatebird

____ Magnificent Frigatebird 2 _____

Gannet

____ Northern Gannet 4 _____

Cormorant

____ Double-crested Cormorant 5 _____

Anhinga

____ Anhinga 2 _____

Pelicans

____ American White Pelican 4 _____

____ Brown Pelican 2 _____

Bitterns, Egrets, Herons

____ American Bittern 4 _____

____ Least Bittern 4 _____

____ Great Blue Heron 5 _____

____ Great Egret 5 _____

____ Snowy Egret 5 _____

Notes

____ Little Blue Heron 4 _____
____ Tricolored Heron 4 _____
____ Cattle Egret 4 _____
____ Green Heron 5 _____
____ Black-crowned Night-Heron 5 _____
____ Yellow-crowned Night-Heron 4 _____

Ibis, Spoonbill

____ White Ibis 3 _____
____ Glossy Ibis 4 _____
____ White-faced Ibis 3 _____
____ Roseate Spoonbill 2 _____

Vultures

____ Black Vulture 5 _____
____ Turkey Vulture 5 _____

Osprey

____ Osprey 5 _____

Eagles, Harrier, Hawks, Kites

____ Swallow-tailed Kite 2 _____
____ Mississippi Kite 4 _____
____ Bald Eagle 5 _____
____ Northern Harrier 5 _____
____ Sharp-shinned Hawk 5 _____
____ Cooper's Hawk 5 _____
____ Northern Goshawk 4 _____
____ Harris's Hawk 1 _____
____ Red-shouldered Hawk 5 _____
____ Broad-winged Hawk 5 _____
____ Swainson's Hawk 2 _____
____ Red-tailed Hawk 5 _____
____ Rough-legged Hawk 5 _____
____ Golden Eagle 4 _____

Falcons

____ American Kestrel 5 _____
____ Merlin 5 _____
____ Gyrfalcon 2 _____
____ Peregrine Falcon 5 _____
____ Prairie Falcon 2 _____

Coot, Gallinule, Moorhen, Rails

____ Yellow Rail 4 _____
____ Black Rail 3 _____

Notes

___ King Rail 4 _____
___ Virginia Rail 5 _____
___ Sora 5 _____
___ Purple Gallinule 4 _____
___ Common Gallinule 5 _____
___ American Coot 5 _____

Crane

___ Sandhill Crane 5 _____

Lapwing, Plovers

___ Northern Lapwing 1 _____
___ Black-bellied Plover 5 _____
American
___ Golden-Plover 5 _____
___ Snowy Plover 2 _____
___ Wilson's Plover 1 _____
___ Semipalmated Plover 5 _____
___ Piping Plover 4 _____
___ Killdeer 5 _____

Avocet, Stilt

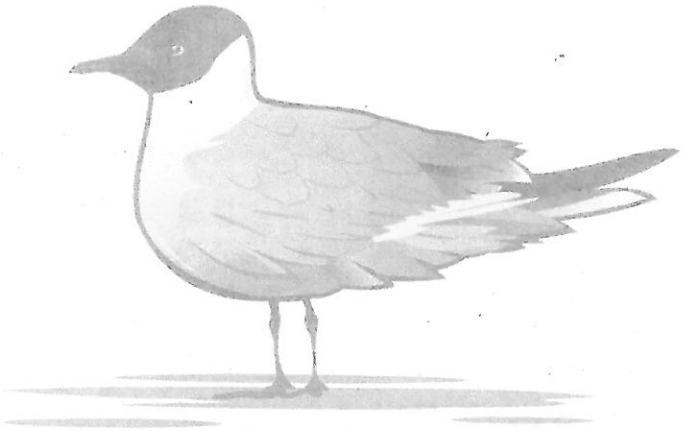
___ Black-necked Stilt 4 _____
___ American Avocet 4 _____

Sandpipers

___ Spotted Sandpiper 5 _____
___ Solitary Sandpiper 5 _____
___ Spotted Redshank 1 _____
___ Greater Yellowlegs 5 _____
___ Willet 4 _____
___ Lesser Yellowlegs 5 _____
___ Upland Sandpiper 4 _____
Eskimo Curlew (Extinct)
___ Whimbrel 4 _____
___ Long-billed Curlew 2 _____
___ Hudsonian Godwit 4 _____
___ Marbled Godwit 4 _____
___ Ruddy Turnstone 5 _____
___ Red Knot 4 _____
___ Sanderling 5 _____
___ Semipalmated Sandpiper 5 _____
___ Western Sandpiper 5 _____
___ Red-necked Stint 1 _____
___ Least Sandpiper 5 _____
___ White-rumped Sandpiper 5 _____
___ Baird's Sandpiper 5 _____
___ Pectoral Sandpiper 5 _____
___ Sharp-tailed Sandpiper 2 _____

Notes

____ Purple Sandpiper 4
____ Dunlin 5
____ Curlew Sandpiper 2
____ Stilt Sandpiper 5
____ Buff-breasted Sandpiper 4
____ Ruff 4
____ Short-billed Dowitcher 5
____ Long-billed Dowitcher 5
____ **Wilson's Snipe** 5
____ Eurasian Woodcock 1
____ **American Woodcock** 5
____ **Wilson's Phalarope** 4
____ Red-necked Phalarope 4
____ Red Phalarope 4



Gulls, Terns

____ Black-legged Kittiwake 4
____ Ivory Gull 1
____ Sabine's Gull 4
____ Bonaparte's Gull 5
____ Black-headed Gull 4
____ Little Gull 4
____ Ross's Gull 1
____ Laughing Gull 4
____ Franklin's Gull 4
____ Black-tailed Gull 1
____ Heermann's Gull 2
____ Mew Gull 2
____ **Ring-billed Gull** 5
____ California Gull 4
____ **Herring Gull** 5
____ Thayer's Gull 4
____ Iceland Gull 4

Notes

___ Lesser Black-backed Gull 4 _____
___ Glaucous Gull 4 _____
Great Black-backed
___ Gull 5 _____
___ Sooty Tern 1 _____
___ Least Tern 4 _____
___ Large-billed Tern 1 _____
___ Caspian Tern 5 _____
___ Black Tern 4 _____
___ Common Tern 5 _____
___ Arctic Tern 2 _____
___ Forster's Tern 5 _____
___ Royal Tern 2 _____

Jaegers

___ Pomarine Jaeger 4 _____
___ Parasitic Jaeger 4 _____
___ Long-tailed Jaeger 3 _____

Guillemot, Murre, Murrelets, Puffin

___ Thick-billed Murre 3 _____
___ Black Guillemot 1 _____
___ Long-billed Murrelet 1 _____
___ Ancient Murrelet 1 _____
___ Atlantic Puffin 1 _____

Doves, Pigeons

___ *Rock Pigeon* 5 _____
___ *Eurasian Collared-Dove* 4 _____
___ White-winged Dove 2 _____
___ Mourning Dove 5 _____
Passenger Pigeon (Extinct)
___ Common Ground-Dove 1 _____

Parakeet

Carolina Parakeet (Extinct)

Anis, Cuckoos

___ Yellow-billed Cuckoo 5 _____
___ Black-billed Cuckoo 5 _____
___ Smooth-billed Ani 1 _____
___ Groove-billed Ani 2 _____

Barn Owl

___ Barn Owl 4 _____

Typical Owls

___ Eastern Screech-Owl 5 _____
___ Great Horned Owl 5 _____
___ Snowy Owl 4 _____
___ Northern Hawk Owl 2 _____

Notes

___ Burrowing Owl 2 _____
___ Barred Owl 5 _____
___ Great Gray Owl 2 _____
___ Long-eared Owl 4 _____
___ Short-eared Owl 4 _____
___ Boreal Owl 1 _____
___ Northern Saw-whet Owl 4 _____

NIGHTJARS

___ Common Nighthawk 5 _____
___ Chuck-will's-widow 4 _____
___ Eastern Whip-poor-will 4 _____

SWIFT

___ Chimney Swift 5 _____

HUMMINGBIRDS

___ Green Violetear 1 _____
___ Ruby-throated Hummingbird 5 _____
___ Anna's Hummingbird 1 _____
___ Calliope Hummingbird 1 _____
___ Rufous Hummingbird 4 _____
___ Allen's Hummingbird 1 _____

KINGFISHER

___ Belted Kingfisher 5 _____

WOODPECKERS

___ Red-headed Woodpecker 5 _____
___ Red-bellied Woodpecker 5 _____
___ Yellow-bellied Sapsucker 5 _____
___ Downy Woodpecker 5 _____
___ Hairy Woodpecker 5 _____
___ Red-cockaded Woodpecker 2 _____
___ Black-backed Woodpecker 3 _____
___ Northern Flicker 5 _____
___ Pileated Woodpecker 5 _____
Ivory-billed Woodpecker (Extinct)

FLYCATCHERS

___ Olive-sided Flycatcher 4 _____
___ Eastern Wood-Pewee 5 _____
___ Yellow-bellied Flycatcher 5 _____
___ Acadian Flycatcher 5 _____
___ Alder Flycatcher 5 _____
___ Willow Flycatcher 5 _____
___ Least Flycatcher 5 _____

Notes

___ Gray Flycatcher 2 _____
___ Dusky Flycatcher 1 _____
___ Eastern Phoebe 5 _____
___ Say's Phoebe 2 _____
___ Vermilion Flycatcher 2 _____
___ Great Crested Flycatcher 5 _____
___ Western Kingbird 4 _____
___ Eastern Kingbird 5 _____
___ Scissor-tailed Flycatcher 2 _____

Shrikes

___ Loggerhead Shrike 4 _____
___ Northern Shrike 4 _____

Vireos

___ White-eyed Vireo 5 _____
___ Bell's Vireo 4 _____
___ Yellow-throated Vireo 5 _____
___ Blue-headed Vireo 5 _____
___ Warbling Vireo 5 _____
___ Philadelphia Vireo 5 _____
___ Red-eyed Vireo 5 _____

Crow, Jay, Magpie, Raven

___ Blue Jay 5 _____
___ Black-billed Magpie 2 _____
___ American Crow 5 _____
___ Common Raven 4 _____

Lark

___ Horned Lark 5 _____

Martin, Swallows

___ Purple Martin 5 _____
___ Tree Swallow 5 _____
___ Violet-green Swallow 1 _____
___ Northern Rough-winged Swallow 5 _____
___ Bank Swallow 5 _____
___ Cliff Swallow 5 _____
___ Cave Swallow 3 _____
___ Barn Swallow 5 _____

Chickadees and Titmouse

___ Carolina Chickadee 5 _____
___ Black-capped Chickadee 5 _____
___ Boreal Chickadee 2 _____
___ Tufted Titmouse 5 _____

Nuthatches

Notes

Red-breasted
____ Nuthatch 5 _____

White-breasted
____ Nuthatch 5 _____

Brown-headed
____ Nuthatch 1 _____

Creeper

____ Brown Creeper 5 _____

Wrens

____ Rock Wren 1 _____
____ Carolina Wren 5 _____
____ Bewick's Wren (Extirpated)
____ House Wren 5 _____
____ Winter Wren 5 _____
____ Sedge Wren 4 _____
____ Marsh Wren 5 _____

Blue-gray Gnatcatcher

____ Blue-gray Gnatcatcher 5 _____

Kinglets

____ Golden-crowned Kinglet 5 _____
____ Ruby-crowned Kinglet 5 _____

Wheatear

____ Northern Wheatear 2 _____

Thrushes

____ Eastern Bluebird 5 _____
____ Mountain Bluebird 2 _____
____ Townsend's Solitaire 2 _____
____ Veery 5 _____

Notes

____ Gray-cheeked Thrush 5 _____
____ Swainson's Thrush 5 _____
____ Hermit Thrush 5 _____
____ Wood Thrush 5 _____
____ American Robin 5 _____
____ Varied Thrush 4 _____

Catbird, Mockingbird, Thrasher

____ Gray Catbird 5 _____
____ Northern Mockingbird 5 _____
____ Brown Thrasher 5 _____

Starling

____ *European Starling* 5 _____

Pipits

____ American Pipit 5 _____
____ Sprague's Pipit 2 _____

Waxwings

____ Bohemian Waxwing 4 _____
____ Cedar Waxwing 5 _____

Longspurs, Snow Bunting

____ Lapland Longspur 5 _____
____ Smith's Longspur 4 _____
____ Snow Bunting 5 _____

Warblers

____ Ovenbird 5 _____
____ Worm-eating Warbler 5 _____
____ Louisiana Waterthrush 5 _____
____ Northern Waterthrush 5 _____
____ Golden-winged Warbler 4 _____
____ Blue-winged Warbler 5 _____
____ Black-and-white Warbler 5 _____
____ Prothonotary Warbler 5 _____
____ Swainson's Warbler 3 _____
____ Tennessee Warbler 5 _____
____ Orange-crowned Warbler 4 _____
____ Nashville Warbler 5 _____
____ Connecticut Warbler 4 _____
____ Mourning Warbler 4 _____

Notes

____ Kentucky Warbler 5 _____
____ Common Yellowthroat 5 _____
____ Hooded Warbler 5 _____
____ American Redstart 5 _____
____ Kirtland's Warbler 4 _____
____ Cape May Warbler 5 _____
____ Cerulean Warbler 5 _____
____ Northern Parula 5 _____
____ Magnolia Warbler 5 _____
____ Bay-breasted Warbler 5 _____
____ Blackburnian Warbler 5 _____
____ Yellow Warbler 5 _____
____ Chestnut-sided Warbler 5 _____
____ Blackpoll Warbler 5 _____
____ Black-throated Blue Warbler 5 _____
____ Palm Warbler 5 _____
____ Pine Warbler 5 _____
____ Yellow-rumped Warbler 5 _____
____ Yellow-throated Warbler 5 _____
____ Prairie Warbler 5 _____
____ Black-throated Gray Warbler 2 _____
____ Townsend's Warbler 2 _____
____ Black-throated Green Warbler 5 _____
____ Canada Warbler 5 _____
____ Wilson's Warbler 5 _____
____ Painted Redstart 1 _____
____ Yellow-breasted Chat 5 _____

SPARROWS

____ Green-tailed Towhee 2 _____
____ Spotted Towhee 2 _____
____ Eastern Towhee 5 _____
____ Cassin's Sparrow 1 _____
____ Bachman's Sparrow (Extirpated) _____
____ American Tree Sparrow 5 _____
____ Chipping Sparrow 5 _____
____ Clay-colored Sparrow 4 _____
____ Field Sparrow 5 _____

Notes

____ Vesper Sparrow 5 _____
____ Lark Sparrow 4 _____
Black-throated
____ Sparrow 2 _____
____ Lark Bunting 3 _____
____ Savannah Sparrow 5 _____
____ Grasshopper Sparrow 5 _____
____ Baird's Sparrow 1 _____
____ Henslow's Sparrow 5 _____
____ Le Conte's Sparrow 4 _____
____ Nelson's Sparrow 4 _____
____ Fox Sparrow 5 _____
____ Song Sparrow 5 _____
____ Lincoln's Sparrow 5 _____
____ Swamp Sparrow 5 _____
White-throated
____ Sparrow 5 _____
____ Harris's Sparrow 4 _____
White-crowned
____ Sparrow 5 _____
Golden-crowned
____ Sparrow 1 _____
____ Dark-eyed Junco 5 _____

Buntings, Dickcissel, Cardinal, Grosbeaks, Tanagers

____ Summer Tanager 5 _____
____ Scarlet Tanager 5 _____
____ Western Tanager 2 _____
____ Northern Cardinal 5 _____
____ Rose-breasted Grosbeak 5 _____
____ Black-headed Grosbeak 2 _____
____ Blue Grosbeak 5 _____
____ Indigo Bunting 5 _____
____ Painted Bunting 2 _____
____ Dickcissel 5 _____

Blackbirds

____ Bobolink 5 _____
____ Red-winged Blackbird 5 _____
____ Eastern Meadowlark 5 _____
____ Western Meadowlark 4 _____
____ Yellow-headed Blackbird 4 _____
____ Rusty Blackbird 5 _____
____ Brewer's Blackbird 4 _____
____ Common Grackle 5 _____

Notes

____ Great-tailed Grackle 1 _____
____ Brown-headed Cowbird 5 _____
____ Orchard Oriole 5 _____
____ Bullock's Oriole 2 _____
____ Baltimore Oriole 5 _____

Finches

____ Brambling 1 _____
Gray-crowned
____ Rosy-Finch 1 _____
____ Pine Grosbeak 4 _____
____ Purple Finch 5 _____
____ House Finch 5 _____
____ Red Crossbill 4 _____
White-winged
____ Crossbill 4 _____
____ Common Redpoll 4 _____
____ Hoary Redpoll 3 _____
____ Pine Siskin 5 _____
____ American Goldfinch 5 _____
____ Evening Grosbeak 4 _____

House Sparrow

____ *House Sparrow* 5 _____

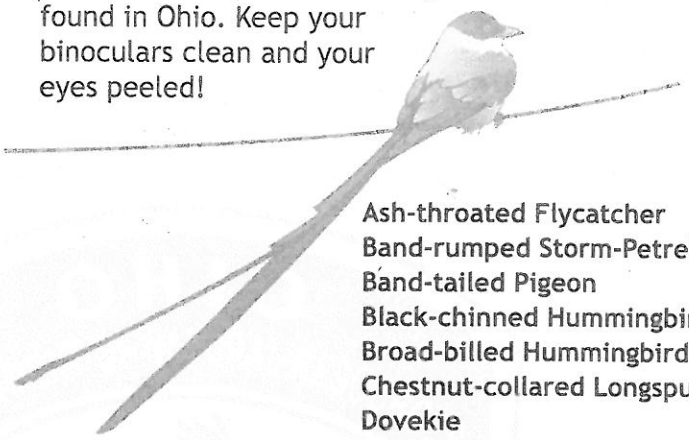
YOU CAN HELP!

Please support conservation in Ohio. Consider purchasing an Ohio Wildlife Legacy Stamp, a wildlife license plate, or making a donation to the Wildlife Diversity Fund. Your money supports bird conservation and research, and publications such as this checklist. Additional information can be found at:

wildohio.com or by calling **1-800-WILDLIFE**

Wishful Thinking?

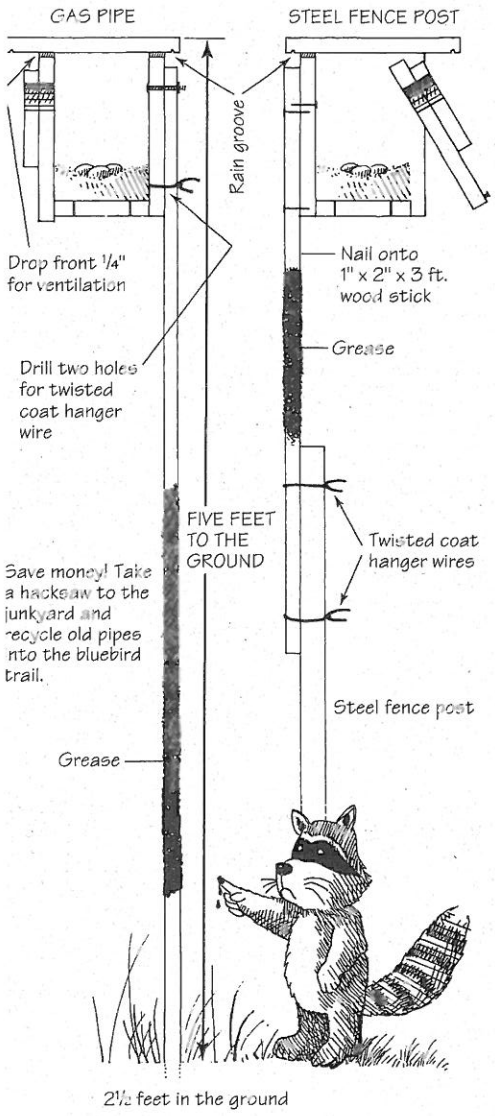
The first checklist of Ohio birds was published by Jared Kirtland in 1838, and included 222 species. In 1968, ornithologist Milton B. Trautman produced a list reporting 344 naturally occurring species. Bruce Peterjohn's book *Birds of Ohio* appeared in 1987 and included 387 species. This checklist includes 422 species, and it will keep growing. One or two new birds are added to the Ohio list each year on average. The following 20 species have been reported in adjacent states multiple times, but have not yet been found in Ohio. Keep your binoculars clean and your eyes peeled!



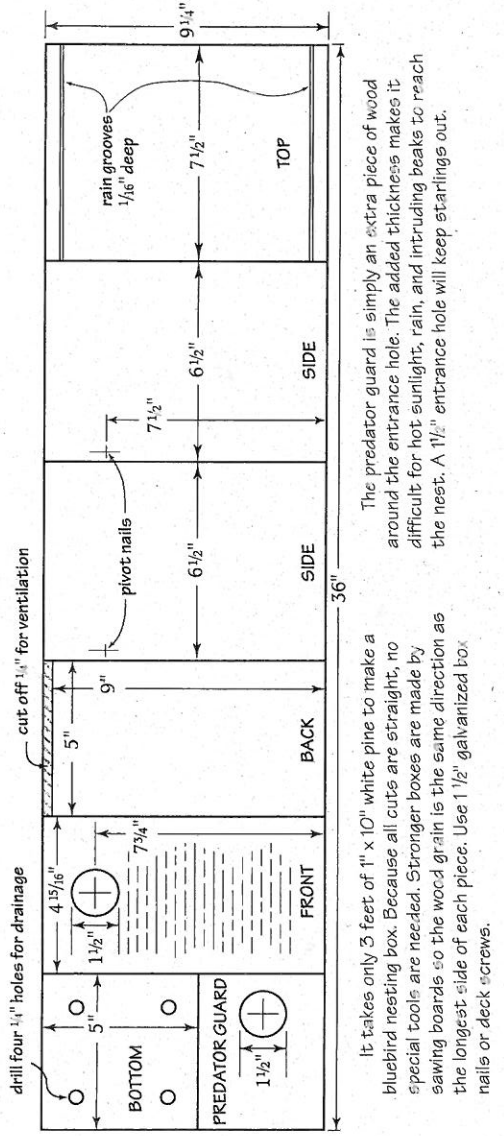
Ash-throated Flycatcher
Band-rumped Storm-Petrel
Band-tailed Pigeon
Black-chinned Hummingbird
Broad-billed Hummingbird
Chestnut-collared Longspur
Dovekie
Ferruginous Hawk
Fish Crow
Fork-tailed Flycatcher
Great Cormorant
Gull-billed Tern
Inca Dove
Lewis's Woodpecker
Roseate Tern
Sage Thrasher
Slaty-backed Gull
Virginia's Warbler
White-tailed Kite
Yellow-billed Loon

DIVISION OF WILDLIFE
Ohio Department of Natural Resources
2045 Morse Road, Bldg. G
Columbus, Ohio 43229-6693
1-800-WILDLIFE • wildohio.com

Mounts



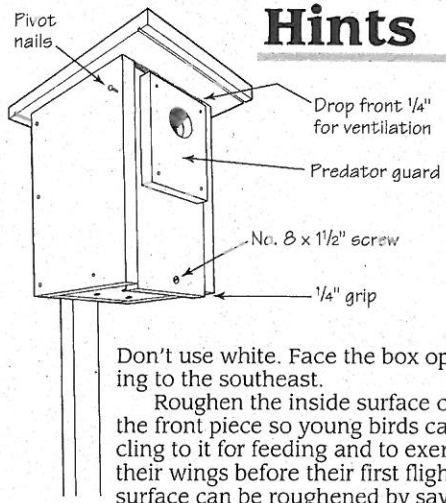
Cuts



The predator guard is simply an extra piece of wood around the entrance hole. The added thickness makes it difficult for hot sunlight, rain, and intruding beaks to reach the nest. A 1½" entrance hole will keep starlings out.

It takes only 3 feet of 1" x 10" white pine to make a bluebird nesting box. Because all cuts are straight, no special tools are needed. Stronger boxes are made by sawing boards so the wood grain is the same direction as the longest side of each piece. Use 1 ½" galvanized box nails or deck screws.

Hints



Don't use white. Face the box opening to the southeast.

Roughen the inside surface of the front piece so young birds can cling to it for feeding and to exercise their wings before their first flight. A surface can be roughened by sawing slots ⅛" deep, punching shallow holes with a screwdriver, tacking on a strip of ¼" hardware cloth or gutter screen, or gluing on small scraps of wood.

Have all boxes ready by March 15 at the latest. Bluebirds nest as early as late March. As soon as a brood has left, clean out the old nest. This will improve chances of another nesting that same year and rid the box of parasites.

The Division of Wildlife's "Hit the Trail for Bluebirds" project and other bluebird management projects are funded by the "Do Something Wild!" state income tax checkoff. Please remember to donate a portion (or all) of your state income tax refund for endangered wildlife and wildlife diversity, and purchase a wildlife conservation license plate. You can also write a check to the Endangered Species and Wildlife Diversity Fund, ODNR Division of Wildlife, 1840 Belcher Drive, Columbus, OH 43224-1300.

Written Richard M. Tuttle
Revised by ODNR Division of Wildlife
Publication 339 (R901)

An Equal Opportunity Employer – M/F/H

Bob Taft, Governor • Samuel W. Speck, Director
Michael J. Budzik, Chief

Total copies printed: 100,000 Unit cost:.05 Publication date: 10/ 01

ODNR DIVISION OF WILDLIFE

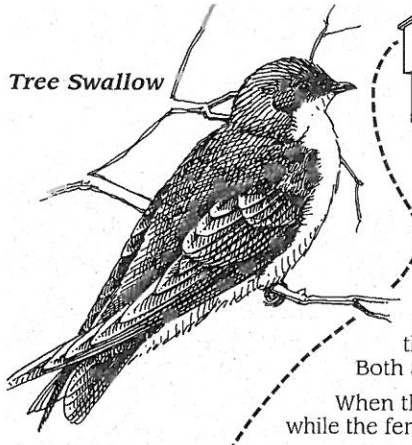
Hit the Trail

for BLUE-BIRDS

HOW TO MAKE AND ENJOY YOUR OWN BLUEBIRD TRAIL

Funded by the *"Do Something Wild!"* state income tax checkoff and Wildlife license plate sales

The Trail



Tree Swallow

What is a Bluebird?

The Eastern bluebird is a sparrow-sized cousin of the robin. The male has a dark sky-blue back and a reddish-earth chest. As in most birds, the female is duller in color.

Bluebirds raise two or three families of three to six insect-devouring young each year, from March through August. The female builds a neat, cup-shaped nest of grass. She lays one sky-blue egg each day for three to six days and incubates them for two weeks. Both adults feed the young for two and a half weeks.

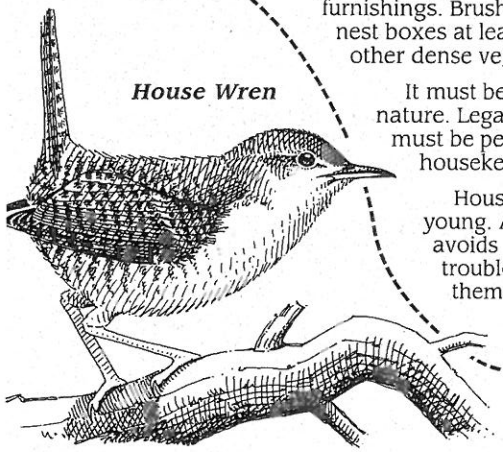
When the young leave the nest the male teaches them to hunt, while the female takes a rest or builds a new nest.

What is a Bluebird Trail?

A bluebird trail is five or more bluebird nesting boxes mounted on fence posts or pipes. The boxes are spaced from 100 to 200 yards apart on farms, parks, cemeteries, golf courses, or other areas with low or sparse vegetation. A "bluebirder" hits the trail every week or two to check the progress of the tenants.

Do Only Bluebirds Use the Boxes?

No. Other beneficial birds such as the house wren, tree swallow, Carolina and black-capped chickadees, white-breasted nuthatch, and tufted titmouse may take up residence on the trail. Boxes spaced 30 yards apart near ponds, lakes, or rivers will attract mosquito-eating tree swallows. Fiercely competitive wrens may evict prior tenants by puncturing their eggs and building a stick nest on top of their furnishings. Brush-loving wrens can be discouraged by placing nest boxes at least 30 yards from the nearest brush, shrub, or other dense vegetation.



House Wren

It must be recognized that competition is common in nature. Legally and ethically, the insect-harvesting wrens must be permitted to nest. Evicted tenants will set up housekeeping elsewhere along the bluebird trail.

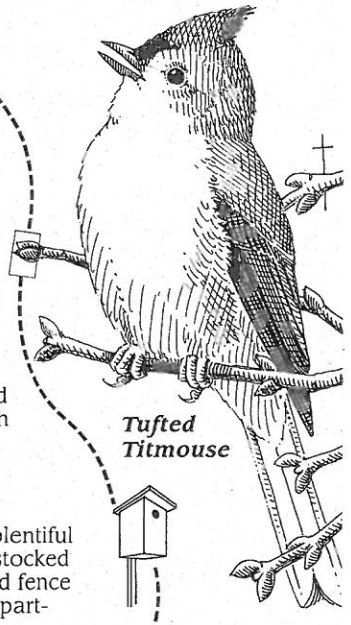
House sparrows will destroy bluebird eggs and young. A bluebird trail that avoids buildings usually avoids house sparrows, too. However, if you're having trouble with house sparrows, you can legally remove them.

Do Bluebirds Have Enemies?

Yes. Raccoons, cats, opossums, gray foxes, and some snakes are climbing predators that love a snack of bluebird eggs or young.

A pipe mounting will stop the fox. Chassis grease liberally applied to the middle third of the pipe may stop the other climbers. Young raccoons may climb right through the grease, but once they reach the summit they will forget their pleading stomachs and concentrate frantically on removing slippery grease from matted fur. Grease will discourage deer mice and black ants from homesteading.

When grease is not acceptable, 24" sections of 7" galvanized stove pipe or 4" – 6" PVC pipe capped with lids or hardware cloth hung below boxes act as baffles. Baffles 30" long will stop the longest rat snakes as well as all furry climbers.



Tufted Titmouse

Do Bluebirds Need Our Help?

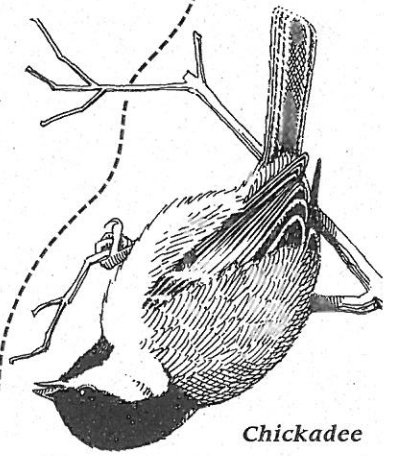
Yes. White-haired farmers can recall the song and flight of plentiful bluebirds in their youth. In bygone days, rural Ohio was a well stocked snack bar for woodpeckers which drilled into decaying trees and fence posts in their quest for insects. Bluebirds quickly occupied the apartments that woodpeckers whittled out two to twelve feet above the ground, and their populations flourished.

Today, fencerows have all but disappeared and orchard trees are pruned. The apartments that remain are usually occupied by the persistent and dominating European immigrants, the starling and house sparrow. Bluebird boxes are a much-needed housing project.

Boxes at eye level can be inspected with a penlight and mechanic's mirror . . . the comeback of the bluebird can be witnessed from the beginning.

Teachers and youth group leaders interested in participating in bluebird projects should contact the Division of Wildlife at 1-800-WILDLIFE. For more information about bluebirding, write: The Ohio Bluebird Society, 20680 Twp. Rd. 120, Senecaville, OH 43780.

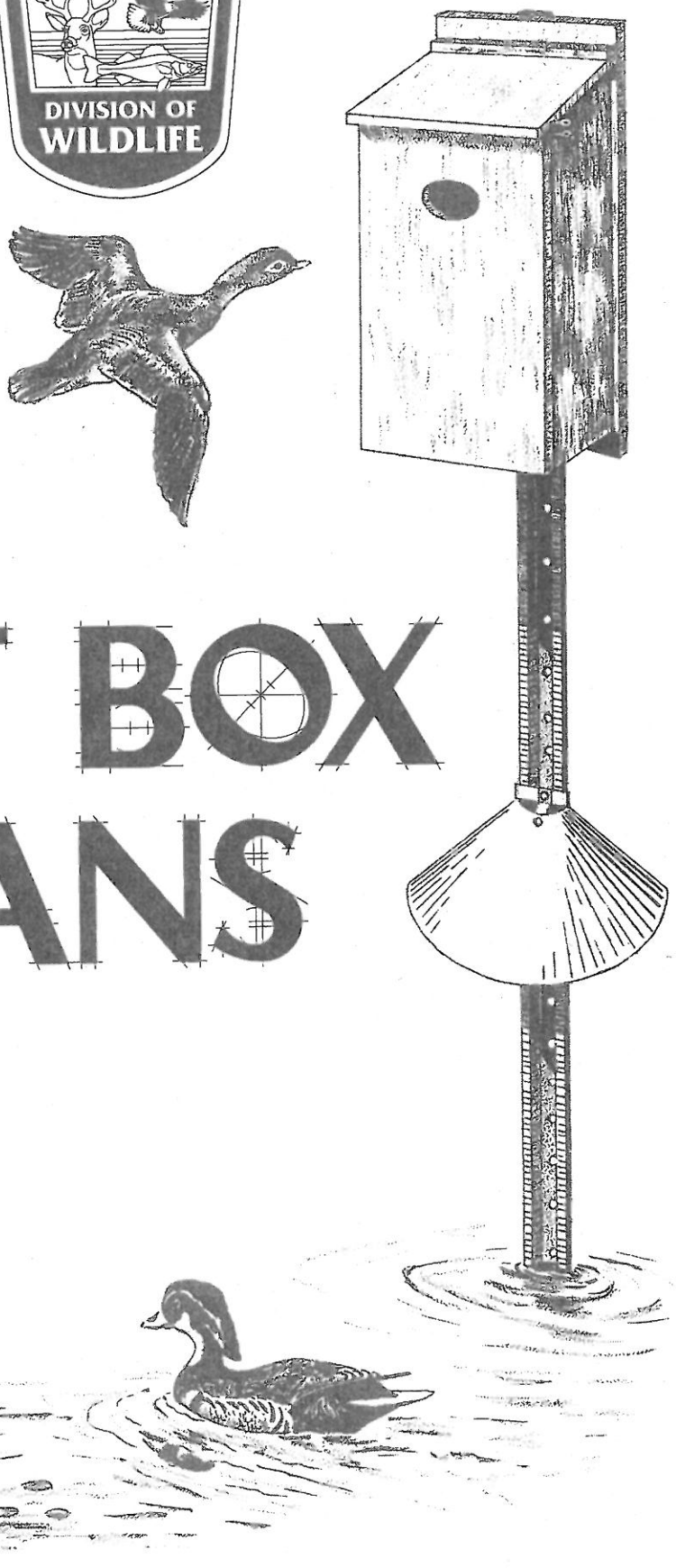
Paint the outside of the box any earth-tone color.



Chickadee

Bird drawings by Jim Glover

DIVISION OF WILDLIFE



NEST BOX PLANS

Publication 419 (306)

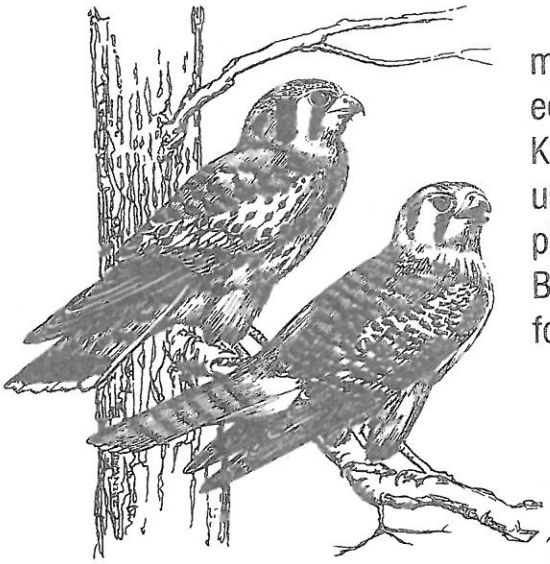
BIRD HOUSE DIMENSIONS AND PLACEMENTS

Species	Specifications					
	Inches				Feet Above Ground	Preferred Habitat
	Entrance		Floor Dimensions	House Depth		
	Diameter	Above Floor				
Bluebird	1 ½	6-7	5 x 5	8-9	5-10	Open field with perches
Chickadee, black capped	1 ⅛	6-8	4 x 4	8-10	5-15	Woodland with perches
" Carolina	1 ⅛	6-8	4 x 4	8-10	6-15	Woodland
Flicker	2 ½	14-16	7 x 7	16-18	6-20	Woodland
Fly catcher, great crested	2	6-8	6 x 6	8-10	8-20	Woodland
Kestrel	3	9-12	8 x 8	12-15	10-30	Open field
Martin, purple	2 ½*	18	6 X 6*	6*	15-20	Open fields AWAY from trees & near water
Nuthatch, white-breasted	1 ¼	6-8	4 x 4	8-10	12-20	Woodland
Owl, barred	7 x 7 arch	12	12 x 12	23	20-23	Woodland
" screech-	3	9-12	8 x 8	12-15	10-30	
" barn	6 x 6	6	12 x 36	15-18	20-25	Open field
Phoebe	Open front & sides		7 x 7	8	8-12	Backyard
Robin	Open front & sides		7 x 7	8	8-12	Backyard
Swallow, tree	1 ½	1-5	5 x 5	6	6-10	Open field near water
Titmouse, tufted	1 ¼	6-8	4 x 4	8-10	6-15	Woodland edge & interior
Warbler, prothonotary	1 ½	6	5 x 5	8	5-10	Over and near water
Woodpecker, downy	1 ¼	6-8	4 x 4	8-10	6-20	Woodland interior
" hairy	1 ½	9-12	6 x 6	12-15	12-20	
" red-bellied	2 ½	10-12	6 x 6	12-14	12-20	
" red-headed	2	9-12	6 x 6	12-15	12-20	
Wren, Carolina	1 ½	4-6	4 x 4	6-8	5-10	Near brushy areas & backyards
" house	1 ¼	4-6	4 x 4	6-8	5-10	

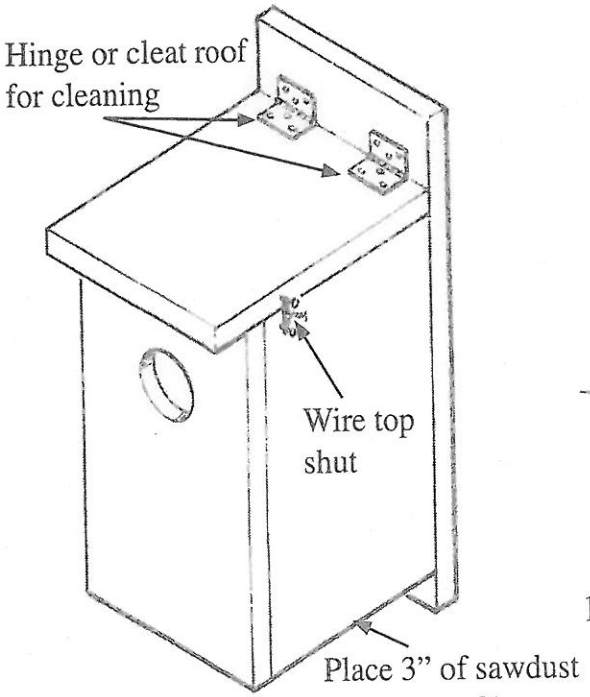
*These are the dimensions for one compartment. Martins nest in colonies; therefore, martin houses should have a minimum of six self-contained apartments.

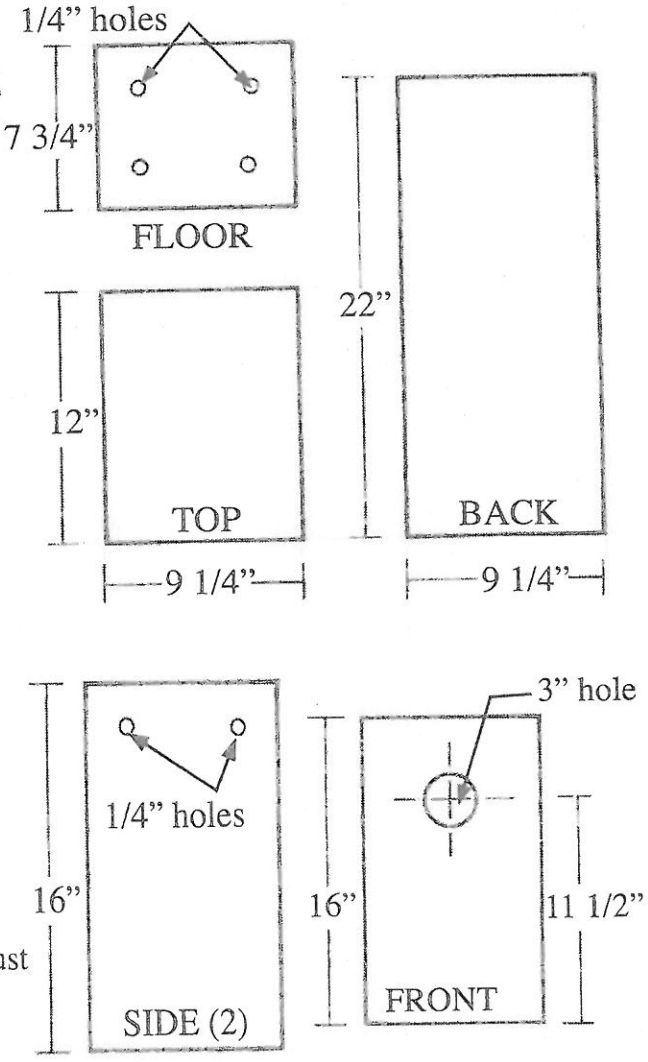
Removing unwanted species such as starlings and house sparrows will increase your chances for nesting success.

AMERICAN KESTREL, EASTERN SCREECH-OWL NEST BOX

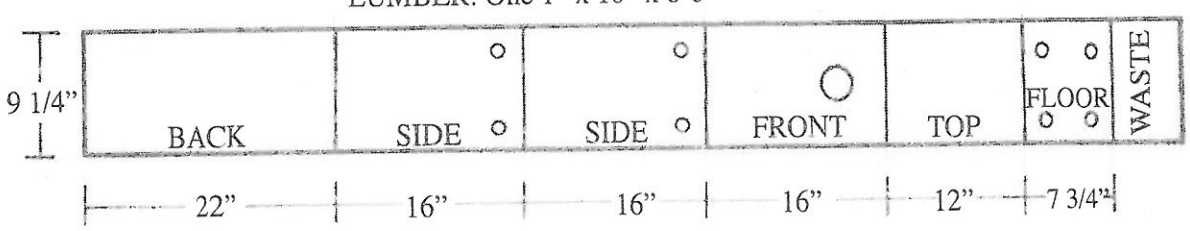


Preferred habitat for owls includes mixed stands of deciduous forest on the edge of woods adjacent to fields or wetlands. Kestrels prefer more open country. To prevent use by squirrels, the box for owls can be placed on a pole with a predator guard. Boxes should be placed at least 10 feet high for owls, and 10 to 30 feet high for kestrels





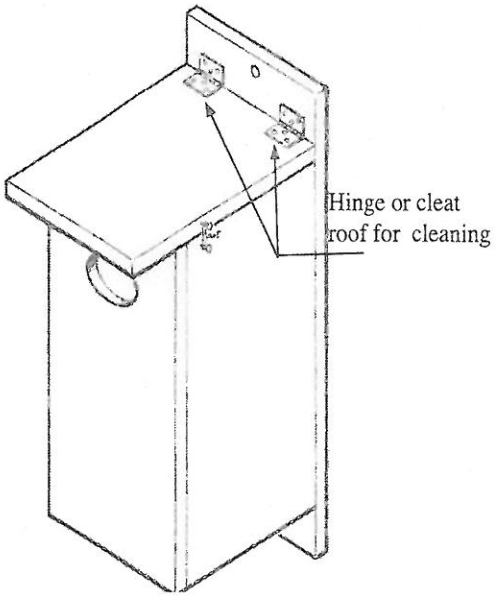
LUMBER: One 1" x 10" x 8'0"

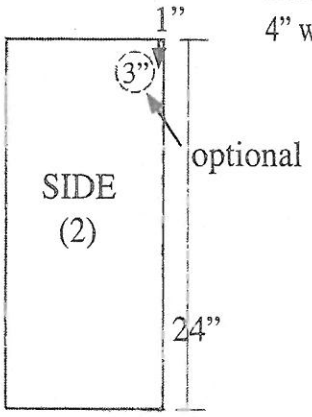


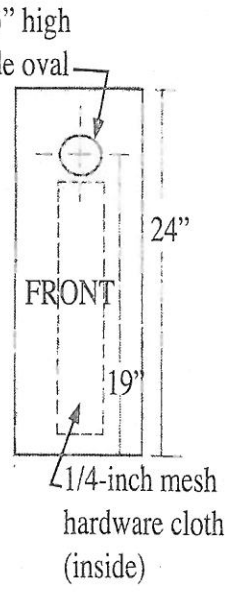
WOOD DUCK NEST BOX

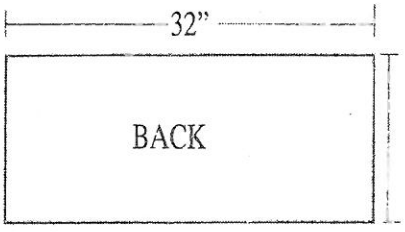
Boxes placed on posts in water should be six to eight feet above the water. Wood duck boxes can also be placed in woodland habitat up to a half mile from lakes, ponds, marshes, and rivers. Since the hen must lead her ducklings to water after they hatch, the habitat between the house location and the water's edge should be free of major obstacles, such as fences, highways, mesh wire, or curbing.

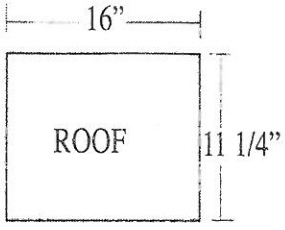
Cavity nesting ducks do not carry nesting materials. It is important to help them out by placing 2-4 inches of wood shavings (not sawdust) in the bottom of the box. Also, some type of predator guard should be used.

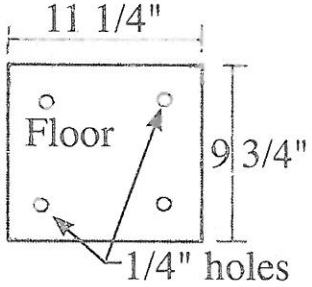




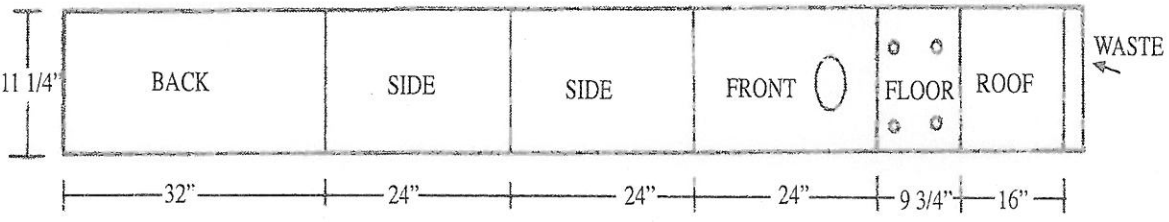






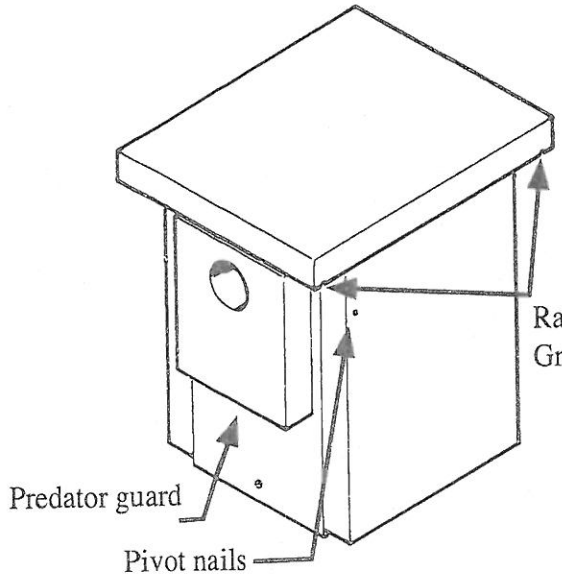


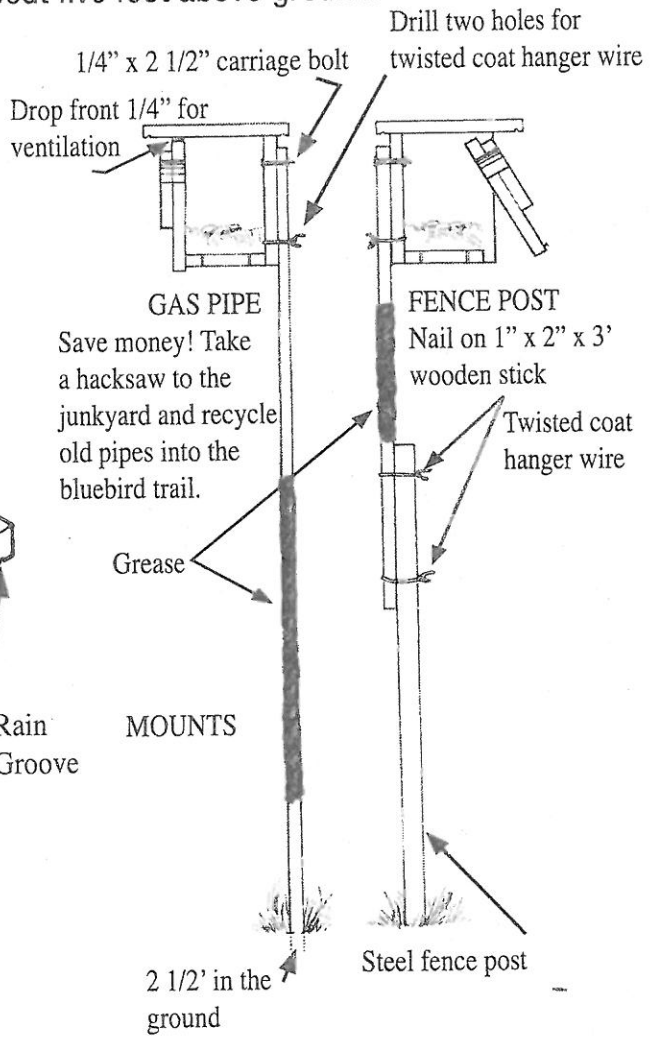
LUMBER:
One 1" x 12" x 12'0"

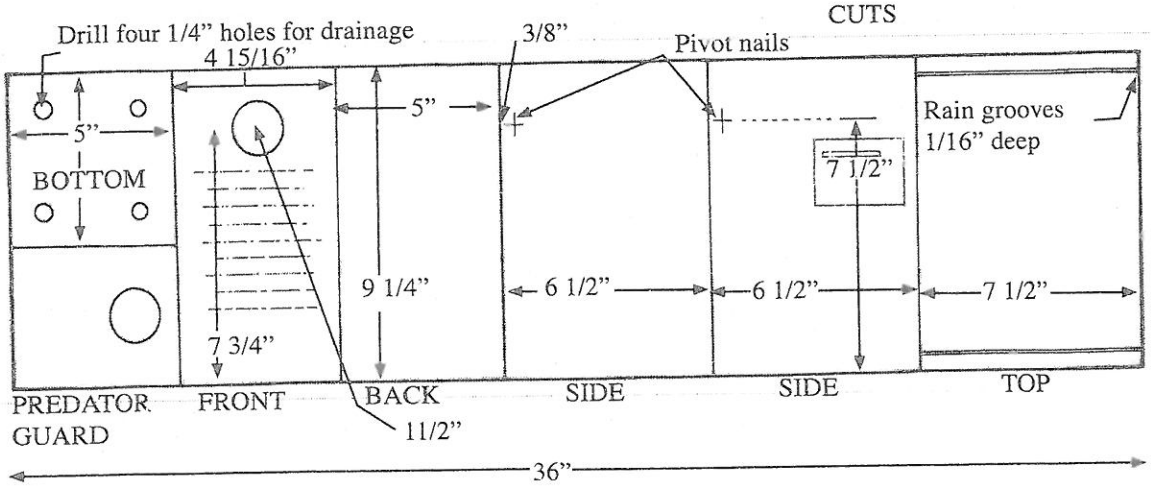


EASTERN BLUEBIRD, TREE SWALLOW NEST BOX

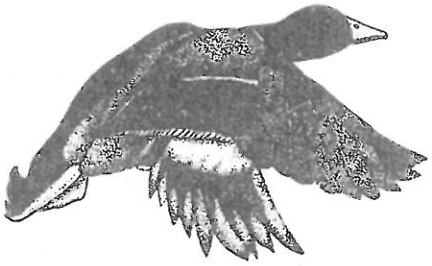
Ideal bluebird habitat is mixed hardwood forest and grasslands. The grassy areas may be meadows, pastures, yards, cemeteries, highway rights-of-way, or prairies. The most desirable grass for bluebirds and tree swallows is short or sparse, mowed or grazed. The area must be also provide enough feeding perches. There can be power lines, fence posts, or scattered trees. Boxes should be mounted on posts, about five feet above ground.







MALLARD NEST CYLINDER



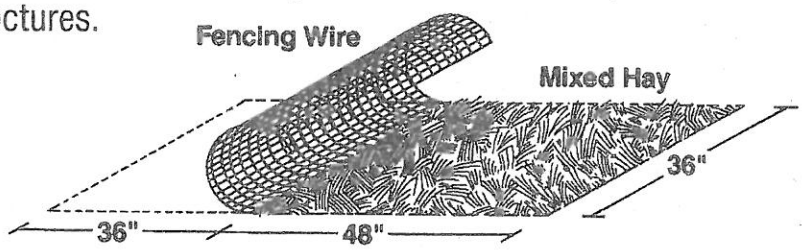
Most of us are familiar with wood duck nest boxes and the success of that program. Wood ducks were lacking suitable nest cavities in trees and readily took to artificial nesting structures, bringing these beautiful ducks back from the brink of extinction to become the most abundant breeding ducks in Ohio. Mallards, although not near extinction, are in need of help. Drought, habitat destruction, and predators take their toll as mallards try to nest in fragmented habitat. This is where you can come in- by providing safe nesting sites for more mallards in Ohio.

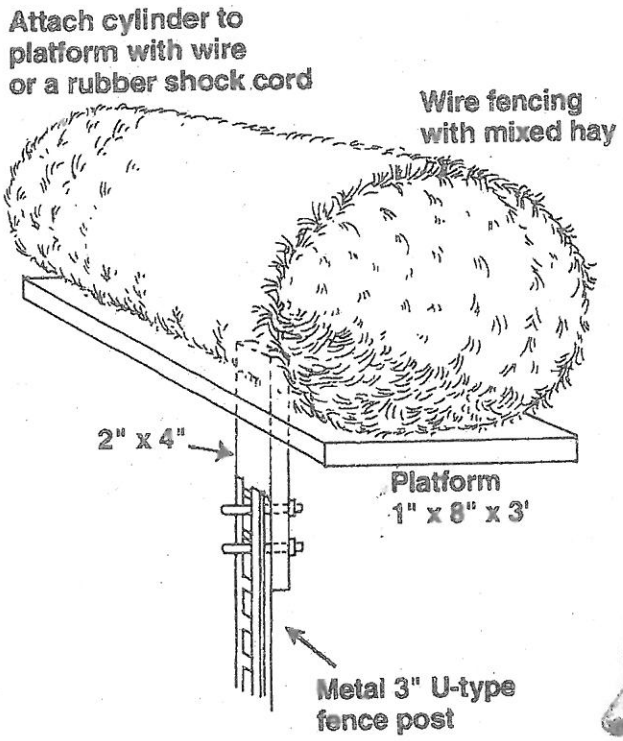
Mallards don't take to nest structures with the same tenacity as wood ducks, but they will use them if the structures are properly placed and maintained. This nest cylinder is easy to build, easy to maintain, relatively inexpensive, and liked by mallards. On a wetland wildlife area in Pennsylvania, 35 to 50 percent of the structures are used annually, and in farm ponds the use is approximately 100 percent! The really good news is that 90 percent of nests are successful in these structures.

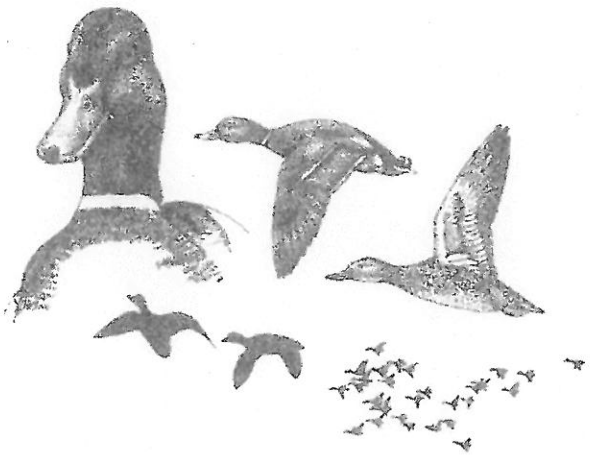
To make this nest cylinder requires a seven-foot piece of fencing wire 36 inches wide. Several types of wire will work, but the recommended type is welded, plastic coated garden fencing with a 2-inch by 2 1/2-inch mesh. A 50-foot roll will make seven nests. Also needed is a supply of grass or hay such as timothy/orchard grass mixture or blue-joint grass. Sudan grass also works well. Straw is a poor choice because it doesn't last long: don't use it.

Cut seven feet of fencing off the roll and place on a flat, hard surface. Measure three feet in from one end and mark the wire. Roll the end of three-foot section of wire to the mark, to produce a cylinder 36 inches long by 12 inches in diameter. Place approximately two inches of hay/grass over the remaining four feet of fencing. Continue rolling the wire over the grass and fasten with pig rings, or wrap the ends of the cut wire to secure it in place. Place a handful of grass in the center for nesting material. Now you are ready to place the nest on a platform or post.

The nest cylinder should be placed over water no less than three feet above the highest water level expected in spring. Place it perpendicular to the prevailing winds in your area. This will prevent nesting material from being blown out of the nest, and-more







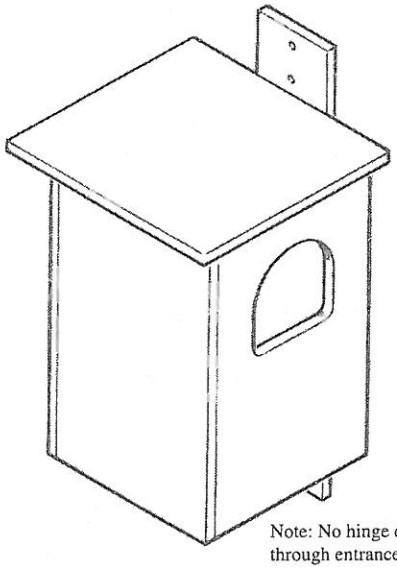
importantly- it will prevent the hen's scent from being spread over a large area and possibly attracting predators. The nest cylinder should be placed far from shorelines and should have a predator guard on the post. The cylinder should be placed near adequate brood cover such as a marsh or stream corridor where the hen can transport her brood to a marsh.

Nesting mallards need overhead cover and the cylinder does an excellent job of providing it. The cylinder can be rotated after the first year to insure overhead cover, and a small handful of grass can be placed in the cylinder to supply additional nesting material. Every three years the grass should be replaced.

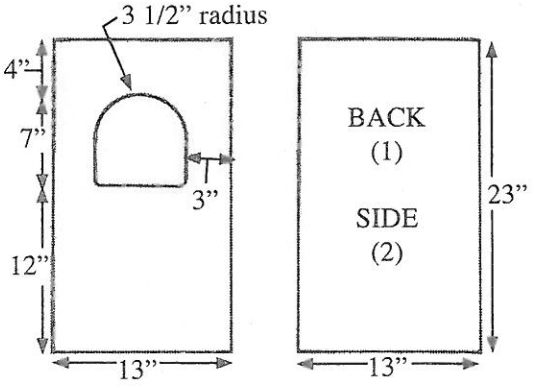
Once mallards catch on to the cylinders and begin raising young in them, success will increase and the local mallard population will build naturally. Young that were produced in the cylinders will search for a similar place to raise their young, so you should continue with this project as long as you have adequate habitat. This is also a great project to get young hunters and conservationists involved with. Raising a wild brood of mallards, which will supply observation and hunting pleasures and return each year to nest, will be extremely rewarding. Plus, mallards could sure use the help.

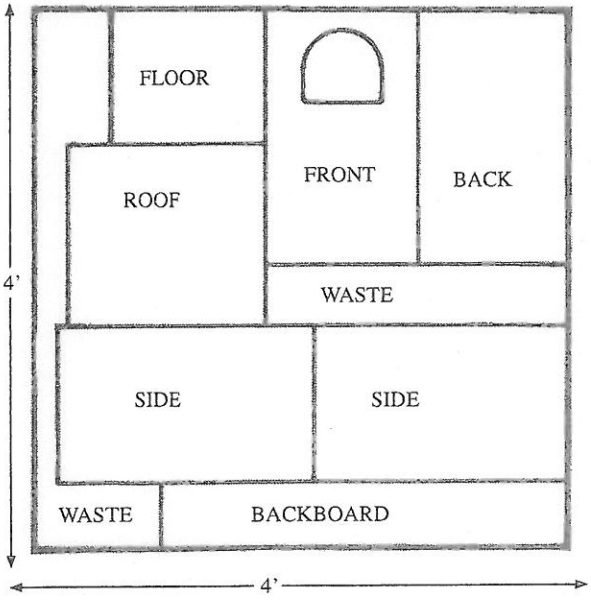
BARRED OWL NEST BOX

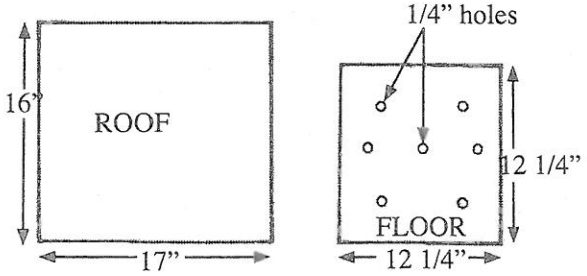
The box should be placed in January, 20 to 30 feet high in a mature lowland hardwood area, preferably within 200 feet of water. It should not be on the edge of a clearing or within 150 feet of a residence. The entrance hole should not be obscured by branches or leaves, but a perch near the nest box is desirable.

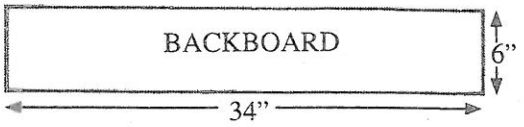


Note: No hinge door needed - clean through entrance hole









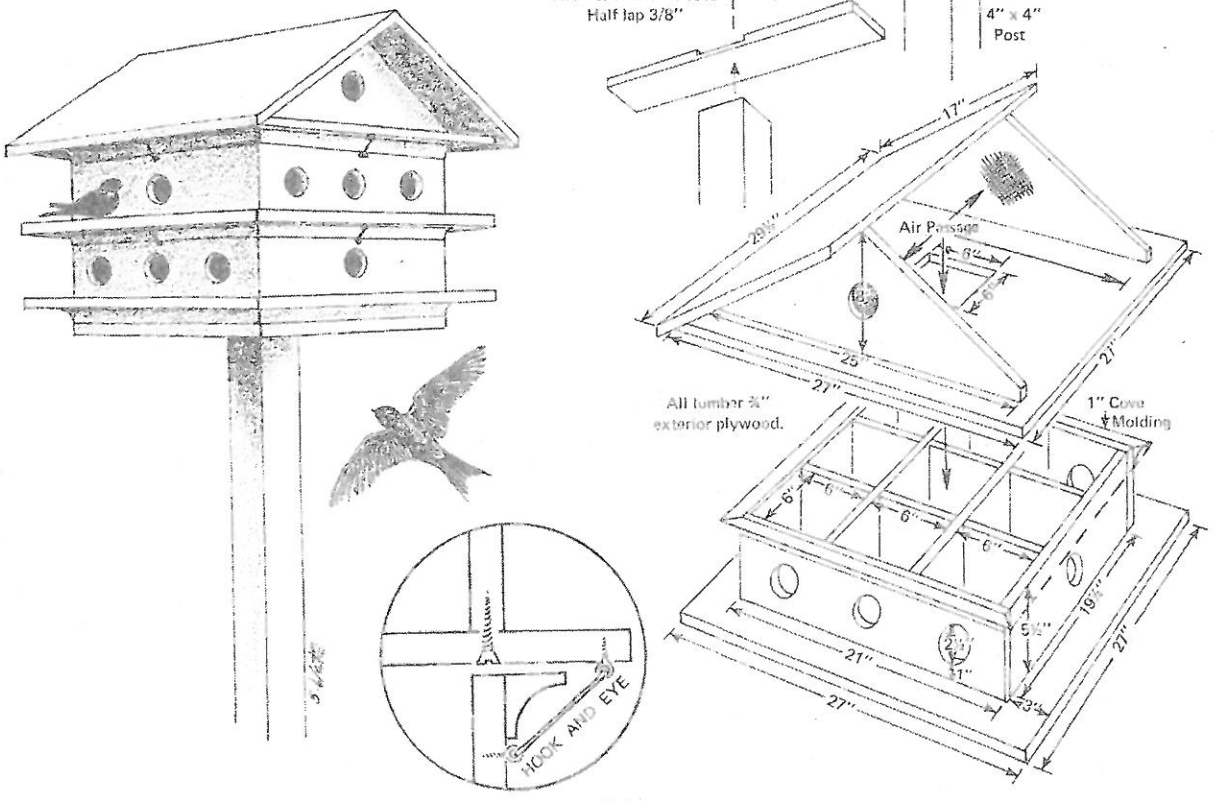
PURPLE MARTIN HOUSE

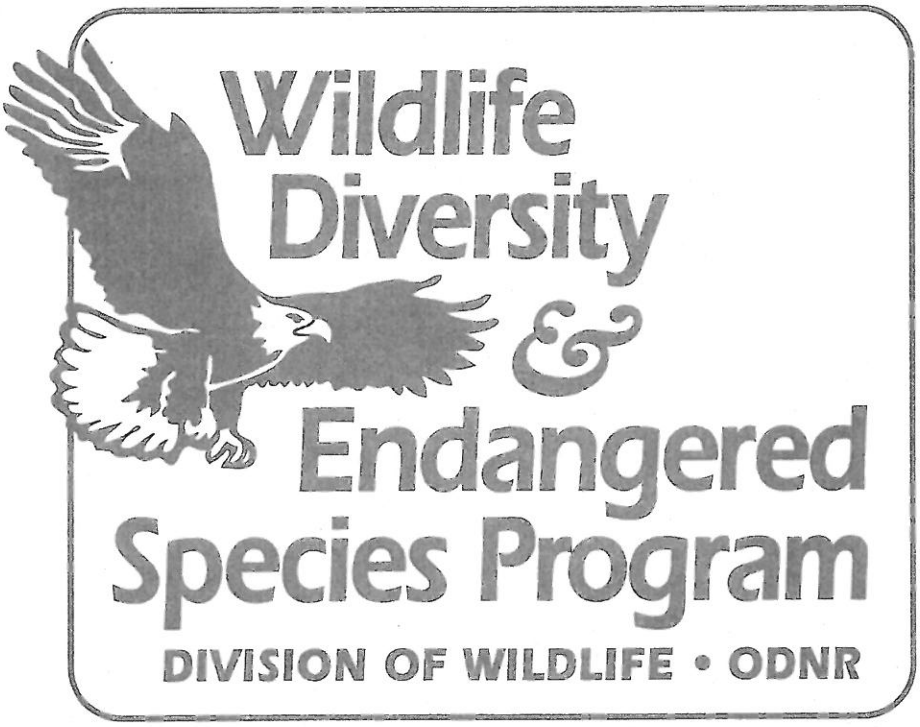
Nesting time is an anxious time for birds and bird watchers alike. There are normally many natural losses. Experienced bird students advise that objectivity is important. Don't get too emotionally involved with individual birds and bird families, even if you enjoy them and follow their daily routines in detail. Do all that's possible to protect them during the vulnerable nesting period by providing good habitat, nesting sites and absence of disturbance from man, or cats and dogs, but recognize that nature's way is to produce far more young than are needed to maintain the species. Loss is inevitable, so make an effort to understand death as a part of the balance of nature.

Nesting and rearing for most species is relatively short (five or six weeks), so take special care during this period. Then relax and enjoy the birds.

One way to help make the nesting season more successful is by providing suitable bird houses or nesting boxes and, in some cases, nesting material.

Bird houses should be erected in the fall so they can weather over winter and be ready for spring occupancy. If erected in spring, they should be up by mid-March.





DO SOMETHING WILD!

Remember to check off a portion (or all) of your state income tax refund for endangered and other wildlife, or write a check to the Endangered Species and Wildlife Diversity Fund and mail to the Division of Wildlife, 2045 Morse Rd. Bldg. G, Columbus, Ohio 43229-6693. All contributions are earmarked for wildlife diversity and endangered animals.

Division of Wildlife
2045 Morse Rd. Bldg. G
Columbus, Ohio 43229-6693

Publication 419 (406)
An Equal Opportunity Employer – M/F/H
Bob Taft, Governor • Samuel W. Speck, Director
Steven A. Gray, Chief

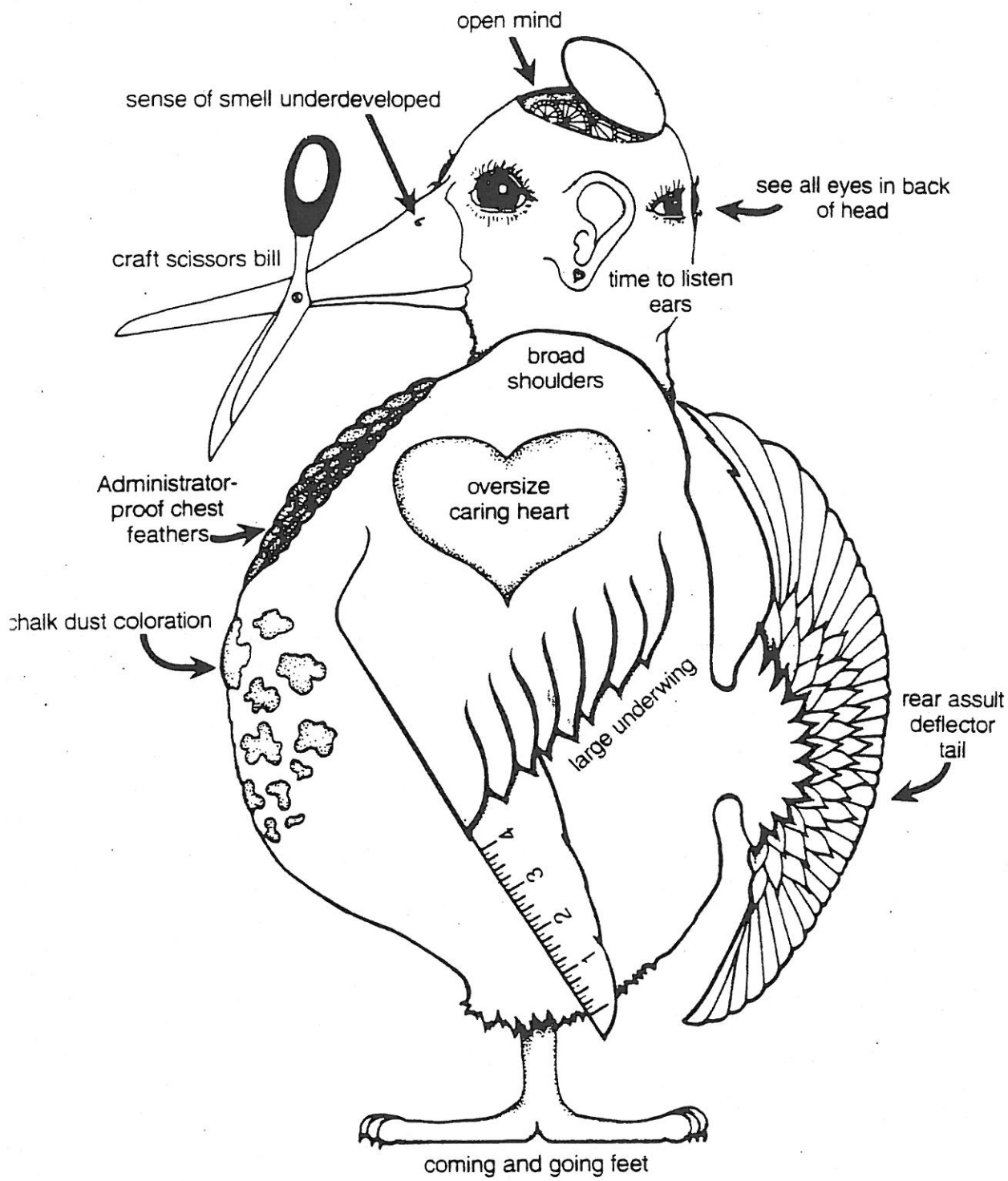
www.ohiodnr.com/wildlife

12

Total Copies Printed: 35000 Unit Cost: $0.119 Publication Date: 6/06

Ohio Department of Natural Resources
Division of Wildlife

Educator Bird



For the Project WILD Activity

Adaptation Artistry

ADAPTATIONS OF BIRDS

Birds show unusual adaptations to their way of life. The most important and obvious is a covering of feathers. These have developed from the scaly covering of reptiles. Each feather has rows of branched barbs that hook together. On the long flight feathers, the barbs mesh tightly to form a firm structure. Contour feathers and an undercoat of finer down cover the bird's body. Form and structure of feathers vary with different birds.

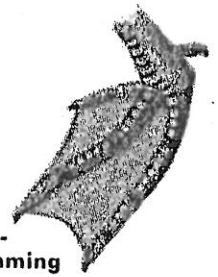
Internal adaptations of birds include air sacs and light, hollow bones; a very rapid heart; temperature several degrees higher than ours, and other structures favoring a very active existence. The animal food of birds includes insects, worms, mollusks, fish, and small mammals. Plant foods include seeds, buds, leaves, and fruits. Bills have obvious adaptations related to diet. Above are four birds, each from a different family, with similar bills adapted for eating fish.

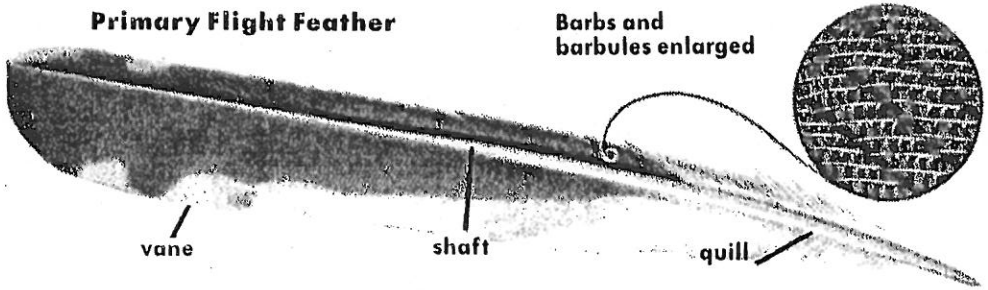
ADAPTATIONS

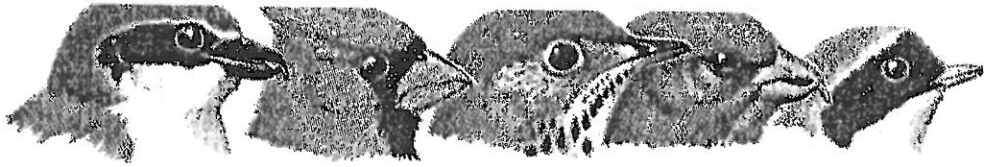

Robin-perching


Ptarmigan-feathered


Pheasant-walking

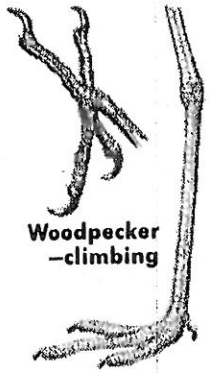

Duck-swimming





OF FEET


Owl-grasping

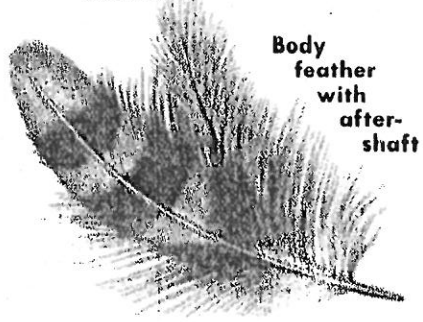


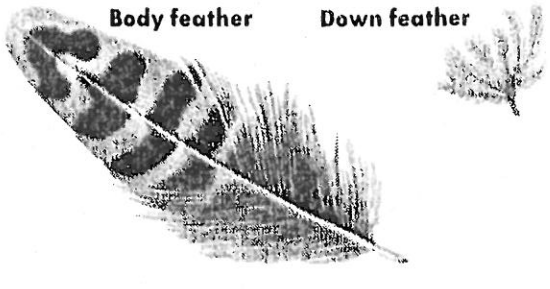

Coot-swimming

Above are five birds all belonging to the same order, perching birds. Each of these species has developed a very different type of bill suited for eating particular foods. These are divergent developments from a common family ancestor. This type of development is also common.

Other adaptations are shown in the legs and feet of birds. The bird's three or four toes have been modified for climbing, scratching, grasping and tearing, and swimming. Long toes distribute the weight of birds that walk on mud and sand. Extra feathering protects the feet of ptarmigans and arctic owls. The long legs of waders, the webbed feet of swimmers, and other adaptations indicate specialized uses of various kinds.

Most interesting of all adaptations are those of behavior. Many species have developed distinct patterns of living. Careful observations will disclose the "personalities" of different birds and their social adaptations.

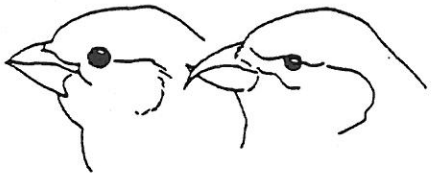




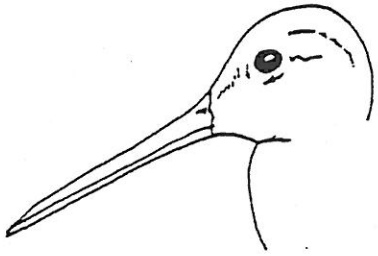
ptations of BILLS

LS of birds are variously adapted for procuring rent foods and serve also for nest building, preen- feathers and protection.

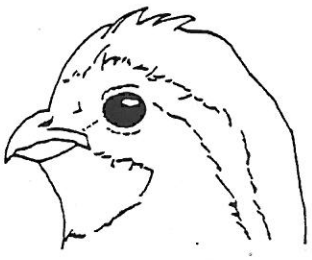
der, pointed beak for picking up insects.



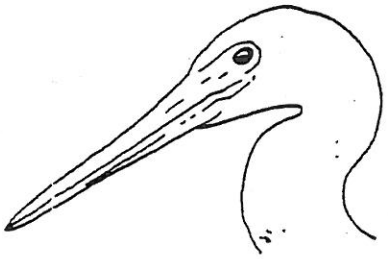
t, thick bill for crushing seeds. Upper and lower dibles crossed to enable bird to extract seeds from s of evergreen trees.



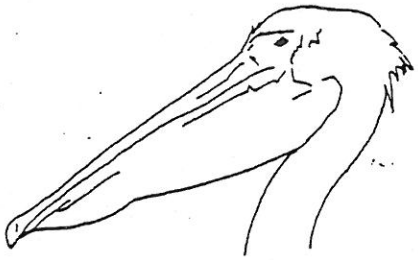
g, slender bill for probing in mud in search of food.



t, stout bill for feeding on the ground.

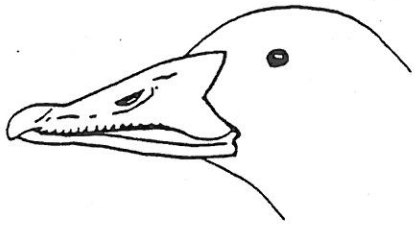


g and sharp for spearing fish.



A flexible pouch underneath bill holds captured fish.

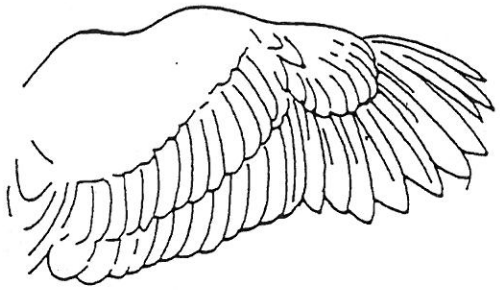
Strong, sharp, hooked bill for tearing flesh.



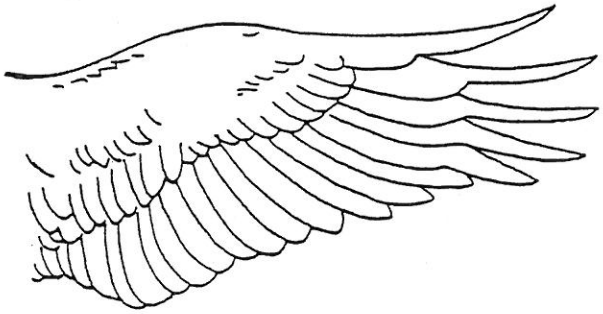
Broad, flattened bill for straining food from mud.

Adaptations of WINGS

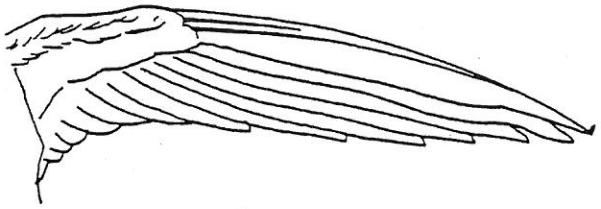
WING size and shape vary greatly. Some wings are designed for soaring, for sudden turns and rapid flight, for easy long distance travel.



Short, rounded wings for speedy take-off and fast flight over comparatively short distances.



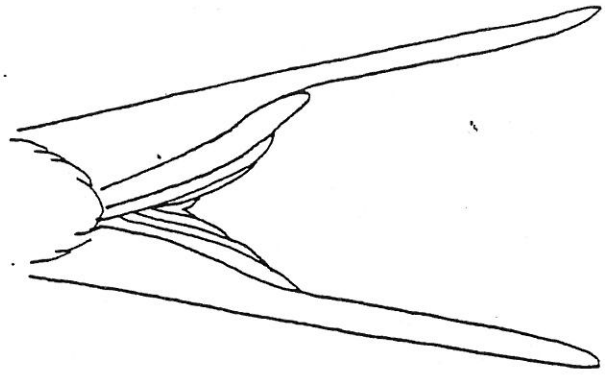
Long, broad wings for strong, soaring, effortless flight.



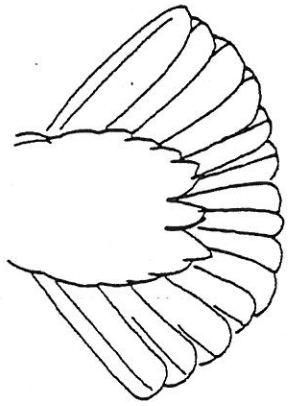
Long, pointed wings for fast, easy flight in the pursuit of flying insects.

Adaptations of TAILS

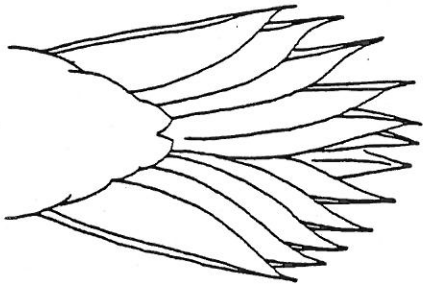
TAILS provide balance when perching and flying; a rudders during flight.



Some birds have long, forked tails for graceful, ski ming flight and extreme maneuverability.



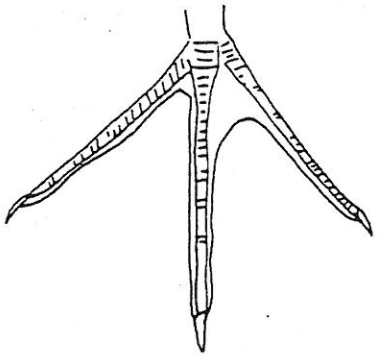
A broad, fanned tail is good for soaring.



Tail feathers with strong, spine-like tips give birds support when clinging to vertical surfaces

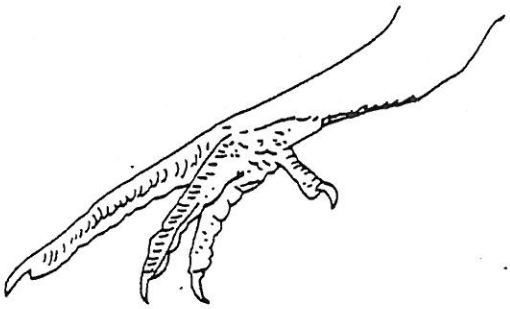
tations of FEET

T are built for perching, scratching, walking, swim- for seizing prey.

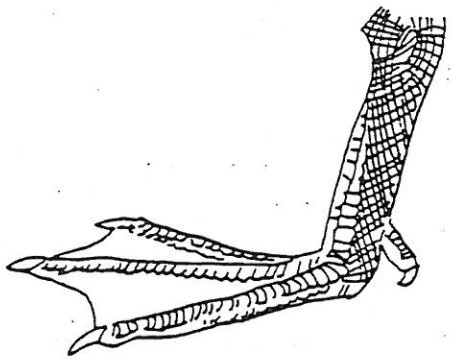


hree long toes keep wading bird from sinking ıe mud.

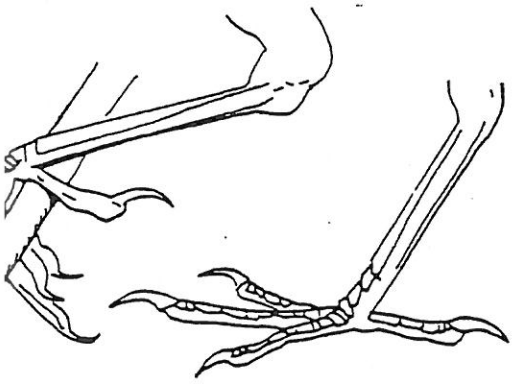
Two toes in front, two toes in back; sharp claws for clinging to an upright surface.



strong and blunt for raking or scratching the for food, as a hen.



Three front toes fully webbed for swimming.



oes in front, one toe behind automatically clasp ch when the leg is relaxed.

Powerful feet and legs with strong, curved, sharp talons for grasping prey.

COWBIRD CAPERS

OVERVIEW
Students participate in a simulation of cowbird parasitism.

CONCEPTS
* Bird populations are affected by human impact on their habitat.
* Human use and management of forests affects bird populations.

OBJECTIVES
Students will be able to:
* Recognize that forest fragmentation increases "edge effects" including brood parasitism.
* Recognize that brood parasitism affects the reproductive success of forest songbirds.
* Describe how nests of breeding songbirds are parasitized by Brown-headed Cowbirds.

KEY POINTS
* Forest fragmentation increases edge effects.
* Those edge effects impact negatively on interior forest bird populations.

TEACHER BACKGROUND
In "Territory Tango", forest fragmentation was discussed as one reason for the decline of songbird populations. Breaking a forest into fragments reduces the total number of suitable territories, and hence nesting sites, for those birds that depend on interior forest. Fragmentation contributes to the decline of migratory bird populations in another way too, by giving parasitic birds access to their hosts, a phenomena referred to as brood parasitism.

Brood parasites are birds that lay their eggs in the nests of other birds (host species). The parasite's eggs hatch and are raised by the host species. Some parasites never rear their own young and are, therefore, totally dependent on host species. The Brown-headed Cowbird (Molothrus ater) is the most common nest parasite in North America.

Because the host parent birds are attending to the parasite young, often few or none of the host's own young survive. Young cowbirds tend to hatch and develop more quickly than most songbirds. Often they are bigger too, and they may push others out of the nest. Many of the host species that co-evolved with the brood parasites have reduced the success of parasites

Preparation:
Make songbird and cowbird "beaks"

Class Time:
20-30 minutes

Subjects:
Science

Vocabulary:
Cowbird
Brood parasitism
Fragmentation
Edge effect

Materials:
* 1 blindfold
* 4 small (4-6 oz) paper or plastic cups
* 1 large unbreakable mixing bowl or plastic container (e.g. the bottom half of a plastic milk jug)
* 5 three-foot pieces of string
* popped popcorn

through a variety of strategies, such as building a new nest or pushing the parasite eggs out of the nest. However, if a host species has not coevolved with a parasitic species, the host may lack the strategies necessary to cope with parasitism. This is the case in North America, where the Brown-headed Cowbird can now reach populations of forest songbirds.

The Brown-headed Cowbird, prior to European settlement, was found in the western part of our country. Its habitat was open grassland. It followed the buffalo, eating insects from their dung and from the prairie disturbed by their great hooves. Because it followed the herd to find food, it could not warm and hatch its own eggs and raise its young, so cowbirds adapted by using the nests and parenting abilities of other birds. However, with settlement and the subsequent deforestation of large areas of eastern North America, the range of the cowbird has expanded. Along with deforestation has come significant forest fragmentation. The fragments contain more area that is adjacent to the forest edge, and cowbirds have increased access to forest bird nests.

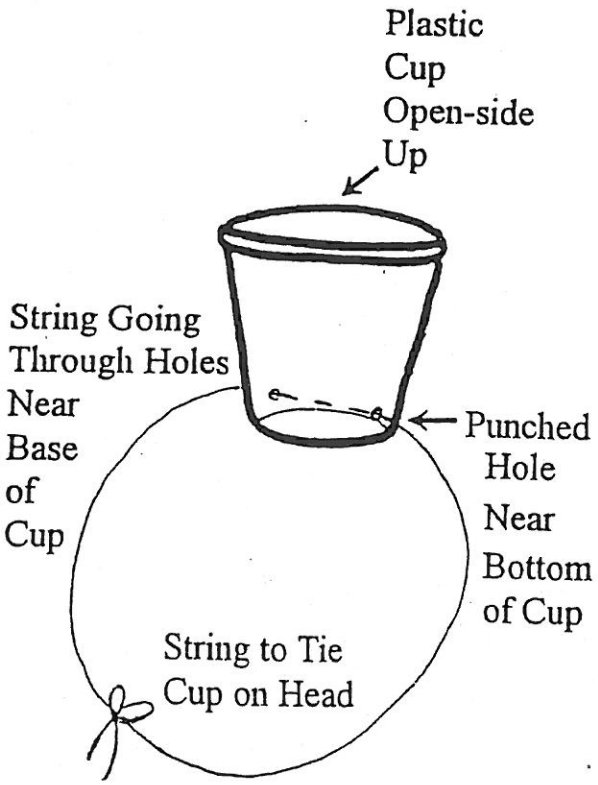
Forest fragmentation and increased edge effect were not the only influences on cowbird parasitism. The cowbird population has also increased sharply, due in part to an increase in rice cultivation in the south. Rice provides a winter food source, which was previously lacking. Now, increased cowbird populations, in combination with increased forest fragmentation and edge effects, have led to increased brood parasitism.

Many forest-breeding neotropical migratory birds have not developed defenses to parasitism. The susceptible host birds include warblers, vireos, flycatchers, tanagers and thrushes. If cowbird populations continue to rise, the populations of our forest dwelling neotropical migratory birds is likely to continue to decline.

PROCEDURE

1. Thread each of the small paper or plastic cups onto a 3-foot piece of string by punching two small holes on opposite sides of the container within one-half inch of the bottom.

2. Ahead of time, secretly select a student with a loud voice to play the role of the baby cowbird. Tell the cowbird to join the others in the circle when you give the signal. Explain the activity to the selected student, but keep the cowbird's role secret from the rest of the class.



3. Introduce the activity with a question about why songbird populations are declining or what effect cutting large tracts of forest into small fragments surrounded by non-forested areas has on forest birds. Say, "Let's simulate a songbird nest to find out."

4. Select four students to be baby songbirds. Have them sit facing outward in a tight circle on the ground or on chairs. Tie the plastic cups onto the heads of the four baby songbirds like hats but with the open end pointed up. Explain that the cups represent the open mouths of the hungry baby birds. When the parent bird returns to the nest, the baby birds call loudly ("Tweet tweet tweet...") to signal the parent bird that they are hungry. The parent bird responds by distributing food to the hungry babies. Typically, the loudest bird attracts the most attention and thus gets the most food.

5. Select one student to be the parent bird. Give that student a blindfold and a bowl of popcorn. The parent bird distributes food (popcorn) to the hungry baby birds by standing at the edge of their circle and dropping or tossing pieces of popcorn in the direction of the tweeting birds. Blindfold the parent bird to ensure that s/he is distributing the food only in response to whomever is tweeting the loudest. Each baby bird must catch at least ten pieces of popcorn in the cup in order to survive. Caution students against trying to actively position themselves to catch the popcorn as this could result in banging heads with another student. Rather, they should simply tweet louder to get the attention of the parent bird.

6. After the directions are given and the parent bird is blindfolded, the baby cowbird is signalled to quietly enter the circle and sit in the center of the other baby birds. Don't let the parent bird know that this is happening. The baby cowbird competes for food and is aided by the larger container, such as a mixing bowl, which s/he holds on his/her head to represent the bird's open mouth. The baby cowbird should join the other baby birds in tweeting loudly for food. The cowbird's larger "mouth", louder voice, and central location in the nest should give it a clear advantage over the baby songbirds and allow it to catch a significant portion of the distributed popcorn. To simulate the real-life situation of limited resources, limit the amount of popcorn given to the parent bird to throw.

7. Continue the activity until the parent songbird has used the popcorn, then have the baby birds count their pieces of popcorn to determine how many of them caught enough popcorn to survive.

8. After tallying the popcorn catch, share more popcorn with all the students.

9. Discuss how many songbirds survived. Why did so few survive? How much popcorn did the cowbird catch?

10. Define cowbird parasitism.

Explain that cowbirds parasitize songbird nests and that brood parasitism from cowbirds is one factor in the population decline of songbirds. Point out that humans have altered the forest, creating more of an edge. This change in landscape has put forest birds in close proximity to the cowbird.

11. Ask whether the people of Central America should be concerned about what cowbirds are doing in the Midwest? Why or why not?

DISCUSSION

If all the popcorn caught by the cowbird were distributed to the other baby birds in the nest, how many of them would have survived? What impact do cowbirds have on the nesting success of songbirds? What will eventually happen to songbirds if brood parasitism continues year after year?

Is there anything that humans can do to protect songbirds from cowbird parasitism? (Short-term responses could include trapping cowbirds, removing cowbird eggs from songbird nests, or in some other way discouraging them from parasitizing songbird nests. Long-term solutions include restricting the geographic range of cowbirds by reducing the amount of forest edge and restoring the presence of large unbroken tracts of forest.) Is this something that people should do? Is the current situation "natural"? Does it preserve the balance of nature? Why do cowbirds parasitize other nests? How have changes in the rural landscape affected cowbird populations? Why is it that cowbirds are more of a threat to songbirds now than they were in the past? What changes have occurred in the landscape of the Midwest? This change in landscape has put forest birds in close proximity to the cowbird. Who is responsible for the current cowbird situation? Who is responsible for protecting the songbirds?

Tell students about the endangered Kirtland's Warbler and the recovery effort to reduce cowbird parasitism on the warbler's nest (as explained in "Intelligent Tinkering").

MODIFICATIONS

Not all species of songbirds are successfully parasitized by cowbirds. Those that have coevolved with cowbirds for long periods of time (hundreds or thousands of years) are able to distinguish cowbird eggs from their own eggs and may either throw out the cowbird eggs, build a new nest floor over the cowbird eggs, or simply abandon the nest completely and start over elsewhere. To represent such adaptations, the activity could be repeated with the modification that if the blindfolded parent is able to distinguish the "tweet" of the cowbird from the "tweets" of the songbirds, then the cowbird can be evicted from the nest and the baby songbirds will have a better chance of surviving.

This activity can also be done with the entire class participating in small groups, rather than with only one group of five or six students actively participating while the other students observe the outcome.

EXTENSIONS

Students could do a report on cowbirds and find out how to recognize their eggs. How do state agencies and other wildlife managers recommend dealing

with the cowbird situation?

Some students may want to do their own study of cowbird parasitism. They could look for nests of songbirds to see whether or not they are being parasitized by cowbirds. Cowbird eggs are most common in songbird nests during May and June. During these months, students with supervision could check to see if there are any cowbird eggs in them. (Cowbird eggs are usually whitish in color and profusely speckled with brown. They should look different than the eggs of the host bird.) Caution students against disrupting the parent birds tending the nest.

Have students speculate as to why brood parasitism evolved. Think about the feeding behavior of cowbirds. They evolved to forage along with nomadic buffalo and had no time to build nests and raise young, so they found host species.

ASSESSMENT

* Have students describe cowbird parasitism and explain how it affects songbirds.

Photo by Kadi Row

For More Information

To learn more, send for a free copy of *Partners in Flight Newsletter*, which includes information on neotropical birds as well as contact people in both government agencies and conservation organizations.

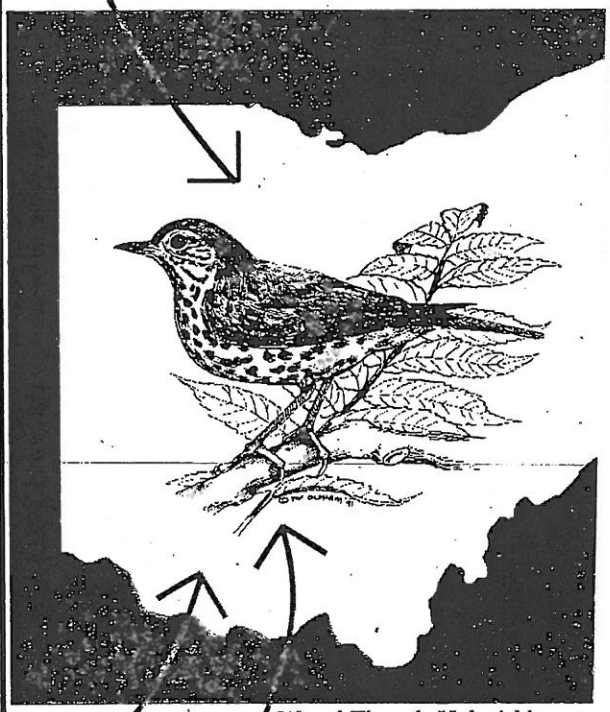
- Write *Partners in Flight*, National Fish and Wildlife Foundation, 1120 Connecticut Avenue, NW, Suite 900, Washington, D.C. 20036.

- For information on efforts of the *Partners in Flight–Ohio Working Group* , contact Julie Shieldcastle, Black Swamp Bird Observatory, P.O. Box 228, Oak Harbor, Ohio 43449. (419-898-4674)

OHIO WORKING GROUP • PARTNERS IN FLIGHT • AVES DE LAS AMERICAS

Printed on recycled paper

The Plight of Migratory Birds in Ohio



Wood Thrush *Hylocichla mus*
The wood thrush is a widely
distributed neotropical migr
found throughout Ohio in su

A *neotropical migrant* is. . .
a bird that spends the winter months in tropical regions and breeds in North Am

Habitat Disturbance

Populations of many *neotropical migrant birds* are decreasing, including some Ohio species. Risks faced by migrant birds increase with each passing season. As human population continues to increase, we compound the challenges:

- Habitat loss and fragmentation on the wintering grounds in the tropics.
- Habitat loss and fragmentation on the breeding grounds in Ohio.
- Habitat loss and fragmentation on the migration stop-over sites in between.
- Increased predation and nest parasitism due to human-altered habitat.

Quantity *and* quality of habitat affect populations of birds. With destruction of forests, wetlands and grasslands in Ohio, the amount of useful habitat decreases. As available habitat decreases, the quality diminishes and predation often increases. The mere presence of a species in an area does not necessarily mean it is successfully reproducing.

Habitat Loss in Ohio

Ohio covers over 41,000 square miles. Most of this area has been converted to agricultural, commercial and residential uses. Woodland habitat is increasing, but wetlands and grasslands have been impacted so much that species in those habitats are most at risk. Suitable habitat that remains, although much reduced, is critical to a diverse array of birds.

Birds at Risk in Ohi

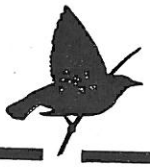
Wetland

Marshes, swamp in Ohio since th

Black Tern

Formerly common breeders in Lake Erie marshes, black terns are now rare in Ohio, uncommon even in migration. As undisturbed wetlands disappeared, so did the terns.

Grassland



Two hundr native prair

Grasshopper Sparrow

This sparrow may be found throughout Ohio in upland grassland habitat of moderate size, including hayfields, pastures, reclaimed strip mines and fields bordering airports. Since the 1930s, conversion of grasslands into cultivated crops and more frequent mowing of hayfields continue to decrease their numbers.

Woodland

Once 95% of Oh decline, forest h

Golden-winged warbler

This species has seemingly been displaced by the blue-winged warbler, which may indeed be a different color type of the same species. Golden-winged warblers never were common in Ohio and remain uncommon even in migration. Nesting occurs rarely in northwest Ohio in the brushy habitats of the Oak Openings.

fens and bogs have declined by 90%
earliest settlement by Europeans.

Common birds that use wetlands: *great blue heron, mallard, Canada goose, red-winged blackbird, belted kingfisher*

Prothonotary Warbler

These uncommon beautiful warblers breed in swamps, and along reservoirs and large rivers in half of the counties in Ohio. They nest in natural cavities over water.

Little Blue Heron

Always a rare visitor to the state, this heron is now a rare summer resident in the marshes of western Lake Erie. Limited breeding occurs on West Sister Island.

years ago 4 percent of Ohio was covered by
. Over 95% of those grasslands have disappeared.

Common birds that use grasslands: *red-winged blackbird, Eastern meadowlark, American kestrel*

Dickcissel

This western species exhibits dramatic fluctuations in numbers in Ohio, which is at the edge of its range. As uncommon summer residents, males establish territories in clover and alfalfa fields, weedy fallow fields and grassy pastures. Sweet clover fields are a favorite.

Bobolink

Bobolinks can be found in grassy hay fields, pastures, wet prairies and fallow fields, more commonly in North and Central Ohio. Since the 1940s, with conversion of grasslands to cultivated fields, they have been declining. This trend is evident throughout central North Americ

was forested. After a long period of
itat has increased annually since 1940.

Common birds that use woodlands: *scarlet tanage downy woodpecker, blue jay, screech owl*

Cerulean Warbler

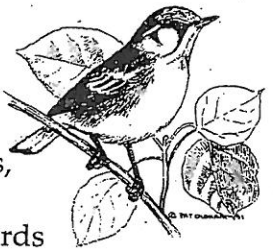
These warblers require mature deciduous woodlands for breeding. Nesting occurs at heights above thirty feet. Cerulean warblers are common nesters in southern and eastern Ohio, where their numbers have increased with the increase in mature woodlands.

Great Crested Flycatcher

These flycatchers nest in cavities in virtually all types of deciduous woodland habitat. While widely distributed throughout Ohio, they are not particularly numerous anywhere. Stressed in western Ohio due to impacted woodlands, they remain stable in eastern Ohi

Neotropical Migrant Birds

Some species of birds spend their entire lives within North America. Other birds like thrushes, orioles, tanagers, wood warblers and hummingbirds are called *neotropical migrants*. These species breed in North America in the summer, then fly to the tropics in Central and South America to spend the winter.



During migration between continents, *neotropical migrants* travel thousands of miles twice a year in search of suitable habitat. They look for good places to nest and raise young with an abundance of insects for food. About 150 species of *neotropical migrant birds* make this round-trip each year. This amounts to billions of individual birds.

Ohio Projects of Concern

Government agencies, universities and private conservation organizations are actively investigating both causes of bird species declines and ways to limit these declines. Throughout Ohio, active projects are in progress to monitor bird populations, conduct research, and to increase awareness of neotropical migrants.

- **Black Swamp Bird Observatory**
  (Julie Shieldcastle, 419-898-4674)
  Investigating bird migration movements and habitat use in migration stop-over habitat in the Lake Erie marsh region.

- **Monitoring Populations of Forest Birds of Wayne National Forest**
  (Randy Dettmers, Ohio State University, 614-292-5762)
  Investigating the character of the forest in southeast Ohio and how it relates to the habitat requirements of neotropical migrant birds.

- **Birds, No Boundaries!**
  (Charity Krueger, Aullwood Audubon Center & Farm, 513-890-7360)
  Linking students in Central America, United States and Canada to understand the migrant birds we share and take action to conserve them.

Publication made possible from a grant by:

Do Something Wild!

OHIO DIVISION OF WILDLIFE

Ohio Department of Natural Resources
Division of Wildlife

Publication 326
(R106)

Wild Animal Collecting Permits
Scientific Collecting, Education, and Banding Permits

Division of Wildlife's Mission Statement

We are dedicated to conserving and improving the fish and wildlife resources and their habitats, promoting their use and appreciation by the people so that these resources continue to enhance the quality of life for all Ohioans.

The Division of Wildlife offers permits for the purpose of scientific study, educational programs and bird banding activities. This publication is meant as a summary only, and is not intended to address all laws and regulations. See the Ohio Revised Code (ORC) and the Ohio Administrative Code (OAC) for details. All permits issued must comply with the mission statement of the Division of Wildlife. All wild animal permits expire at midnight on March fifteenth annually.

Banding Permits

Persons desiring to conduct wildlife banding activities must apply for a free Wild Animal Banding Permit (Form 167). Wild Animal Banding Permits are for the purpose of banding activities only. Permit holders agree to not hold any species longer than the period of time necessary for banding. Animals killed or injured during banding shall be turned over to the Division of Wildlife. When banding migratory birds a Banding Permit is required from the United States Fish and Wildlife Service (USFWS), or activities must be conducted under the supervision of a USFWS master banding permit holder.

Scientific Collecting

A Scientific Collecting Permit allows the collection of wild animals, in Ohio, that would otherwise be prohibited. Scientific Collecting Permits are primarily for survey and inventory of wildlife species that are protected, being collected during the closed hunting or trapping season, collected in excess of daily bag limits or collected with devices or techniques otherwise prohibited.

A Scientific Collecting Permit is required under ORC 1533.08 which states in part that "any person desiring to collect wild animals that are protected by law or their nest or eggs for scientific study shall make application to the chief of the Division of Wildlife for a wild animal collecting permit." Wild animals are defined in ORC 1531.01 as including mollusk, crustaceans, aquatic insects, fish, reptiles, amphibians, wild birds, wild quadrupeds and all other wild mammals excluding domestic deer. A permit from the USFWS may be required in addition to the state permit for collection of migratory birds or protected species.

Persons wishing to obtain a Scientific Collecting Permit must complete the application in its entirety (Form 167). It is often necessary to supplement the application with attachments or a cover letter detailing the specifics of a project request. The following criteria have been established to provide guidelines for determining qualifications for the issuance of a Scientific Collecting Permit;

- The applicant for a Scientific Collecting Permit must submit a completed application (Form 167) to the Division of Wildlife thirty (30) days prior to the start of the activity. The application must outline in detail the species, locations, quantity and collection methods to be used.
- The applicant for a Scientific Collecting Permit must be directly affiliated with or an appropriate representative from one of the following institutions:
    1. A college, university, high school, junior high or elementary school as an educator, researcher, student, masters or doctoral candidate.
    2. A public agency, such as federal, state, city or county unit of government, engaged in a wildlife or scientific area of study or research.
    3. A non-profit educational or conservation organization that is associated with wildlife or scientific area of study or research.
    4. A scientific research organization or bona fide environmental consulting firm performing wildlife related work for a third party.
- Applicants who are not directly affiliated with an institution listed must provide the following information to verify qualification for a permit:
    - Personal qualifications to perform this activity.
    - Specific purpose necessary for you to perform this activity.
    - The location(s) where collected specimens will be maintained. Name and address of the facility to be used as a repository for voucher specimens.

A project that will include the collection or possession of migratory birds, eggs, nest, parts, or the collection of protected species, may require a permit from the US Fish and Wildlife Service in addition to a state permit. Contact information provided on back page.

Education Permits

Education permits are a mechanism designed to permit qualified educators to possess Ohio native wild animals. Activities covered by an Education Permit include; possession of dead wild animal parts, nest, eggs, mounts or study skins and live wild animals for educational programming or display. *Special regulations apply to the possession of live reptiles. Snakes with a snout to vent length of greater than eighteen inches, and turtles with a carapace four inches or larger must be permanently marked with a unique passive integrated transponder (PIT) tag. Only PIT tags read with an "Avid Mini Tracker" may be implanted.*

Persons desiring to obtain an Education Permit must complete the application in its entirety (Form 167). It is often necessary to supplement the application with attachments or a cover letter detailing the specifics of a project request. The following criteria provide guidelines for determining qualifications for the issuance of Education Permits;

1. The applicant for an Education Permit must submit a completed application (Form 167) to the Division of Wildlife. The application must outline in detail the species, locations to be collected or held, quantity and collection methods to be used.
2. The applicant for an Education Permit must be directly affiliated with, or an appropriate representative from one of the following institutions:
    1. A college, university, high school, junior high or elementary school as an educator.
    2. A public agency, such as federal, state, city or county unit of government, performing wildlife education.
    3. An educational or conservation organization, museum or zoological garden that displays or performs wildlife education.
    4. A licensed Ohio Wildlife Rehabilitator who has permanent resident wildlife used for educational activities.
3. Applicants who are not directly affiliated with an institution listed must provided the following information to verify qualification for a permit:
    - Personal qualifications to perform this activity.
    - Specific purpose necessary for you to perform this activity.
    - The location(s) where collected specimens be maintained. Name and address of the facility to be used as a repository for voucher specimens.

A project that will include the collection or possession of migratory birds, eggs, nest, parts, or the collection of protected species, may require a permit from the US Fish and Wildlife Service in addition to a state permit.

Record Keeping and Annual Reports

All persons holding Scientific Collecting, Education or Banding Permits must maintain accurate daily records of specimens collected under the authority of the permit, and the disposition of the specimens. These records shall be exhibited to any official of the Division of Wildlife upon request.

All permit holders must submit an annual report of operations and the disposition of specimens prior to the first of February each year. The report must be submitted in a format provided by the Division of Wildlife or on accepted media. Failure to report may result in the forfeiture of the permit involved and affect the eligibility to apply for a new permit.

Endangered Species, Aquatic Nuisance Species (ANS) and Wildlife Areas

There are specific rules and regulations governing the collection or possession of endangered species, Aquatic Nuisance Species (ANS) as well as the collection of wildlife and plants from an area owned or controlled by the Division of Wildlife.

The ORC states that no person shall take or possess any native endangered species without the permission of the Chief of the Division of Wildlife. Laws pertaining to aquatic nuisance species are similar. Permission to collect or work with endangered or aquatic nuisance species is handled by a special letter permit in addition to the requirements that exist for obtaining a scientific collecting permit, and must be requested in writing.

Possession of a scientific collecting permit does not constitute permission to collect on Division of Wildlife owned or controlled properties. Special regulations prohibit collection of wild animals and plants from wildlife areas without the permission of the Chief of the Division of Wildlife. Those wishing to conduct activities on wildlife areas must first request to do so in writing to the Division of Wildlife. In your request, you must list the specific information as to what benefit your activity has to wildlife.

To obtain copies of form 167, contact your nearest Division of Wildlife District Office or the Division of Wildlife, Permit Coordinator, 2045 Morse Rd. Bldg G. Columbus, OH 43229-6693.

1533.08. Collecting permit for scientific, educational or rehabilitation uses.

Except as otherwise provided by division rule, any person desiring to collect wild animals that are protected by law or their nests or eggs for scientific study, school instruction, other educational uses, or rehabilitation shall make application to the chief of the division of wildlife for a wild animal collecting permit on a form furnished by the chief. Each applicant for a wild animal collecting permit, other than an applicant desiring to rehabilitate wild animals, shall pay an annual fee of twenty-five dollars for each permit. No fee shall be charged to an applicant desiring to rehabilitate wild animals. When it appears that the application is made in good faith, the chief shall issue to the applicant a permit to take, possess, and transport at any time and in any manner specimens of wild animals protected by law or their nests and eggs for scientific study, school instruction, other educational uses, or rehabilitation and under any additional rules recommended by the wildlife council. Upon the receipt of a permit, the holder may take, possess, and transport those wild animals in accordance with the permit.

Each holder of a permit engaged in collecting such wild animals shall carry the permit at all times and shall exhibit it upon demand to any wildlife officer, constable, sheriff, deputy sheriff, or police officer, to the owner or person in lawful control of the land upon which the permit holder is collecting, or to any other person. Failure to so carry or exhibit the permit constitutes an offense under this section.

Each permit holder shall keep a daily record of all specimens collected under the permit and the disposition of the specimens and shall exhibit the daily record to any official of the division upon demand.

Each permit shall remain in effect for one year from the date of issuance unless it is revoked sooner by the chief. All moneys received as fees for the issuance of a wild animal collecting permit shall be transmitted to the director of natural resources to be paid into the state treasury to the credit of the fund created by section 1533.15 of the Revised Code.

1533.09. Duties of collecting permit holder; revocation and forfeiture.

Before the first day of February of each year, each wild animal collecting permit holder shall file with the division of wildlife a written report of his operations under the permit and the disposition of the specimens collected during the preceding calendar year on report blanks furnished by the chief of the division. Failure to file a report shall cause the permit to be forfeited as of the first day of February. Permits are not transferable. No permit holder or person collecting wild animals under authority of such a permit shall take, possess, or transport the wild animals for any purpose not specified in the permit.

Conviction of a violation of this section, failure to carry a permit and exhibit it to any person requesting to see it, or the violation of any other law concerning wild animals constitutes a revocation and forfeiture of the permit involved. The former permit holder shall not be entitled to another permit for a period of one year from the date of the conviction.

Contact Information

Division of Wildlife Mission Statement

We are dedicated to conserving and improving the fish and wildlife resources and their habitats, and promoting their use and appreciation by the people so that these resources continue to enhance the quality of life for all Ohioans.

Division of Wildlife Headquarters
2045 Morse Road, Bldg. G
Columbus, OH 43229-6693
(614) 265-6300 (Voice)
1-800-750-0750 (Ohio Relay TTY only)
1-800-WILDLIFE

Wildlife District One
1500 Dublin Road
Columbus, OH 43215
(614) 644-3925

Wildlife District Two
952 Lima Avenue
Findlay, OH 45840
(419) 424-5000

Wildlife District Three
912 Portage Lakes Drive
Akron, OH 44319
(330) 644-2293

Wildlife District Four
360 E. State Street
Athens, OH 45701
(740) 589-9930

Wildlife District Five
1076 Old Springfield Pike
Xenia, OH 45385
(937) 372-9261

Lake Erie Enforcement Unit
305 E. Shoreline Drive
Sandusky, OH 44875
(419) 625-8062

United States Fish and Wildlife Service
Migratory Bird Permit Section
1 Federal Drive
Fort Snelling, MN 55111
(612) 713-5343

BIRD BANDING

USGS-Patuxent Wildlife Research Center, Bird Banding Laboratory
http://www.pwrc.usgs.gov/bbl/default.htm

About Bird Bands

There are several different types of bands used on wild birds in North America. Each type of band is made in many different sizes so that every bird has a suitable size band available for use by banders. Bands provided by the Bird Banding Laboratory are made of aluminum and inscribed CALL 1-800-327 BAND and WRITE BIRD BAND LAUREL MD 20708 USA followed by a unique 8 or 9 digit number. The older bird bands had the legend AVISE BIRD BAND WASH DC. These bands are from the same agency as the new bands and can be reported on the 1-800 telephone number or to Laurel MD.

There are 23 standard size bands and 5 specially sized bands made to accommodate the smallest hummingbird to the large Trumpeter Swan. In addition there are 4 common types of bands which include the standard butt-end band, the lock-on bands used on hawks and owls, rivet bands used on eagles, and hard metal bands for use on birds that would otherwise outlive their bands or are in harsh environments like salt water that may wear the regular bands too quickly.

Bands do wear out eventually, but even a very worn band with the numbers seemingly invisible can have the numbers determined using etching. To learn more about etching bands, click here. Hundreds of bands are etched and returned to hunters by the Bird Banding Laboratory every year.

Butt-end Bands
The most common type of band used in North America is the butt-end band. This band is a round band with two edges that butt evenly together when closed correctly. Butt-end bands are supplied by the Bird Banding Laboratory to licensed US banders free of charge. Bands made of a harder metal, typically stainless steel, monel or incoloy, are used on birds that live for many years or live in salt water environments. Some sizes of hard metal bands are available to banders now, but most must be purchased at the banders expense.

Lock-on and Rivet Bands
Lock-on and Rivet bands are specifically designed to stop birds with strong bills like hawks and owls from opening or damaging the band with their strong bill. The lock-on band is used on all medium to large birds of prey other than eagles. The band is like a normal butt-end band with two flanges of metal. The longer flange is folded over the shorter flange, effectively "locking" the band in place. The band is made of relatively soft aluminum and can be removed by the bander, but not by the bird.

Rivet bands are made of harder metal than the lock-on band (but not stainless steel) and are used on eagles. The band has two short flanges of metal that project out from the seam where the two ends of the band meet. These flanges are side by side when the band is closed with a hole for a rivet. The band is riveted in place. Other bands are sometimes seen on birds. Some of these can be reported to the Bird Banding Laboratory, but most

cannot.

Why Band Birds?

Bird banding data are useful in both research and management projects. Individual identification of birds makes possible studies of dispersal and migration, behavior and social structure, life-span and survival rate, reproductive success and population growth.

Dispersal and Migration
Every bander participates in studies of dispersal and migration by sending all their banding data in to a central site like the Bird Banding Laboratory. When banded birds are captured, released alive and reported from somewhere else we can reconstruct the movements of the individual bird.

In this way we have learned that some species go south in one pathway and return north by another pathway. Nesting and wintering grounds have been located for some species, and specific nesting grounds have been connected to specific wintering areas. The Arctic Tern makes the longest migration flight of any living species, making an annual round trip flight of 25,000 miles. The migration routes used by this species have been determined by band recoveries in part.

The Bird Banding Laboratory can give banders permission to use radio transmitters to track individual birds. The radios may be on a standard research frequency for tracking local movements or the dispersal of young birds from the area where they were raised. Some researchers are using satellite transmitters on birds which allow the researcher to track the bird anywhere on the earth. A wealth of information can be learned from using satellite radios, but they are expensive and although technology is allowing them to be made lighter and lighter, the bird must still be a relatively large species to be able to carry a satellite transmitter at this time.

Behavior and Social Structure
Many researchers use banding as one tool in their studies of bird populations and communities. The Bird Banding Laboratory can give banders permission to use additional techniques to study birds, including markers that are more visible than the metal service bands. Some banders use colored leg bands to mark individual birds and study their local movements and behaviors from a distance. Individual identification of birds allows many things to be studied without handling the bird again. Some things that may be studied include territorial behavior, mate fidelity, territory size and fidelity, reproductive behavior (which bird builds the nest? Feeds the young? How often?).

Determining Life Span
Banding allows the determination of the minimum length of time that an individual bird lives. Without an individual marker, there would be no way to determine if the Cardinal that is outside my window is the same bird that I saw last year or not. With a bird band, if I catch that Cardinal today and band it, I will know if that one bird is caught again in the

future.

We have learned, for example, that it is not uncommon for individuals of some species to live 10 to 20 years or more in the wild. Small songbirds that we may think of as short-lived may live a surprising length of time. We have a record of a hummingbird living as long as 12 years! However, the average life span of the majority of the individuals is much shorter.

Longevity Records by Species Number

Population Studies
Banding and marking birds can also be used to estimate the numbers of birds in a population using a mark-recapture technique. Birds are marked in one time period, and then recaptured or resighted in a later time period. The number of birds marked in the first period and the ratio of marked to unmarked birds in the population in the second period allow the total population of birds to be estimated.

Estimating Survival and Productivity
Banding data allows for the comparison of normal, wild banded birds with birds that may have had their survival altered by exposure to oil or other hazards. Survival and Productivity can be studied by using a constant effort banding site. The Monitoring Avian Productiviy and Survivorship(MAPS) program is a cooperative research effort of the Institute for Bird Populations and banders throughout North America.

Toxicology and Disease Research
Birds can be vectors of diseases which effect people, including encephalitis and Lyme disease. Sampling wild birds for serious disease helps determine the prevalence of the disease in the population. Banding allows for birds that have been sampled once to be avoided in the next sample--or to be resampled, depending on the study.

Toxicology projects using banding assess the turnover time or how long birds use an area once they arrive in it. This allows the researcher to determine the potential exposure of birds to chemicals in contaminated areas.

Other Uses of Game Bird Data
An analysis of banding information from game birds is completed annually and is essential for hunting regulations development and for detecting changes in waterfowl populations. Banding data can be used to assess the hunting pressure, estimate productivity and survival, and measure the vulnerability of the age/sex classes to hunting pressure.

How many birds are banded?

For the calendar year 1995, 1,148,151 birds were banded in the United States and Canada, and 58,342 recoveries were reported to the Bird Banding Laboratory. These included birds from the following groups:

Ducks 274,280 banded; 25,227 recovered
Geese (includes Brant) 118,061 banded; 25,534 recovered
Swans 427 banded; 182 recovered
Doves 8,930 banded; 89 recovered
Woodcock 2,303 banded; 71 recovered
Nongame 744,150 banded; 7239 recovered
Included in Nongame birds are hawks and owls, most (non-waterfowl) endangered species, wading birds, and songbirds (including neotropical migrants) as well as other birds that are not eaten as game.

Where are the grouse, quail, turkey, pheasant? These birds are no longer banded with federal bands. Each state or province uses their own bands on these birds, as they are not covered by the Migratory Bird Treaty Act.

In 1995, the following Nongame birds were banded or recovered:

Eagles 1146 banded; 139 recovered
Hawks and Owls other than eagles 25,767 banded; 1224 recovered
Herons, Egrets, Ibis, and Bitterns 3835 banded; 33 recovered
Gulls and Terns 65,680 banded; 1541 recovered
Shorebirds 6797 banded; 107 recovered
Vireos and Warblers 138,441 banded; 61 recovered
Sparrows and Buntings 117,969 banded; 142 recovered
Of course, there are many other groups that are not listed!

Birds Banded and Recovered by Species Number
Summarized Counts of How many Birds were Banded

How to Report a Bird Band in North America

The preferred method of reporting bird bands is to call toll-free to 1-800-327-BAND (2263) from anywhere in Canada, the United States and most parts of the Caribbean. The operators will need to know the band number, how, when and where the bird or band was found.

Please do not use this number to call us about other matters.

All About Auxiliary Markers

Many researchers use additional markers to allow them to identify an individual bird at a distance. Researchers who want to use auxiliary markers on wild birds need to have federal banding permits and auxiliary marking authorization as well as any state permits that may be required. There are additional permits required to work on endangered or threatened species.

Auxiliary markers include plastic cylinders or cone-shaped collars on geese, nasal markers on ducks, dyes and colored plastic leg bands on many species of birds. Radio transmitters are also used to track birds from a distance, sometimes across huge areas. These auxiliary markers are all attached at the time of banding. Some are designed to be lost with time, and others are more permanent markers.

For some types of markers there are agreements about the size, shape, color, and/or style of the markers. These agreements are called protocols, and they help to keep many different projects coordinated so that all the researchers can identify all the individual birds.

Neck Bands or Collars
Nasal Markers
Dyes
Colored Leg Bands and Flags
Web Tags and Plasticine-filled Bands
Radio Transmitters
Patagial Markers
Tail Streamers

There are international protocols on the color and type of markers that can be used on some species or groups of birds. Look for links to additional information on these protocols after the marker type.

These protocols are being followed by banders in Canada and the USA. Some including the leg flag protocol of the Pan American Shorebird Program and the Arctic Goose Joint Venture are coordinated beyond North America. Banders using bands issued by the Bird Banding Laboratory or Canadian Wildlife Service must follow these protocols. For more information on protocols, click here .

How to Report an Observation of an Auxiliary Marked Bird

Neck Bands or Collars
Goose collars are used to study goose populations or track geese as part of a research project. Collars can be easily read from a distance with binoculars or a telescope. This allows researchers to identify an individual bird using the combination of collar color,

code color, and the code on the collar.

Goose collars come in many different colors. It is possible to see several colors in one area, as color may indicate the flyway or a special project. Collars come in two shapes. Most collars that are used today are cylinders of hard plastic. On the east coast of the United States and Canada, bib-type collars are seen. These collars are cone-shaped and made of flexible vinyl. Collars may have 3 or 4 characters on them. It is important to report collars with characters facing two directions with care. Drawing the collars or stating "vertical 1 horizontal 2 3" both help to ensure that the codes are reported correctly.

Small subspecies of Canada Geese have codes that are 3 characters, and the cone-shaped collars in the Atlantic Flyway are also only 3 characters. Most large Canada Geese have collars with four characters. Snow Goose, White-fronted Goose, and other species of geese have 3 or 4 characters on the collar. Codes may be vertical, horizontal, or some combination. The letters, numbers, and other symbols may be highly stylized to allow for easier separation of similar characters.

Occasionally you will see a collar that has only 2 characters or is completely black. Collars with two characters have a radio transmitter attachment. The collar allows the radioed bird to be visually identified as well as tracked by radio.

Swan Protocol
About Canada Goose Collars
Arctic Goose Joint Venture
Atlantic Flyway Eastern Tundra Swan Project

Nasal Markers

Nasal saddles and disks are used to study local movements and behavior of ducks. These markers are not as highly coordinated as goose collars, and only allow individual identification within the study area. Nasal saddles are fit over the bill and often have codes on them, while nasal disks are small pieces of plastic in various shapes and colors that are attached to opposite sides of the bill.

Dyes

Banders use dyes to mark birds in an obvious but temporary manner. Dyes are quickly lost through weathering or molt and are rarely obvious for more than a few months. Dye can help to call attention to a bird that is marked with less obvious markers, like colored leg bands or a radio transmitter. Dyes that are used are generally bright, obvious, and non-toxic to the birds.

Don DesJardin Photo

Colored Leg Bands and Flags

Colored leg bands can be coordinated internationally between the United States and

Canada, or only locally depending on the species. Colored leg bands on waterfowl are usually hard plastic with etched codes that are coordinated much like collars, but are smaller and less visible on the bird. Peregrine Falcons and Eagles also have colored leg bands with engraved codes.

Colored leg bands for small birds are made of plastic and come in a variety of colors that give unique combinations because of their placement on the bird. Colored bands are sometimes placed on the upper leg as well as the lower leg. The exact placement of the bands (above or below the "knee", left or right leg), colors of bands, and location of the metal Service band are all important in identifying color banded birds. Some birds, notably shorebirds, may have flags and color bands mixed together on the same bird. A flag is a leg band with tabs that extend away from the leg. This flag identifies the country of banding for shorebirds under the Pan American Shorebird Program.

The Pan American Shorebird Program Flag Protocol
Peregrine Falcon Protocol
Black Brant Protocol

Web Tags and Plasticine Bands
Web tags are small markers of metal with a code identifying the bander and then the banders number on them. The tags were developed to mark fingerling fish, and have been adopted by banders for use on waterfowl chicks. Web tags may identify the local area or nest site of the bird, or be part of a study on chick survival. The use of web tags allows individual marking of birds that are too small to band. Because web tags are used on chicks, they are the only auxiliary marker that is normally used without banding the bird. If the bird is later trapped and is large enough for banding, the band is added to the bird.

US banders are currently adapting a clay-filled band from Europe for use on Wood Ducks and Mallards in North America. These clay-filled bands are similar to lock-on bands but the inside of the band is filled with clay at banding. As the duckling grows, wear removes small amounts of clay until the duck has worn all of the clay out of the band, which results in a duck with a full-size band on a well grown leg. Currently these bands are manufactured with codes similar to web tags. These bands are currently being used on Wood Duck and Mallards in the USA although they have been used on many species in Europe.

Radio Transmitters
Radio transmitters the allow tracking of individual birds movements, over short or long distances. Satellite transmitters can be tracked across the globe by satellites, and allow study of the migration or movements of a single bird around the world. Radios may be attached to a bird by many methods, including gluing the transmitter to a tail feather on a raptor or a neck collar for a goose, attaching it to the bird with a harness or glue, and even internal placement. Banders usually appreciate the return of radio transmitters as they can often be reused by the bander after replacement of the battery.

Links to radio tracking sites:

Mallard Tracker (Manitoba, Canada)
Satellite Tracking Threatened Species (North America)
Satellite Tracking Wood Stork
Wild Wings: Heading North. Track Snow Geese on the 'Net. (North America)
Patagial Markers
Patagial Markers are shapes of vinyl (often circles) or cattle ear tags (square with codes) attached over the leading edge (or patagium) of the wing. These markers are very visible both in flight and on perched birds, although part of the marker may be obscured by feathers on a perched bird. Homemade markers may be any shape and may include multiple colors. Codes of letters and numbers are usually painted or sewn onto the marker. Commercial cattle ear tags are plastic with codes of letters and numbers. Cattle and sheep ear tags are sometimes used as patagial tags on birds.

The vast majority of patagial tags have codes, and the individual bird can often be identified by the code. Often, a partial code is reported, or only a marker with the color. This information is still of use as it can identify the research project. Look for patagial markers on vultures, eagles, swans, ravens, crows, and herons.

Tail Streamers
Tail streamers are pieces of tape that are folded over a tail feather and project out an inch or two from the end of the feather. The color of the marker and the shape of the tip (notched, pointed, squared) are useful information. These markers are often used in projects with migrant birds, and a cohort mark is typically used (all birds from one day get a red streamer on the left side of the tail with a notch in end of the tape, for example). Even though the individual bird can't be identified, the information is still of use to the bander. Tail streamers are used on birds from hawks to sparrows.

Who Can Band Birds?

Because banding birds requires capturing the birds and handling them before the banding takes place, the banding of birds in the United States is controlled under the Migratory Bird Treaty Act and requires a federal banding permit. Some states require a state permit as well. Only official federal bands may be legally placed on birds that are released to the wild within the United States.

Banders are a select group. There are currently only 2000 Master banding permits and 2000 subpermits in the United States. Master Banders include federal and state agencies, university researchers, bird observatories, and private individuals. Waterfowl are banded only by federal and state agencies. Private individuals are not normally allowed to band waterfowl as the banding information is used to set harvest regulations.

Persons who want to apply for a banding permit must be able to show that they are qualified to safely trap, handle, and band the birds. The applicant is responsible for

acquiring all training, none is provided by the Bird Banding Laboratory. Some potential banders learn in an apprenticeship program, working one-on-one with an active bander. Others learn by visiting bird observatories or banding groups. Still others take courses in banding and handling birds. Advertisements for courses can be found in the Ornithological Newsletter or the North American Bird Bander.

Applicants who are at least 18 years of age and are able to identify all of the common birds in their different seasonal plumage may apply for a bird banding permit. Applications are submitted to the Bird Banding Laboratory in the USA or the Canadian Wildlife Service in Canada. The applicants must furnish the names of three well-known bird banders or ornithologist who can vouch for their expertise as a bird bander. Only those persons who are well qualified and have a well defined research project are issued banding permits. Authorized banders receive bands and the necessary reporting forms.

A Brief History of Bird Banding

People have been banding (or ringing, as it is called in Europe) birds for centuries. The first record of a metal band attached to a bird's leg was about 1595 when one of Henry IV's banded Peregrine Falcons was lost in pursuit of a bustard in France. It showed up 24 hours later in Malta, about 1350 miles away, averaging 56 miles an hour!

Duke Ferdinand placed a silver band on a Grey Heron about 1669: the bird was recovered by his grandson about 1728, indicating the heron lived at least 60 years. In 1710 in Germany, a falconer captured a grey heron with several rings on one leg. The bander was unknown but one of the rings was apparently placed on the heron in Turkey, more than 1200 miles to the east.

The first records of banding in North America are those of John James Audubon, the famous American naturalist and painter. In 1803 he tied silver cords to the legs of a brood of phoebes near Philadelphia and was able to identify two of the nestlings when they returned to the neighborhood the following year.

A system for bird banding did not really develop until 1899, when Hans Mortensen, a Danish school teacher, began placing aluminum rings on the legs of European teal, pintail, white storks, starlings and several types of hawks. He inscribed the bands with his name and address in the hope they would be returned to him if found. His system of banding became the model for our current efforts.

In 1902 Paul Bartsch, a well-known conchologist, whose hobby was the study of birds, began the first scientific system of banding in North America. In that year he ringed more than 100 black-crowned night herons in the District of Columbia with bands inscribed "Return to Smithsonian Institution". The real pioneer bander in the Americas was Jack Miner who established a waterfowl sanctuary near Kingsville, Ontario. Between 1909 and 1939 he banded 20,000 Canada Geese alone, many of which carried bands returned to him by hunters

By 1909 the American Bird Banding Association had been formed to organize and assist the growing numbers of bird banders. By 1920 banding was so widespread that it could not be coordinated by a private group, so the Bureau of Biological Survey (now the United States Geologic Survey) and its counterpart the Canadian Wildlife Service accepted the offer to take over the work of the Association. This has been a joint effort to oversee the activities of dedicated banders all over the world ever since.

Patuxent Wildlife Research Center

General Server Disclaimer

The HTTP server, www.pwrc.usgs.gov, is maintained by the Patuxent Wildlife Research Center in Laurel, Maryland. The server is a pentium-based PC and is for general use.

If some links fail or if other misleading or otherwise inappropriate information is brought to our attention, we will make a reasonable effort to fix or remove them. Such concerns should be addressed to the author of the material (if known), or webmaster@patuxent.usgs.gov if attempts to contact the author of the material do not prove satisfactory. All transactions on this server are being monitored.

Data Liability Disclaimer

Although these data have been processed successfully on a computer system at the U.S. Geological Survey, Biological Resources Division, Patuxent Wildlife Research Center, no warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly recommended that these data are directly acquired from a Biological Resources Division server, and not indirectly through other sources which may have changed the data in some way. It is also recommended that careful attention be paid to the contents of the metadata file associated with these data. The Biological Resources Division shall not be held liable for improper or incorrect use of the data described and/or contained herein.

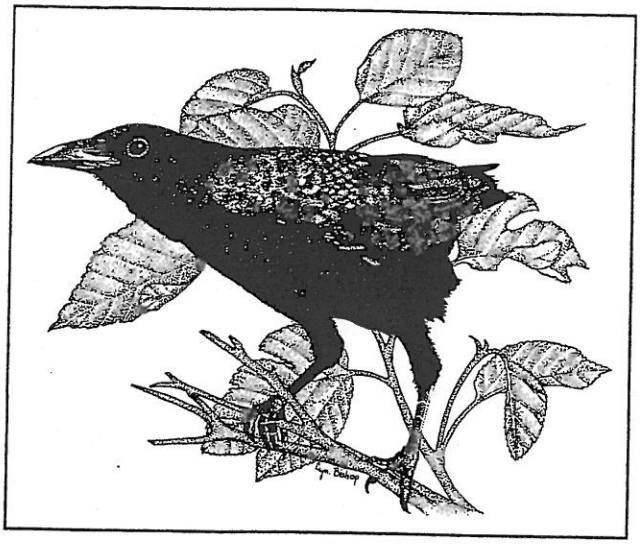
default.htmdefault.htm

Ohio Division of Wildlife

Life History Notes

American Crow

Scientific Name: *Corvus brachyrhynchos*



Publication 219
(1099)

Introduction

The American crow is a bird that, depending on who you talk to, is nothing more than a flying pest. Not a favorite among farmers, the crow will pull up corn sprouts and eat soft corn, eggs, fruit, and young poultry. Thus the development of the "Scare-" crow. But because of its apparent intelligence and wariness, few crows actually fall for the dummy in the field that is supposed to keep them at bay. Crows are adaptable and this ability has allowed them to establish themselves throughout the state from rural farmlands to central cities.

Description

The American crow is an all-black relative of the blue jay, magpie, and raven. Chunky and heavy-billed, it is nearly as large as the familiar red-tailed hawk, but can easily be distinguished from a hawk at a distance by its frequent, steady wingbeats.

You usually don't even need to see a crow to know one is in the vicinity. Its "Caw-caw-caw" call is familiar to many Ohioans.

Habitat and Habits

Crows are more abundant in Ohio today than they were when unbroken forests covered the state at the time of European settlement. They thrive in habitats with open fields (where they feed) and trees (where they nest and roost). Crows are found in all 88 Ohio counties, but are most numerous in the more heavily forested farmland of southeastern region of the state.

Crows begin to flock in late summer, roosting together at night and dispersing over a large area to feed during the day. Flight lanes to and from the roost tend to remain the same, day after day. As cold weather approaches, the birds may begin to move southward. Crow migration is not as orderly as in many other bird species; it may occur over a period of several months. Most Ohio nesters probably move south in winter, replaced within the state by immigrants from farther north as the season wears on. Mansfield is the site of a longtime winter roost that is usually inhabited by several thousand crows.

Reproduction and Care of the Young

Crows mate the second spring after they have hatched. As with other birds that mate for life, they exhibit limited courtship behavior. They will nest in a wide variety of trees, including large, mature conifers, although oaks are most often used. The nest is built about 30 feet above the ground, and typically close to the trunk of the tree. Nests are about a foot in diameter, constructed of branches and twigs, and lined with strips of bark, grasses, mosses, and fine roots. Both sexes work on nest construction which is usually complete in two days.

The female is almost entirely responsible for incubating the eggs. The male spends most of the day nearby, occasionally bringing food to his mate. Both adults will care for the young; they regurgitate food to the begging nestlings.

A few days before the young leave the nest, they can be seen standing on the edge, exercising their wings. Later, they hop awkwardly about the tree before trying a few short flights. Once out of the nest tree, the young quickly scatter. Parents continue to feed them until they are strong enough to make extended flights and feed themselves.

Management Plans

The Ohio Division of Wildlife doesn't manage habitat specifically for crows. However, crows can be found throughout the state and at many wildlife areas where suitable habitat exists. The management activities that occur on these areas and elsewhere around the state are designed to benefit crows and a host of other wildlife species. Each year wildlife biologists evaluate data and establish a limited hunting season for crows.

Viewing Opportunities

Crows are found throughout Ohio. You may not need to go any further than your own backyard to see crows. They can be found in areas where open fields and trees intersect. A drive along rural roads provides an opportunity to see crows.

Do Something Wild!

The Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a variety of wildlife as possible. Many species like the crow can be hunted in the state, but many more are not. The Division has a special program to manage and research nongame species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous; birds form a pair and work together to rear the young.

Peak Breeding Activity: Mid-April; crows nest mid-March to mid-June.

Incubation: 18 days

Young are Hatched: Most hatch May 1-15

Clutch Size: 3-7 eggs; 5 is average

Young Fledge: 30 days after hatching

Number of Broods per Year: 1; if first nest is disrupted they may renest

Adult Weight: 16-20 ounces

Adult Body Length: 17-21 inches including the tail

Adult Wingspan: 33-39 inches

Life Expectancy: 15 months average; maximum known 9 years

Migration Patterns: Most winter in southern Ohio, Kentucky, and Tennessee. Crows begin to migrate to Ohio in January and February; they depart to the south for the winter gradually between September and January.

Typical Foods: Waste grain (mostly corn), insects, carrion, bird eggs, young birds, small mammals, and the fruits of mulberry, blackberry, and poison ivy.

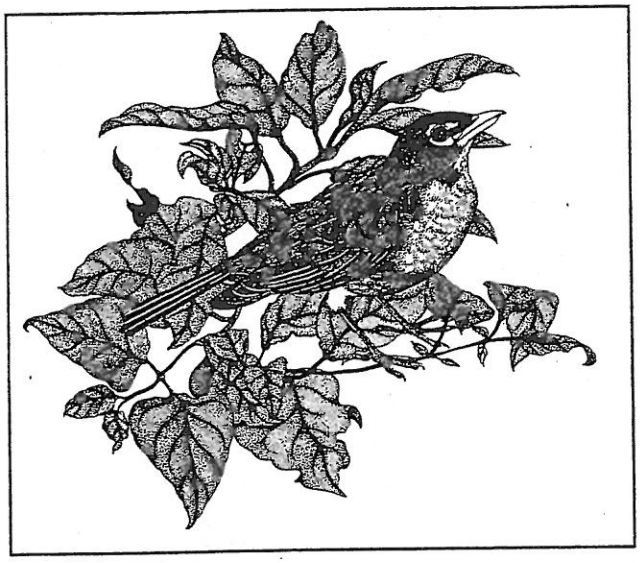
Native to Ohio: Yes

Ohio Division of Wildlife

Life History Notes

American Robin

Scientific Name: *Turdus migratorius*



Publication 239
(1099)

Introduction

The American robin is popularly recognized as a "harbinger-of-spring." However, robins can be found in Ohio throughout the year. Robins can and do roost in the state through the winter, especially if it is a mild one; those that overwinter in Ohio are more abundant in the southern portions of the state.

As winter ends, and the daylight lengthens, American robins are often the first birds you hear singing just as dawn approaches. This behavior has earned the bird the nickname "wake robin."

Pesticide contamination and its effects on birds such as the bald eagle and peregrine falcon is well known. Less well known, but as detrimental, was the effect of DDT on the American robin population. DDT was used to combat Dutch elm disease. In the process, earthworms–a staple of the robins' diet–incorporated the pesticide into their systems and eventually the pesticide passed into the systems of robins. Robin population numbers fell, but as DDT was banned and its residue filtered out of the environment American robins recovered.

American robins can be found in the eastern and northern United States west almost to the Rocky Mountains and northwest Alaska. Some range maps indicate that the species is found across the country. Robins winter as far south as the Gulf Coast west to Texas. In Ohio, they are found in good numbers in all 88 counties.

Description

The head, back, wings, and tail are a very dark gray to black in male robins and a slightly duller/lighter shade in females. The well-known breast is a light brown to brick red for adult males and a duller shade of red in females. The tail is tipped in white. Robins also have a slight white ring around their eyes. Legs and feet are a beige-gray.

Habitat and Habits

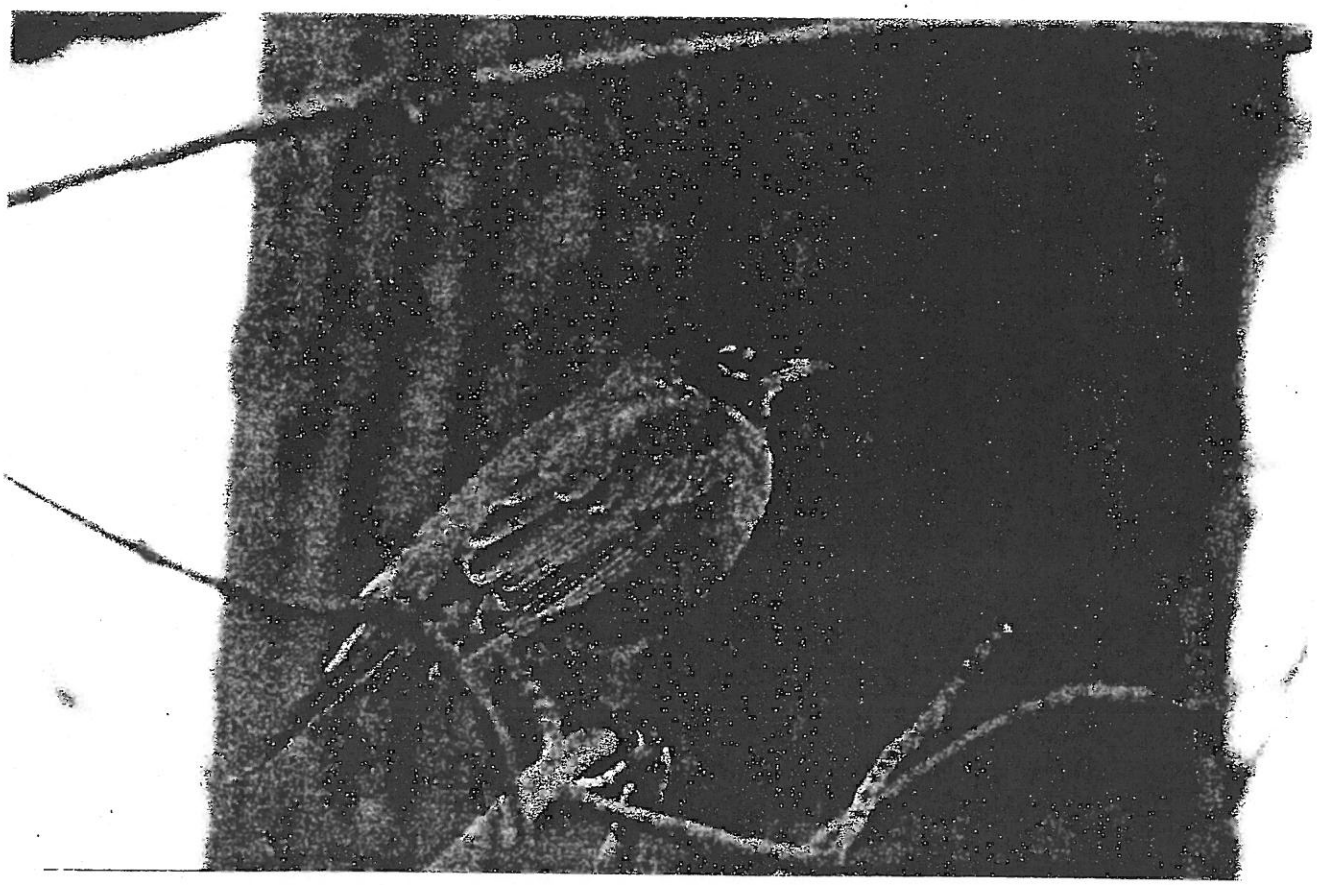
Robins prefer mowed areas in urban, suburban, and rural areas for most of their activities. Some will use open woodland areas with sparse understory or ground cover.

Robins are social birds, that when not breeding, will roost communally with other robins and occasionally with starlings and blackbirds.

Earthworms are their primary food source and robins use their sense of sight to find this meal. Robins are often seen pulling a worm from the ground or taking them off a road or sidewalk following a spring or summer rainstorm. Insects are another food source. If these sources are not available due to cold weather, robins will use fruit for food.

Reproduction and Care of Young

Robins breed and nest in virtually any mowed area with suitable nesting sites–ranging from trees, to buildings, to fence posts–nearby. Their nests are thick-walled structures made of mud reinforced with grass, leaves, twigs or



man-made materials such as paper, twine, etc. The inside of the nest is lined with grass. Nests are usually within 35 feet of the ground.

Robins are monogamous throughout the breeding season; however if something happens to her first mate, the female will choose another male for subsequent nests. Nest construction starts in late March or early April. Nests with eggs are seen as early as the first part of April. Incubation generally takes 13 days; the majority of fledglings have hatched by the last half of May. Many robins produce a second nest; young from this effort fledge in late July and early August.

Young robins are altricial, meaning they depend on their parents for their complete care. The female constructs the nest and incubates the eggs. Males help rear the nestlings and fledglings by providing food. The male's feeding role is more prominent late into the rearing of the first brood, as the female has diverted her attention to building a nest for the next brood. Young robins leave the nest at about 13 days.

Robins are not known to have any set breeding displays. There is some speculation that the female selects a suitable territory and subsequently the male inhabiting it.

Management Plans

The Division of Wildlife does not intentionally manage for this species. However, habitat for robins is provided as mowing occurs around buildings at our wildlife areas. Most homeowners "manage" for robins as well through mowing their lawns.

Viewing Opportunities

Robins can be seen virtually anywhere there is a mowed lawn and nearby nesting habitat which can include trees, buildings, lights, bridges, fence posts, and other man-made structures. Parks across the state are excellent viewing sites, particularly from late March through October.

Robins that reside in urban and suburban areas can be viewed without the use of cover or a blind. Woodland area robins are not as accustomed to human presence and activity and thus a more subtle approach is needed by the viewers.

Do Something Wild!

Robins are an important part of our ecosystem and contribute to the wildlife diversity of the state. Helping us to manage and research

these species are the generous citizens of the state of Ohio. With money they either donated through the state income tax checkoff, the purchase of wildlife conservation license plates, or their direct contribution to the Endangered Species Special Account, the Division is able to purchase critical habitat essential to sustaining wildlife diversity or to provide education materials and opportunities on wildlife to children and adults.

Contributions to our Endangered Species and Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating:Monogamous

Peak of Breeding Activity: April - July

Incubation Period:13 days

Young Hatch:Late April-July; they are altricial, and require their parents' care

Number of Eggs:3-4

Eggs Produced:2 broods in a year are typical, but sometimes 3 are produced.

Adult Length:10 inches

Adult Weight:Male - 4.34-5.11 ounces; Female - 4.23-4.97 ounces

Life Expectancy:Normally 1.7 years in the wild; there is a bird on record that lived 11 years in the wild (based on banding data)

Migration Patterns:Seasonal resident although there are winter roosts of robins in Ohio. Peak of the migration south is in October.

Feeding Periods:Probably the majority of feeding takes place in the morning and evenings. When feeding young they likely feed all day.

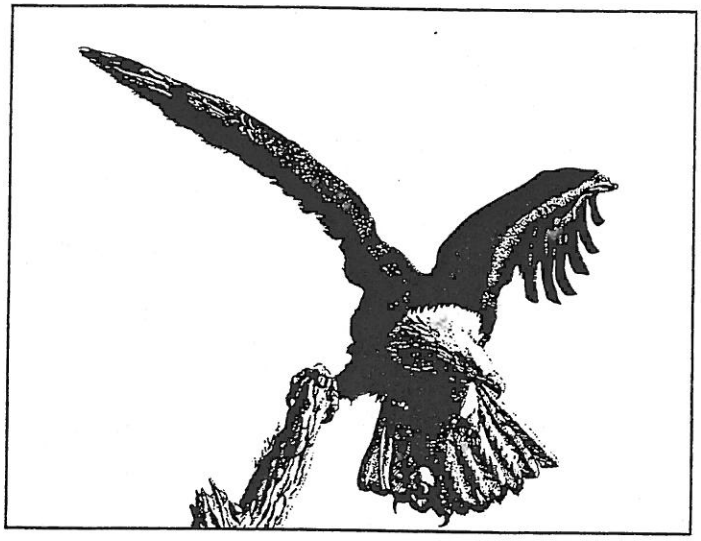
Typical Foods:Earthworms, insects and fruit

Native to Ohio:Yes

Ohio Division of Wildlife
Life History Notes

Bald Eagle

Scientific Name: *Haliaeetus leucocephalus*



State Endangered Species

Publication 383
(399)

Introduction

Selecting a national symbol is no easy task. Something that embodies the best characteristics or qualities to which to aspire should be chosen. The bald eagle displays many outstanding characteristics—exceptional vision, a striking appearance, and a commanding presence. You can't help but think that those who decided upon the eagle as the country's symbol had to have seen it soaring over open water and were impressed with its grace, strength, and the personification of freedom.

Sadly, by the later half of the 20th century, the bald eagle was classified as an **endangered** species. This, however, is a case with positive results. Through the diligent efforts of wildlife biologists and a concerned public the bald eagle population is coming back and is no longer on the federal endangered list. Its federal status is now "threatened" the symbol of the nation has also; become the symbol of recovery for all endangered wildlife.

Description

The bald eagle can be found in small concentrations throughout the U.S., particularly near sizeable bodies of water, natural and man-made. Some of the largest populations in North America are in Alaska, the Pacific Northwest, Canada, the Upper Great Lakes region, and Florida. In Ohio, the bald eagle's stronghold is the marsh region of western Lake Erie. Nesting pairs also occur in northeast Ohio, along the Sandusky River, and in north-central Ohio. Several nesting pairs have moved farther inland recently, as far as Delaware and Coshocton counties. Nonbreeding birds can be found anywhere in the state at anytime of the year.

The adult bald eagle is one of the most easily recognized species of wildlife. It has snow white feathers covering its head down to the neck area. The tail feathers of the mature bald eagle are also white. The body color is very dark brown, almost black. Yellow eyes, beak, and feet accent the bird's appearance. The white of the head and tail distinguish the fully mature eagle from immature birds of the species. Young eagles do not have this appearance until they reach the age of five or six years. Until that time, they are decidedly duller in appearance and, to the inexperienced observer, probably would not be recognized as a bald eagle. Immature eagles are almost uniformly dark brown from head to tail feather. Their undersides are mottled white with buff and cream blotches.

The sexes are alike in appearance. The voice of the bald eagle has been described as a high-pitched, squeaky cackle or chatter.

The eagle is one of the largest birds in the raptor (bird of prey) or *Accipitridae* family. It is generally 34 to 43 inches long, weighs 10 to 12 pounds (females are the heavier of the sexes) and has a wingspan of six to seven and a half feet.

Habitat and Habits

The bald eagle, as with any species of wildlife, requires food, water, shelter, and space. For the bald eagle, the ideal site is one where water with ample food (fish) is located within two miles of the nest. The eagle shows a preference for a somewhat secluded homesite. This is particularly critical when the nest is being established and young raised. Eagles are highly territorial and too much interference from other eagles can result in problems at the nest site.

The bald eagle is skilled in taking fish over water, dipping to the surface and coming up with a fish clutched in its talons. However, the bird has other methods of obtaining food. In Alaska, it has been observed standing in streams, using its talons or beak to capture migrating salmon. The eagle will readily feed on mammals, including groundhogs, rabbits, squirrels, or other birds such as ducks, gulls, hawks, and owls. It will also scavenge for carrion, especially in the winter when other sources of food are limited.

Reproduction and Care of Young

It is generally believed that the bald eagle stays mated to one partner for life. However, current research is yielding evidence that this might not be completely true. Nonetheless, bald eagle pairs go through a series of behaviors in preparing to mate that bond them to one another. Pair bonding activity for both new and established pairs begins in the fall. Courtship behavior and nest building can occur anytime between October and early December. As winter begins and daylight hours are reduced, the bonding activities wind down. Courtship rituals resume in late January as the days begin to lengthen again. Although many steps and activities are involved in the mating behavior of the bald eagle, the most noticeable and spectacular part of this process is the aerial display between the mates. Beginning in early February, the male bald eagle will put on an aerial display of ritualized movements showing his mate his readiness. If receptive, the female will join him in flight. This activity is then followed by more ritual movements and gestures before actual mating occurs. As outstanding as this display is, scientists credit the activity that occurs during nest building as the most important element in cementing the pair bond.

Established pairs generally return to an existing nest and add six or more inches of material including branches and grasses. Corn stalks and cattails are also added to the nest structure prior to egg laying, during incubation, and through the early brooding period to provide an insulating lining to the nest structure. The nest is maintained throughout the breeding season.

New pairs will basically start from scratch and this can be quite a task as the average nest ranges in size from three to five feet across and three to six feet in depth. Still, a young pair can build their nest in as little as three weeks.

Ohio has the distinction of being the home of the largest bald eagle nest on record. Referred to as the "Great Nest," it was located in Vermilion and was measured at 12 feet in height, 8 1/2 feet across and it weighed **two tons!** The nest was 80 feet up in the tree, which is within the normal placement range of 50 to 100 feet above ground. This nest was used continuously by different pairs of eagles for over 35 years. It was destroyed during a storm in 1925.

The female lays one to three eggs, approximately 36 hours apart, in mid-February to late March. Both she and her mate spend time on the nest incubating. This process usually lasts 35 days, with the young hatching in late March through early May. The eaglets will stay in the nest 10 to 12 weeks and both parents share the feeding responsibilities. The eaglet(s) begin limb hopping as they strengthen their wings. The fledging process continues for four to eight weeks; all the while the eaglets slowly broaden their range from the nest, but continue to depend on their parents for food. The young birds generally become independent at 17 to 20 weeks of age and will disperse from Ohio in November or December.

Management Plans

Bald eagle numbers declined through the first half of the 20th century as habitat was lost. After World War II, the pesticide DDT was commonly used on American farms and by way of runoff, found its way into rivers, streams, and lakes. As a result, the staple of the bald eagle's diet—fish—became contaminated. The toxicity of the chemical eventually built up in the birds' system and either left them sterile or so seriously weakened the shells of their eggs, that they would break under the weight of the incubating adults. The effect of the contamination was a critical decline in the number of healthy, adult nesting pairs because too few young were being produced to replace or expand the population.

Eventually, the link between the use of DDT and the contamination of numerous wildlife species was established, and the pesticide was subsequently banned. That was in 1972. Unfortunately, legislating DDT, dieldrin, and other chemicals out of use didn't magically bring the bald eagle back from the brink of extinction in the state or nation. Chemical contamination,

loss of habitat and other adverse conditions were having a long-term impact on the birds. In 1979, seven years after the ban on the use of these chemicals, eagle numbers continued to decline; in 1959 there had been 15 pairs, now Ohio was down to just four pairs. If this trend was to be reversed, man would have to step in and actively manage for an increase in the population.

In 1979, the Ohio Division of Wildlife began a bald eagle restoration project. An important aspect of this project was adding more young eagles to the resident population and eventually, breeding population. Eaglets were obtained from zoos and the U.S. Fish and Wildlife Service (USFWS) and placed in the nests of eagles whose eggs failed to hatch. The eagles became "foster parents" to these eaglets.

Additional actions were taken to help restore Ohio's eagle population. Education of the public about the importance of the eagle and other raptors was and continues to be essential. Rehabilitation of injured birds contributed to the eagle's recovery. Each individual bird was considered critical to the population and the future. Every attempt was made to help a bird recover and return to the wild. Man-made nests, constructed to resemble an eagle-built nest, were developed in areas where existing nests were in poor condition.

In 1989, the bald eagle restoration project added a new dimension with the creation of a four-year research project to determine the movement and habitat requirements of young bald eagles. While still in the nest, each eaglet produced in the Lake Erie marshes was fitted with a backpack-style harness holding a radio transmitter and an identification tag was attached to each bird's wings. The radio signals were monitored by biologists working out of the Division of Wildlife's wetland research station. The results of this research have added to the existing knowledge concerning habitat requirements of Ohio's eagles. This phase of the project, as well as the restoration efforts themselves, was funded through the *"Do Something Wild!"* income tax checkoff program.

Restoration was just one phase of the preservation of the bald eagle in Ohio. Two problems still threaten the existence of the bald eagle in Ohio: 1. the loss of wetlands and swamp forests, among the preferred nesting and staging areas for the eagle; and 2. contaminant concerns. Elevated levels continue to affect Lake Erie bald eagle populations.

Ohio has experienced a good deal of success in its efforts to strengthen the state's bald eagle population. The goal of having 20 nesting pairs by the year 2000 has already been met.

Viewing Opportunities

Much has been accomplished in the effort to save and restore the bald eagle in Ohio and the nation. Seeing a bald eagle in the wild is an opportunity that should not be missed. The best time to see the bald eagle is in the late winter or early spring, before the trees leaf out. Eagles are also more active at this time as they are pairing off and establishing territories and nests. However, this is also a critical period in the reproductive cycle of the bird and it should not be disturbed. Therefore, if you plan to make a viewing trip at this time, attempt to be as unobtrusive as possible. Binoculars or a spotting scope are recommended, as they will allow you to get a good view of the bird while keeping your distance. The Ottawa National Wildlife Refuge and Pickerel Creek Wildlife Area are becoming spectacular staging areas for nonbreeding eagles from late August to October, when a lucky observer may see 10 to 20 eagles at one time from the trail system.

Eagles may also be viewed from roads surrounding the Mosquito Creek, Killdeer Plains, and Magee Marsh wildlife areas. Keep in mind though, that no spot is guaranteed for eagle viewing. These birds are highly mobile and may set up "housekeeping" in another location.

Do Something Wild!

As mentioned earlier, research and restoration efforts for the bald eagle were funded in part by money from the *Do Something Wild!* income tax checkoff fund. The Division of Wildlife also uses money from this fund to acquire wetlands—a habitat critical to the bald eagle. Through the generosity of Ohio citizens, who either donated through the checkoff, purchased wildlife conservation plates, or made their direct contribution to the Endangered Species Special Account, the Division is able to sponsor a variety of special projects to benefit endangered species and wildlife diversity in the state.

Tax time ***is not*** the only time you can help. Contributions to our Endangered Species and Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous, pairs for life

Peak Breeding Activity: Early February through March

Incubation Period: 35 days on average, February through April

Clutch Size: Usually two eggs; with a range of one to three

Young are Hatched: Peak hatching occurs in mid-April

Young: Altricial (helpless and dependent on the parents). They leave the nest at about 10-13 weeks

Number of Broods per Year: 1; however, if a nest is destroyed, some pairs will "recycle" and initiate a second nest within the same year.

Adult Weight: Males - 10 pounds; Females - 12 pounds

Adult Length: 34-43 inches, including the tail

Adult Wingspan: Between 6 1/2 and 7 feet

Life Expectancy: 15-20 years in the wild

Migration Patterns: Adults are generally year-round residents; immature birds sometimes migrate during spring and fall.

Feeding Periods: Anytime during daylight hours

Typical Foods: Mostly fish, will also feed upon waterfowl, small mammals, and carrion

Native to Ohio: Yes

Active or Potential Nuisance Species: No

The bald eagle is on Ohio's endangered species list and is listed as threatened throughout most of its range by the federal government.

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Bob Taft, Governor / Samuel W. Speck, Director / Michael J. Budzik, Chief
An Equal Opportunity Employer - M/F/H

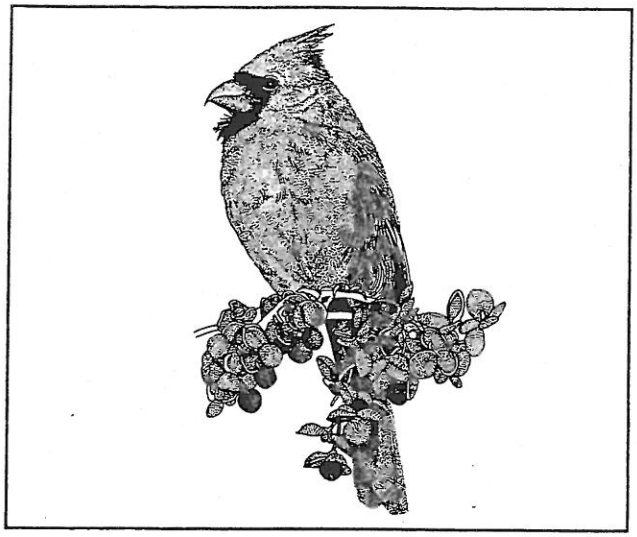
Publication Date: 5/99 / Quantity: 10,000 / Unit Cost: .04

Ohio Division of Wildlife

Life History Notes

Cardinal

Scientific Name: *Cardinalis cardinalis*



Publication 114
(1099)

Introduction

The cardinal is the state bird of Ohio. It is well known around the state for its rich, distinctive call. The cardinal's song is usually a repetition of short whistled phrases with some notes run together; for instance: "What-cheer-cheer-cheer," or Who-it, who-it, who-it," or "Birdy, birdy, birdy." There is also a sharp, short "clink" sound the bird makes as a call note. Cardinals can unusually be found singing near the top of the tallest tree in their territory.

Cardinals are very common throughout our state. They are equally at home in cities and suburbs as they are in rural areas. They are also a frequent visitor to backyard bird feeders.

Cardinals have expanded their range northward, east of the Plains Region, across the U.S. into southern Ontario, Canada in the past century. Cardinals were found in the southern and central parts of the state prior to settlement, expanding into northern Ohio during the 1830s.

Description

The male cardinal is an unmistakable brilliant red with black facial markings and a crested head. Females also have a head crest, but overall are duller in coloration. Female cardinals are a grayish, brown-red with true red only on their wings, tail, and crest. The red bill is also a distinguishing characteristic. As with many other species of birds, this muted appearance makes the female cardinal less conspicuous to predators when nesting.

Habitat and Habits

Cardinals prefer a mixed habitat of woodlands, brush, and forest edges. They eat a variety of seeds that their thick, cone-shaped beak is well adapted to handling.

Cardinals do not migrate, but individuals may wander over a widespread area. As with most wildlife species, cardinals have a very short life span. Most cardinals live only one year or less; a two- or three-year-old bird is a rarity. Two to three broods of young in a year help offset the loss of older birds in the population.

Reproduction and Care of the Young

In Ohio, cardinals begin nest building in April. Females construct the nest, usually in a dense bush or thick brush pile. The nest is a loosely built structure of leaves, twigs, grasses, and strips of bark. Nests are generally less than eight feet off the ground.

The cardinal is monogamous, meaning that the male and female form a bond and work together to rear their young. Generally, three or four bluish-white eggs with fine reddish brown freckles are produced per clutch. Females take sole responsibility for incubating the eggs. The male brings food to his mate while she incubates and he also feeds the young after hatching as the female is often incubating another clutch of eggs. After leaving the nest, the fledglings are cared for by the male for about three weeks. Young cardinals can fly at nine to ten days of age.

Management Plans

The Ohio Division of Wildlife doesn't manage habitat specifically for cardinals. However, cardinals are found throughout the state and at many of our state wildlife areas where suitable habitat exists. The management activities that occur on these areas and elsewhere around the state are designed to benefit cardinals and a host of other wildlife species.

Viewing Opportunities

Cardinals are found throughout Ohio. The best place to see them may be in your own backyard. Woodland and forest areas are also probable sites for finding cardinals. Although cardinals can be found at most all of Ohio's officially designated "Watchable Wildlife" areas, three are noted as very good places to watch for them: Springville Marsh State Nature Preserve in northwest Ohio, Crooked Run Nature Preserve and Gilmore Ponds Interpretive Preserve in southwest Ohio.

Do Something Wild!

The Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. The Division has a special program to manage and research non-game species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax checkoff, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous

Peak Breeding Activity: April and May; overall breeding season extends through September

Incubation: 12-13 days

Clutch Size: 3 or 4 eggs

Young Fledge: In about 10 days

Number of Broods per Year: 2 or 3

Adult Weight: 2-3 ounces

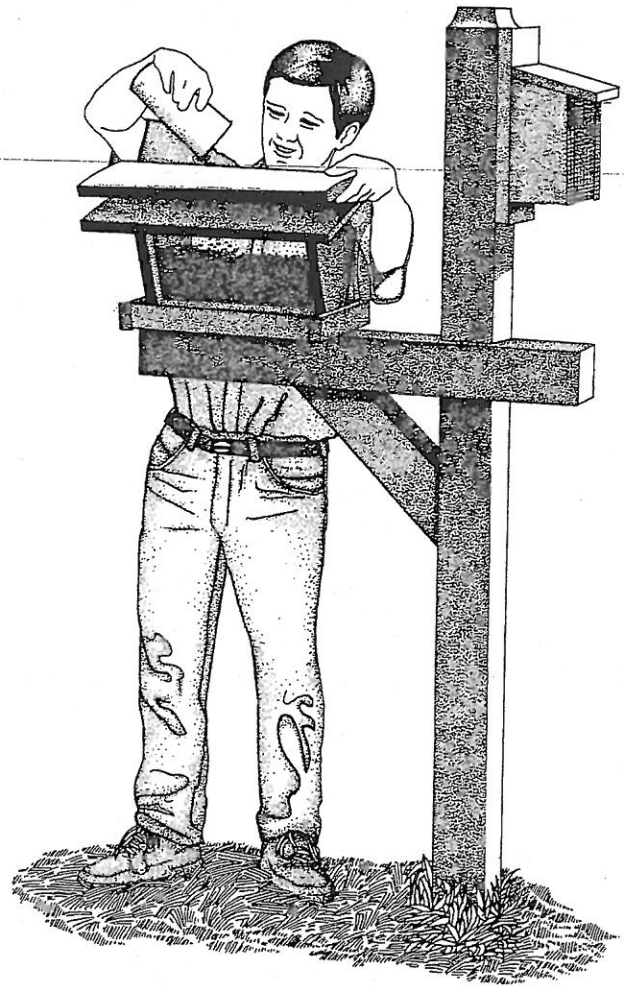
Adult Length: About 8 inches (including the tail)

Life Expectancy: 1 year or less

Migration Patterns: Year-round resident

Typical Foods: Mostly seeds, some insects

Native to Ohio: Yes

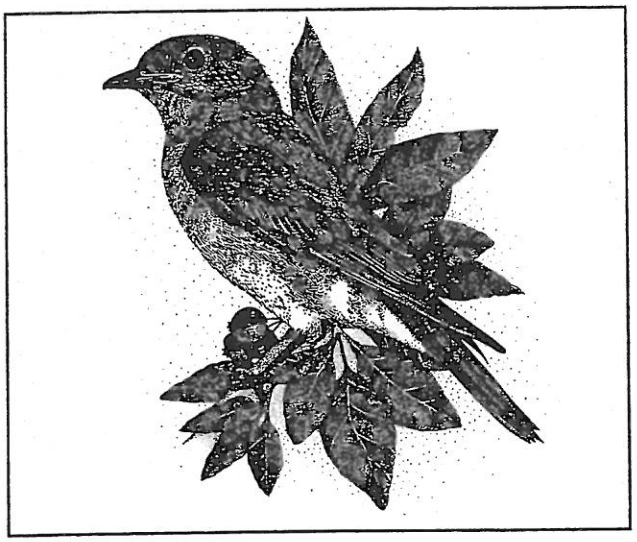


Ohio Division of Wildlife

Life History Notes

Eastern Bluebird

Scientific Name: *Sialia sialis*



Publication 359
(1099)

Introduction

Bluebirds were once common across Ohio when the countryside was composed of a mixture of small fields of hay, oats, corn, pastures, and orchards. As farming changed to a more monoculture approach--extensive fields of corn and soybeans--away from pastures and orchards, bluebird habitat declined in Ohio. Additionally, the introduction of the European starling and house sparrow created increased and stiff competition for the few nesting cavities available. Both factors have contributed to a decline in bluebird population numbers in the state.

Description

The Eastern bluebird is also known as the blue robin or the blue redbreast. These names can be attributed to the bird's appearance; the Eastern bluebird is the only bird with a bright royal blue back in combination with a rusty-colored breast. Females are a paler version of the males. Bluebirds are often recognized by their distinctive "chur-wi" call that is used to locate the singer--often perched on a fencepost or power line.

The Eastern bluebird is a member of the thrush family, related to the robin and the thrushes, including the gray-cheeked, wood, Swainson's, and hermit, and the veery.

Habitat and Habits

In the summer, bluebirds are insect eaters and will swoop down from a perch to take grasshoppers, beetles, and other insects including spiders, millipedes, and centipedes. All feeding is done during daylight hours.

Eastern bluebirds are often found near old field borders adjacent to short grasses. Highway rights-of-way, orchards, golf courses, and parks are frequently the home of a pair or more of this species. Those pairs often use man-made nest boxes that bluebird enthusiasts erect in suitable habitats. Nest boxes can attract these birds to fields where they have never been seen before.

Some bluebirds will overwinter in Ohio, especially in the southern part of the state. Traveling in flocks of 10 to 40 birds, they search out the fruits of multiflora rose and other shrubs and occasionally are attracted to feeders for mealworms or peanut butter. Often they roost together in the same holes they nested in earlier in the year, for extra body warmth during cold nights. Bluebirds in Ohio are vulnerable to late winter storms, which may eliminate an entire flock.

Reproduction and Care of the Young

Pairs of bluebirds begin their nesting season by choosing a natural cavity or an abandoned woodpecker hole in a post or tree, or perhaps a man-made nesting box. The bottom is lined with grass before the female begins laying her eggs. The female does most of the incubating while the male remains nearby. After the young hatch, both parents share in feeding them.

Young birds that have just left the nest are mostly gray, with just a touch of blue in their wings and tail. Their breasts are spotted much like those of baby robins. Males continue to feed the fledglings until the young become self-sufficient.

Management Plans

The Ohio Division of Wildlife has outlined goals and objectives for increasing the numbers of bluebirds in the state and for increasing opportunities for Ohioans to enjoy bluebirds in a variety of ways. The Division is promoting the use of nest boxes to attract bluebirds to suitable habitat. It is working cooperatively with bluebird organizations to educate the public about this species and is using the bluebird as a feature species in the schools to teach principles of wildlife management and diversity. Although the Division does not manage its areas for a specific species, the management activities that do occur on the state's wildlife areas and elsewhere are designed to benefit bluebirds and a host of other wildlife species.

Viewing Opportunities

The best chance to see the Eastern bluebird is at an area where an old field comes together with an area of short grasses. As mentioned earlier, highway rights-of-way, orchards, golf courses, and parks are good locations. Abandoned railroad tracks that have been converted to bikeways should be added to this list.

If the area around you is suitable, your own property could become a "bluebird trail." A bluebird trail is five or more bluebird nesting boxes mounted on fence posts or pipes. The boxes are placed 100 to 200 yards apart on farms and other areas of low or sparse vegetation. The "manager" of the trail walks it every week or two two check the progress of the resident bluebirds. For more information on building bluebird boxes and establishing a bluebird trail call or write the Division of Wildlife and request Publication 339--*Hit the Trail for Bluebirds.*

Do Something Wild!

The Division of Wildlife manages for wildlife diversity in the state. We attempt to create and/or conserve the habitat that will support as wide a diversity of wildlife as possible. Many species of wildlife are hunted and trapped in the state, but many more, like the Eastern bluebird are not. The Division has a special program to manage and research nongame species that is supported by the generous citizens of the state of Ohio. With money either donated through the state income tax check-off, by the purchase of wildlife license plates, or direct contributions to the Endangered Species Special Account, the Division is able to purchase critical habitat that is essential to sustaining many species of wildlife and to implement special efforts like the reintroduction of the osprey and the trumpeter swan to the state.

Contributions to our Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 4322-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous; birds form a pair and work together to rear the young.

Peak Breeding Activity: April and July; bluebirds nest March through August

Incubation: 13-16 days

Young are Hatched: Most in April and July

Clutch Size: 3-7 eggs

Young Fledge: 15-20 days after hatching

Number of Broods per Year: 2

Adult Weight: 1-1.25 ounces

Adult Body Length: 6.5-7.5 inches including the tail

Adult Wingspread: 11.5-13.25 inches

Life Expectancy: 1 year or less

Migration Patterns: Some migrate south in the winter, others remain in the southern portions of the state.

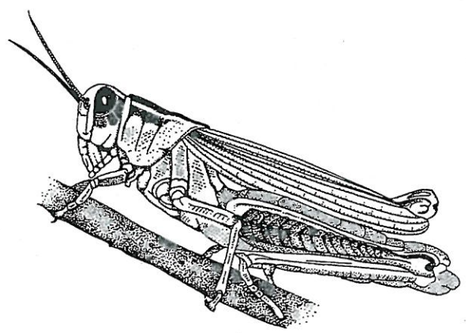
Typical Foods: Insects in the summer, fruits and seeds in the winter

Native to Ohio: No, most likely migrated to the state as settlement cleared forests and farms were established.

For More Information

If you would like to know more about bluebirds in our state you may wish to contact:

The Ohio Bluebird Society
20680 Township Road 120
Senecaville, Ohio 43708

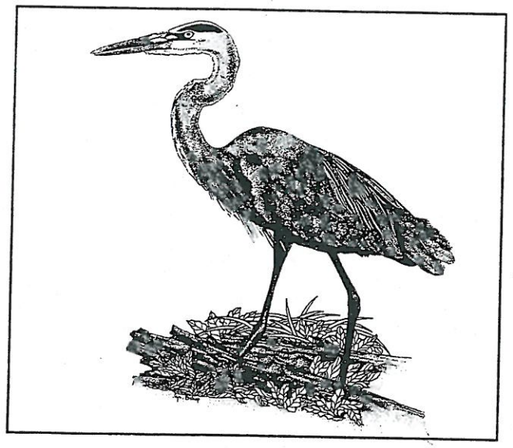


Ohio Division of Wildlife

Life History Notes

Great Blue Heron

Scientific Name: *Ardea herodias*



Publication 70
(1099)

Introduction

One of the largest bird species in Ohio, populations of the great blue heron are widely distributed throughout the state. Native to Ohio, there was a time when heron numbers dwindled as these birds' feathers were a favorite of the millinery trade during the 1800s.

The great blue heron is often observed motionless, as it pursues its prey while standing in a stream, river or wetland. Unlike numerous other predators that actively stalk on foot or wing, the great blue heron takes the complete opposite approach–it stands still, watching the water for a fish. Then in the blink of an eye, in a sharp and seamless movement it will snare its prey.

Description

The great blue heron stands nearly four feet tall. It has a whitish head with black plumes that originate just above its eyes and project out behind its head. The plumage of the body is brown, black, and white, yet it gives an overall appearance of being a bluish-gray color. The toes of its feet are not webbed. For the most part, great blue herons are silent birds; they utter a rough croaking sound when alarmed or harassed.

Breeding populations are found in 60 of Ohio's 88 counties. In North America, they inhabit and breed in areas as far north as Alaska and south to Mexico, Cuba, and Jamaica. There are numerous varieties and subspecies of the great blue heron throughout this range.

Habitat and Habits

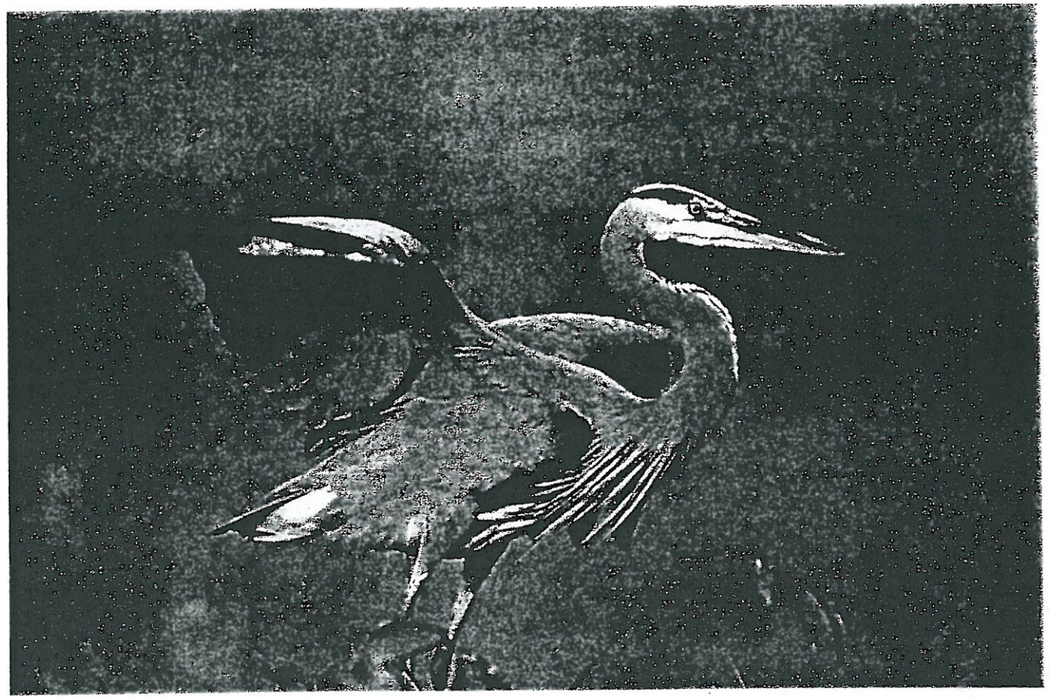
The great blue heron is found in both freshwater and saltwater habitats. It prefers shallow water areas with trees for nesting nearby. Great blue herons may be found along the banks of rivers or at the shores of major water ways such as Lake Erie.

These birds are colonial nesters, with 10 to 75 pairs nesting in one location. Some colonies, however may have as may as 1,500 to 2,000 pairs as found at the West Sister Island heronry in western Lake Erie, or as few as two to five pairs along smaller waters. Male herons are the first to arrive at the previous year's nest. Later after females arrive, courtship rituals are initiated between pairs. The birds will dance in circles and nibble at each others' feathers. The female will often urge the strutting males on by croaking in response to their actions.

The herons will migrate to warmer areas with unfrozen waters in the winter; rarely does a great blue heron remain in the state at this time of year. They return to Ohio as soon as the ice melts–mid-February in warm years and mid-March during a particularly long or cold winter.

Reproduction and Care of Young

Great blue herons are monogamous, meaning the birds form a pair bond and work together to raise the young. Both the male and the female will incubate the eggs, and once the young have hatched feed them by regurgitating food into their mouths. In Ohio breeding occurs generally from the end of March



through mid-April. The hatching period begins after 28 days of incubation, usually reaching its peak in May. Once the young herons hatch, they are altricial, or helpless. The young birds will have matured enough to leave the nest after about 60 days.

Management Plans

The Division of Wildlife bands young great blue herons at many of the heronries statewide. This allows biologists to monitor the movements of individual birds and their survival rates, as well as track population numbers. Division personnel also monitor nest sites looking for trends in nesting populations.

Viewing Opportunities

The best location to view great blue herons in Ohio is at West Sister Island. Access to this area is restricted; however, boaters can readily view the birds from the perimeter of the island. There is also a colony that can be seen from the parking lot of the Little Portage Wildlife Area in Ottawa County. Two other areas with significant populations of great blue herons are Stage's Pond State Nature Preserve in Pickaway County and the Ottawa National Wildlife Refuge in Ottawa County.

Watching wildlife is encouraged, but it is important that visitors use good judgement on their trips. In the case of the great blue heron, it is particularly important to remain quiet when observing a heronry. The herons are easily disturbed and too much activity and noise around their breeding grounds can be disruptive to the process.

Do Something Wild!

The great blue heron is among the majority of wildlife species in Ohio that are not hunted. All these animals are vital parts of our overall ecosystem and contribute to the wildlife diversity of the state. Helping us to manage and research these species are the generous citizens of the state of Ohio. With money they either donated through the state income tax checkoff, the purchase of wildlife conservation license plates, or their direct contribution to the Endangered Species Special Account, the Division is able to purchase critical habitat essential to sustaining wildlife diversity in the state and provide educational materials and opportunities on wildlife to children and adults.

Contributions to our Endangered Species and Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus Ohio 43224-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous

Peak of Breeding Activity: March 25-April 15

Incubation Period: 28 days

Young Hatch: May

Number of Eggs: 3-7, usually 4

Eggs Produced: Once a year, but they will renest if a nest is destroyed.

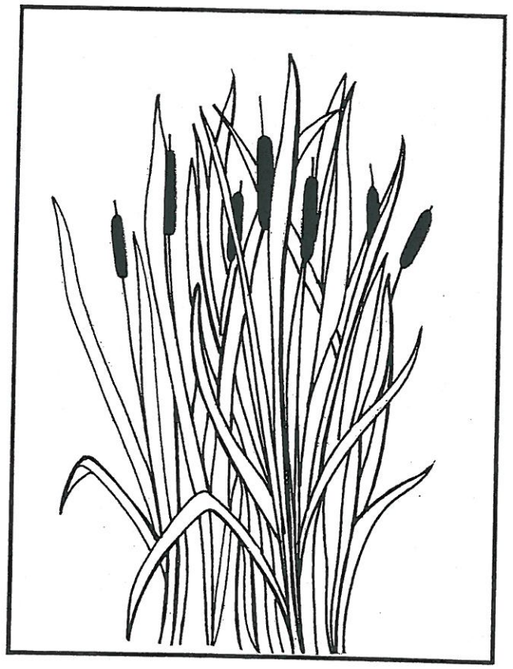
Adult Height: 4 feet

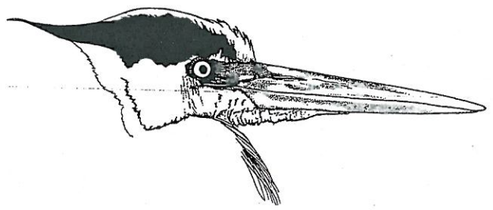
Life Expectancy: 21 years was the age of the oldest known heron in the wild; most have shorter lives.

Feeding Periods: Herons feed during both day and night

Typical Foods: Fish, snakes, frogs, crustaceans, birds, small mammals, and insects

Native to Ohio: Yes



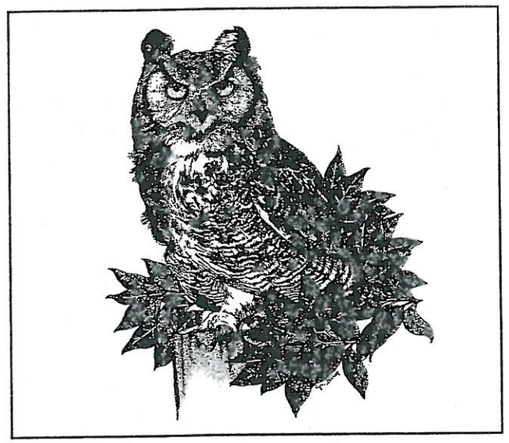


Ohio Division of Wildlife

Life History Notes

Great Horned Owl

Scientific Name: *Bubo virginianus*



Publication 182
(1099)

Introduction

The great horned owl is the largest of Ohio's resident owls and the largest "eared" owl in North America. Once abundant in the state, great horned owl numbers have declined with the development of Ohio. This owl will eat a tremendous variety of animals and is a talented hunter; these attributes have allowed it to adapt to nearly all types of habitat where it can find suitable nest sites.

Throughout the world, owls have been associated with a variety of myths and superstitions, good and bad, that run the gamut from being a symbol of witchcraft, evil occurrences, impending death, wisdom, good luck and victory. Many of the stories that have been fabricated around owls likely have their roots in attempts to explain owls' nocturnal behavior and their vocalizations, many of which sound human. The great horned owl has a variety of calls or notes it sounds including a five- or six-note hoot, shrieks, barks, growls, and a scream that sends a chill down many spines.

The great horned owl is considered the top bird of prey, fearing no other creature but man.

Description

The great horned owl has a mixture of brown and varying shades of black and buff feathers. A considerable number of feathers show white, especially under the chin where there is a conspicuous throat patch. The breast is heavily barred--the variation in feather colors gives the impression of bars running across the body. Two large tufts of longer feathers come off either side of the great horned owl's head.

Male and female great horned owls are identical in appearance, but the female is noticeably larger.

Owl feathers are described as "soft and flexible"; the edges are fringed. This allows owls to fly nearly silently and to approach their prey without warning. Most owls have 12 tail feathers.

The eyes are yellow and highlighted by a black facial rim. They are also very large; and this adaptation helps the owl be an effective predator. The size of its eyes allows the owl to gather sufficient light to permit it to see well and function in low light conditions. The great horned owl has a sharp beak and claws, also excellent aids in hunting prey. Its talons are curved and thick and there is a soft covering of feathers over the toes down to the base of the nails. Its ears are placed on the top sides of its head, and its hearing is acute. The great horned owl's hearing, like that of other owls, picks up the most minute sounds to the point that it can take prey in complete darkness.

Great horned owls are generally 21 to 23 inches in height. Their weight varies greatly, but they can weigh as much as 4.5 pounds. The male's wingspan is 50 to 55 inches and the female's 50 to 62 inches.

Great horned owls have an extensive range--throughout the Americas from the Arctic to the Straits of Magellan, less the West Indies. There are 10 subspecies of great horned owls within this range. Coloration patterns vary somewhat among the subspecies, but their general appearance is consistent with the

subspecies found in Ohio. Great horned owls are fairly common in Ohio, especially in the glaciated portions of the state.

Habitat and Habits

Great horned owls can be found throughout Ohio, but their primary habitat area is open farmlands where numerous woodlots are interspersed among the agricultural fields. Wooded parks and riparian corridors near openings of heavily forested areas are also used; extensive forested areas are avoided.

Great horned owls are the earliest nesters, but they don't build their own nests. These owls will use the abandoned nests of hawks, eagles, herons, and squirrels; tree dens and cavities may also be used. Large, mature trees are the preferred sites for these nests. When tree nest sites are lacking, great horned owls have been known to use old buildings, cliffs, and even the bare ground. Breeding populations are known to occur in 86 of Ohio's 88 counties and are believed to occur in the remaining two.

Typically the home range of the great horned owl is constant throughout the year; however, this can be influenced significantly by the availability of prey animals. These owls don't migrate in the usual sense of the word, but will relocate to areas with more prey during periods of severe conditions.

The great horned owl prefers live food, but will eat freshly killed prey. This owl's diet is the most widely varied of all North American birds of prey. Its diet ranges from small rodents to house cats, skunks, and beaver; and small songbirds to geese and adult turkeys. Their prey list includes, but is not limited to the previously mentioned species, and: ducks, chickens, pheasants, hawks, grouse, mice, rats, muskrats, eels, rabbits, porcupines, snakes, and skunks.

Reproduction and Care of the Young

Great horned owls are monogamous, meaning that the pair forms a bond and the male doesn't breed with other females. In Ohio, mating occurs in early January; clutches of three or four white, roundish eggs are laid in late January through late February. Incubation takes about 30 days (this may range from 28 to 35 days) and the eggs generally begin to hatch in late February through March. Incubation of each individual egg begins as it is laid, so hatching dates within the clutch will be staggered. While the female incubates, the male hunts and brings his mate food; he will continue these efforts, bringing food to the owlets when they hatch. If a clutch of eggs is destroyed, the female may attempt to renest.

Owlets open their eyes at one week, and will leave the nest cavity at four to five weeks of age. Young fledge at 10 weeks of age. Once the owlets leave the nest, they typically roost on a tree branch which they often have to climb to until they become more accomplished fliers. The young great horned owls may stay with their parents for up to a year when they themselves become sexually mature.

Management Plans

Currently, great horned owl populations within the state appear stable. Although the Division of Wildlife has no active management plan designed specifically for these owls, continued monitoring and evaluation of data and information, as it becomes available, will help ensure that they remain a viable part of our state's woodland-open land ecosystem.

Viewing Opportunities

Opportunities to view great horned owls are best in farmland areas where numerous woodlots are interspersed by agricultural, particularly pasture and grassland, fields. Because they are primarily nocturnal, the likelihood of hearing a great horned owl is much greater than actually seeing one. They can be lured into viewing range by individuals who, while imitating their call or hoot, are successful in eliciting a territorial response from resident owls.

Do Something Wild!

The great horned owl is among the majority of wildlife species in Ohio that are not hunted. All of these animals are vital parts of our overall ecosystem and contribute to the wildlife diversity of the state. Helping us manage and study these species are the generous citizens of the state of Ohio. With money they either donated through the state income tax checkoff, by the purchase of wildlife conservation license plates, or their direct contribution to the Endangered Species Special Account, the Division is able to purchase critical habitat essential to sustaining many species of wildlife and to implement programs that benefit species like the great horned owl.

Contributions to our wildlife diversity program are accepted throughout the year. To make a contribution, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your income tax return or directly, are tax deductible.

At a Glance

Mating: Monogamous

Peak Breeding Activity: Late January through mid-March

Incubation Period: 28-35 days; 30 days typical. Incubation begins as soon as the first egg laid and ends about 30 days after the last egg is laid.

Young Hatch: Generally beginning in late February through early April

Clutch Size: 3-4 eggs

Young Fledge: At 10 weeks old

Number of Broods per Year: 1

Adult Weight: Male- 2.5-3.5 pounds; female- 3-4.5 pounds

Adult Height: 21-23 inches

Life Expectancy: Approximately 50% of great horned owls hatched will die within the first year of life. Those that survive beyond this period average 6-7 years of life.Oldest reported in the wild was 15 years of age.

Migration Patterns: In the extreme northern portions of its range, the shortage of prey species, which generally occurs in the winter, results in owl movement from those areas to more productive hunting grounds. Provided adequate food supplies are available, migration is minimal.

Typical Foods: Small rodents, small cats, skunks, beaver, songbirds, geese, adult turkeys, chickens, pheasants, grouse, muskrats, snakes, eels, rabbits, porcupines, and squirrels among other animals.

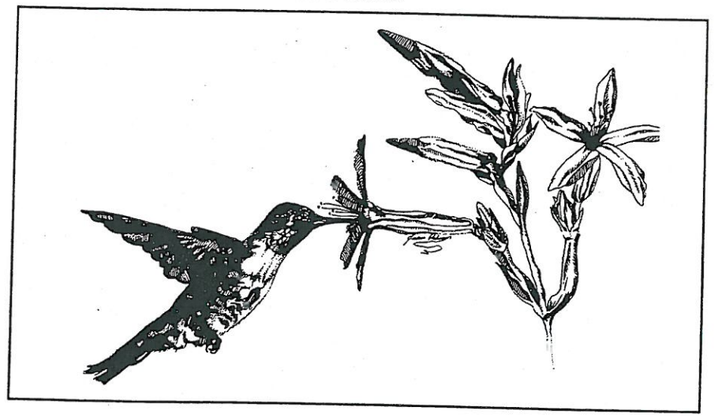
Native to Ohio: Yes

Ohio Division of Wildlife

Life History Notes

Ruby-Throated Hummingbird

Scientific Name: *Archilochus colubris*



Publication 379
(399)

Introduction

The ruby-throated hummingbird is a member of one of the world's most unique family of birds. They were a surprise and curiosity to the European settlers in the U.S. who had never before seen hummingbirds; these birds are only found in the Western Hemisphere.

The ruby throat is among the smallest of birds, weighing less than an ounce. They are astounding flyers that can move forward and backward as well as hover in flight. They have been clocked flying up to 60 mph. The sound produced by its rapid wingbeats led to its name. You need only to sit near a flower being visited by a hummingbird to understand.

The ruby throat is native to Ohio and 99 percent of the hummingbirds you will see will be the ruby-throated. Occasionally, a rufous hummingbird makes an appearance in the state. Rufous hummingbirds have been documented at least five times in the state since 1985.

At least 319 species of hummingbirds have been reported in the world; these are primarily tropical birds and the number of species present declines the further north a site lies from the Equator.

The ruby-throated hummingbird is sometimes confused with the day-flying hummingbird moth. Reports of "flocks of baby hummingbirds" turn out to be this member of the sphinx moth family.

Because of its size, many people feel concern for this creature, but hummingbirds are actually quite hardy. They will range as far north as Nova Scotia and are quite capable of surviving short periods of wintery weather. Their fall migration can take them 600 miles from their summer range.

Description

The average ruby-throated hummingbird is 3 to 3 3/4 inches long, with a wingspan of 4 to 4 3/4 inches. The adult male has a red throat and a slightly forked tail. The red is not a pigmented color; its appearance is dependent upon the angle of light falling upon the bird's throat area. In dim or indirect light, the throat may appear black. Both sexes and all ages share the iridescent green back. Females and young of both sexes have white spots on the outer tail feathers. Juvenile males may show a few red throat feathers in late August and September, a month or two after they fledge. If observed at close range, juvenile birds can be identified by the light tan edges on their head feathers which give a scalloped appearance. These edges will wear off as the bird matures.

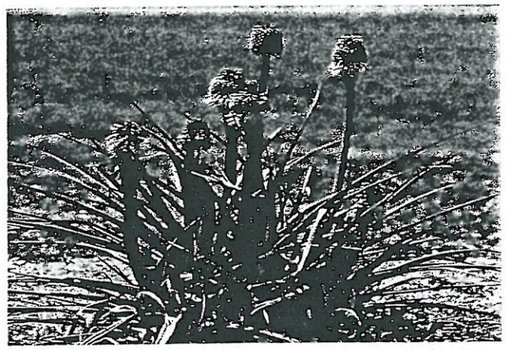
Males weigh about one-twelth of an ounce, the equivalent of a penny; females are slightly heavier. As other birds do, hummingbirds fatten up prior to and during migration, and may double their normal weight as they prepare to head south.

The ruby throat is the only nesting hummingbird east of the Mississippi River. Its range extends west to the central areas of the Great Plains and north into central Canada, as far west as central Saskatchewan, east to the

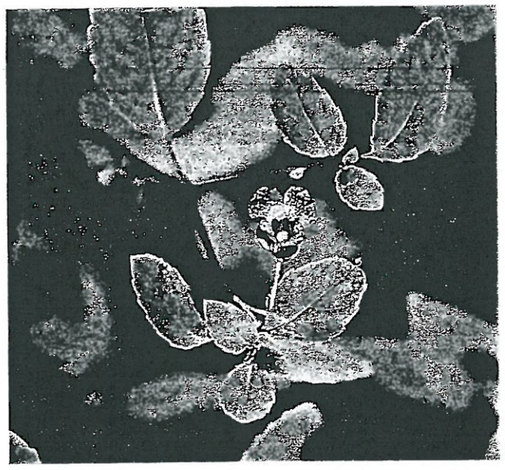
Atlantic Coast, as far north as Nova Scotia, south to the Gulf Coast and west along the eastern coast of Texas.

Habitats and Habits

Hummingbirds are seldom seen in large groups; they tend to be solitary creatures throughout their lives. Where concentrations occur at feeders, the birds are extremely aggressive and frequently challenge other birds at the site. There have been a few reports of large numbers of birds feeding at natural sites. In the spring, such an area might be meadows of penstemon (*Penstemon digitalis*—an Ohio native species); in late summer, lowland expanses of jewelweed.



penstemon



jewelweed

The first arrivals of spring migrants occur in southern Ohio in late April with a peak in mid-May. The birds follow the blooming of columbine and lilac throughout the state. Fall migration south occurs over a longer period of time. In the fall migration, males leave first; most are gone by August 1. The majority of adult females are gone by late August. Juveniles straggle through the state, sometimes as late as mid-October, depending upon the weather. Occasionally, adult males appear late in the season as well. Hummingbirds migrate under their own power. They **do not** travel on the backs of geese as an old tall tale indicates.

It appears that ruby throats are most common at areas where wooded edges are near water. Preferred flowers include jewelweed and cardinal lobelia, both wetland plants. They feed not only on flower nectar, but also on insects and small spiders they pluck from flowers or catch in mid-air. They are also easily attracted to artificial feeders and will use many garden flowers as a source of nectar and insects.

Hummingbird feeders are increasingly popular with Ohio residents. Many people believe that they have the same bird returning to their feeder year after year. Banding studies confirm that there are, however, greater numbers of birds using a feeder than most people would believe. For example, at a site monitored in Columbiana County, 60 different birds were banded before one which had previously been handled was recaptured. If you watch a feeder, you might see as many as five or six birds at one time; it's unlikely that the same birds are there every time.

Peak activity periods at feeders are early morning and late evening. Many who maintain feeders report heavy usage before major thunderstorms.

Reproduction and Care of Young

Ruby-throated hummingbirds are polygamous; the male and female associate only for mating. Females incubate and rear the two offspring without assistance. In northern Ohio, most females are on nests by mid-June. Two broods may be produced in a year.

Two white eggs are produced, the size of sweet peas. The young hatch in 14 to 16 days and are altricial (born helpless).The young birds will fledge about 21 days after they hatch. When hummingbirds leave the nest, they are very close to full size.

This bird nests in trees, generally those at the edge of the woods or other opening, such as along a wooded stream side. If you are able to locate the tiny nest, which is the size of half an English walnut shell, you may well find nests in the same area in future years.

Management Plans

The Division of Wildlife has no specified management program for this species. The Division provides a hummingbird-butterfly seed packet annually to interested gardeners who would like to develop a natural food source or attraction in their yards.

hummingbird moth on garden phlox

Viewing Opportunities

The ruby throat is found in varying numbers throughout the state. Viewing opportunities are limited primarily because of the difficulty in actually seeing this diminutive bird. Hummingbirds are often overlooked as they sit on utility wires along roadsides and on bare branches that provide a good view of their surroundings. Generally, the bird is seldom seen away from feeders except by careful observers. Where suitable habitat exists, feeders draw birds to locations where they can be easily viewed.

Feeding hummingbirds does require a certain commitment of time and attention to feeder conditions. Feeders should be thoroughly cleaned and then maintained regularly. A mixture of one part sugar dissolved in four parts of water is an appropriate formula (see complete details for preparing this mixture at the end of this note); prepared formulas are also available at many garden centers. Honey **should not** be used as it has been associated with a fungal disease when fed to birds in captivity.

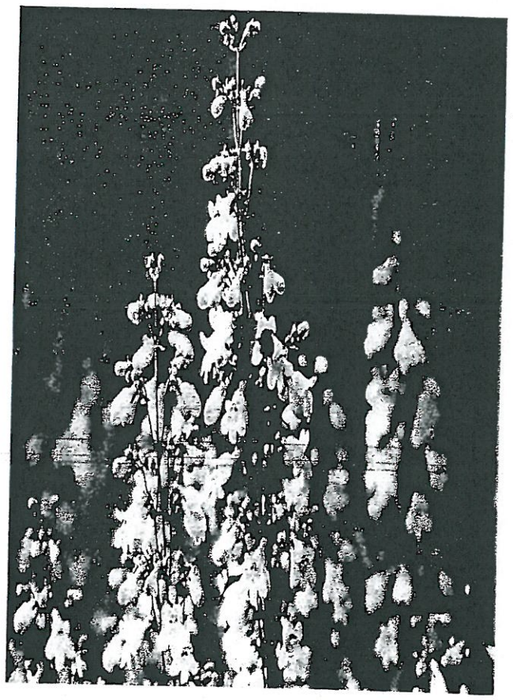
If the fluid in your feeder looks cloudy or dirty, change it. If you wouldn't drink it yourself, you shouldn't feed it to the birds.

To reduce aggression and conflict at feeders, several should be located around the yard, placed so that birds at one feeder cannot see birds at another feeder. If you have birds coming to your feeders, you can increase viewing opportunities by planting flowers such as coral bells, lilac, red hot poker, gladiolus, Mexican sunflower, trumpet vine, and scarlet runner beans.

Do Something Wild!

The ruby-throated hummingbird contributes to the diversity of wildlife in the state. And as indicated earlier, it uses wetland plants as a part of its diet. Many purchases of wetland habitat in the state have been funded through the *Do Something Wild!* state income tax checkoff program. Through the generosity of Ohio citizens, who either donated through the checkoff or made their direct contribution to the Endangered Species Special Account, the Division is able to undertake a variety of special projects that benefit wildlife diversity in the state. Besides the purchase of wetland habitat, the fund has been used to provide hummingbird-butterfly seed packets.

Tax time ***is not*** the only time you can help. Contributions to our Endangered Species and Wildlife Diversity Program are accepted throughout the year. To make a donation, please send a check to: Endangered Species Special Account, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, Ohio 43224-1329. All contributions, whether made on your tax return or directly, are tax deductible.



tritoma

At a Glance

Mating: Polygamous

Peak Breeding Activity: June and July

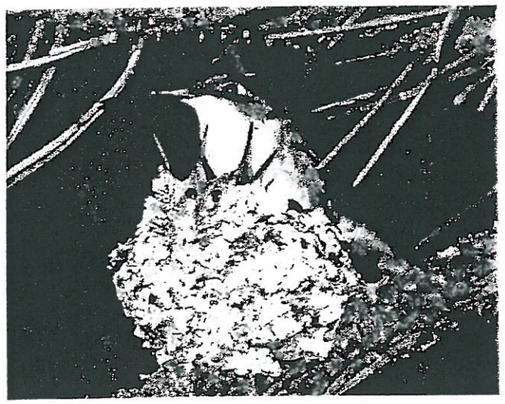
Incubation Period: 14-16 days

Young are Hatched: June and July

Clutch Size: 2 eggs

Young: Altricial, young leave nest at 20 to 22 days old

Number of Broods per Year: 2



Adult Weight: less than one ounce

Adult Length: 3-3 3/4 inches

Adult Wingspan 4- 4 3/4 inches

Life Expectancy in the Wild: 2-3 years

Migration Patterns: Seasonal resident; no documentation as to how far young go to establish their own territory.

Feeding Periods: Daylight hours

Typical Foods: Nectar, small insects, and spiders

Native to Ohio: Yes

Active or Potential Nuisance Species: No

Recipe for Feeding

* Mix one part white sugar to four parts water
* Boil mixture for two to three minutes
* Cool and fill feeder
* Store unused portion in refrigerator for later use
* **DO NOT** use honey or red food coloring

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

Bob Taft, Governor / Samuel W. Speck, Director / Michael J. Budzik, Chief
An Equal Opportunity Employer - M/F/H

Loggerhead Shrike

Preferred Habitats

Grasslands with hedgerows and lookout posts and perches.

Concerns & Limits

- Loss of suitable breeding habitat due to removal of fencerows, continued suburban development, and reforestation.

Research Needs

- What is accurate information on population trends?
- What are the causes for population declines?
- What are migration habitat requirements and threats during migration?

Contact:
Julie Shieldcastle
Ohio Partners in Flight Chairperson
Black Swamp Bird Observatory
P.O. Box 228
Oak Harbor, Ohio 43449
419-898-4070

Funding provided in part by

Contact:
Ohio Division of Wildlife
Columbus, Ohio 43224
614-265-6300 or 1-800-WILDLIFE
www.dnr.state.oh.us/odnr/wildlife

BIRD SPECIES OF CONCERN IN OHIO

GRASSLAND BIRDS

A special focus on birds and their habitats in Ohio has been the emphasis for a number of years by an association called Ohio Partners in Flight (OPIF). OPIF is a consortium of public agencies, non-governmental organizations, universities, and environmental centers united in a volunteer effort to conserve bird populations. We do this by promoting the protection of quality habitat, promoting research on bird populations, and educating land managers and landowners about bird conservation.

In this brochure, Ohio Partners in Flight outlines the preferred habitat of selected grassland species at risk in Ohio and what needs to be done to protect them. We list:

- ✔ some of the primary concerns about these birds
- ✔ limiting factors that affect their populations
- ✔ some of the research information needed to better understand their population dynamics.

Risk for the bird species listed here has been ranked as high in Ohio based on certain priority concerns. These priority concerns include:

- ✔ the overall health of their populations
- ✔ breeding considerations
- ✔ migratory risks
- ✔ potential for adequate wintering conditions.

Populations of the grassland birds listed here are at risk overall for various reasons. The OPIF Research Committee has determined the rank of these species in Ohio based on the above criteria.

When ranking birds at risk in Ohio, one-third of the most at risk species are found in grasslands. The most important management goals for this group of birds are:

1. to preserve existing habitat in hopes of halting any further decline of these species.
2. to encourage restoration of these habitats in hopes of fostering a recovery in the abundance of these birds in Ohio.

Sedge Wren

Preferred Habitats

Sedge marshes, edges of large wetlands, wet meadows with dense vegetation.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- What are the current population trends?
- What are the preferred breeding and migration habitats?

Dickcissel

Preferred Habitats

Grasslands, prairies, hayfields.

Concerns & Limits

- Loss of breeding habitat due to conversion of grasslands to cultivation and frequent hay mowing.

Research Needs

- What are the effects on populations by loss of breeding habitat due to conversion of grasslands to cultivation and frequent hay mowing?

Bobolink

Preferred Habitats

Grassy fields, hayfields, grassy margins of marshes.

Concerns & Limits

- Habitat destruction and frequent mowing of fields.
- Lack of suitable breeding habitat.

Research Needs

- What are migration habitat requirements and threats during migration?

Eastern Meadowlark

Preferred Habitats

Old fields, grassy fields, savannas, hayfields, lightly grazed pastures.

Concerns & Limits

- Loss of habitat due to conversion of grasslands to cultivation and frequent hay mowing.

Research Needs

- What factors other than habitat loss are limiting their populations?

Short-eared Owl

Preferred Habitats

Large open areas supporting abundant small mammal populations: weedy fields, prairie, wet meadows, shrub thickets, marshes.

Concerns & Limits

- Few areas of preferred breeding habitat. Continuing loss of suitable wintering habitat.

Research Needs

- How can we effect intensive surveys needed to describe true extent of breeding population?
- What is the accurate breeding chronology for Ohio?
- What are migration habitat requirements and threats during migration?

Vesper Sparrow

Preferred Habitats

Farmlands: fencerows next to cultivated fields, short grass pastures, or meadows.

Concerns & Limits

- Serious population decline due in part to losing breeding habitat to cultivated crops and mowing hay.

Research Needs

- Are there limiting factors other than lack of habitat?
- What are migration habitat requirements and threats during migration?

Northern Harrier

Preferred Habitats

Wetland and upland grasslands: wet meadow, wet prairie, grass margins of marshes, upland hayfields, pastures, and reclaimed strip mines.

Concerns & Limits

- Continuing loss of grassland habitats.
- Insufficient prey base in some existing grasslands.

Research Needs

- What constitutes a sufficient prey base for breeding and wintering?
- Can grasslands be managed to provide a better prey base?

Ring-necked Pheasant

Preferred Habitats

Open grassland and fallow fields interspersed with small woodlots.

Concerns & Limits

- Shortages of suitable grasslands for nesting, cover, and food for wintering.
- Steady population decline.

Research Needs

- Can existing areas of grassland be managed to create more suitable habitat?

Lark Sparrow

Preferred Habitats

Disturbed open habitats with short vegetation interspersed with open soil.

Concerns & Limits

- Lack of suitable breeding habitat.
- Scattered small breeding populations.

Research Needs

- What are their migration habitat requirements?
- What are the threats during migration?

Buff-breasted Sandpiper

Preferred Habitats

Dry short-grass fields, pastures, golf courses, airports, dry mudflats with short vegetation.

Concerns & Limits

- Heavy use of herbicides and pesticides.

Research Needs

- How can the general lack of necessary information and high uncertainty for population trends and threats during migration be minimized?
- How can we institute surveys during migration and studies of this species' preferred migration habitats?

Upland Sandpiper

Preferred Habitats

Flat, open grassland with vegetation height of 1 to 2 feet, plus lookout posts.

Concerns & Limits

- Conversion of grasslands to cultivation and frequent hay mowing.

Research Needs

- What are current population trends?
- What are migration habitat requirements and threats during migration?

Henslow's Sparrow

Preferred Habitats

Grasslands, hayfields, old fields.

Concerns & Limits

- Loss of breeding habitat due to conversion of grasslands to cultivation and frequent hay mowing.

Research Needs

- What is acceptable breeding habitat?
- How can we encourage more intensive surveys to increase certainty in population trends?

Grasshopper Sparrow

Preferred Habitats

Large tall-grass fields.

Concerns & Limits

- Loss of breeding habitat due to conversion of grasslands to cultivation and frequent hay mowing.

Research Needs

- What are the size requirements for breeding habitats?
- What are the effects of habitat fragmentatic
- What are their migration habitat requireme and threats during migration?

Northern Shrike

Preferred Habitats

Successional fields, brushy pastures, wooded fencerows.

Concerns & Limits

- Degradation of migration and wintering habitats. Potential problems from contaminants.

Research Needs

- What are the causes for population decline
- How can we gather more information on migration and wintering habitat requirem

Barn Owl

Preferred Habitats

Open grasslands and agricultural fields with suitable nest sites nearby.

Concerns & Limits

- Lack of old buildings/structures for nest s
- Lack of agricultural fields that support hig densities of small mammal prey.

Research Needs

- How can we encourage better surveys for monitoring population trends?
- How can we get better information on w populations are declining?
- What are migration habitat requirements threats?

Northern Pintail

Preferred Habitats

Breeding: large undisturbed marshes surrounded by grassy areas.

Migration: large lakes and marshes.

Concerns & Limits

- Lack of suitable breeding and migration habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we assess limiting factors other than lack of habitat?

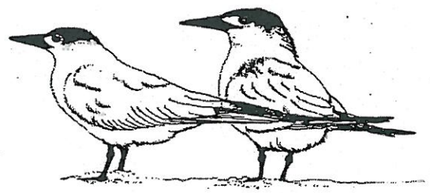
Contact:
Julie Shieldcastle
Ohio Partners in Flight Chairperson
Black Swamp Bird Observatory
P.O. Box 228
Oak Harbor, Ohio 43449
419-898-4070

Funding provided in part by

Contact:
Ohio Division of Wildlife
Columbus, Ohio 43224
614-265-6300 or 1-800-WILDLIFE
www.dnr.state.oh.us/odnr/wildlife

BIRD SPECIES OF CONCERN IN OHIO

WETLAND BIRDS



A special focus on birds and their habitats in Ohio has been the emphasis for a number of years by an association called Ohio Partners in Flight (OPIF). OPIF is a consortium of public agencies, non-governmental organizations, universities, and environmental centers united in a volunteer effort to conserve bird populations. We do this by promoting the protection of quality habitat, promoting research on bird populations, and educating land managers and landowners about bird conservation.

In this brochure, Ohio Partners in Flight outlines the preferred habitat of selected wetland species at risk in Ohio and what needs to be done to protect them. We list:

- ✔ some of the primary concerns about these birds
- ✔ limiting factors that affect their populations
- ✔ some of the research information needed to better understand their population dynamics.

Risk for the bird species listed here has been ranked as high in Ohio based on certain priority concerns. These priority concerns include:

- ✔ the overall health of their populations
- ✔ breeding considerations
- ✔ migratory risks
- ✔ potential for adequate wintering conditions.

Populations of the wetland birds listed here are at risk overall for various reasons. The OPIF Research Committee has determined the rank of these species in Ohio based on the above criteria.

When ranking birds at risk in Ohio, one-third of the most at risk species are found in wetlands. The most important management goals for this group of birds are:

1. to preserve existing habitat in hopes of halting any further decline of these species.
2. to encourage restoration of these habitats in hopes of fostering a recovery in the abundance of these birds in Ohio.

Piping Plover

Preferred Habitats

Sparsely vegetated open sand, gravel, or cobble substrates.

Concerns & Limits

- Lack of suitable habitat due to human encroachment (disturbance and property development) and high lake levels.
- Region-wide population declines.

Research Needs

- How can we collect better information on what limits use of suitable breeding habitat?
- If suitable habitat exists in the state, why don't they use it?

Black Tern

Preferred Habitats

Large undisturbed marshes having open water interspersed with tall emergent vegetation.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued loss/degradation of existing habi

Research Needs

- Habitat needs–how large of an area for bree
- What are effects of contaminants?
- What are migration habitat requirements ar threats during migration?

King Rail

Preferred Habitats

Uses a variety of extensive (> 20 hectares) marsh-type habitats.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued loss/degradation of existing ha
- Severe population decline in state.

Research Needs

- Better survey methods to record where the occur and track population trends.
- What are migration habitat requirements threats during migration?

American Bittern

Preferred Habitats

Emergent vegetation and shallow water (<10 cm).

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we initiate better survey methods for determining population trends?
- What are migration habitat requirements and threats during migration?

Common Tern

Preferred Habitats

Sandy or gravel substrate on small islands, beaches, or dikes.

Concerns & Limits

- Toxic contaminants;
- Displacement from prime breeding habitats by gulls with subsequent increased predation.

Research Needs

- How can we develop nesting areas with low predation and competition risks?

Prothonotary Warbler

Preferred Habitats

Flooded woodland swamps.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we initiate better survey methods for determining population trends?
- What are migration habitat requirements and threats during migration?

Common Moorhen

Preferred Habitats

Large semi-permanently flooded marshes with persistent emergent vegetation.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we initiate better survey methods for information on population trends?
- What are migration habitat requirements and threats during migration?

Least Bittern

Preferred Habitats

Large (>10 hectares) marshes having dense, tall growths of cattails or similar vegetation interspersed with woody vegetation and open water.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat (e.g., purple loosestrife & phragmites, pollution).

Research Needs

- How can we initiate better surveys for monitoring population trends?
- What are habitat requirements and threats during migration?
- What are the factors regulating population?

American Coot

Preferred Habitats

Large marshes with 1 to 3 feet of water with dense emergent vegetation interspersed with open water.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradationof existing habitat.

Research Needs

- How can we initiate better survey methods for monitoring population trends?
- What are migration habitat requirements and threats during migration?

Virginia Rail

Preferred Habitats

10 hectare marshes with wide areas of tall emergent vegetation (cattails).

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we develop better survey methods for monitoring population trends?
- What are the migration habitat requirements and threats during migration?

Sora

Preferred Habitats

Drier margins bordering large marshes.

Concerns & Limits

- Lack of suitable breeding habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we develop better survey methods for monitoring population trends?
- What are the migration habitat requirements and threats during migration?

Yellow Rail

Preferred Habitats

Wet meadows/marshes with dense vegetation (usually sedge).

Concerns & Limits

- Lack of suitable migration habitat.
- Continued destruction/degradation of existing habitat.

Research Needs

- How can we get better information on numbers moving through Ohio during migration?
- What are migration habitat requirements and threats during migration?

Sandhill Crane

Preferred Habitats

Breeding: isolated, undisturbed bogs or open meadows and large wet meadows.

Migration: large, undisturbed marshes near pastures, hayfields, corn stubble.

Concerns & Limits

- Lack of suitable breeding and migration habitats.

Research Needs

- How can we gather information on reproductive success of pairs now breeding in Ohio?
- How could more be attracted to areas of suitable breeding habitat in the state?

Black Duck

Preferred Habitats

Large lakes, marshes, and streams.

Concerns & Limits

- Competition from Mallards.
- Reduction in suitable breeding and migration habitats.
- Wetland pollution.

Research Needs

- What are the reasons for continued decline
- How can we investigate Black Duck conditi and survival during migratory stops and wintering?

Pied-billed Grebe

Preferred Habitats

Breeding: large marshes with dense emergen vegetation interspersed with small openinc

Migration: lakes, marshes, streams with vegetated margins.

Concerns & Limits

- Lack of suitable breeding and migration h
- Continued destruction/degradation of exi habitat.

Research Needs

- How can we assess limiting factors other t lack of habitat?

Do Something Wild!

DO SOMETHING WILD!

Remember to check off a portion (or all) of your state income tax refund for nongame and endangered fish and wildlife, or write a check to the Nongame and Endangered Wildlife Special Account and mail to the Ohio Department of Natural Resources, Division of Wildlife, Fountain Square, Columbus, Ohio 43224. All contributions are earmarked for nongame and endangered animals.

OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF WILDLIFE

Total Copies Printed: 10,000 Unit Cost: .0723 Publication Date: 3/97

WATERFOWL IDENTIFICATION KEY

Publication 50
(R1084)

A. FEET LOBED

1. Smaller than a teal. Body buff colored; bill with dark band; rump white. — **PIED-BILLED GREBE (Helldiver)**
2. Size of pied-billed grebe, but darker. Male with dark crest on top of head; hen with white spot behind eye. Rump dark. — **EARED GREBE**
3. Size of pied-billed grebe. Rump dark. Male with buff-colored ear tufts; female with white neck. — **HORNED GREBE**
4. Body dark slate gray. Bill white, chicken-like; tail feathers short and stubby. — **AMERICAN COOT (Mud hen)**

B. FEET WEBBED

1. Bill long, tapered, very stout and pointed. Large bird, size of small goose. — **COMMON LOON**
2. Bill long and narrow with saw teeth. *(Mergansers.)*
   a. Teal-sized, black and white with trailing crest on back of head. Male with white patch in crest, hen with white throat. — **HOODED MERGANSER**
   b. Large (mallard-sized). Male's head dark green, with no crest; much white on body. Female with rusty colored head and trailing crest. — **COMMON MERGANSER**
   c. Smaller than mallard. Both sexes with crest on back of head. Male with red breast; female looks like hooded merganser female without white throat. — **RED-BREASTED MERGANSER**

B. FEET WEBBED (cont.)

3. Bill flat (duck-like).
   a. Very large bird; neck as long as body. *(Swans.)*
      (1) Body white; bill black, with yellow spot below eye. — **TUNDRA (WHISTLING) SWAN**
      (2) Body white; bill knobbed and orange. — **MUTE SWAN**
   b. Large bird; neck 2/3 length of body. *(Geese.)*
      (1) Body gray; neck and head black; white cheek patches. — **CANADA GOOSE**
      (2) Smaller than Canada goose. Body, wings, and tail white; wing tips black; laughing patch on bill. — **SNOW GOOSE (white phase)**
      (3) Smaller than Canada goose. Laughing patch on bill. Adult with bluish gray body and white head; juvenile with dusky body, dark bill and feet. — **SNOW GOOSE (blue phase)**
      (4) Smaller than Canada goose. Laughing patch on bill. Adult with gray neck, black splotches on belly; juvenile dusky, with light bill and feet. — **WHITE-FRONTED GOOSE**
      (5) Size of snow goose. Head, neck, and chest black; body white. — **BRANT**

(1) No lobe on hind toe. Speculum iridescent (except sometimes on female pintail). *(Puddle ducks.)*

(a) Speculum green

I. Secondary coverts white. Feet and legs blue-gray; top of male's head white. **AMERICAN WIGEON (Baldpate)**

II. Secondary coverts blue with no white margin; may be some white between blue secondary coverts and speculum. Male with white crescent in front of eye. **BLUE-WINGED TEAL**

III. Secondary coverts blue with white margin. Bill very wide, spoon-like. **NORTHERN SHOVELER (Spoonbill)**

IV. Secondary coverts dull brownish. Male with green "mask" around eye extending to back of head. **GREEN-WINGED TEAL**

(b) Speculum purple.

I. Speculum with white margins. Male with white neck ring, green head. **MALLARD (Greenhead)**

II. Speculum with black margins; may be small trace of white at back of wing. Body dark brown, contrasting with silvery underwings. **AMERICAN BLACK DUCK (Black mallard)**

Black bars, rusty splotch in secondary coverts. Feet and legs yellow-orange. **(Gray mallard)**

(d) Speculum iridescent bluish green (like turkey feathers); color continuing up into secondary coverts. Underside of belly light; underside of wings darker. Tail square. Female with white teardrop patch around eye. Male's head with crest. **WOOD DUCK (Woody)**

(e) Speculum with many different iridescent colors, often bronze, with white margin on back edge of wing and brown margin at front edge of speculum. (Female speculum may be entirely dull brown.) Neck very long. Male with very long tail feathers; female's tail pointed, shorter than male's. Male's head rust colored; throat and belly white. **NORTHERN PINTAIL (Sprig)**

(2) Lobe on hind toe (nail not very prominent). Speculum with no iridescent color. *(Diving ducks.)*

(a) Body light colored in middle and dark at ends.

I. Head red, rounded, with short bill. Female looks like ring-necked female with no white fringe on bill at head. **REDHEAD**

B. FEET WEBBED (cont.)

II. Head red, with flat forehead and long bill. **CANVASBACK**

III. Head, neck, and breast dark; bill blue. Female with white splotch at juncture of head and bill. **SCAUP (Bluebill)**

IV. Head, neck, and breast dark; bill with white ring near end; female with white edge on base of bill at juncture with head. **RING-NECKED DUCK**

(b) Body dark and light; head dark, looks as if it has lump on top. Larger than bufflehead. Male with white spot in front of and below the eye. Female with white collar below the dark head. **COMMON GOLDENEYE (Whistler)**

(c) Body and wings black and white. Very small duck (teal-sized). Male with white patch on head from below the eye to back of head; female with white spot behind eye. **BUFFLEHEAD (Butterball)**

(d) Body and head with much white. Male with long pinlike tail. Bill short, appears orange and black. **OLDSQUAW**

(e) Small duck. Tip of tail appears very ragged due to absence of upper tail coverts. Cheeks light-colored. Female with dark longitudinal line under eye on light cheek. **RUDDY DUCK**