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## 4-H Wildlife Conservation : Extension Circular 18-51-2

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EXTENSION CIRCULAR 18-51-2

SEPTEMBER 1956

# ***4-H Wildlife Conservation***

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COLLEGE OF AGRICULTURE  
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COLLEGE OF AGRICULTURE AND U. S. DEPARTMENT  
OF AGRICULTURE, COOPERATING W. V. Lambert, Director

### ACKNOWLEDGMENTS

One of the newest of the 4-H Club activities is the Wildlife Conservation program. This manual has been prepared to provide clubs with basic information from which programs can be developed. The author wishes to acknowledge the assistance of the following persons in the preparation of this manual: Wallace Green, Phil Agee, C. G. Pritchard, George Schildman, Lloyd P. Vance, Glen R. Foster and Orty Orr of the Nebraska Game, Forestation and Parks Commission; Marvin S. McMurtey of the Soil Conservation Service; Howard L. Wiegers of the University of Nebraska College of Agriculture teaching staff; Harold H. Gilman, William D. Lutes and De Loris Clouse of the University of Nebraska Agricultural Extension Service; and Don K. Wiles of the University of Nebraska Agricultural Extension Service for general supervision and coordination of manuscript preparation.

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# ***4-H Wildlife Conservation Club Manual***

MORRIS HEMSTROM

If hunting and fishing is to remain as a great American sport, we must do our utmost to protect our game, fish, and other wildlife natural resources wisely. We can best meet this challenge through you, if you will learn to appreciate the outdoors, recognize the benefits of true conservation, and develop a personal pride in being a good sportsman. Such is the purpose of this project.

## **Requirements of Project**

1. Observe and record the habits of at least one kind of fish or game.
2. Adopt and carry out some specific wildlife conservation practice under the supervision of some recognized conservation agency or the University of Nebraska. Your local Extension Service is a part of the University.
3. Take part in at least one hunting or two fishing trips with a reliable adult.
4. Practice safe and legal hunting and fishing. This includes knowing and understanding the Nebraska fish and game laws and the "Ten Commandments for Safe Handling of Firearms."

All of the requirements may be met as group activities or as individual activities. For example, the club may adopt a wildlife conservation practice; or each member may sponsor and carry out a conservation practice. The same is true of the observations and the hunting and fishing trips.

At the end of the project year, you are expected to submit a completed project record book. It is proof that you have met the project requirements. A suggested record book may be obtained through your county Extension Service office. It is also suggested that you write a report about your project. The report should include your ideas on how the club has helped you.

## **Suggested Activities**

At the end of each part of this manual, you will find some suggested activities. The purpose of these suggestions is to help you develop interesting and educational 4-H club meetings and programs. This manual will not necessarily tell you how to carry out the activity. You will need to ask for help and more information from various agencies and people, and you will have to rely upon your imagination.

# Game and Hunting

During the past 100 years Nebraska's game population has changed. Places that once produced large numbers of grouse now produce quail and pheasants. In some areas we now have more game than the settlers could find when they first settled our state. In other places the number is less. This change in wildlife species and population is brought about by the way the land is used. In the beginning the increase in cultivated land improved the environment for such wildlife species as quail, cottontails, and the introduced pheasants. On the other hand, agriculture destroyed much of the needed grassland habitat for prairie chickens and sharptail grouse. Today's intensive farming is now crowding out those species that benefited earlier.

The food and cover available for wildlife will greatly determine the number that can be carried in any one area. Except in very unusual cases, nature produces more wildlife than the land can feed and shelter. As a result, much of the game die during the winter months when food and cover are scarce. If game is wisely harvested from the land before winter, a smaller number of game will die during the winter and an adequate breeding stock is assured. This job of managing, so that the maximum number is carried on the land, is done by the State Game, Forestation and Parks Commission in co-operation with farmers, ranchers, and sportsmen.

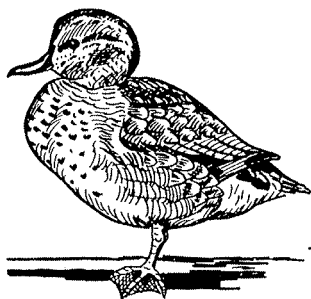
You can do a service to your community and the state by adopting some of the conservation practices suggested by your conservation agencies.

## NEBRASKA GAME BIRDS AND ANIMALS

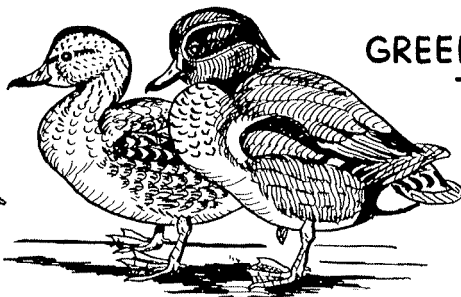
### Waterfowl

Most of the wild ducks and geese are raised in the prairie provinces of Canada. They provide sport for hunters as they migrate southward to their wintering grounds. Here in Nebraska about 500,000 wild ducks are produced each year in the Sandhills lake country; and about 250,000 waterfowl, mostly mallards, winter on Nebraska's open waters.

**Ducks.**—Ducks eat a variety of food, both animal and vegetable. Because of their feeding habits, ducks are classified as either surface-feeding ducks or diving ducks. The surface-feeding ducks are often called puddle ducks, because they obtain most of their food from small shallow bodies of water and the surrounding land. The diving duck, unlike the surface-feeder, seldom leaves the water and prefers the deeper, larger bodies of water. They obtain most of their food by



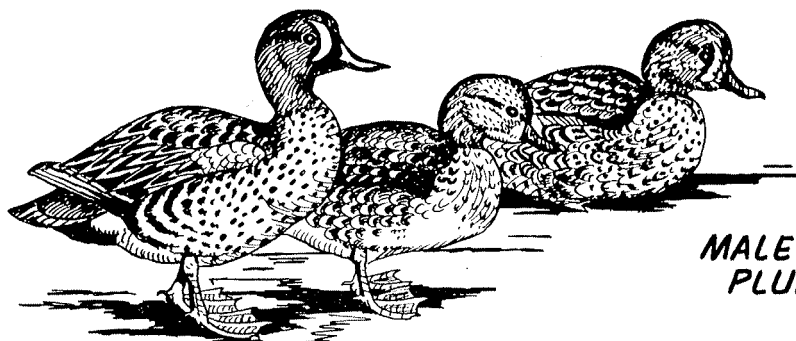
**ECLIPSE  
PLUMAGE**



**FEMALE  
PLUMAGE**

**MALE BREEDING  
PLUMAGE**

**GREEN-WINGED  
TEAL**

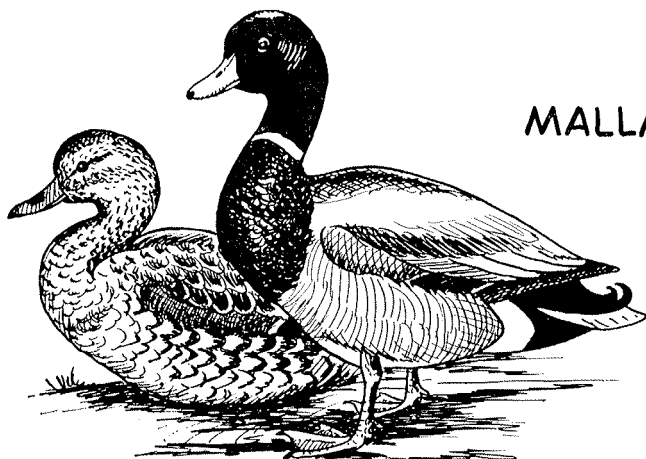


**MALE BREEDING  
PLUMAGE**

**FEMALE  
PLUMAGE**

**BLUE -  
WINGED  
TEAL**

**MALE ECLIPSE  
PLUMAGE**



**MALLARD**

diving and pulling up submerged parts of plants; gathering seeds; and eating small insects, crustacean, and similar animal life.

The plants from which much of the duck's food is taken are known as aquatic and marsh plants. Our most common aquatic plants consist of pondweeds, widgeongrass, muskgrass, coontail, and duckweeds. Bulrush, wild millet, smartweed, and arrowheads are our most common marsh plants.

The MALLARD is the best known of all our ducks. Because of his large size,  $2\frac{1}{2}$  to  $3\frac{1}{2}$  pounds, and excellent reputation as a table delicacy, the mallard is one of the most hunted ducks. The mallard is a surface-feeding duck. During their fall migration, cornfields are a favorite eating spot.

GREEN-WINGED TEAL and BLUE-WINGED TEAL are among the first to arrive in the fall and the last to arrive in the spring. They are among the fastest flying ducks. These are two of the smallest hunted ducks, usually weighing from 10 to 16 ounces. The Green-winged and Blue-winged teal rate high in the number shot in Nebraska. Both are surface-feeding ducks.

The American PINTAIL is a slender, graceful bird that weighs about 2 pounds. In Nebraska it is one of the first ducks to arrive in the spring. The Pintail is an excellent table duck. It is a surface-feeding duck.

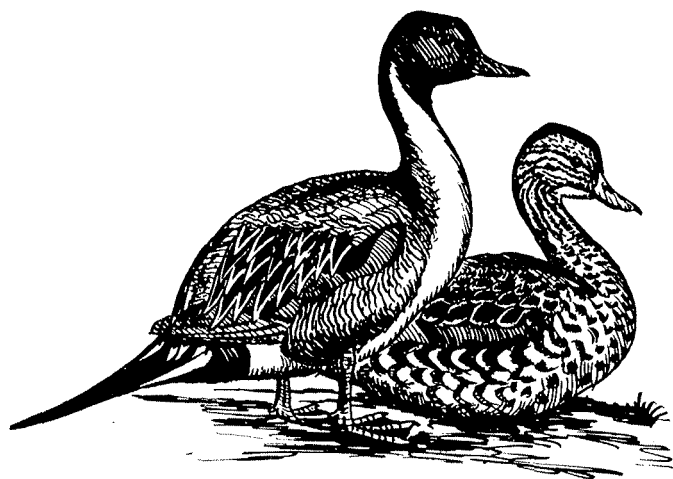
The SHOVELLER is often called the "spoonbill," "shovelbill," or "broadbill." He has a broader and flatter bill than most ducks and geese. The Shoveller is considered to be a surface-feeding duck. He frequently feeds on small insects and crustaceans in shallow water. This duck weighs about  $1\frac{1}{2}$  pounds.

CANVASBACKS are one of the best known diving ducks in Nebraska. Their bodies are not adapted to walking on land. This is one of the larger ducks, weighing up to 3 pounds. Nebraska is not on the main migration route of the Canvasbacks, so only a few are killed each year by Nebraska hunters. They are a real prize in the game bag.

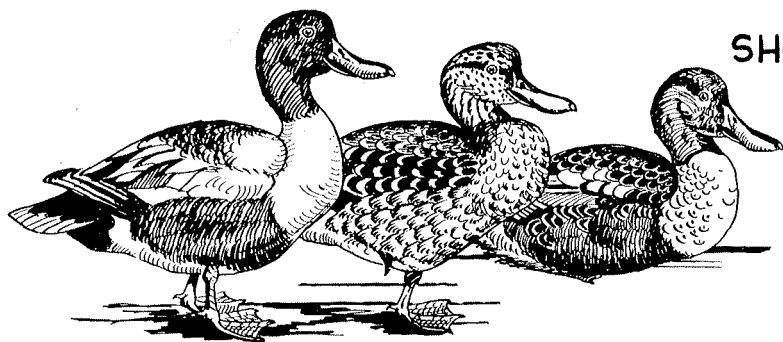
The REDHEAD, another diving duck, ranks about seventh in the number of ducks shot each year in Nebraska. They resemble the Canvasback, weigh about  $2\frac{1}{2}$  pounds, and have a high rating as table fare.

Several other species of ducks are seen in Nebraska. Some of them are the GADWALL, BALDPATE, SCAUP, GOLDEN-EYE, and RUDDY DUCK. The Gadwall and Baldpate are surface-feeding ducks; and the Golden-eye, Scaup, and Ruddy duck are diving ducks. These species make up only a small percentage of Nebraska's total duck kill.





PINTAIL

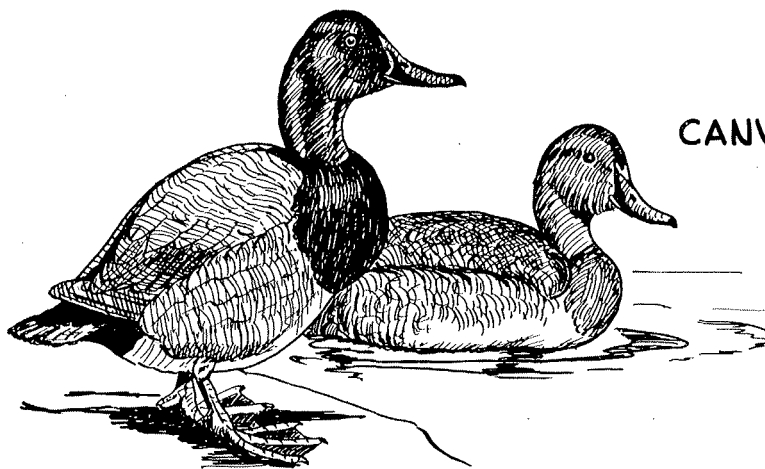


SHOVELLER

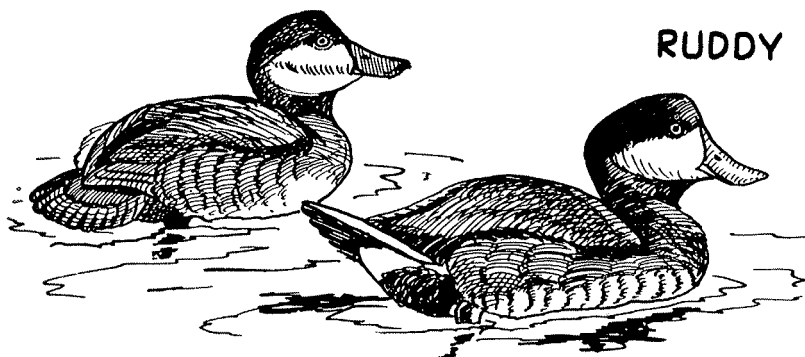
MALE BREEDING  
PLUMAGE

FEMALE  
PLUMAGE

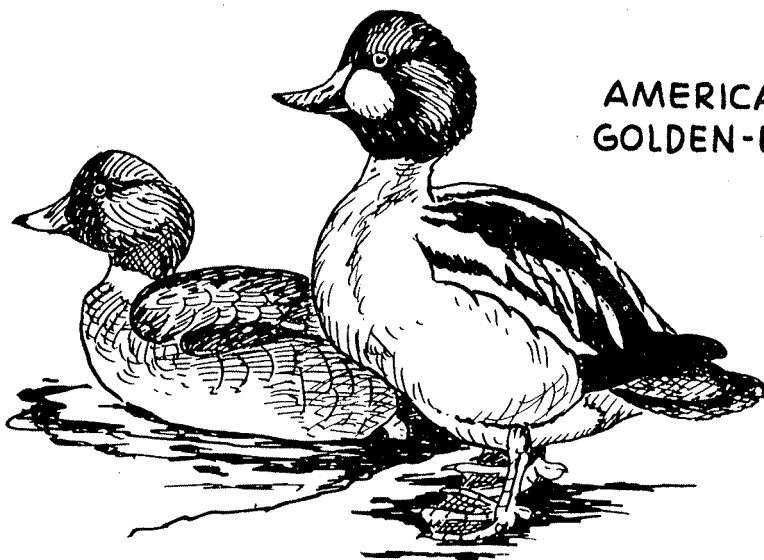
MALE ECLIPSE



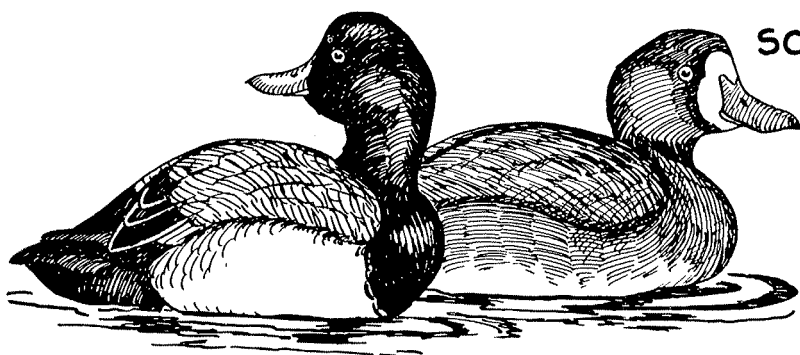
CANVASBACK



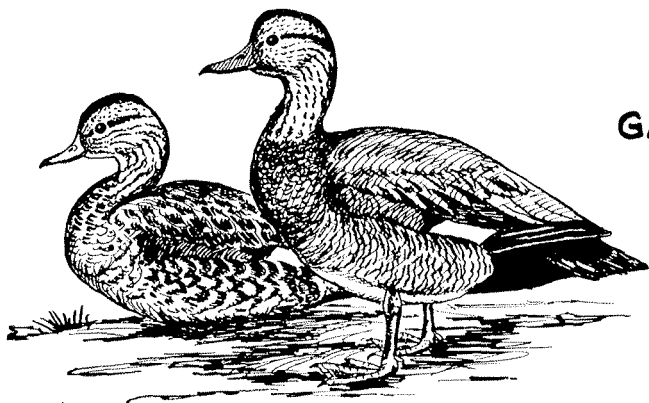
RUDDY DUCK



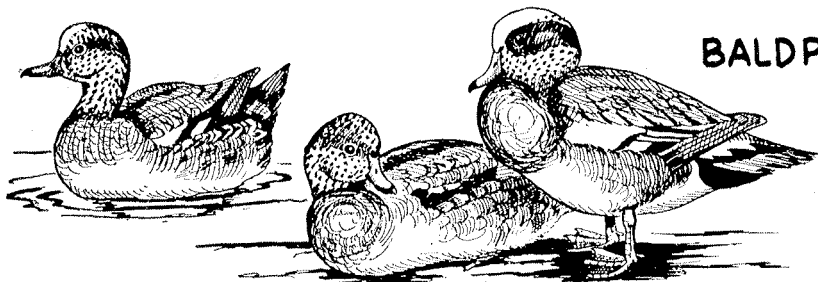
AMERICAN  
GOLDEN-EYE



SCAUP



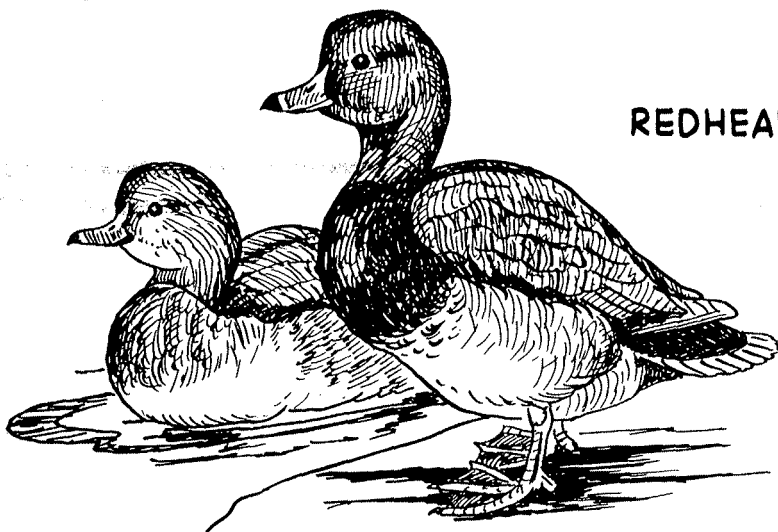
**GADWALL**



**BALDPATE**

**MALE  
AUTUMN  
PLUMAGE**

**FEMALE PLUMAGE    MALE PLUMAGE**



**REDHEAD**

**Geese.**—Geese eat grass, small green plants, grain, and a small amount of animal matter. In Nebraska, the most commonly seen geese are the Canadians. The Common Canada Goose, Lesser Canada Goose, and Hutchins' Goose belong to this group. These geese once nested in Nebraska. Their black neck and white throat patch make them easy to identify. Other species of geese that travel across Nebraska are the White-fronted Goose, Blue Goose, and Lesser Snow Goose.

**COMMON CANADA GOOSE** is sometimes called the "honker," "Canadian goose," "Canadian," or "wild goose." It is the largest of the wild geese; attaining a weight of 8 to 13 pounds and a length of 35 to 43 inches. It flies extremely fast; attaining a speed of 40 to 60 miles an hour.

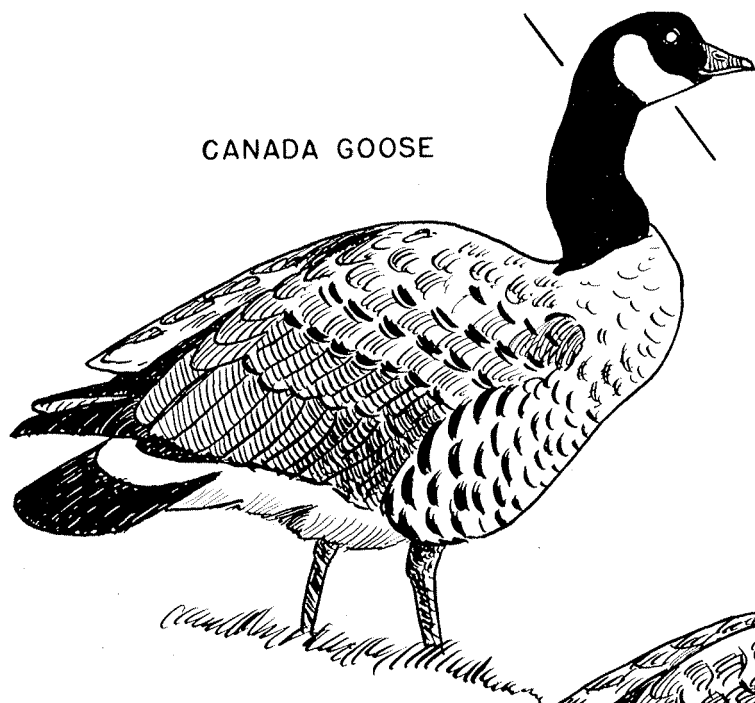
**LESSER CANADA GOOSE** is similar to the Common Canada except for size. This goose attains a weight of 5 to 7 pounds and a body length of 25 to 34 inches. As a rule, the Lesser Canada is browner in color than the Common Canada. The call of this goose is higher pitched than that of the Common Canada which helps to separate the two species in the air.

**HUTCHINS' GOOSE** is marked exactly like the Canada goose but is smaller. It weighs 3 to 4 pounds and has a body length of 23 to 25 inches. Flight speed is about the same as the larger geese, having been clocked at 40 to 50 miles per hour. Sometimes they are called "Richardson's goose," "hutch," "brant," or "cackling goose." Most of the Hutchins' geese migrate southward in the eastern portion of Nebraska. The Hutchins' may be readily separated from the Common and Lesser Canada by its short bill, small size, and much higher pitched call.

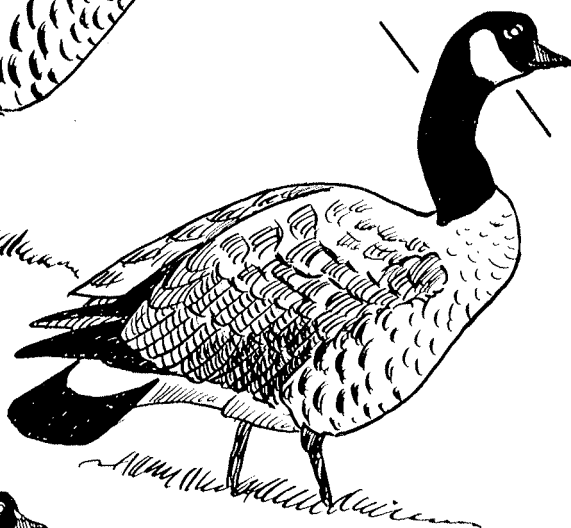
The **BLUE GOOSE** is often called "blue wavey," "whitehead," "whiteheaded goose," or "brant goose." It attains a weight of 4 to 6 pounds and a body length of 28 to 30 inches. The flight speed is 40 to 55 miles per hour. In adult plumage, the goose is readily recognized by a white head and neck and blue-gray back and sides. The head and neck are often a stained rusty color. This species sometimes breeds with the snow goose and produces birds that have some characteristics of both species. Its nesting area is north of the Hudson bay.

The **LESSER SNOW GOOSE** is all white with the exception of its black wing tips. It is sometimes called the "white goose," "common wavey," or "white wavey." According to one writer, the name "wavey" comes from the habit of these geese to fly in irregular waving lines; another authority says it comes from the Indian word "wa-wa," which

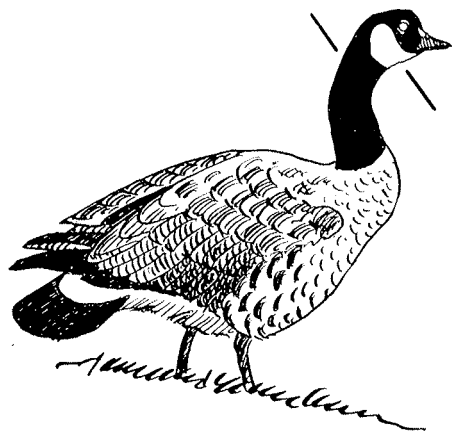
CANADA GOOSE



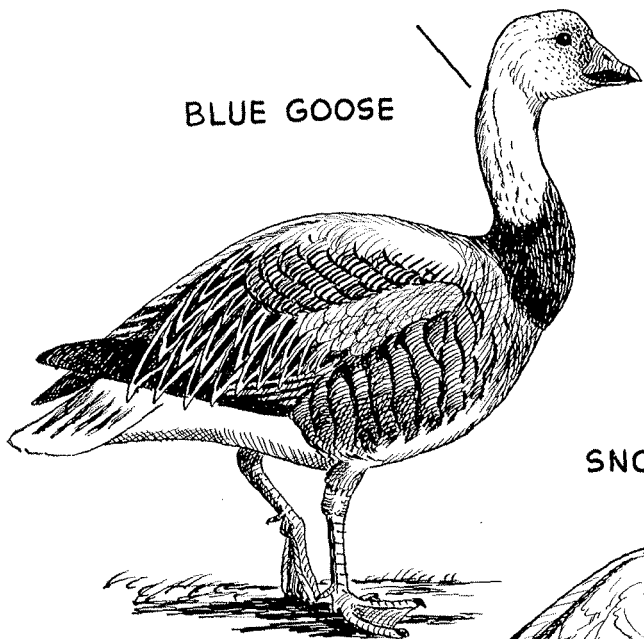
LESSER CANADA GOOSE



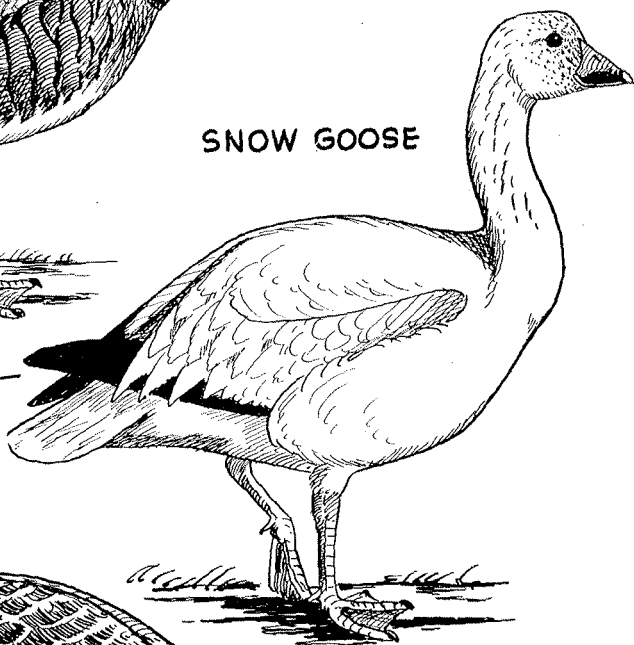
HUTCHINS' GOOSE



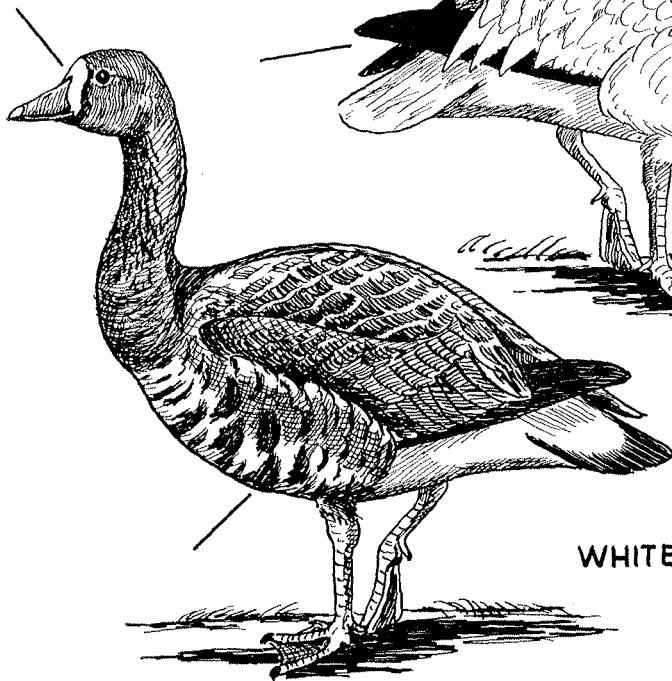
BLUE GOOSE



SNOW GOOSE



WHITE FRONTED GOOSE



means wild goose. In migration, snow and blue geese often intermingle. The lesser snow goose weighs 3 to 6 pounds and measures 25 to 28 inches in body length.

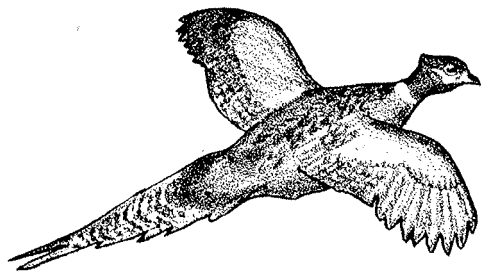
The **WHITE-FRONTED GOOSE** has more common names than most species. To many Nebraskans he is known as the "speck." Other names are "specklebelly," "speckled goose," "spotted goose," or "gray wavey." It is about the size and weight of a blue goose. This species has brownish-gray plumage and light colored under parts. The under parts are heavily blocked with black. The feathers at the base of the bill are white, hence the name "white-fronted." This species is often seen with other geese. However, they are wary; and when found with other geese they are usually seen at the edge of the concentration.

**Hunting of Ducks and Geese.**—A shotgun is the only firearm with which you can legally hunt ducks and geese. Most hunters prefer a 12 or 16 gauge gun. Number 4 or 5 shot is the most common shot size for ducks; and number 2 is usually preferred for geese. Ducks and geese are hard to bring down, because of their tight feathers and the usually great distance from the hunter. It is better to be sure of your shot than to have a wounded bird get away. A good retrieving dog will keep your bird losses to a minimum.

Whether you hunt over decoys, shoot along a stream, or pass shoot from the top of a hill, ducks and geese furnish real sport.

### Upland Game Birds

**Pheasant.**—The pheasant is Nebraska's number one game bird. It was introduced into this country from China, Siberia, and Korea.



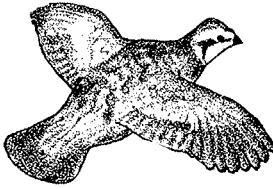
RING-NECKED PHEASANT

Pheasants are able to survive in close proximity with man and often come into farmyards during the winter for feed.

This bird nests in concealed places along fence rows, in grain and hay fields, and in open prairie grassland. The brood of 8 to 12 young hatches in the spring or summer months. Pheasants eat large numbers of grasshoppers and other insects, as well as weed seeds and waste grain.

When hunted, they have an amazing ability to hide, and will often run and hide rather than fly. A shotgun must be used to hunt pheasants legally. The shot size used should be in the range of 5 to 7½.

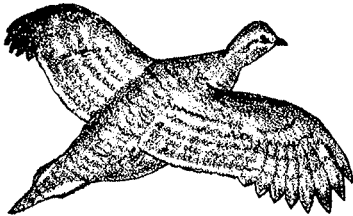
**"Bob White" Quail.**—The "bob white" quail is perhaps the best known member of the quail group. This popular game bird thrives in farmed areas where abundant brushy cover and feed is available. Most of Nebraska's quail are found in the southeastern part of the state.



BOB WHITE QUAIL

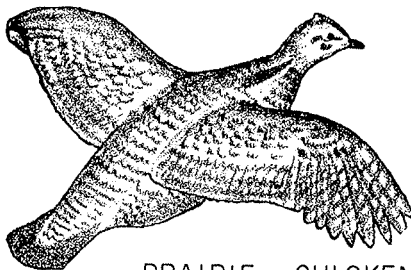
In the spring quail separate in pairs; and in the fall they gather in small flocks called coveys. They eat weed seeds, buds of trees and bushes, and insects. If you hunt for quail, be ready for fast shooting. Use number 7½ or 8 shot, and get on your target in a hurry. It won't be there long.

**Prairie Grouse (Sharptail and Prairie Chicken).**—Grouse in Ne-



SHARP-TAILED GROUSE

braska are confined mostly to the Sandhill area. The most common is the **SHARP-TAILED GROUSE** which is found throughout the Sandhills. This bird gathers into large flocks in the fall. The grouse is a dark meat bird weighing about 2 pounds. They feed mostly on grass, weed seeds, green vegetation, and insects.



PRAIRIE CHICKEN

The greatest populations of **PRAIRIE CHICKENS** or **Pinnated Grouse** are in the southeastern third of the Sandhills. Their range is limited to a combination of grass and cultivated crop land. They feed mostly on grass, weed seeds, green vegetation, and insects.

The breaking up of the prairie and close grazing, and not hunting, is the main reason for their reduced number.

### Small Game

In Nebraska we hunt many species of mammals. A mammal is in the highest class of animals, has a backbone, has hair, and nourishes



its young with milk. In this group of animals some of the most interesting forms of wildlife are found. Not only do they furnish sport for hunters and income for trappers, but they have a high value placed on them by nature lovers. We like to see small game as we drive along the country roads; and we like to study and photograph many of them. A mother skunk with her family of 6 or 8 young is always a car stopping sight, even on the busiest roads.

Several of Nebraska's mammals are on the game and fur bearer list. If you will read and find out more about these animals, you will have a deeper appreciation of outdoor Nebraska.

**Cottontail Rabbit.**—This small animal is now a popular game animal. In fact, the cottontail is the most hunted mammal in the United States.

The cottontail is widely distributed over the United States. They thrive wherever they can find a place to hide and where brush is available for food and shelter. Piling old brush around woodlots and fence corners is a good way to insure a supply of rabbits for the table during the fall and winter months.

The cottontail bears 2 to 4 litters a year. The average litter is about 5, but there is considerable variation. The young are born blind and helpless; but are well hidden in a nest until they are old enough to leave.

Rabbits have many enemies. Almost any flesh-eating animal relishes a cottontail feast. Because the cottontail reproduces so rapidly it has been able to survive the hunting pressure of both man and predators.

**Squirrels.**—In Nebraska the Fox Squirrel is most commonly seen. Squirrels are found in wooded areas; such as river bottoms, tree plantings, and in town. They eat buds of trees and bushes, weed seeds, grain, insects, and nuts. Occasionally, they become mischievous and raid bird nests.

Chipmunks and groundhogs are members of the squirrel family; but are not usually considered to be game animals. They hibernate while the squirrel does not.

**Other Small Animals.**—There are many other mammals that are both hunted and trapped. Many of these animals, as well as the cottontail and squirrel, are often called fur bearers. Animals that fall into this group are the racoon, opossum, skunk, coyote, fox, porcupine, muskrat, mink, beaver, badger, bobcat, and weasel.

## Big Game

**Deer.**—Nebraska has two species of native deer. They are the **MULE DEER** and the **WHITE-TAILED DEER**. If you notice the



**MULE DEER**

**WHITETAIL  
DEER**

antlers and the tail of these two deer, you can easily distinguish them. A mule deer has a short tail and the antlers are branched. The white-tailed deer has a long brushy tail which is carried straight up when he is alarmed; and the points of his antlers come out from the main beam.

Deer are browsing animals, not grazing animals like cattle. They eat some grain, but their real "bread and butter" consists of twigs and leaves.

Venison, as deer meat is called, is a welcome addition to any locker or deep freeze. It is a wholesome, nutritious meat; and when properly cared for and cooked is a real treat.



**WHITETAIL  
DEER**

**MULE DEER HAVE  
A STIFF-LEGGED  
BOUNCING GAIT WHEN  
RUNNING.**

Some people view the deer hunting season with dismay, saying that "all those beautiful deer will be killed." Actually the annual increase of

deer is more than the hunter's kill; and as many hunters will verify, deer are able to take care of themselves during hunting season. Residents of Nebraska may apply for a deer permit, but may have only one every three years. The hunting success has been high in Nebraska.

If you have some doubt as to the kind of rifle to use in deer hunting check with your local game conservation officer.

**Antelope.**—Most of Nebraska's antelope herds are located in the open grasslands of the panhandle counties. The antelope's keen eyes and speed help protect them from their natural enemies. These animals are usually found in herds.

## **ESSENTIALS OF SAFE HUNTING**

Faithful adherence to the following essentials of safe hunting will prevent hunting accidents and make this old and honored sport a safer, more enjoyable pastime.

### **1. Know Your Gun**

- (a) Be sure the gun and ammunition are in good condition.
- (b) Sight-in the gun before hunting with it.
- (c) Learn to be a good shot.

### **2. Handle Your Gun Properly**

- (a) Treat every gun as if it were loaded.
- (b) Always point the muzzle in a safe direction.
- (c) Be sure of your target.
- (d) Keep your finger out of the trigger guard until ready to fire.
- (e) Practice self-control.
- (f) Open the action and unload any gun which is not in use.
- (g) Store guns in a safe place.

### **3. Fulfill Your Responsibilities As A Safe Hunter**

- (a) Follow the rules of safe hunting.
- (b) Learn to identify game.
- (c) Know and observe the game laws.
- (d) Be courteous and promote friendly hunter-farmer relations.
- (e) Insist that your companions be safe hunters.

## **Suggested Activities**

- 1. Make a study of the habits of Nebraska game animals and other interesting wildlife. Report at meeting what you have seen and learned.
- 2. Answer roll call with names or calls of Nebraska game animals.
- 3. Invite members of the Game, Forestation and Parks Commission to a meeting. Ask them to explain their program on game management, habitat development, and game regulations.
- 4. Club members may want to study skin mounts. The state Game, Forestation and Parks personnel and any person who is familiar with taxidermy may be able to help.
- 5. Have a lesson or demonstration on how to dress and clean game. Another session might be held on proper cooking methods. Outdoor cookery sessions are also educational and fun.

## Gun Safety and Marksmanship

Every week we read of an accident with firearms. Young folks are shot while playing with guns they didn't know were loaded; or a hunter is shot as he crawls under a fence or gets into a car with a loaded gun. These and similar accidents can be prevented by the proper training on the use of firearms. An educational program in gun safety can be a part of your project; or a gun training school might be sponsored by the club. The two objectives of a good gun training



The author instructs a Sheridan County 4-H Club Member in the correct methods of handling and firing a rifle.

program are to (1) teach safety in handling firearms and ammunition and (2) develop skill in shooting.

Gun safety through ignorance is impossible; and safety through prohibiting the use of guns will not work. The only way to teach gun safety is to (1) have the individual learn the dangers of carelessly handled firearms, (2) learn safe habits, and (3) realize the pleasure to be had in proper usage of guns and skillful shooting.

Shooting contests can be fun and educational. For example; rifle marksmanship, directed by members of the Nebraska Game, Forestation and Parks Commission, is a popular activity at the 4-H Conservation Camp. It is possible to have shooting matches between clubs or counties, if the event is properly supervised.

## THE N.R.A.

The National Rifle Association (N.R.A.) will help clubs who wish to affiliate with this organization. To become affiliated with the National Rifle Association, you should:

1. Write to the National Rifle Association Headquarters at 1600 Rhode Island Avenue, Washington 6, D. C. Request application blanks and information on Junior Rifle Clubs.
2. Read their material carefully and return the following three items to the N.R.A. office: A completed application form, a copy of the rifle club by-laws, and the fee for the charter.
3. When your charter is approved by the N.R.A., the club is eligible to receive a free issue of ammunition, targets, and rifles. The rifles are model 513T Remingtons, a special target rifle. They are equipped with peep sights and sling.
4. In order to get rifles, targets, and ammunition, the Instructor or Leader must write to:

Director of Civilian Marksmanship  
Department of the Army  
Washington 25, D. C.  
Attention: Club Branch

Request requisition blanks for ammunition and targets, forms for application of bond, and firing report forms. When these forms are properly filled out and returned, the club will receive the issue.

## WHEN YOUR GUN MISFIRES

There is great danger in opening the bolt on a gun after a misfire. The safest way to handle a misfire is to recock and attempt to fire the gun repeatedly. Do this before you consider opening the chamber. If the shell still does not fire, wait at least a minute before opening the chamber. After waiting a minute hold the action away from your face and body and eject the shell as rapidly as possible.

## THE TEN COMMANDMENTS OF GUN SAFETY

1. *Treat every gun with the respect due a loaded gun. This is the cardinal rule of gun safety.*
2. *Carry only empty guns, taken down or with the action open, into your automobile, camp, and home.*
3. *Always be sure that the barrel and action are clear of obstructions.*
4. *Always carry your gun so that you can control the direction of the muzzle, even if you stumble.*

5. *Be sure of your target before you pull the trigger.*
6. *Never point a gun at anything you do not want to shoot.*
7. *Never leave your gun unattended unless you unload it first.*
8. *Never climb a tree or a fence with a loaded gun.*
9. *Never shoot at a flat, hard surface or the surface of water.*
10. *Do not mix gunpowder and alcohol.*

### **Suggested Activities**

1. "Break down" a gun, and become familiar with its parts.
2. Give a demonstration on how to properly clean and care for firearms.
3. Have older members attend a trap shoot and get help from experts on this sport.
4. Set up an indoor or outdoor rifle range that is carefully supervised by adults. Form a rifle team to compete with other teams in the area.
5. Invite someone who reloads shells to demonstrate how shells are loaded, and to discuss ballistics in simple terms.
6. Make some "gun safety" and "hunting safety" posters and display them in store windows before and during the hunting season.
7. Have members make gun cases and holsters. Most people who are acquainted with leather craft can show the members how.
8. As a special activity, develop a gun training course for your community. The N.R.A. will help you with this program.

### ***Predators***

A predator can be defined as any animal that secures its food by killing other animals (their prey). The idea of one animal killing another is not pleasant to some people; but it is very necessary and important among wild animals. If a particular animal is not controlled by predators, hunting, disease, weather conditions, food, cover, and accidents, it would overpopulate the world and leave nothing for you, your friends, and other animals.

Most birds, mammals, reptiles, amphibians, fishes, and many of the insects are predaceous animals at some time during their life. Consider the mouse that eats an occasional grasshopper, the ground squirrel that robs a meadowlark nest, the young pheasant with a crop full of

insects, and man that eats a beef steak. These are not generally thought of as predators, yet these are forms of predation.

On the other hand, some animals that we classify as predators secure a considerable part of their diet by other means than predation. For example, the coyote is not preying on other animals when he takes a meal from the carcass of a dead cow or eats his fill of wild plums. It would be wrong to shoot all cats, yet some cats that roam wild through the countryside become serious predators.

The relationship between the predator and the prey needs to be considered from many angles. Before either can be classed as good or bad, you should answer these questions.

1. What and how much does each predator eat?
2. How many of the predators are there?
3. What and how much does the prey eat?
4. How many of the prey species are there?
5. What are the beneficial habits and the destructive habits of the prey; of the predator?
6. Does either prey or predator have some other value such as fur or recreational value?
7. What are the living conditions or habitats of each?
8. How much effect does the removal of individuals by a predator have upon the over-all prey population?

By the time you have found the correct answers to all these questions, you will probably come to one important conclusion. No animal is entirely good or entirely bad. Before you can fairly judge a predator you must know exactly how he affects other wild creatures, domestic animals, and people that live around him.

### **Suggested Activities**

1. Learn to distinguish species of hawks and owls. This can be done by showing pictures of them to the people who are present and having the birds identified.
2. Make a survey in your area. Find out if the loss of wildlife due to predators is serious. Then take control measures as recommended by your local Game Conservation officer. (This might be a wildlife conservation activity, if the predator is a serious problem.)
3. If your county has a man who is hired for the purpose of controlling troublesome animals, such as predators, ask him to talk to the club about predators.

## ***Fish and Fishing***

One of Nebraska's greatest resources is water. We have more miles of running water than any other state; and each year ponds, lakes, and reservoirs are being built by the score. These new bodies of water are providing more and better fishing. Anything that you can do to keep the soil on the land and to prevent pollution of water will help insure good fishing.

Although there may not be much that you can do about the management of our streams and large bodies of water, you may be able to do a great deal towards establishing good fishing in farm and stock ponds and small lakes. Some of the requirements of a good fish pond are:

1. Cover at least  $\frac{1}{2}$  acre.
2. Have a permanent supply of silt-free water.
3. Be free of excessive flooding.
4. Have sufficient depth to leave free water below the ice,
  - a. Winter depth of 8 feet over  $\frac{1}{3}$  of the area for southeastern part of the state.
  - b. As we move north and west the needed depth gradually increases to a winter depth of 16 feet over  $\frac{1}{3}$  of the area.
5. Maintain a shoreline depth of at least  $1\frac{1}{2}$  feet to discourage weed growth.
6. Keep livestock away from the pond by building a fence around the area. If water is needed for livestock, pipe water to a stock tank that is located outside the fenced area. If complete fencing is not practical, fence the upper  $\frac{2}{3}$  and leave the deeper water open for livestock.
7. When practical, plant a living snow fence of trees and shrubs approximately 75 feet from edge of pond. The purpose of this planting is to intercept the drifting snow that might be deposited on the ice.

For information on stocking and managing of farm ponds you are referred to your Extension Service, Soil Conservation Service, and Game, Forestation and Parks Service. These agencies can also provide fish for farm pond stocking, if (1) you have a good pond and (2) you use the fish to stock the pond.

### **THE PHYSIOLOGY OF FISH**

Fish are cold-blooded animals and have a bony skeleton. They require oxygen to live, the same as you do.

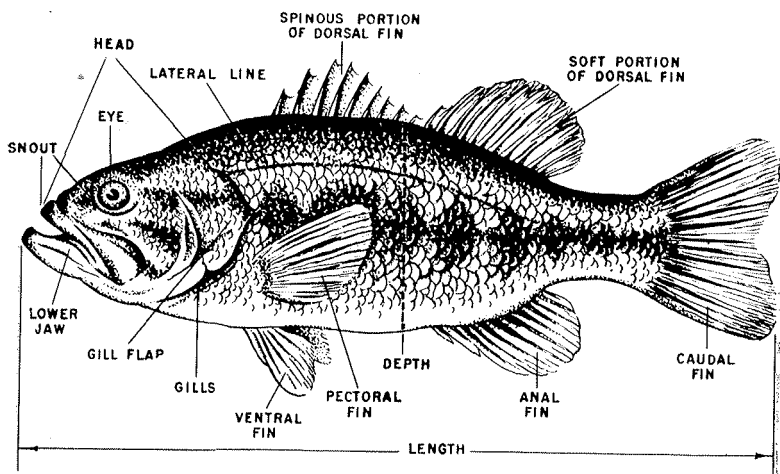
Most fish have four gills with which they breathe. These gills are



covered with fine filaments that have the ability to absorb oxygen from the water. Fish get their oxygen to the filaments by taking water into the mouth and expelling it out through the gill openings. When the water's oxygen content becomes low, the fish swim near the surface where the oxygen content is the highest. If oxygen does not become available, the fish will die. The secret to keeping minnows alive in a bait bucket depends upon your getting oxygen back into the water.

The fish's fins are used to help him swim and maintain balance. The body of the fish is covered by scales or skin, which feel slimy to

### LARGEMOUTH BASS



the touch. This slimy substance provides protection against disease and fungus growths.

The fish also has an esophagus, stomach, liver, intestine, spleen, kidney, and a two chambered heart. The heart pumps blood back and forth through the gills and body. A short distance below the backbone is an air bladder that maintains the buoyancy of the fish. The air bladder also serves the same function as your eardrum; it aids the fish in sensing vibrations.

### NEBRASKA'S GAME FISH

In Nebraska you can find about 97 different kinds of fish. They represent 91 species and 20 families. Of the 97 kinds of fish, about 25 provide sport fishing. Many of the remaining 70 odd kinds of fish

are consumed as food by the larger fish, and are often spoken of as "forage fish" and "rough fish." Minnows, chubs, suckers, daces, and shiners are classified as "forage fish." Carp is a "rough fish," although it is a member of the minnow family. Because we are primarily interested in the more common game fish, we will discuss only their families, characteristics, and habits.

### **The Sunfish Family**

The largest family of game fish in Nebraska is the sunfish family. This family makes up a large proportion of the game and pan fish in our lakes, farm ponds, and streams. In this family you will find the largemouth and smallmouth black bass, bluegill, sunfish, white and black crappies, and rock bass.

**Largemouth and Smallmouth Black Bass.**—The most popular member of the sunfish family is the **LARGEMOUTH** black bass. The largemouth is generally found in clean rivers, lakes, and ponds; and is the most commonly used fish in the stocking of farm ponds. The **SMALLMOUTH** is occasionally found in eastern Nebraska lakes, ponds, and rivers and a few are found in Lake McConaughy.

You can identify the largemouth from his cousin, the smallmouth bass, by the jaw, color markings, and eyes. The largemouth's jaw extends back beyond his eye; usually has a dark band or streak along the side of his body; and has gold colored eyes. The largemouth is the larger of the two fish, weighing as much as 22 pounds.

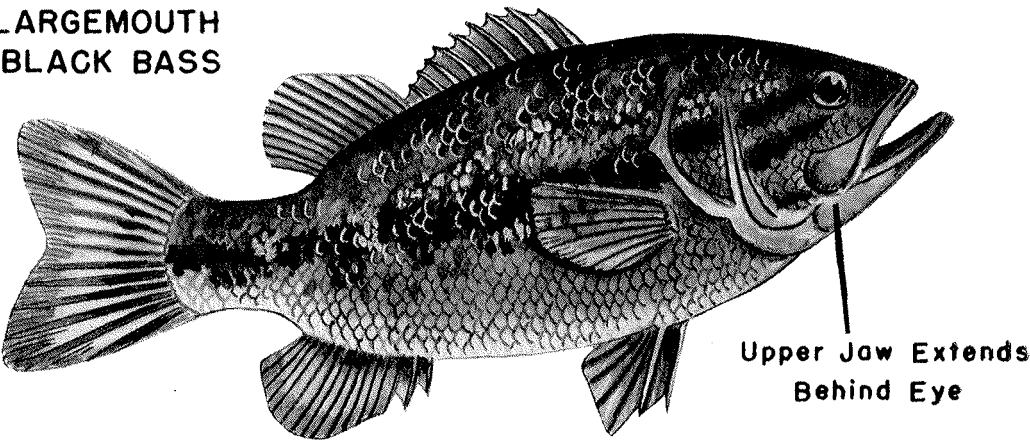
The smallmouth's jaw extends back to the middle of his eye. You can not find a band or streak along the side of his body, and he often has some red in his eyes. The smallmouth bass has been known to weigh up to 9 pounds, but seldom exceeds 2 pounds.

Both the largemouth and the smallmouth black bass feed on smaller fish, crawfish, large bugs, and beetles. Minnows, frogs, and crayfish probably top the list of natural baits. Artificial lures are also used for bass fishing. In fact, there are more artificial lures manufactured for bass than for any other fish on the North American continent. Early morning and evening hours are considered the best time for bass fishing.

**Bluegill and Sunfish.**—Bluegill and sunfish are found in ponds, lakes, and streams. They are usually found hiding among rushes, weeds, and similar vegetation. Bluegills and bass make an excellent combination in farm ponds, and are usually stocked together.

When you try to identify bluegill and sunfish, do not rely upon color. Color may be misleading. The most important identifying characteristics are the mouth, gill markings, and body conformation.

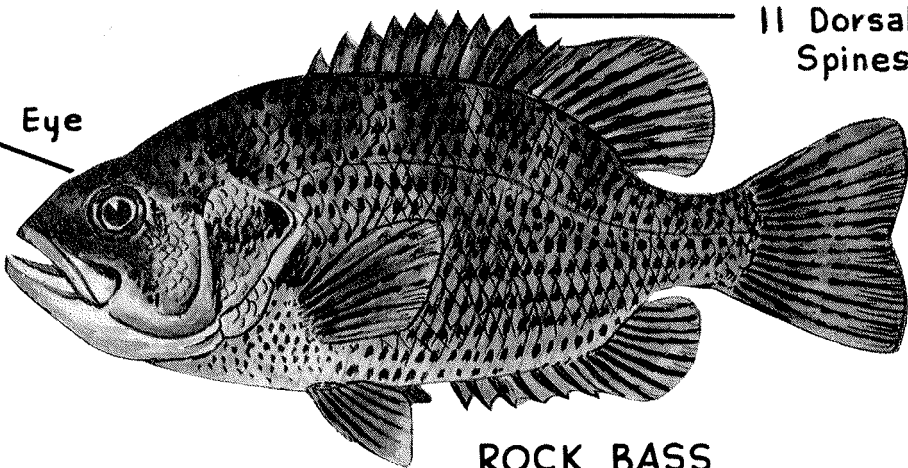
**LARGEMOUTH  
BLACK BASS**



Upper Jaw Extends  
Behind Eye

**Red Eye**

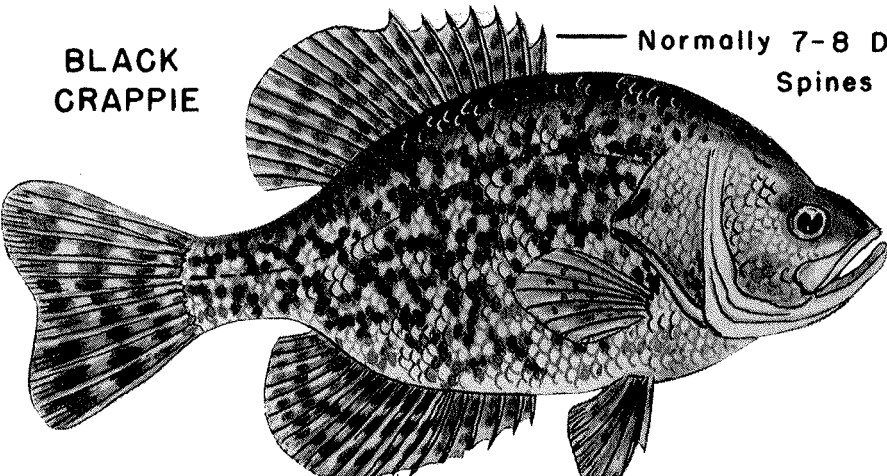
11 Dorsal  
Spines



**ROCK BASS**

**BLACK  
CRAPPIE**

Normally 7-8 Dorsal  
Spines



The bluegill has a small, pugged mouth; bright blue to purple-colored gill covers; no light margins along the gill cover's edge. The sunfish has a larger mouth and a light margin along the edge of the gill cover; and the body is less compressed.

The food of the bluegill and sunfish consists largely of insects that live in or on the water and the insects' larvae. Worms are probably the most popular bait for catching bluegill and sunfish. Fly fishermen catch a large number of these gamey little fish. Even though their size is small, they are an excellent table fish.

**Crappie.**—Two species of crappies, the black and the white, are found in Nebraska waters (mostly lakes and ponds).

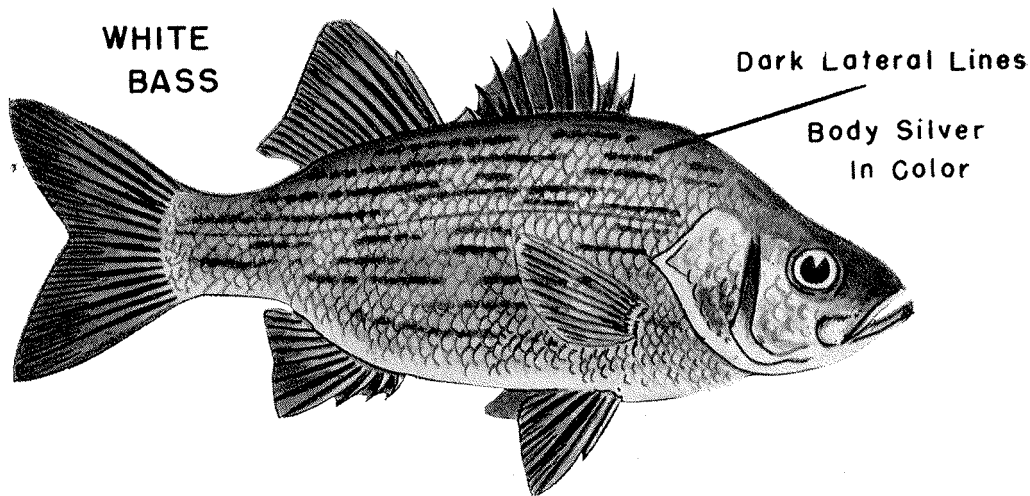
The white crappie usually has 6 spines in the front portion of the dorsal fin; the black crappie usually has 7 or 8. The average crappie weighs about 1 pound, but some weigh as much as 4 pounds.

Crappies are gregarious which means that where one is found there are almost always more. Minnows are the preferred food. The most common method of catching these fish is to use a live, small minnow (1 to 2 inches long) on a line with a bobber.

**Rock Bass.**—As the name implies, rock bass are usually found along rock ledges; and are found in lakes and streams.

It has a mottled appearance, large red eyes, a deep mouth, and a deep compressed body. There are 11 to 12 spines in the dorsal fin.

You can catch this bass with grasshoppers, worms, minnows, and artificial baits. Although the rock bass is not considered a major game fish, he does furnish a great deal of sport for many cane pole fishermen.



## The Bass Family

**White Bass.**—The white bass is an introduced fish that has become very popular in Nebraska's larger reservoirs. Its general habitat is deep, still water over sand and gravel.

Because of his color, the white bass is often called the striped bass or silver bass. You can distinguish the white bass from the largemouth and smallmouth black bass by the silver color and the dark lateral lines.

Small minnows, small spinners, and various fly combinations account for most of the white bass catches.

## The Perch Family

**Walleye Pike, Sauger and Perch.**—Walleye pike, sauger, and perch are found in Nebraska's larger lakes and reservoirs. Perch is also common in the Sandhills lakes. The walleye pike is often mistaken as a member of the pike family when actually it is a member of the perch family. Members of this family have sharp spines in the dorsal fins while a pike does not. Also, if you study the pictures of the walleye pike and the northern pike, you will notice differences in their body shapes.

The **WALLEYE PIKE** and the **SAUGER** resemble each other very much. They are equipped with sharp teeth and sharp spines on the dorsal fins; and have similar food habits. Both the walleye and the sauger are gregarious which means that they move about in schools. The walleye is the more widely distributed in Nebraska; and is preferred to the sauger by most fishermen. It is also the larger of the two fish, and has a dark spot at the end of his dorsal fin. A number of black spots can be found over the sauger's dorsal fins.

The yellow **PERCH** can be distinguished from other fish by its yellowish-white body and olive-green bands. The yellow perch is the ice fisherman's delight. This fish, along with the crappie, makes up most of the winter's catch in Nebraska Sandhills lakes.

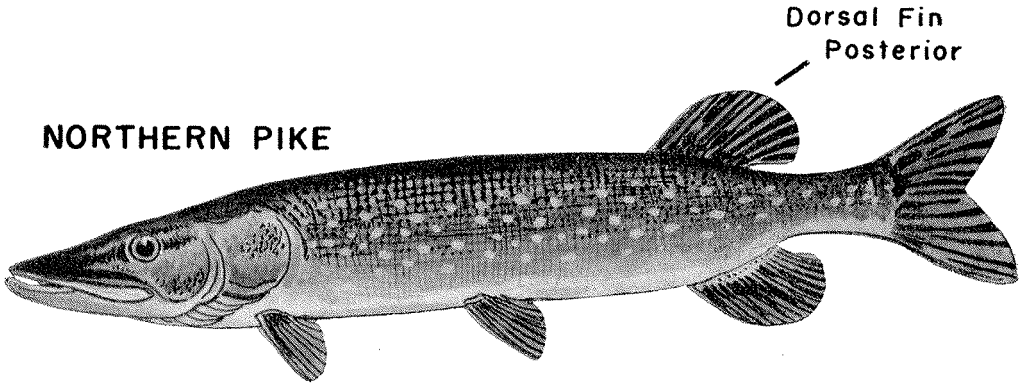
All members of the perch family are carnivorous; that is, they feed mostly on other fish. Minnows and small slow-running lures will catch walleyes, saugers, and perch.

## The Pike Family

**Northern Pike.**—The Northern pike is stocked throughout the state. He has a full set of needle sharp teeth that can easily cut a line or snag a finger. This fish grows to a very large size; some specimens weigh over 40 pounds.

He is undoubtedly Nebraska's most greedy fish; and feeds ex-

## NORTHERN PIKE



tensively on other fish, frogs, snakes, and has even been known to eat young ducks. The Northern Pike probably accounts for many of the "big one got away" stories.

### The Trout Family

**Trout.**—Many people consider trout as the aristocrat of our fresh water fish. Indeed, the Rainbow, Brown, and Brook trout are scrappy fish; and when combined with the pleasant atmosphere of trout streams they have a right to be rated high. Most of the trout in Nebraska are limited to the streams and a few lakes in Western Nebraska. Very little natural propagation takes place. For this reason, trout are stocked from state-owned fish hatcheries at Valentine, Gretna, and Rock Creek and some federal hatcheries.

Some of the big lakes have produced large trout. For example, a Rainbow trout weighing 12 pounds and 4 ounces was taken from Lake McConaughy.

Worms are the most used trout bait. The main food of the stream trout is small flies and water insects. Trout also feed heavily on small minnows.

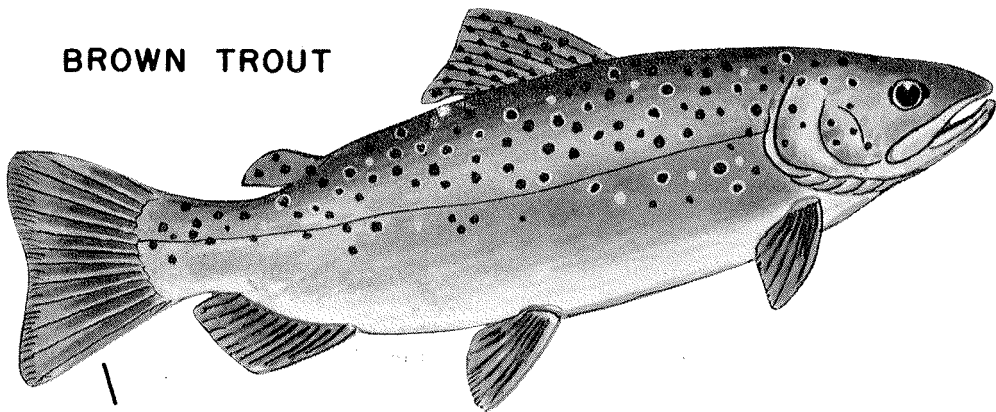
### The Catfish Family

Probably more people in Nebraska have tried their skill and luck in catching the members of this family than any other game fish. In fact, there are very few fishermen who have not fished for a member of this family.

**Bullheads.**—Bullheads are widely distributed in Nebraska. They prefer the slower moving streams and shallow lakes. Many of the Sandhills lakes are well stocked with big bullheads.

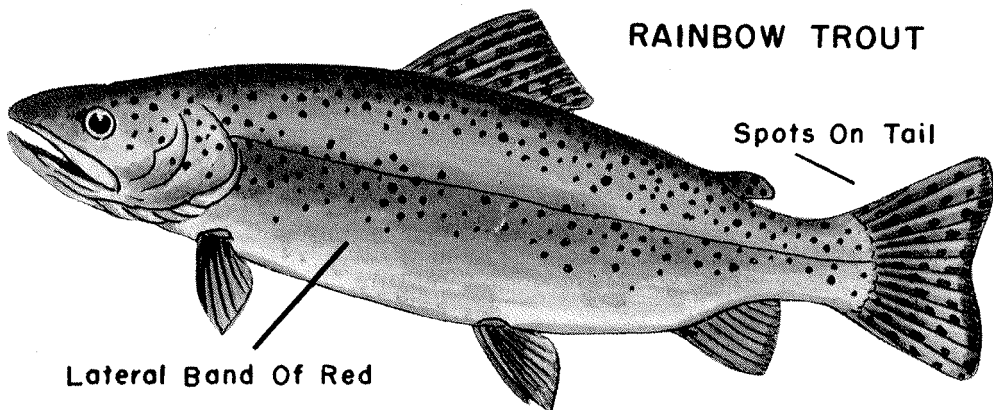
In Nebraska they sometimes reach weights of over 2 pounds, although the average is probably less than a pound. When taken from clean, unpolluted water, bullheads make an excellent table fish.

## BROWN TROUT



No Spots On Tail

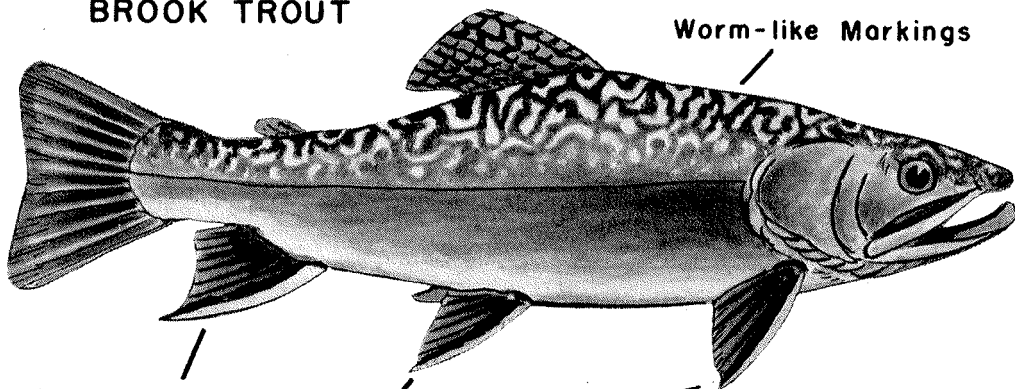
## RAINBOW TROUT



Spots On Tail

Lateral Band Of Red

## BROOK TROUT



Worm-like Markings

Light Markings On  
Forward Edge Of Fins

It can be summed up that the bullhead "is easy to catch, good to eat, and can be found almost anywhere." Henry Thoreau, an early American writer, had this to say about the feeding habits of bullheads: "They stay near the bottom moving slowly about with their barbels widely spread, watching for anything edible. They will take any kind of bait, from an angle worm to a piece of tomato can, without hesitation or coquetry; and they seldom fail to swallow the hook." Even excluding tomato cans, bullheads are not very particular about what they eat.

**Catfish.**—Three main species of catfish can be found in Nebraska's rivers. They are the Channel catfish, Blue catfish, and the Flathead catfish. Catfish are a homing fish. That is to say that they prefer to stay in one place, and if removed from their home will try to find its original home. In fact, one catfish that was transplanted from one stream to another is known to have traveled more than 230 miles—presumably in an effort to find its original home. Catfish do migrate upstream during the early part of spring for the purpose of laying their eggs, but once the eggs are laid they return to their home.

The channel cat is similar to the blue cat; and the two are often mistaken for each other. You can seldom identify them by color. The best method of telling the two apart is by the shape and structure of the anal fin. In the channel catfish, the outer-margin of the anal fin is rounded and has 24 to 29 rays; the blue catfish's anal fin is straight and has 30 to 35 rays. The flathead catfish is often called the yellow cat or mud cat, and has a rounded anal fin with 15 to 17 rays.

As of 1955, the record blue catfish in Nebraska weighed 58 pounds, the record channel catfish weighed 31 pounds, and the record flathead weighed 46 pounds. All three of these catfish have been known to grow larger in the warm streams of our southern states. The best eating catfish is not the large ones but the smaller sizes.

Their habits are similar to the bullheads. That is to say that they are "rather easy to catch and eat almost anything." Because of their eating habits, the catfish is often referred to as a scavenger.

### **Steps In Cleaning Fish**

A simple way to clean fresh water fish is as follows:

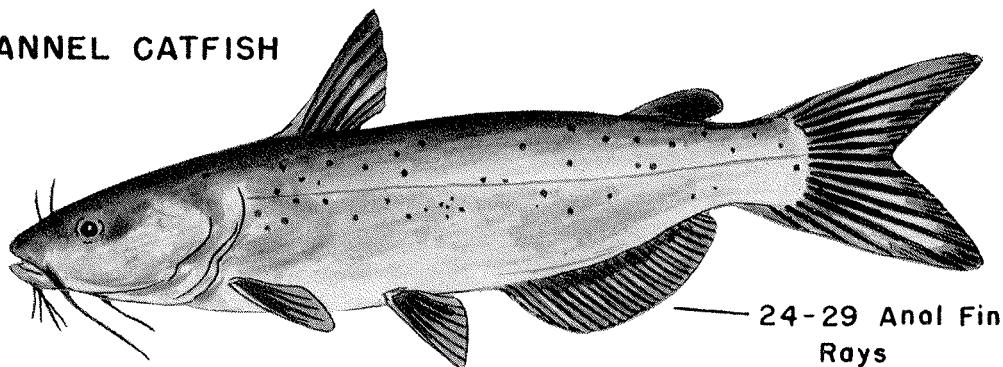
Heat a pan of water to the boiling point.

Place the fish, just as it comes from the water, in the boiling water. Leave the fish in the water for 40 seconds for the first two pounds. For each pound over two pounds leave the fish in the water an additional 10 seconds; but do not leave any fish in the water longer than 70 seconds.

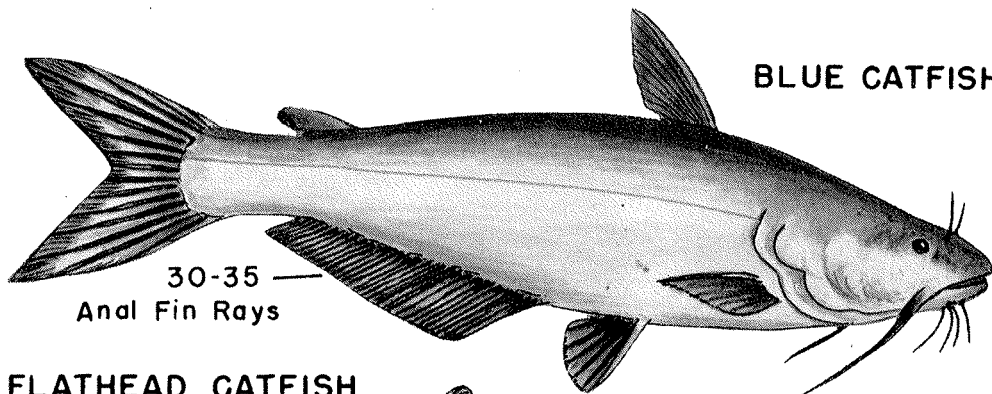
When the fish is removed from the boiling water, pull the fins out.



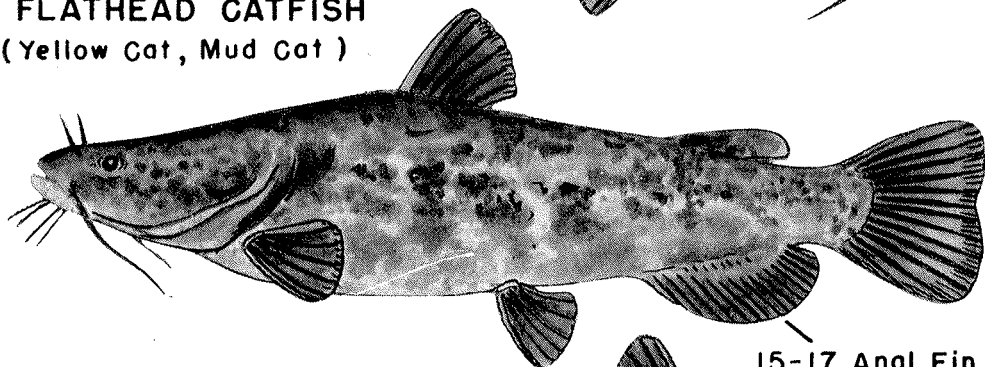
**CHANNEL CATFISH**



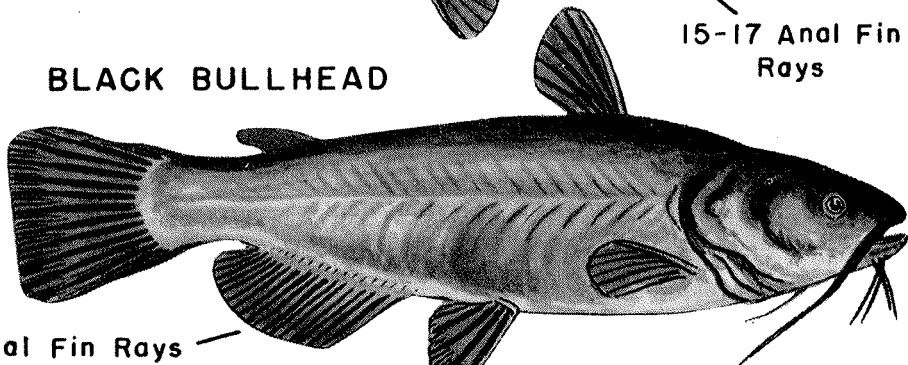
**BLUE CATFISH**



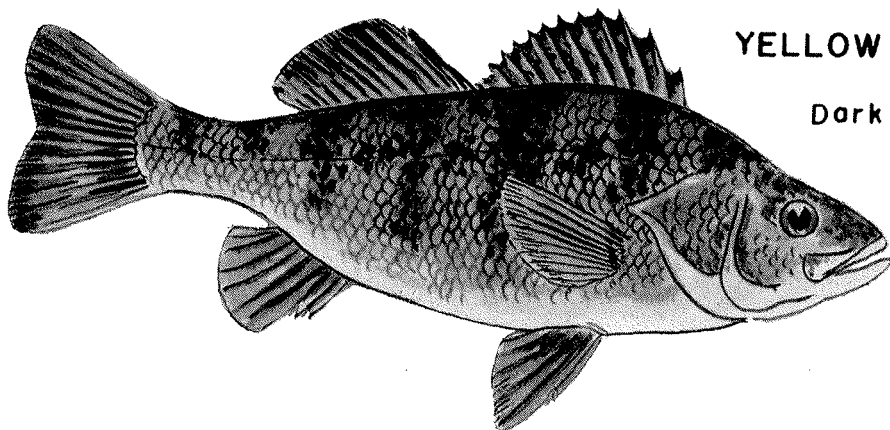
**FLATHEAD CATFISH**  
(Yellow Cat, Mud Cat)



**BLACK BULLHEAD**

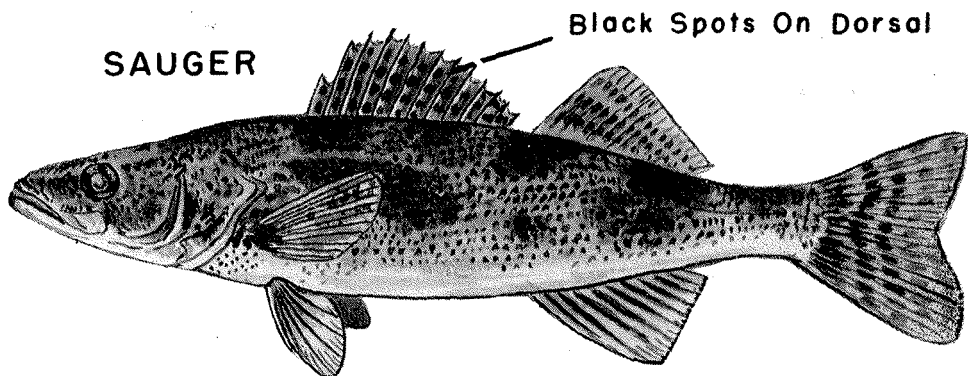


17-21 Anal Fin Rays



**YELLOW PERCH**

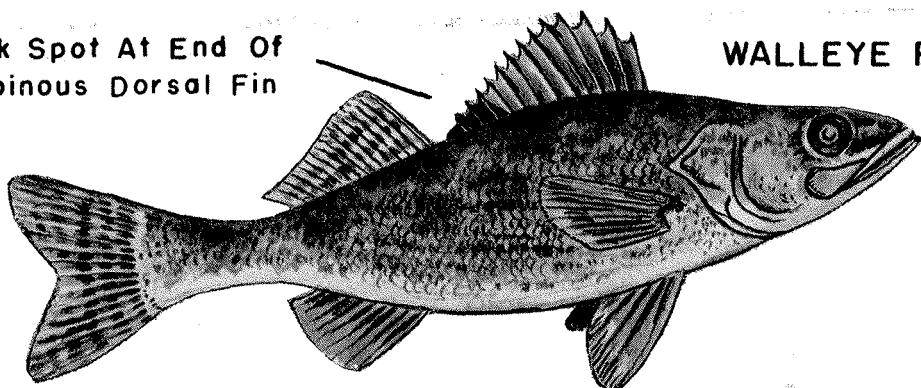
**Dark Bands**



**SAUGER**

**Black Spots On Dorsal**

**Dark Spot At End Of  
Spinous Dorsal Fin**



**WALLEYE PIKE**

Then split it down the backbone and along the belly, fore to aft. Skinning can then be accomplished by stripping off the skin.

To complete the job, cut the backbone just back of the head and pull the head downward and backward. The entrails will come out fastened to the head.

### **Safety When Fishing**

1. Wear proper clothing for protection from wind, sunburn, and insect stings.

2. Do not drink from lakes or streams unless the water has been boiled. Always carry a flask of drinking water.

3. When wading, test the footing before each step. Be alert for submerged obstructions. Remember, water deep enough for fishing is deep enough for drowning.

4. Observe the safety suggestions for "boating and canoeing" as given in the chapter on Boats and Boat Safety.

5. When casting, cast overhand so you will not endanger your companions.

6. Be careful with hooks; they are the most dangerous equipment found among fishing tackle. A pair of heavy duty cutting pliers should be standard equipment in every tackle box. Pliers can be used for cutting hooks that happen to get caught.

7. Wear good sun glasses. They may help avoid headache due to sun-glare on the water.

8. Sterilize wounds immediately. Scratches and punctures from hooks and fish teeth often become infected.

### **Suggested Activities**

1. Go to a nearby lake or stream and practice fishing methods. The group might discuss and study the most desired habitat for different kinds of fish. Then have a meal of the fish caught. (Note: It may pay to take along a few wieners!)

2. Invite members of the Game, Forestation and Parks Commission to a meeting, and ask them to explain their program on fish management and similar activities.

3. Tour a fish hatchery.

## ***Fishing Equipment***

There is probably more variety in fishing equipment than fish. The range of price for rods, reels, and lures varies. You can spend as much or as little as you want for fishing equipment and still be able to catch fish.

Your best source of information about fishing equipment is an experienced fisherman. Beginners should not hesitate to ask for advice. Fishing equipment generally falls into four classifications which are the cane pole, bait casting, fly fishing, and spinning.

### **The Old Cane Pole**

The old cane pole serves a useful purpose in many types of fishing. It is economical and no great skill is required to use one. Boat fishermen often use a cane pole to fish around reeds and brush where casting is unhandy. Some people who fish for catfish use the cane pole, because they are able to reach further out over the banks of a stream. Many people dress their cane pole up by adding line guides, reel seats, and ferrules.

### **Bait Casting**

When speaking of bait casting, most people think of a rod, reel, and line that will place the bait some distance from the fisherman. Skill in casting is obtained through practice. Your back yard is a good place for practice. Just find a spot where there are no trees or overhead wires and go to work. Stick some paper plates in the ground with a nail and try to hit them; or cast into a rubber tire.

The average casting rod is about 5½ feet long. It can be made of steel, split bamboo, or fiber glass. The split bamboo casting rods are not as satisfactory, because they warp easier than glass fiber and steel.

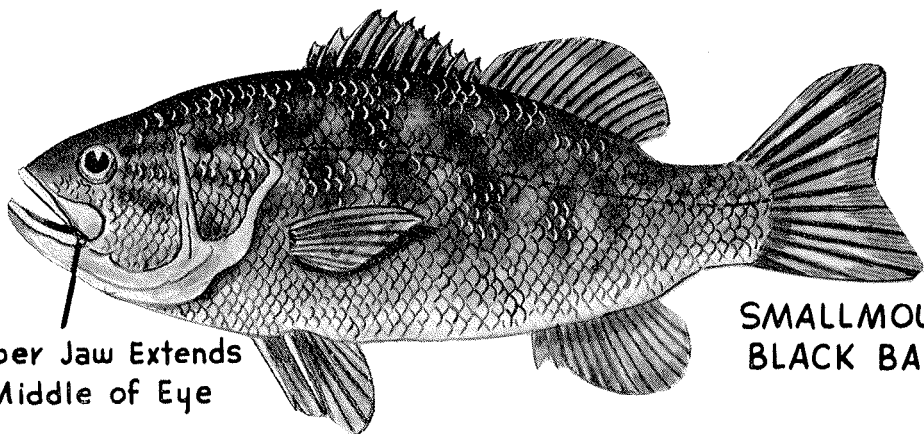
The reel and line are important pieces of your bait casting equipment. A good quality reel is always a good investment. The reel should be of the level wind type. The line should fit the type of fishing you plan to do. Light weight test lines will cast a bass plug better than heavy 25 to 30 pound lines. If carefully handled, a 9 or 12 pound test line will hold almost any fish. Usually 50 to 100 yards of line is enough.

### **Fly Fishing**

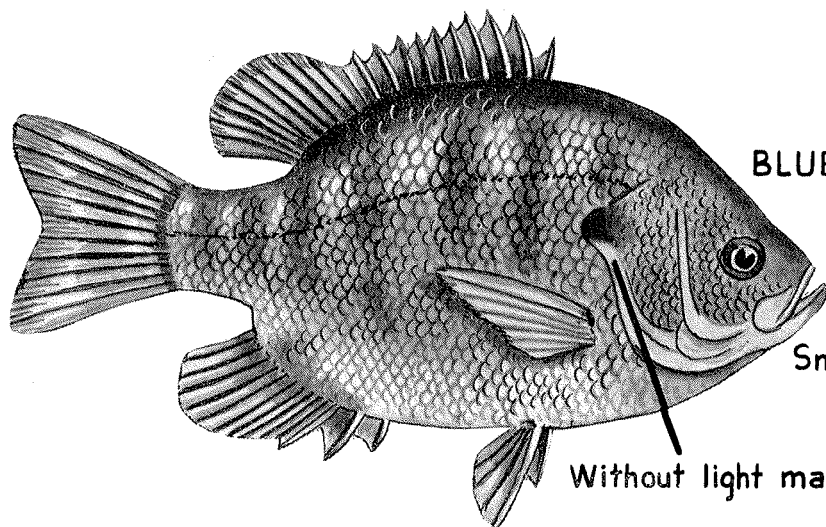
Fly fishing invariably involves a creel, hip waders, and a fast mountain stream. The rod is made of bamboo; and more recently of fiber glass. The average length is about 8½ feet. Fly casting differs from bait casting in that the weight of the fly line carries the bait, while in bait casting the weight of the bait or lure carries the line.

A good fly rod and line is not restricted to the use of flies. You can have fun with worms, minnows, and spinners; and any kind of fish can be caught.

If you are a beginner, select a line of uniform thickness. As you gain experience, you may prefer other kinds of fly lines.



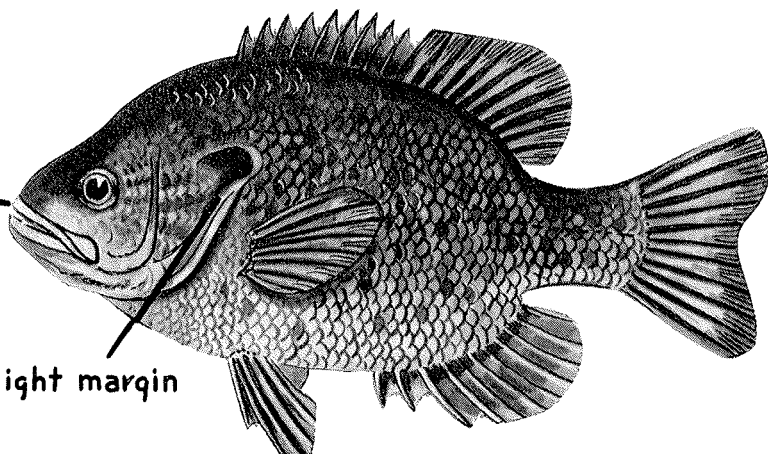
SMALLMOUTH  
BLACK BASS



BLUEGILL

Small Mouth

Without light margin



GREEN  
SUNFISH

With light margin

Large mouth

## Spinning

In recent years spinning has become very popular. Spinning is an art that started in Europe many years ago. Improved reels that permit ease and accurate casting of lightweight lures for long distances is the reason for the sudden interest in spinning. Anyone can learn to use a spinning rod and reel with practice.

Spinning equipment is made to catch anything from a half-pound trout to a 70 pound catfish.

In spinning, an important point to remember is to use a limp monofilament nylon line with a test weight not greater than 8 pounds. Avoid heavy lines.

### Suggested Activities

1. Have a demonstration on the use of various types of fishing equipment.
2. Have a casting contest using standard bait casting equipment and  $\frac{5}{8}$  ounce weights. Use old rubber tires or paper plates as targets and space them at distances of 10 to 40 feet from the caster.
3. Invite an experienced fisherman to discuss his favorite method of catching fish. Also, have him tell about the equipment that he uses.
4. Order plug kits from any of the various supply houses and make your own plugs and lures. Artificial flies can also be made in this manner.
5. Have a demonstration on the proper care of fishing equipment.

## *Boats and Boat Safety*

Boats, as we think of them in Nebraska, are used mostly for fishing, hunting, water skiing, or joy riding. A good boat is a pleasure to own and many hunters and fishermen consider them an essential part of their equipment.

### Types of Boats

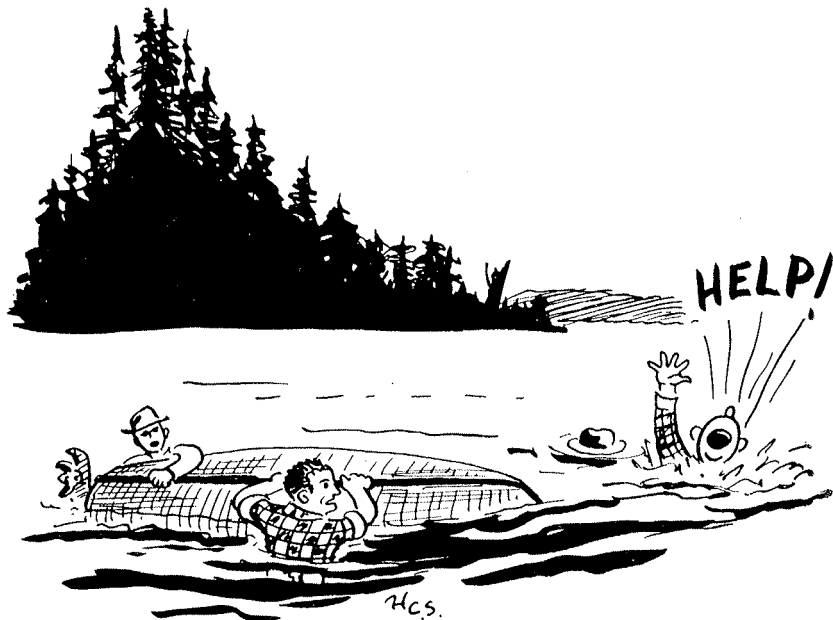
In general, boats used for hunting and fishing are powered by paddles, oars, poles, sail (sometimes referred to as "cloth"), and out-board motors (sometimes referred to as "odor"). They can be made of wood, canvas, rubber, steel, aluminum, or fiber glass. The most commonly used types of boats for hunting and fishing in Nebraska are the skiff, punt and float boat, canoe, and inboard cabin cruiser. The term skiff means a small boat such as a rowboat.

The COMMON SKIFF is probably the most widely used and most

versatile boat for fishing and hunting. It is usually flat-bottomed and measures about 15 feet or more in length. Semi-V and V-bottomed skiffs are more maneuverable than the flat bottomed variety.

PUNT and FLOAT BOATS, such as rafts, differ from the ordinary skiff in that they have a square bow. This feature increases the carrying capacity, but makes them more difficult to handle in rough water.

CANOE. A fast light boat for inshore fishing and hunting on lakes and rivers. It combines the advantages of stability in rough water with



Stay with the boat! The swim to shore may be farther than you think. An overturned boat can support several adults so hang on.

portability and maneuverability. Three main types currently in use are canvas covered, aluminum, and fiber glass canoes.

The INBOARD CABIN CRUISER is seen on some of Nebraska's larger bodies of water. Its hull has an inboard engine and a cabin. It is generally between 26 to 46 feet in length. In addition to the cabin, most cruisers used in fishing have a wheel house that is commonly called the cab. The cab is located back of the cabin.

Note: Many boat companies make kits of several models that can be assembled at home. Anyone with patience and some knowledge of carpentry can put one together.

## Boat Safety

Boats are safe if handled properly. Almost all boating accidents are the result of carelessness. Drownings are about the third or fourth major cause of fatal accidents and many of these fatalities are caused by boats. Some rules for boat safety are:



Be courteous! Considerate of others, a good boatsman avoids racing near fishermen, swimmers, anchored boats or sailboats.

1. Always step into or out of a boat with care; always keeping the weight in the center of the craft.
2. Don't stand up in a boat or canoe.
3. Don't change seats or move about unnecessarily.
4. Never overload or get into an overloaded boat.
5. Keep the weight evenly distributed.
6. Don't play in a boat.
7. Avoid the wake of a motor boat. If overtaken by a boat's wake, stay out of the trough and try to ride the waves head on.
8. If your boat or canoe tips over or if you fall into the water, hang on to the boat for support until help comes. Do not try to climb over the side of a small boat; go to the bow or stern.
9. If you leave a boat to swim to shore, be sure that you can make the distance.
10. Know what to do to save a drowning person.
11. Know how to apply artificial respiration.
12. Always watch the weather. When a storm threatens play safe and head for the nearest shore, but do not start across a large body of open water.
13. Never get into a boat without life jackets, even though you can swim. Be sure your boat is equipped with oars, even if you use a motor.
14. If you are out on the lake after dark, travel only at one quarter speed unless you are thoroughly familiar with the lake. It may pay to leave the dome light on in your car, or a flashlight on, so you can find the way back.



### **Suggested Activities**

1. Study the state boating regulations. Have each member give one of the regulations and tell why they are necessary. Copies can be obtained from the County Clerk.
2. Members may want to build a boat, either for sale or use. Many different plans and kits are available. This is a good winter activity.
3. Invite someone who owns a boat and motor to explain the different types of boats, motors and their uses. This also makes a good report for a member to give at a meeting.
4. Have a demonstration on artificial respiration.
5. Encourage members to learn how to swim.

### ***Wildlife Conservation Activities***

All wildlife conservation activities should be conducted in co-operation with a recognized conservation organization such as the Game, Forestation and Parks Commission; the Soil Conservation Service; or the University of Nebraska of which the county Extension Service is a part.

Your wildlife conservation activity may be centered around ponds, streams, land, or marshes. Some of the activities that you and your club might sponsor are as follows:

#### **Ponds**

1. Make a survey of a farm pond that does not have fish in it and determine if it is capable of providing good fishing. If the pond can be made into a good fish pond, aid in correcting the faults and then help stock it.
2. Make a survey of a pond that already has fish in it, but that is not providing good fishing. Determine the trouble and correct it.
3. Aid with the proper management of a pond; such as fencing it off from livestock, developing watering holes for livestock, and fertilizing the pond.
4. Help the farmers or ranchers prevent silting of ponds and streams by applying corrective measures.

#### **Streams**

5. Seed down bare banks along streams.
6. Eliminate pollution problems. For example, a town or people may be dumping garbage into the stream. A campaign to prevent dumping would be a good activity.

7. Build small dams or dig holes in streams for the fish. This can be done by felling trees in the proper place, encouraging and protecting beaver dams, and by other methods.

### **Land**

8. Find a co-operator who has some unused land that can be used as a wildlife habitat, and aid in establishing a habitat.
9. Encourage farmers and ranchers to use flushing bars on their mowers. Plans may be obtained from the Game, Forestation and Parks Commission, Soil Conservation Service; or the Extension Service.
10. Protect present wildlife habitats by (1) fencing them off from livestock, (2) preventing their destruction, and (3) making low bushy border plantings.
11. Establish "prevent fires" signs or similar signs in places where people will see them.
12. Establish food patches for wildlife. This may be done by leaving a small amount of unharvested grain in the field near a place where wildlife has protective cover, by leaving weeds stand and go to seed, and by planting food producing plants in areas where grain is not normally grown.
13. Encourage, develop, and protect travel lanes. These strips provide protective cover between the animal's source of food and his cover. The preferred place is along fence rows, irrigation ditches, windbreaks, and field borders. This might be done by planting low growing bushes and shrubs or tall growing grasses; and by not destroying present growths of weeds, grasses, bushes, and shrubs.
14. Apply soil conservation practices. For example, proper grazing practices of pastures.

### **Marsh**

15. Protect the marsh area by (1) preventing livestock damage, (2) avoiding the burning of plants, and (3) discouraging the drainage of such land.



## *Conservation Pledge*

I GIVE MY  
PLEDGE AS AN AMERICAN  
TO SAVE AND FAITHFULLY TO  
DEFEND FROM WASTE THE  
NATURAL RESOURCES OF  
MY COUNTRY—ITS SOIL  
AND MINERALS, ITS  
FORESTS, WATERS,  
AND WILDLIFE

