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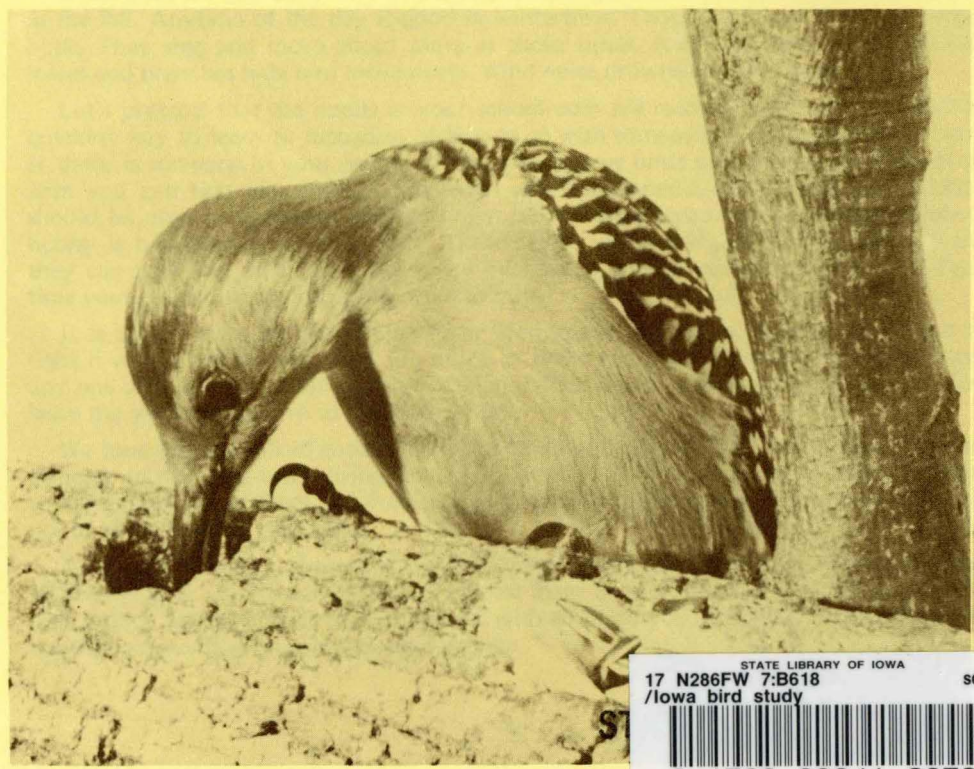
IOWA

BIRD



STUDY

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BIRD STUDY FOR SCHOOLS

Would you like to know more about birds? Perhaps these hints on how to study birds will help you.

What equipment do we need? Field glasses or binoculars are fun to own and use, but you can have fun without them. A good field guide or book is very important. Such a book will have colored pictures of nearly every bird. It will tell you what markings or behavior to look for. Roger Tory Peterson's "Field Guide to the Birds" Richard Pough's "The Audubon Bird Guide", and the Golden Nature Guide "Birds", by Dr. Zim and Dr. Gabrielson are excellent guides.

A small pocket mirror is a handy gadget to have on a bird walk. Reflected sunlight can be used as a pointer to locate birds for a group of students. Light from the mirror will show color of feathers more clearly. Of course, the sudden flash of light may frighten the bird you are watching.

What shall we wear? Dull-colored clothing is best. Birds may be frightened by flashy colors.

Where shall we look for birds? Birds are found where there is food and shelter. Brushy fencerows, along marsh edges, and along wooded streams are good places to look. A city park that has both trees and shrubs is often a choice spot, especially in spring and fall. Perhaps someone in your neighborhood has a winter bird feeder. Winter birds will gather there.

When shall we go? Early morning is best in spring and summer. Late afternoon is best in the fall. Anytime of the day is good in wintertime. Those are "meal times" for most birds. They sing and move about more at those times. A windless day is best. Moving leaves and branches hide bird movements. Wind noise drowns out bird songs.

Let's pretend that the pupils in your schoolroom are ready to take a bird walk. The quickest way to learn to recognize birds is to go with someone who already knows them. If there is someone in your neighborhood who knows birds you should ask them to go with you and first few times. A boy scout who has earned a merit badge in bird study should be able to recognize most common birds. Perhaps you can find someone whose hobby is bird feeding or bird study. These people will usually be glad to help you and they can save you much time and many mistakes. I will be your leader this time. Next time your teacher or someone else can lead you.

It is best if there are only 10 or 12 or even less in one group. A larger number is all right if we do not move around too much or make too much noise. We have agreed that any one who spoils our fun by loud talking, horseplay, or unnecessary movements must leave the group and return to the schoolroom.

We have already talked about why we're studying birds. We have learned that birds are valuable to man and other living things. We want to be able to recognize them. We want to learn more about them and their habits. Then we can fit birds into our plans for better use of all our natural resources.

As we draw near to likely-looking spots (where birds can find shelter, food and water) let's stand very quietly and listen for at least three or four minutes. How many different bird sounds can you hear? Start a bird list with all those you recognize, such as the crow, mourning dove, English sparrow, blue jay, etc.

A bird list is an important part of your days study. Your list will be sort of a score card to measure your success. Probably you will hear four or five songs that you do not recognize. Let's walk slowly toward the nearest of these mysterious sounds. If we can, we'll circle slowly to get the sun behind us. This makes it easier for us to see the bird and harder for the bird to see us. Slow and easy does it! The group stays close together, no one talks, and every movement is slow. If the bird stops singing or gets restless, we stop. There he is!

This is close enough for now. If the bird is singing it is probably a male. Does anyone know him? Let's compare his size with that of some bird we know well. What color is he? Can you see any unusual marks? Is the tail and bill long or short? Someone make some notes on his appearance and song. Someone else look through the field guide for his picture. Let's not try to move closer until we know his name or need a better look. Our next movement may mean our last look at this fellow.

One at a time, and softly, let's take turns trying to imitate his song or call. If he hears a fairly good imitation, he may come toward us. His jealousy of other male birds of his kind may overcome his fear of us. Do not move if you want him to come close to you.

If it is nesting season, "squeaking" may bring birds closer to us. Make a squealing sound by kissing the back of your hand or whistling through your teeth. Only one at a time now, and softly. The noise should sound like a baby bird in trouble.

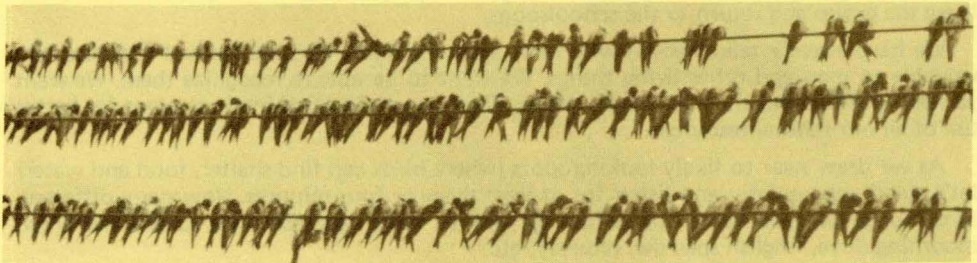
If we cannot find our mystery bird's picture and description in our field guide in a few minutes, we'll try to get a little closer and get a better look. Move very slowly and quietly. Stand still when he stops singing. Look, listen, and use your field guide - - these are the secrets of learning to know birds.

If we still don't know his name, let's try to decide to which family or group our mystery bird belongs. Then we can use the index of our field guide to find names and pictures of birds in that group.

Here is a simple table which may give you some hints as to a strange bird's family. The table is not sure-fire. For example, most birds look "dark above and light below", but not all birds perch quietly. Flycatchers usually do, but not always. A bird may fit the description for several families and not belong to any of them. Maybe you think our table isn't much good. Why doesn't your class work out a better one?

Habits and behavior are good clues to a bird's family. Warblers usually will be seen looking for insects on branches and under leaves. Swallows are insect eaters, too, but they usually catch their food as they swoop through the air. So do flycatchers. Creepers and nuthatches hunt insects as they climb up and down trunks and main branches. Finches, sparrows, and grosbeaks are seed eaters. We'll usually find them looking for seeds on the ground, on weeds, and on trees and shrubs. As you study birds more, their habits and manners often tell you their name, even before you can see their color.

Many families of birds have been left out of our table. Only commonest families of roadside and woods birds are listed.



BIRD FAMILY DESCRIPTIONS

SIZE	DESCRIPTION	FAMILY
Very small	Tiny, greenish gray above, light below	Kinglets
Smaller than a sparrow	Yellow, black or brown markings, slender bill.	Warblers
Smaller than a sparrow	Restless, brown. Tail sticks up. Loud singers.	Wrens
Smaller than a sparrow	Brown. Climbs up tree trunks. Slender curved bill.	Creeper
Smaller than a sparrow	Dark above. Comes down tree trunks head-first. Bill long, slants upwards.	Nuthatches
Sparrow size	Gray, long tails, seldom still, may hang upside down.	Chickadees & Titmice
Sparrow size	Sparrow-like. Short, stout bill.	Sparrows (Many kinds)
Sparrow size	Dark above, light below, graceful flight.	Swallows
Robin and smaller	Gray or black above, light below. Sits quietly on perch (often dead branches).	Flycatchers
Robin and smaller	Short, stout bill. Usually bright colored	Finches or or grosbeaks
Robin size	Long tails, good singers.	Mockers (brown thrashers, catbird, mocking bird).
Robin size	Spotted breasts. Found in dense cover (usually).	Thrushes



CHECK LIST OF IOWA BIRDS

The following is a list of birds that to date have been recorded for the State of Iowa. All are represented by specimens. It is a generally accepted rule that no species of birds shall be admitted to a state list unless a specimen has been taken and is either preserved in some collection or has been critically examined by a competent ornithologist.

On this list the status is simply the over-all picture of the species in this state. Some listed as migrant may remain throughout the year and some listed as migrant may also nest in the state in small numbers. In this paper the status is meant only to give the over-all concept of the species in this area.

The purpose of this paper is to make available a complete list of the birds of Iowa and to give the relative abundance of each species.

Legend for Bird Status

A	Accidental	RPR	Rare permanent resident
C	Common	RSR	Rare summer resident
E	Extinct	RSV	Rare summer visitor
R	Rare	RWM	Rare winter migrant
CM	Common migrant	RWV	Rare winter visitor
IS	Introduced Species	USR	Uncommon summer resident
PE	Probably extinct	UWV	Uncommon winter visitor
PR	Permanent resident	AMSR	Abundant migrant and summer resident
RM	Rare migrant	CMSR	Common migrant and summer resident
RR	Rare resident	ISCR	Introduced species - common resident
UM	Uncommon migrant	RMSR	Rare migrant and summer resident
VR	Very rare	UMSR	Uncommon migrant and summer resident
WV	Winter visitor	AMCWR	Abundant migrant and common winter resident
APR	Abundant permanent resident	WMRPR	Winter migrant and rare permanent resident
ASR	Abundant summer resident		
CPR	Common permanent resident		
CSR	Common summer resident		
CWR	Common winter resident		
CWV	Common winter visitor		
UR	Uncommon resident		

IOWA BIRDS

<u>Common Names</u>	<u>Status</u>	<u>Common Names</u>	<u>Status</u>
Common Loon	RM	White-faced Ibis	RV
Artic Loon	A	Mute Swan	A
Red-throated Loon	RM	Whistling Swan	UM
Red-necked Grebe	RM	Trumpeter Swan	A
Horned Grebe	UM	Canada Goose	CM
Eared Grebe	UMSR	Lesser Canada Goose	UM
Western Grebe	RM	Hutchin's Goose	UM
Pied-billed Grebe	CSR	White-fronted Goose	CM
American White Pelican	CM	Lesser Snow Goose	CM
Brown Pelican	A	Ross Goose	VR
Double-crested Cormorant	CM	Mallard	CMSR
Anhinga	A	American Black Duck	CM
Great Blue Heron	CMSR	Gadwall	CM
Green-backed Heron	CMSR	Northern Pintail	CM
Little Blue Heron	RSV	Green-winged Teal	CM
Cattle Egret	A	Blue-winged Teal	CMSR
Great Egret	CSR	Cinnamon Teal	RM
Snowy Egret	RSV	European Widgeon	A
Black-crowned Night Heron	CMSR	American Widgeon	CM
Yellow-crowned Night Heron	RSR	Northern Shoveler	CM
Least Bittern	CMSR	Wood Duck	CMSR
American Bittern	CMSR	Redhead	CMSR
Wood Stork	RV	Ring-necked Duck	CM
Glossy Ibis	RV	Canvasback	CM

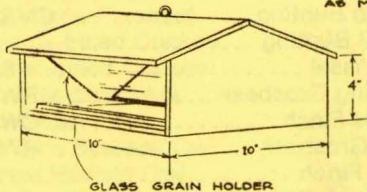
<u>Common Names</u>	<u>Status</u>	<u>Common Names</u>	<u>Status</u>
Greater Scaup	RM	Black Rail	RM
Lesser Scaup	CM	Common Moorhen	UMSR
Common Goldeneye	CM	American Coot	CMSR
Oldsquaw	RM	Semipalmated Plover	CM
Bufflehead	CM	Piping Plover	RMSR
Harlequin Duck	A	Killdeer	CMSR
Common Eider	A	American Golden Plover	CM
King Eider	A	Black-bellied Plover	UM
White-winged Scoter	UM	Ruddy Turnstone	RM
Surf Scoter	UM	American Woodcock	UMSR
Common Scoter	RM	Common Snipe	CM
Ruddy Duck	CMSR	Long-billed Curlew	RM
Hooded Merganser	CM	Whimbrel	RV
Common Merganser	CM	Eskimo Curlew	PE
Red-breasted Merganser	UM	Upland Sandpiper	CSR
Turkey Vulture	CSR	Spotted Sandpiper	CSR
Black Vulture	A	Solitary Sandpiper	CM
Swallow-tailed Kite	PE	Willet	RM
Mississippi Kite	PE	Greater Yellow-legs	CM
Goshawk	UM	Lesser Yellow-legs	CM
Sharp-shinned Hawk	CM	Knot	RV
Cooper's Hawk	CMSR	Pectoral Sandpiper	CM
Red-tailed Hawk	CPR	White-rumped Sandpiper	CM
Red-shouldered Hawk	CPR	Baird's Sandpiper	CM
Broad-winged Hawk	CM	Least Sandpiper	CM
Swainson's Hawk	UR	Dunlin	CM
Rough-legged Hawk	CWV	Short-billed Dowitcher	RM
Ferruginous Hawk	RM	Long-billed Dowitcher	CM
Harris' Hawk	A	Stilt Sandpiper	CM
Golden Eagle	UM	Semipalmated Sandpiper	CM
Bald Eagle	UM	Western Sandpiper	RM
Northern Harrier	CMSR	Buff-breasted Sandpiper	RM
Osprey	UM	Marbled Godwit	RM
Prairie Falcon	RM	Hudsonian Godwit	UM
Peregrine Falcon	RSR	Ruff	A
Merlin	UM	Sanderling	UM
American Kestrel	CPR	American Avocet	RM
Ruffed Grouse	CPR	Black-necked Stilt	RV
Greater Prairie Chicken	RWM	Wilson's Phalarope	CM
Sharp-tailed Grouse	RWM	Northern Phalarope	RM
Bobwhite	CR	Parasitic Jaeger	RV
Ring-necked Pheasant	ISCR	Long-tailed Jaeger	A
Reeve's Pheasant	IS	Glaucous Gull	A
Gray Partridge	IS	Herring Gull	CM
Eastern Wild Turkey	E&IS	Ring-billed Gull	CM
Chukar	IS	Franklin's Gull	CM
Whooping Crane	A	Bonapart's Gull	UM
Sandhill Crane	RM	Black-legged Kittiwake	A
King Rail	UM	Sabine's Gull	RV
Virginia Rail	CMSR	Forster's Tern	CM
Sora Rail	CMSR	Common Tern	UM
Yellow Rail	UMSR	Interior Least Tern	USR

<u>Common Names</u>	<u>Status</u>	<u>Common Names</u>	<u>Status</u>
Caspian Tern	UM	Cliff Swallow	CSR
Black Tern	CMSR	Purple Martin	CSR
Thick-billed Murre	A	Blue Jay	CPR
Rock Dove	IS	Black-billed Magpie	UWV
Mourning Dove	CR	Common Raven	RV
Passenger Pigeon	E	Common Crow	CR
Louisiana Parakeet	E	Clark's Nutcracker	A
Yellow-billed Cuckoo	CSR	Black-capped Chickadee	CPR
Black-billed Cuckoo	CSR	Carolina Chickadee	A
Groove-billed Ani	A	Tufted Titmouse	CR
Barn Owl	UR	White-breasted Nuthatch	CPR
Eastern Screech Owl	CR	Red-breasted Nuthatch	UWV
Great Horned Owl	CR	Brown Creeper	CM
Snowy Owl	WV	House Wren	CSR
Burrowing Owl	RSR	Winter Wren	CM
Barred Owl	CR	Bewick's Wren	RSR
Great Gray Owl	RV	Carolina Wren	USR
Long-eared Owl	CWV	Marsh Wren	CSR
Short-eared Owl	CWV	Sedge Wren	USR
Saw-whet Owl	UWV	Rock Wren	RSR
Whip-poor-will	CSR	Mockingbird	UR
Chuck-Will's-Widow	RSR	Catbird	CSR
Nuttall's Poor-will	RV	Brown Thrasher	CSR
Common Nighthawk	CSR	Sage Thrasher	RV
Chimney Swift	CSR	Robin	ASR
Ruby-throated Hummingbird	CSR	Wood Thrush	CSR
Belted Kingfisher	CSR	Hermit Thrush	UM
Yellow-shafted Flicker	CSR	Swainson's Thrush	CM
Red-shafted Flicker	R	Gray-cheeked Thrush	CM
Pileated Woodpecker	RR	Veery	UM
Red-bellied Woodpecker	CR	Eastern Bluebird	CSR
Red-headed Woodpecker	CR	Mountain Bluebird	A
Yellow-bellied Sapsucker	CM	Townsend's Solitaire	RV
Hairy Woodpecker	CR	Blue-gray Gnatcatcher	USR
Downy Woodpecker	CR	Golden-crowned Kinglet	CM
Three-toed Woodpecker	RV	Ruby-crowned Kinglet	CM
Eastern Kingbird	CSR	Water Pipit	UM
Western Kingbird	USR	Sprague's Pipit	R
Great Crested Flycatcher	CSR	Bohemian Waxwing	UM
Eastern Phoebe	CSR	Cedar Waxwing	CMSR
Say's Phoebe	RSR	Northern Shrike	UWV
Yellow-bellied Flycatcher	USR	Loggerhead Shrike	CSR
Acadian Flycatcher	USR	Starling	ISCR
Traill's Flycatcher	CSR	White-eyed Vireo	USR
Least Flycatcher	CSR	Bell's Vireo	USR
Eastern Wood Pewee	CSR	Yellow-throated Vireo	CM
Olive-sided Flycatcher	UM	Solitary Vireo	CM
Northern Horned Lark	UWR	Red-eyed Vireo	CM
Prairie Horned Lark	CSR	Philadelphia Vireo	UM
Tree Swallow	CMSR	Warbling Vireo	CSR
Bank Swallow	CSR	Black and White Warbler	CM
Northern Rough-winged Swallow	CSR	Prothonotary Warbler	USR
Barn Swallow	CSR	Worm-eating Warbler	RSR

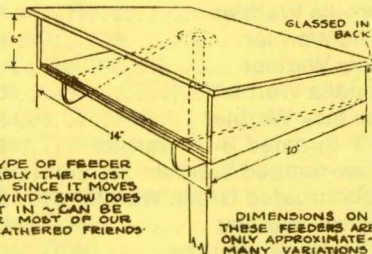
<u>Common Names</u>	<u>Status</u>
Golden-winged Warbler	RM
Blue-winged Warbler	UMSR
Tennessee Warbler	CM
Orange Crowned Warbler	CM
Nashville Warbler	CM
Parula Warbler	UM
Yellow Warbler	ASR
Magnolia Warbler	CM
Cape May Warbler	RM
Black-throated Blue Warbler	RM
Yellow-rumped Warbler	CM
Black-throated Green Warbler	UM
Cerulean Warbler	USR
Blackburnian Warbler	CM
Yellow-throated Warbler	RSR
Chestnut-sided Warbler	CM
Bay-breasted Warbler	RM
Blackpoll Warbler	CM
Pine Warbler	UM
Prairie Warbler	RM
Western Palm Warbler	CM
Ovenbird	CMSR
Northern Waterthrush	UM
Louisiana Waterthrush	USR
Kentucky Warbler	RSR
Connecticut Warbler	UM
Mourning Warbler	UM
Common Yellow-throat	CSR
Yellow-breasted Chat	USR
Hooded Warbler	RM
Wilson's Warbler	CM
Canada Warbler	CM
American Redstart	CM
House Sparrow	ISCR
Bobolink	CMSR
Eastern Meadowlark	CSR
Western Meadowlark	CSR
Yellow-headed Blackbird	CSR
Red-winged Blackbird	USR
Orchard Oriole	USR
Northern Oriole	CSR
Rusty Blackbird	CM
Brewer's Blackbird	UM
Common Grackle	AMSR

<u>Common Names</u>	<u>Status</u>
Brown-headed Cowbird	CSR
Scarlet Tanager	USR
Summer Tanager	RSR
Cardinal	CPR
Rose-breasted Grosbeak	CMSR
Blue Grosbeak	RV
Indigo Bunting	CMSR
Lazuli Bunting	A
Dickcissel	ASR
Evening Grosbeak	RWV
Purple Finch	CWV
Pine Grosbeak	RWV
Rosy Finch	A
Common Redpoll	UWV
Pine Siskin	UM
American Goldfinch	CSR
Red Crossbill	RWV
White-winged Crossbill	RWV
Rufous-sided Towhee	CMSR
Lark Bunting	RM
Savannah Sparrow	CM
Grasshopper Sparrow	USR
Leconte's Sparrow	UM
Henslow's Sparrow	UM
Sharp-tailed Sparrow	UM
Vesper Sparrow	CM
Lark Sparrow	USR
Northern Junco	AMCWR
Tree Sparrow	CWR
Chipping Sparrow	CSR
Clay Colored Sparrow	CM
Field Sparrow	CSR
Swamp Sparrow	CM
Song Sparrow	CM
McCown's Longspur	RM
Lapland Longspur	CWR
Smith's Longspur	RM
Chestnut-collared Longspur	RM
Snow Bunting	UWV
Harris' Sparrow	CM
White-crowned Sparrow	CM
White-throated Sparrow	CM
Fox Sparrow	CM
Lincoln's Sparrow	CM

HINGED OR REMOVABLE TOP FOR EASE OF FILLING



THIS IS A LARGE CAPACITY FEEDER AND IS VERY HANDY SINCE IT DOESN'T REQUIRE AS MUCH ATTENTION.

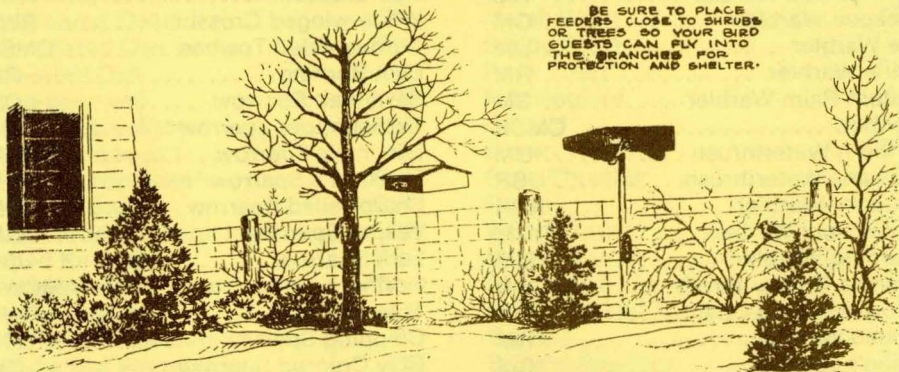


THIS TYPE OF FEEDER IS PROBABLY THE MOST PRACTICAL SINCE IT MOVES WITH THE WIND ~ SNOW DOES NOT DRIFT IN ~ CAN BE USED FOR MOST OF OUR SMALL FEATHERED FRIENDS.

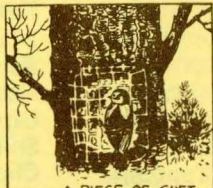
DIMENSIONS ON THESE FEEDERS ARE ONLY APPROXIMATE ~ MANY VARIATIONS CAN BE MADE.

OPERATION TID-BITS

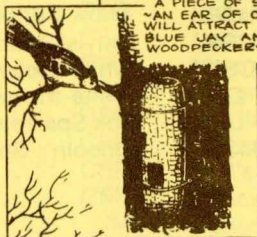
BE SURE TO PLACE FEEDERS CLOSE TO SHRUBS OR TREES. SO YOUR BIRD GUESTS CAN FLY INTO THE BRANCHES FOR PROTECTION AND SHELTER.



FILL HOLES IN A SMALL SECTION OF LOG WITH SUET MIXED WITH GRAIN OR SUNFLOWER SEEDS. SMALL SHALLOW CANS FILLED WITH THE SAME AND TACKED ON TREES IS ALSO GOOD.



A PIECE OF SUET ~ AN EAR OF CORN WILL ATTRACT THE BLUE JAY AND WOODPECKERS.



FOR THE SEED EATERS A MIXTURE OF SUNFLOWER SEEDS ~ CRACKED CORN AND PEANUT HEARTS IS VERY GOOD.



IOWA BIRD MIGRATION CALENDAR

A bulletin giving the average dates of arrival of various birds calculated for Iowa has been prepared by Bob Moorman, Extension Wildlife Conservationist at Iowa State.

Gadwall	March 15	November 4
American Pintail	March 5	November 16
Green-Winged Teal	March 12	November 8
Blue-Winged Teal	March 18	November 4
Wood Duck	March 20	October 26
Redhead	March 18	October 25
Canvas-Back	March 18	November 3
Lesser Scaup Duck	March 9	November 21
Buffle-Head	March 25	November 6
Ruddy Duck	April 5	October 28
American Merganser	March 20	November 12
Turkey Vulture	April 1	October 18
Eastern Red-Tailed Hawk	March 12	November 16
Red-Shouldered Hawk	March 14	October 16
Broadwinged Hawk	March 24	October 28
Swainson's Hawk	April 14	September 25
Rough-Legged Hawk	October 16	March 25
Marsh Hawk	March 1	November 14
American Kestrel	March 14	October 12
King Rail	April 17	September 25
Virginia Rail	April 24	October 15
American Coot	March 25	November 20
Killdeer	March 10	November 4
American Woodcock	April 9	October 28
Common Snipe	March 25	November 25
Upland Sandpiper	April 16	August 31
Solitary Sandpiper	April 23	October 10
Greater Yellowlegs	April 10	September 25
Herring Gull	April 4	November 12
Bonapart's Gull	May 1	October 4
Common Tern	April 28	September 20
Mourning Dove	March 24	October 25
Yellow-Billed Cuckoo	May 16	September 25
Black-Billed Cuckoo	May 12	September 22
Barn Owl	Partially migratory	
Eastern Screech Owl	Permanent resident	
Great Horned Owl	Permanent resident	
Barred Owl	Permanent resident	
Long-Eared Owl	Partially migratory	
Short-Eared Owl	Permanent resident	
Whip-poor-will	April 26	September 18
Nighthawk	May 3	September 25
Chimney Swift	April 18	September 16
Ruby-Throated Hummingbird ..	May 7	October 1
Belted Kingfisher	March 27	November 18
Northern Flicker	March 20	October 22
Red-Bellied Woodpecker	Permanent resident	
Red-Headed Woodpecker	May 1	November 20
Yellow-Bellied Sapsucker	April 3	October 15
Hairy Woodpecker	Permanent resident	

Downy Woodpecker	Permanent resident	
Great Crested Flycatcher	May 8	September 15
Eastern Phoebe	March 18	October 14
Eastern Wood Pewee	May 7	October 1
Prairie Horned Lark	Partially migratory	
Tree Swallow	April 5	October 1
Bank Swallow	April 20	September 21
Rough-Winged Swallow	April 19	September 4
Barn Swallow	April 20	September 24
Cliff Swallow	April 24	September 18
Purple Martin	April 8	September 3
Blue Jay	Permanent resident	
Black-Capped Chickadee	Permanent resident	
Tufted Titmouse	Permanent resident	
White-Breasted Nuthatch	Permanent resident	
Eastern Bluebird	March 8	October 30
Blue-Gray Gnatcatcher	April 15	September 1
Golden-Crowned Kinglet	April 2	October 16
Ruby-Crowned Kinglet	April 10	October 8
Cedar Waxwing	March 7	October 12
Migrant Shrike	March 28	October 26
Red-Eyed Vireo	May 6	September 21
Black and White Warbler	April 27	September 24
Tennessee Warbler	May 10	September 17
Nashville Warbler	May 6	October 2
Yellow Warbler	May 3	September 12
Magnolia Warbler	May 12	September 14
Myrtle Warbler	April 20	September 10
Ovenbird	May 5	September 25
Louisiana Water Thrush	April 23	September 1
Northern Yellow-Throat	May 7	September 29
American Redstart	May 8	September 25
Bobolink	May 1	September 28
Eastern Meadowlark	March 10	October 20
Western Meadowlark	March 12	October 18
Yellow-Headed Blackbird	April 14	October 9
Red-Winged Blackbird	March 12	November 17
Orchard Oriole	May 10	August 2
Northern Oriole	May 1	September 7
Rusty Blackbird	March 21	October 17
Bronzed Grackle	March 14	November 11
Brown-headed Cowbird	April 10	August 24
Scarlet Tanager	May 8	September 15
Eastern Cardinal	Permanent resident	
Rose-Breasted Grosbeak	May 1	September 21
Indigo Bunting	May 6	September 27
Dickcissel	May 16	September 6
Purple Finch	March 24	October 16
Pine Grosbeak	November 2	March 30
Common Red Poll	October 22	April 12
Northern Pine Siskin	April 24	October 16
American Goldfinch	Permanent resident	
Red Crossbill	Irregular winter visitant	

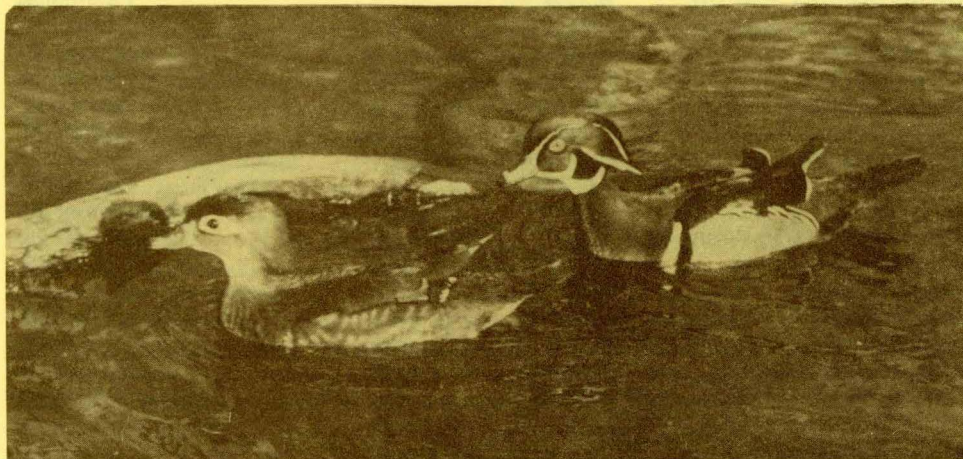
White-Winged Crossbill	..... Irregular winter visitant	
Rufous-sided Towhee	..... April 14	October 17
Grasshopper Sparrow	..... April 28	September 27
Vesper Sparrow	..... April 2	October 23
Lark Sparrow	..... April 21	July 30
Northern Junco	..... Winter Visitant	
Tree Sparrow	..... March 30	October 24
Chipping Sparrow	..... April 1	October 18
Clay-Colored Sparrow	..... April 18	October 12
Field Sparrow	..... April 11	October 12
Harris' Sparrow	..... May 9	October 7
White-Crowned Sparrow	..... May 6	October 9
White-Throated Sparrow	..... April 26	September 30
Fox Sparrow	..... April 6	October 10
Song Sparrow	..... March 20	November 9
Lapland Longspur	..... October 23	March 18
Snow Bunting	..... November 6	March 10
Brown Creeper	..... Permanent resident	
House Wren	..... April 26	October 5
Winter Wren	..... April 4	September 30
Short-Billed Marsh Wren	..... May 6	September 25
Catbird	..... May 1	October 3
Brown Thrasher	..... April 16	October 2
Eastern Robin	..... March 8	November 12
Wood Thrush	..... May 3	September 22
Eastern Hermit Thrush	..... April 10	October 10
Swainson's Thrush	..... May 10	September 24



CONSTRUCTION AND INSTALLATION OF WOOD DUCK NESTING BOXES

Indisputably the drake wood duck is the most beautiful of all our ducks. It is an important species in Iowa being one of our few species of breeding waterfowl and forming an important part of the hunter's bag in some sections of the state.

Wood ducks also suffer heavy predation in their natural nest sites especially from raccoon and fox squirrel. By installation of nest boxes of proper design both coon and squirrel predation can be eliminated. By providing more and safer nesting sites, the production of young can be increased.



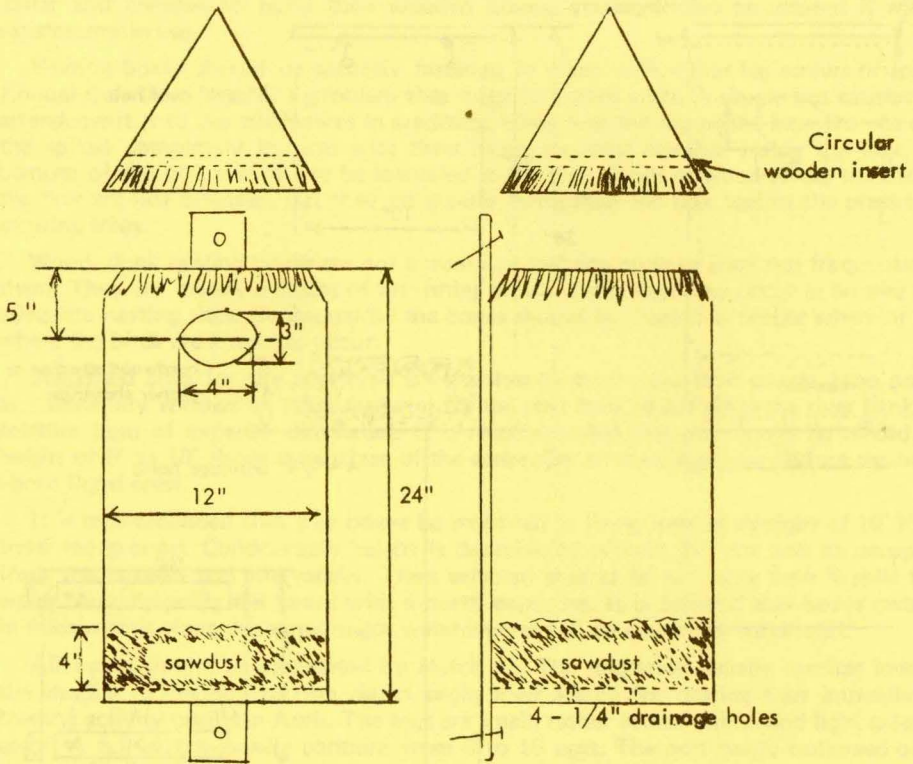
The natural nesting site of the wood duck is a fairly large natural cavity in the trunk or large branch of a tree. It has no special preference for any particular kind of tree and not much choice as to its location, but it would probably prefer to find a hollow tree near some body of water. It is often forced to select a tree a long distance from water, even in dooryards and city parks. The size and depth of these natural cavities vary greatly and be anywhere from 3 to 50 feet from the ground. If it cannot find a natural cavity that suits its taste it will occasionally occupy the hole of one of the larger woodpeckers or of a fox squirrel.

The box designs shown will be found to meet the requirements of the ducks. One design is modified for post mounting in marshes and ponds. The other is designed for tree mounting.

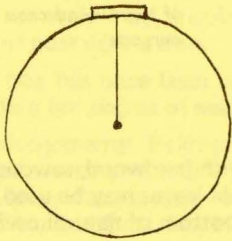
Wooden boxes are generally made from one inch rough lumber free from knot holes and cracks. Rough native lumber may often be obtained for this purpose at low cost. The more durable the lumber is, the better for the purpose. Any holes or cracks which occur in the lumber must be covered, for the ducks will not use boxes permitting light to enter near the bottom. Ducklings climb to the entrance hole with sharp toe nails to leave the nest. Consequently rough lumber should be used. If dressed lumber must be used attach a strip of screen wire or hardware cloth to the inside of the front to permit them to climb out.

The entrance hole is centered on the front of the box from four to six inches from the top depending on the design. A four inch round hole was formerly used on wood duck nest boxes. This may still be satisfactory for boxes mounted on poles or posts completely surrounded by water. An oval hole 3" x 4" will exclude raccoon from the box and still allow entrance to the ducks. It is recommended that this oval hole be used on all wood duck boxes. Be sure the small diameter of the hole is vertical and the large horizontal.

Wood Duck Nesting Box - Tree Type



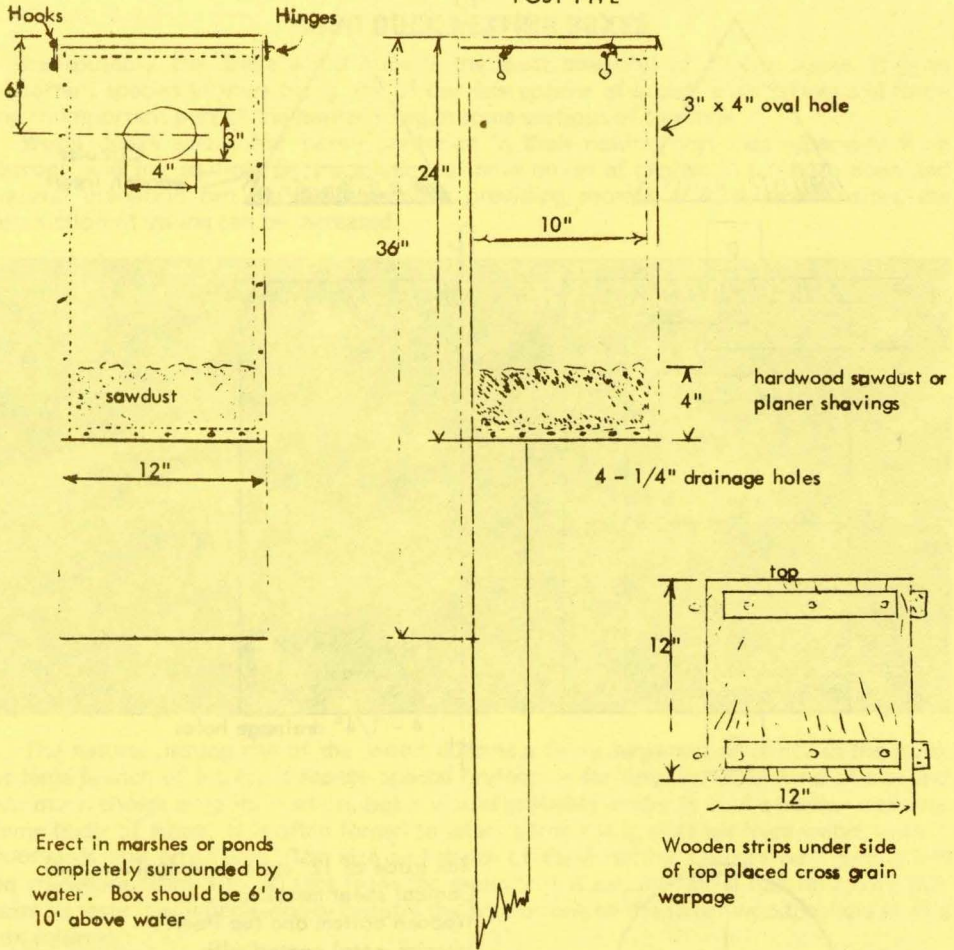
Box made of 12" stove pipe (galvanized)
 Conical sheet metal roof.
 Wooden bottom and top insert.
 Interior metal coated with
 automobile undercoater
 Roof attached with self-tapping
 sheet metal screws.



By permission as described by
 Frank Bellrose, Illinois Natural History Survey
 Scale $1/8" = 1"$

Authorities disagree on painting. This is a point which apparently makes very little difference to the birds so long as the paint used is a dull, drab, natural appearing color. Board nesting boxes may be left unpainted if desired but some form of paint or wood sealer will aid in preventing rotting and warpage and add to their life expectancy. All metal or metal covered boxes should be painted an olive drab or "dead grass" color. Painting undoubtedly makes metal houses more attractive to the ducks.

WOOD DUCK NESTING BOX
POST TYPE



Erect in marshes or ponds completely surrounded by water. Box should be 6' to 10' above water

Scale 1/8" = 1"

Fill the bottom of the box to a depth of about 4" with hardwood, sawdust or coarse hardwood planer shavings. If neither of these are available leaves may be used, but leaves are less attractive than the wood particles which line the bottom of natural cavities.

At least four 1/4" drain holes should be drilled in the bottom of each box to prevent the accumulation of undue amounts of moisture.

Squirrels are difficult to exclude from boxes. Three features must be incorporated in wooden boxes to keep them out. These are: metal cone or pyramid on roof; roof overhang at front; and metal facing on front and sides.

Also included in the drawings is a new type metal box developed by Frank Bellrose of the Illinois Natural History Survey. This box is made from 12" stove pipe with a wooden bottom and a conical sheet metal roof. The cone roof is designed to prevent predators from entering. In order to enable the young to climb out the interior of the metal is covered with automobile undercoating about 1/8" thick. A garage will spray it on, but it

is much cheaper to buy the undercoating and dab it on with a brush. It takes approximately one pint for each box. We strongly recommend this new box and if you find it easier and cheaper to build than wooden boxes, you may also be assured it will be satisfactory in use.

Nesting boxes should be securely fastened in place with either lag screws or spikes. Annual growth of trees is a problem that must be coped with. A simple but satisfactory arrangement is to use two spikes in predrilled holes near the top of the box. Do not drive the spikes completely in, and wire their heads securely together inside the box. The bottom of the box should also be toenailed to the tree. Strips of wood across the back of the box are not essential, but they do greatly strengthen the box against the pressure of growing trees.

Wood duck nesting boxes are not a means of enticing birds to areas not frequented by them. They are merely a means of furnishing wood ducks that may occur in an area with adequate nesting sites. Consequently the boxes should be located in timber where or near where the birds are known to occur.

Suggested sites for the post type are marshes or bays, overflow ponds, farm ponds, etc. Generally willows or other material for the post may be cut along the river bank and another item of expense eliminated. It is recommended that post boxes be placed at a height of 6' to 10' above the surface of the water. On all river locations be sure the box is above flood crest.

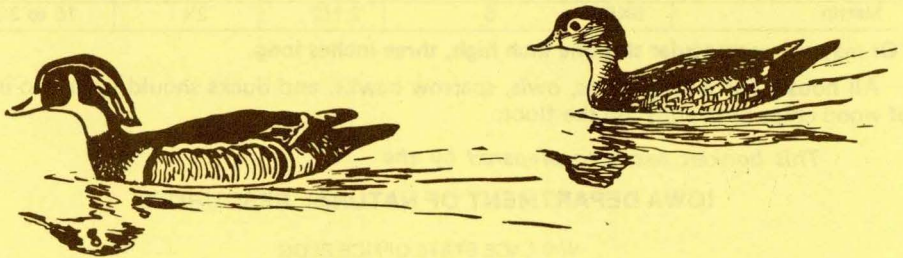
It is recommended that tree boxes be mounted in living trees at a height of 10' to 20' from the ground. Considerable height is desirable to protect the box and its occupants from the curious and the vandal. Trees selected should be no more than ¼ mile from water. Avoid placing the boxes with a north exposure. It is believed that boxes installed in open woods along the states major watercourses will be eminently successful.

All boxes should be completed by March 15. The migration usually reaches Iowa by the middle of March and the ducks begin their search for nesting sites immediately. Nesting activity begins in April. The eggs are small, rather round, shiny, and light cream in color. A full clutch usually contains from 8 to 15 eggs. The nest cavity hollowed out in the wood chips will also contain much down from the female's breast.

The boxes shown have hooks and hinges on the lid for inspection, cleaning, etc. You may secure the lids permanently if you wish. Should you desire to check the boxes for occupancy in early May, incubating females may be flushed by rapping sharply on the tree trunk or post with a club.

After a box has once been used successfully additional boxes may be installed in the vicinity with a fair degree of assurance of occupancy.

Acknowledgements: Bellrose, Frank C.; Wood Duck Housing Project: Ill. Nat. Hist. Survey, Bent, Arthur C.; Life Histories of N. A. Wild Fowl; U.S. Museum of Nat. Hist. Musgrove, Jack; Waterfowl in Iowa; Iowa Conservation Commission, Sieh, James G.; Lake Odessa Nesting Box Data, Iowa Conservation Commission Quarterly Biology Reports.



TAILOR-MADE BIRD HOUSES

Ken Morrison of the National Audubon Society sent us a colorful little book, "The Picture Primer of Attracting Birds". It was published in 1952 by the Riverside Press of Cambridge, Massachusetts.

Written by C. Russell Mason and illustrated in color by Bob Hines, the little book is an excellent source of information for winter and summer bird feeding, and for attracting birds in all seasons. It also includes a brief section on birdhouse building specifications.

Many hobby-built birdhouses are not designed for any specific bird, and dimensions of such shelters can be quite critical. A house intended for songbirds may be taken over by sparrows or other species if not built to certain specifications.

Species	Floor in Inches	Depth in Inches	Entrance Diameter in Inches	Center of Entrance Above Floor In Inches	Height Above Ground In Feet
House wren	4X4	5 to 7	1*	3½ to 5½	5 to 10
Carolina wren, Bewick's wren	4X4	5 to 7	1 1/8 to 1 3/8	3½ to 5½	5 to 10
Prothonotary warbler	4X4	8 to 10	1 1/8	6 to 8	3 to 5
Chickadee	4X4	8 to 10	1 1/8	6 to 8	5 to 15
Nuthatch, Downy woodpecker, Titmice	4X4	8 to 10	1 1/4	6 to 8	5 to 15
Bluebird Tree swallow, violet-green swallow	4X5	7 to 9	1 1/2	5½ to 7½	4 to 15
Crested flycatcher Ash-throated fly-catcher	6X6	8 to 10	2	6 to 8	8 to 20
Hairy woodpecker, Golden-fronted woodpecker	6X6	13 to 15	1 3/4 to 2	9 to 12	8 to 20
Red-headed woodpecker	7X7	16 to 18	2 to 2 1/2	12 to 14	12 to 20
Flickers, Saw-whet owl	7X7	16 to 18	3	12 to 14	12 to 20
Screech owl, Sparrow hawk	8X10	13 to 15	3 1/4	9 to 12	12 to 20
Hooded merganser	10X10	15 to 18	5	10 to 13	4 to 6
Wood duck	10X10	15 to 18	5	10 to 13	4 to 20
Golden-eye	10X10	15 to 18	7	10 to 13	4 to 20
Martin	6X6	6	2 1/2	2¼	15 to 25

*Or may use rectangular slot one inch high, three inches long.

All houses for woodpeckers, owls, sparrow hawks, and ducks should have two inches of wood chips or sawdust on the floor.

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