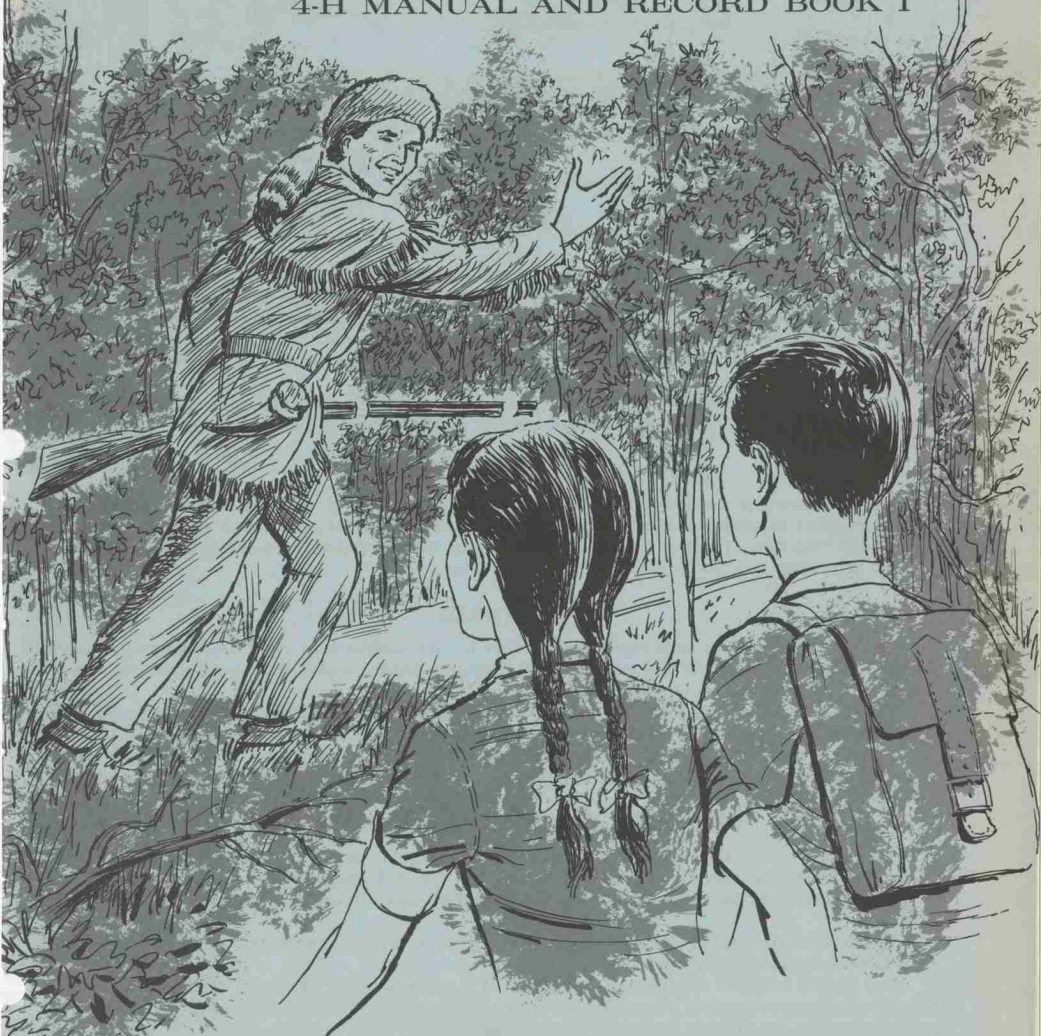


WILDLIFE PIONEERS

4-H MANUAL AND RECORD BOOK I



Name of 4-H Club Member



You are now opening the door to a world of exploration. Behind the door you will find the spirits of Dan'l Boone, Davey Crockett, and Kit Carson—adventurers who always wondered “What’s on the other side of the mountain?” You will also encounter the spirits of conservationists who are striving to wisely use the natural resources that have made our nation great. Enter! Explore the world of wildlife. Learn the inside story of the animals that live around your home and in your community. You are on your way to adventure.

Any adventure requires preparation, study and imagination. You will find your efforts well repaid with pleasant memories, new knowledge, and a better understanding of the world around you.

KEEPING RECORDS

The 4-H record is a measuring stick; its facts and figures keep the club member, parents and leaders informed of progress. When completed, submit the completed record and story to the Community 4-H Club subject matter leader in wildlife on the date requested. A record of work done should be kept accurately and neatly according to instructions.

AWARDS

Awards are offered to encourage greater effort by club members. In every project certificates are awarded to the individual for the completion of a project and to county, district and state winners on the basis of the best project summary record.

The State Wildlife Conservation Project winner is awarded a scholarship to National 4-H Club Congress. Each winner of 4-H Wildlife District Demonstrations receives a scholarship to State 4-H Club Week, and the State Wildlife Demonstration winner is awarded a savings bond. There are other award possibilities. How about a wildlife exhibit of the county fair? At State Fair? Explore and find others.

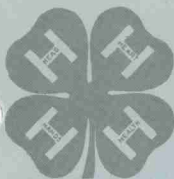
PROJECT COMPLETION REQUIREMENTS

4-H’ers enrolled in the Wildlife Conservation project should complete the requirements listed under “Learn” and “Do”, plus at least one additional activity. You will find suggestions at the end of the Project Requirements list under “You May Also Want To.” Choose from these or make up some of your own.

You are also required to include a story describing your Wildlife Conservation Project when you turn in your annual project record.

You should complete the Pioneer requirements in one year. The Advanced Pioneer requirements will take longer—perhaps two years. Set your own pace, plan your work and do it well.

If you begin the Wildlife project as an advanced Pioneer, get a good foundation by doing the requirements set forth for the first year 4-H’ers. You will find that they will help you with your more advanced work.



WILDLIFE PIONEERS

FIRST YEAR REQUIREMENTS

LEARN

A definition of Conservation.

A definition of Wildlife.

DO

Fish:

Catch at least one bream, bass, catfish and/or trout.

Learn the characteristics that you can use to identify the fish listed above.

Birds:

Put up and maintain a bird house or feeder around your home.

or

Learn the physical characteristics of different types of birds found in your community. Tell how these characteristics are used by birds. Learn to identify 10 species of birds found in your community.

Start your lifetime record of the species of birds you have seen.

Mammals:

Describe the characteristics that separate mammals from other animals.

List the wild mammals that you observe in your community.

or

Identify and make casts of at least five different mammal tracks.

Miscellaneous:

Choose a piece of land, about 3 to 10 acres in size (an old field, a woodlot, a pond and surrounding land) as a study area and maintain animal census charts recording the animals that you find there.

YOU MAY ALSO WANT TO

Raise earthworms for fish bait.

Make a wildlife scrapbook.

WILDLIFE-ADVANCED PIONEERS

After First Year (To be completed in whatever order you choose)

LEARN

To repeat and explain the 10 Commandments of gun safety.

To explain, in your own words, the characteristics that an animal should have in order to be a game animal. In other words, what qualities does a quail have that an English sparrow lacks?

or

To trace a farm animal back to its wild ancestor.

or

To tell the difference between poisonous and non-poisonous snakes. List the poisonous snakes found in North Carolina.

or

To identify at least 25 songbirds found in your community.

The meaning of: animal, mammal, amphibian, reptile, songbird, predator.

DO

Fish:

Identify the fish found in your pond or other local body of water.

or

Learn the characters that you can use to identify three species of sunfish; two species of catfish; and two species of minnows or two species of trout.

Go fishing! Keep a record of the kinds of fish you catch, as well as the kind of bait you used.

Birds:

Build, put up, and maintain more bird houses and feeders around your home.

or

Study the habits of, and be able to identify at least five common hawks and/or owls.

or

Make a chart of birds that winter and those that nest in your community.

Continue your life-time record.

Mammals:

Add to your track collection by making plaster casts of additional wild mammal tracks. Identify the new tracks.

or

Make a map of your study area. Locate

the mammal homes (dens, burrows, etc.) on the area and plot them on your map.

Miscellaneous:

Develop and maintain a conservation bulletin board in your school.

or

Identify and list the wild plants on your study area that are used as food by wildlife.

Maintain your Animal Census Charts.

YOU MAY ALSO WANT TO

Present a wildlife demonstration or give a talk to your club or present a chapel program on wildlife conservation at your school.

INTRODUCTION

DEFINITIONS

We will hear and use new words and terms in this project. Some of these are listed and defined here:

Characteristic—Something which helps separate an animal or group of animals from all others, such as a duck's flat bill and webbed feet.

Conservation—There are many definitions. One is "The wise use of our natural resources for the greatest benefit of the most people for the longest possible time." (Make up a definition for your own use.)

Identify—To recognize an animal by its characteristics.

Maintain—To keep up.

Manage—To treat with care.

Natural Resources—A *resource* is a supply of something useful in our living or which may influence our welfare. A *natural resource* is one that is provided by nature. A *renewable natural resource* is one that can be replenished, such as trees and other plants, water, wildlife and sometimes, soil. A *non-renewable resource* is one that cannot be replenished, such as rock, mineral ores, and petroleum.

Species—A distinct kind of plant or animal. The individuals that make up a species possess certain characteristics that separate them from all other species. These characteristics are passed on to succeeding generations.

Wildlife—Used here to include all wild ani-

mals that have backbones. *Game Animals* are wildlife that are sought for sport.

IDENTIFYING ANIMALS

Animals can be grouped together because of common characteristics. Birds have feathers—fish don't; mammals bear live young—birds don't. Each animal group can be further divided into smaller groups based on the characteristics common only to those groups. The group known as "species" will be the one you will work with. A fox squirrel and the gray (cat) squirrel are both mammals. They are rodents as well. They are, of course, squirrels. But they are different species. They look different; they act different—they are different. Two gray squirrels are of the same species. They may not have the same parents, but you can bet that their mothers and daddies were gray squirrels!

All species have characteristics which can be used for identifying them. Some of these are readily noticed—others are harder to find. A fish is not just a fish. It is a rainbow trout or a brown trout—a bluegill or a shell-cracker—a shiner or a carp. It can be identified by certain combinations of characteristics. The same is true for birds. Woodpeckers have specially built bills, tails, feet, etc., that help them make a living. So do ducks and hummingbirds. How does a cardinal use his heavy, short, strong bill? Why would long, narrow wings be unsuitable on a quail?

YOUR STUDY AREA

Your study area is a place where you can study and observe wildlife. Choose any type area you wish and visit it regularly. Study the animals you see there. Find out where they live, what they eat, how they act. You may wish to observe from a blind made of brush. The number of animals you see is not as important as how well you observe them. Be quiet, patient, and alert.

Records are important—they help you remember. They let you compare today's activities and observations with those of some other time. They need not be complicated. Decide what information you need to satisfy your project and your curiosity. Keep your records uniformly, neatly, and completely.

Nothing is more discouraging than to try to make sense out of a jumble of poorly written, haphazard, incomplete notes.

Your Lifetime Record—This is a list of species of birds new to you that you see and identify at any time, anywhere. You will find that adding new species to your list is an exciting pastime. You may see hundreds of cardinals, but it will appear on this record once only. You may see one Evening Grosbeak, which will also be recorded once only.

Your Animal Census Charts—These charts are used to record the kinds and numbers of animals that you find on your study area. Separate charts should be made for different kinds (mammals, birds, reptiles, etc.) of animals. Perhaps you would want to make your chart similar to this:

ANIMAL CENSUS CHART

Mammals

Date	Time	Species	Number of		Activities, Location and Habitat
			Young	Adults	

FIELD TRIPS

Clothes are designed for special purposes. You wouldn't think of going to church in a bathing suit, would you? The same holds true for field trips, including visits to your study area. Wear proper clothes.

Shoes: Wear good, sturdy shoes that will be just as comfortable at the end of the trip as at the beginning. Shoes with tops that come past the ankle give more protection and support. In wet locations or rainy weather, wear rubber boots or galoshes.

Trousers and Shirt: If you want to get scratched, skinned, and eaten up by insects, wear shorts and a short-sleeved shirt. Otherwise, wear full-length trousers and a long-sleeved shirt.

Consider the Weather: Don't forget your sweater, jacket, or raincoat. Being cold and wet can change a delightful field trip into a miserable ordeal.

Equipment: Carry the things you need, but don't load yourself down with excess baggage. You may want a pocket first-aid kit (you can make it yourself), insect repellent, a candy bar, a canteen, a small magnifying



glass, pencil and notebook, field books about the things you are looking for, your track-casting kit, etc.

Do not go on a long field trip or into a strange area unless you are accompanied by a grown-up. Always tell your parents where you are going, who you are going with, and when you expect to return.

10 COMMANDMENTS OF SHOOTING SAFETY


When you pick up a gun it is your responsibility to handle it with care and good judgment. Do you know the rules of safe gun handling? If you don't—learn them and practice them.

1. TREAT EVERY GUN WITH THE RESPECT DUE A LOADED GUN.
2. WATCH THAT MUZZLE! Carry your gun safely; keep safety on until ready to shoot.
3. UNLOAD GUNS WHEN NOT IN USE, take down or have actions open; guns should be carried in cases to shooting area.
4. BE SURE BARREL IS CLEAR OF OBSTRUCTIONS, and that you have ammunition only of the proper size for the gun you carry.
5. BE SURE OF TARGET BEFORE YOU PULL TRIGGER; know identifying features of game you hunt.
6. NEVER POINT A GUN AT ANYTHING YOU DO NOT WANT TO SHOOT; avoid all horseplay.
7. NEVER CLIMB A TREE OR FENCE OR JUMP A DITCH WITH A LOADED GUN; never pull a gun toward you by the muzzle.
8. NEVER SHOOT A BULLET AT A FLAT, HARD SURFACE OR WATER; at target practice, be sure your backstop is adequate.
9. STORE GUNS AND AMMUNITION SEPARATELY, beyond reach of children.
10. AVOID ALCOHOLIC BEVERAGES before or during shooting

TRACKING AND TRACK CASTS

An animal's tracks are his calling cards. They tell you who he is, when he passed, and sometimes, where he was going and what he was doing. When you are able to "read sign", you can carry out detective work on your area (and elsewhere) and find out about things that go on that you never really observe.

Suppose you find a track that you want to collect or cannot identify. What do you do? You can't pick it up and put it in your pocket. If you leave it, it will weather and wash away. You can draw it, or photograph it. But, unless you are a good artist or photographer you may not get the results you



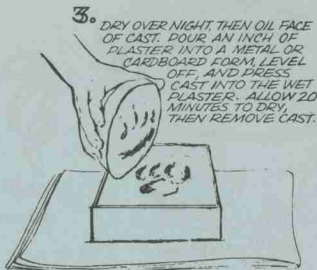
want. Why not make a "cast" of the track? A cast lets you collect the track and take it with you. To make casts you need plaster of Paris; a jar for storing the plaster; a large tin can for mixing plaster and water; and a "collar" made of cardboard or similar material.

Practice mixing plaster of Paris and water to get the right mixture. If it is too thick, it will quickly become stiff and not make good casts; if it's too thin it will run all over the place and take too long to harden. It should be about the consistency of a thin batter that will pour easily. After pouring the cast, allow it to set about ten minutes before picking it up.



1. TRACK IN SNOW IS TREATED WITH FINE ATOMIZED SPRAY OF WATER IN SUB-ZERO WEATHER—ALLOWED A FEW MINUTES TO HARDEN.

2. COLLAR IS FITTED FIRMLY AROUND TRACK, FILLED WITH PLASTER AND ALLOWED TO DRY (10-15 MINUTES).



3. DRY OVER NIGHT, THEN OIL FACE OF CAST. POUR AN INCH OF PLASTER INTO A METAL OR CARDBOARD FORM LEVEL OFF, AND PRESS CAST INTO THE WET PLASTER. ALLOW 20 MINUTES TO DRY, THEN REMOVE CAST.



4. AFTER 10 TO 12 HOURS OF DRYING PAINT THE TRACK BLACK—LABEL IT—AND YOUR COLLECTION IS STARTED!

Tips on making casts in snow: Mix some snow in the "batter" to cool it so it will not melt the track. With a small perfume atomizer, lightly spray the track with cold water before you pour in the "batter." The water will form an ice glaze that will help prevent melting and destruction of the track.

FISH

IDENTIFICATION

Suppose you met someone who had never seen a fish. How would you describe such an animal to him?

Perhaps you would say "A fish is a cold-blooded animal that lives in and breathes water. Its body is covered with scales and ends with a fan-shaped tail."

This description will fit most of the fish found in North Carolina. But there are many that just don't look like fish. Let's take each characteristic in our description and try to find fish that do not fit.

- (a) *A cold blooded animal*—All fish are cold-blooded. So are snakes, lizards, turtles, and frogs. "Cold-blooded" is not a good term, but we use it because it is convenient. We really mean that the body temperature is not constant like ours. Instead it changes with the surroundings so that in cold weather (or water) the body temperature is low and in hot surroundings it is high.
- (b) *Lives in and breathes water*—The lungfishes of Africa and Australia live

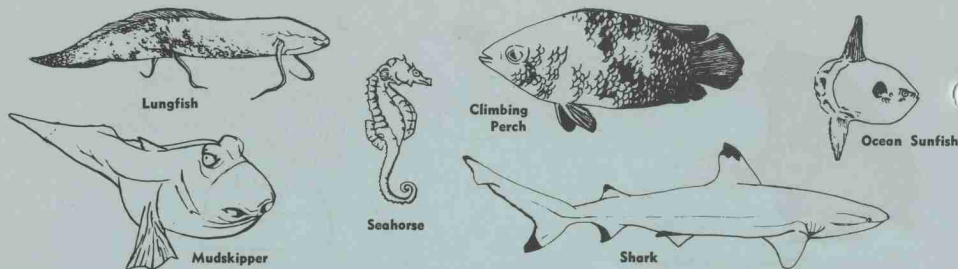
where the year is divided into two seasons—wet and dry. During the wet season they live much like any other fish. However, during the dry season they breathe air and live in a mud cocoon far from any water. Two other foreign fish, the climbing perch and the mud skipper, venture out of water sometimes for considerable distances. Some eels travel overland, usually on wet nights.

- (c) *Body covered with scales*—Many fish have no scales. Catfish, sharks, and some eels are good examples. Lizards and snakes also have scales.
- (d) *A fan-shaped tail*—How about the eel, the seahorse, and the Ocean Sunfish?

As you can see, fish come in all shapes and sizes (the smallest known is the Phillipine Minnow which is one-half inch long when grown. The largest is the whale shark which may be 65 feet long).

You will be learning to identify "fishy" fish, and you can tell one kind from another by certain characteristics.

There are many characteristics useful in identifying fish. Some of these are: location,



shape, and size of mouth; presence and location of teeth; and size and shape of the "ear" or opercular flap. Color is sometimes useful but is often not dependable.

Fin characteristics are very helpful in fish identification. You will find three general kinds of fins on the fish you study.

- (1) Spinous—These fins are the ones that are supported by needle-like spinous rays. These are the ones that hurt when they stick you.
- (2) Soft—These fins are supported by flexible soft rays that easily bend.
- (3) Adipose—This is the fleshy, fatty tab found on the backs of catfish and trout. It is located between the dorsal and caudal fins.

The fish you will study have a dorsal fin, an anal fin, a caudal fin, a pair of pectoral fins, and a pair of pelvic fins. You will use the shape and location of these fins in your work, as well as the numbers of spinous rays and soft rays in the dorsal and anal fins.

Examine pictures on specimens of different kinds of common fish. Which have spines in

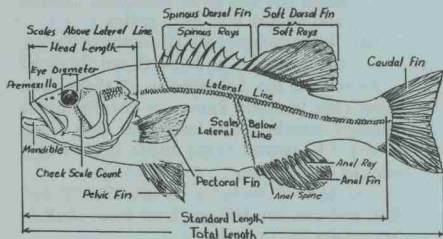
their fins? Which have adipose fins? Which have only one type fin on the back? Which have the pelvic fins close under the pectoral fins and which have them placed farther back on the belly?

MINNOWS

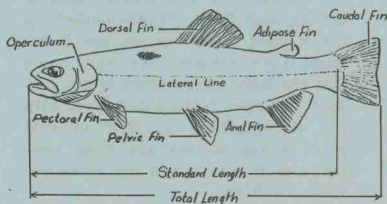
What is a minnow? No, it is not a baby fish. It is a member of a certain group of fish just as a trout and a sunfish are. Most minnows are quite small, but some that are found in western United States are several feet long. The carp and the golden shiner are minnows.

THE VALUE OF FISH

There are many ways that fish help man. They provide us with food and they give us sport and pleasure. Fish are used in making fertilizer, paint, and even jewelry. Many people make their living from fish. Some fish commercially, others build boats, make rods and reels, or operate canneries or freezing plants. Can you think of other ways fish help man?



EXTERNAL FEATURES OF A SPINY-RAYED FISH



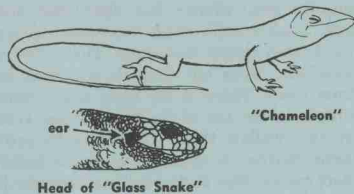
EXTERNAL FEATURES OF A SOFT-RAYED FISH

REPTILES

Reptiles are cold-blooded animals whose bodies are covered with scales, shields, or plates. The North American species are broken down into three major groups: Lizards and snakes (the ones that shed their skins); crocodiles and alligators (which remind us of giant lizards); and turtles and tortoises (which are enclosed in a shell and lack teeth).

Most reptiles lay eggs. However, some give birth to living young. Baby reptiles are "compact models" of their parents. Their shape is much the same as the adult, but their color may be different.

Most reptiles have four legs and toenails. (Since amphibians do not have toenails, this



SNAKES

Snakes are the most misunderstood and mistreated of our wild animals. Perhaps this is because of the serpent's activities in the Garden of Eden. Probably the poisonous snakes have given them all a bad name. More than likely it is because of our ignorance of snakes and their ways.

There are about 40 species of snakes native to North Carolina. Only seven are poisonous. One of these is the Coral Snake. The other six are Pit Vipers: Copperhead, Cottonmouth, Pygmy Rattler, Timber Rattler, Canebrake Rattler, and the Diamondback Rattler.

Some non-poisonous snakes are quite gentle. Others are vicious and will bite readily. While there is no danger of poisoning, there is danger of infection from such a bite. Until you know quite a lot about snakes you should not handle them. It is best to wear gloves and long sleeves if and when you handle snakes.

characteristic will help you distinguish lizards from salamanders.) Of course, snakes do not have legs. The common glass "snake" is not a snake. It is a legless lizard.

LIZARDS

There are no native chameleons in North America. The "chameleon" you see sunning on a fence has the ability to change colors from green to brown or gray. This ability has given it its nickname. Actually it is a lizard known as Anole.

Surely you have tried to catch a lizard by the tail, only to have the squirming tail come loose in your hand. And the lizard kept on going! This is one way nature protects lizards. The predator who tries to catch a lizard sometimes winds up with the tail and the lizard runs off and grows a new one.

You have probably heard of, or seen, the "scorpion" and heard about how poisonous it is. Actually it is a quite harmless lizard. There are no poisonous lizards in the eastern United States.

Do you know how to tell the difference between a snake and a "glass snake"? The glass snake has an ear opening located just behind the corner of the mouth. No true snake has such.

The poisonous snakes are a different story. Do not handle them! Even the most experienced snake handlers get bitten, and sometimes pay with their lives. Dead snakes can bite, too. There have even been cases of people being bitten by snakes after the snake's head has been cut off.

There is no reason to fear snakes. Just be cautious and use good judgment.

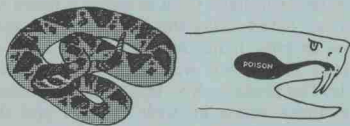
How can you tell the poisonous from the non-poisonous snakes? In order to do this we must describe the two groups of poisonous snakes, the Coral Snake and the Pit Vipers:

Coral Snake—Very colorful; marked with red, black, and yellow rings. The head is not triangular and is about the same width as the body. This snake is very secretive and is usually gentle. However, it is extremely dangerous because its venom attacks the nervous system. It is a relative of the Cobra. The Scarlet Snake, Scarlet Kingsnake, and some Milk Snakes resemble it. If you should find a pretty little snake on which the red and

yellow rings touch—leave it alone. These characteristics, plus a black nose and a yellow band across the head identify the Coral Snake.



Coral Snake



Pit Viper

Pit Vipers—Any native snake that has a facial pit on each side of the head is a Pit-Viper. The pit is located about halfway between the eye and the nostril. It is a heat-sensing organ that helps the pit viper aim when it strikes warm-blooded prey. This is

a very good characteristic, but who is going to get down on hands and knees to see if a snake has pits? So, let's try some other characteristics.

All pit vipers have vertical pupils in their eyes. (So do some nonpoisonous snakes). Their heads are somewhat triangular and are distinctly wider than their necks. And, of course, the Rattlesnakes have rattles on the end of the tail.

Pit-vipers range in size from about 18 inches (Pigmy Rattler) to over six feet (Diamondback Rattler). They are generally heavy-bodied snakes. Their poison usually destroys the red blood cells of their victims, although it may also attack the nervous system at times.

Most "snake stories" are false. They make mighty good stories but they just aren't true. Snakes don't sting with their tongues, nor do they charm their prey. They will cross horsehair ropes but they do not suck milk from cows. There is no hoop snake with a stinger in the tip of its tail. Mother snakes do not swallow their youngsters to protect them. Neither do snakes avenge the death of their mates. The facts about snakes are just as interesting as the fiction, even if the facts are not so wild.



American Alligator

CROCODILES AND ALLIGATORS

The American Crocodile is the only species found in eastern North America. It is found only in southern Florida.

The American Alligator is found in the coastal plain of the southeastern United States, including the coastal country of North Carolina.

The 'Gator builds a nest of vegetation that is about five feet wide and two or three feet high. There she buries her eggs. The young

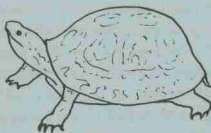
'gators, are about nine inches long when they hatch. They look much like the adult except they are black with crossbands of bright yellow. They will bite readily, immediately upon hatching.

Alligators normally eat fish, turtles, crayfish, and most any unwary small animal. They also eat things that don't resemble food at all—old shoes, bottles, shotgun shells, bricks, and pieces of wood. Alligators are sometimes accused of being man-eaters, and may be on very rare occasions. The typical 'gator fears man and leaves him strictly alone.

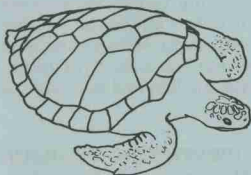
TURTLES

The term "Turtle" and "Tortoise" and "Terrapin" can be used interchangeably. Usually we consider turtles as living in water and tortoises and terrapins as living on land. We will just call them turtles. The bodies of these animals are armor-plated, with a "carapace" covering the back and a "plastron" protecting the belly. They are the tanks of the animal kingdom. Some have very hard shells and others have soft, leathery shells.

Some species are strictly land animals. Others are at home in pond and stream.



Box Turtle



Sea Turtle

There are still others that are found only in the sea. All turtles lay eggs in nests that they dig in the ground. The eggs are covered with leathery white shells. They look like ping-pong balls. When the eggs hatch, the little turtles dig their way out of the nest. They are on their own, because the mother left soon after she laid the eggs and covered the nest.

Some North American turtles are about three inches long when grown. Others reach considerable size. The Atlantic Leatherback Sea Turtle reaches a length of about eight feet and a weight of 1600 pounds.

Reptiles are an important part of our animal life. Many snakes are important rodent controllers. They may also destroy birds nests and eat eggs and young. The poisonous snakes are dangerous to man. Many snakes and lizards are insect eaters and may be considered helpful to man. They are neither "good" nor "bad".

Some reptiles are economically important. Alligator hide is highly valued for making expensive leather goods. Several species of turtles are used for food.

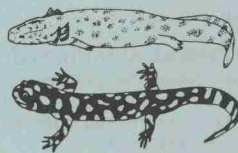
Reptiles are interesting creatures to have around. Some people make their living by having reptile exhibits. Even though many of us fear and do not understand reptiles, we still find them fascinating.

AMPHIBIANS

The word "amphibians" is the combination of two Greek words: *Amphi*, which means "of both kinds; and *bios*, which means "life." In other words, amphibians lead double lives.

Most amphibians begin life in ponds or streams. As babies they live in the water and breathe through their gills. They look nothing like their parents. As they grow up, many species move out of the water onto land. They become air breathers and their gills are replaced by lungs. They change form until they look like their parents. Indeed they live "double lives." The tadpole and frog are good examples.

Many species do not follow these general rules. Some never grow up. Some keep their gills and spend their entire lives in water. Some species lay their eggs on land, in burrows or under logs, and the babies hatch out looking like tiny adults. Some species have neither lungs nor gills when they grow up. They "breathe" through the skins and mouth lining.

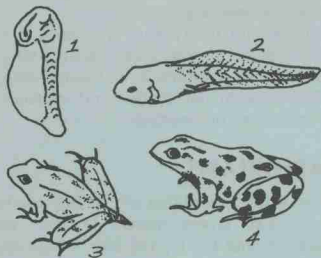


Salamanders

Amphibians are cold-blooded animals that can be identified by their soft, moist skins. They do not have claws or nails on their toes. They are usually found in or near water, or in moist places.

Two groups of amphibians are found in eastern North America. One group, the newts

and salamanders, have tails as adults. The other group, frogs and toads, are tailless when grown.



Stages in the Life of a Frog

We are all pretty familiar with the frogs and toads. We seldom see newts and salamanders because they are so secretive and spend most of their time in hiding. If you wish to find them you must visit a pond, stream or moist area and uncover them by *gently* raising the rocks, logs, and leaves they hide under. You will be rewarded by finding some of the most colorful, interesting animals we have.

Amphibians are more helpful to man indirectly than directly. The bullfrog provides us with food, sport or income. "Spring lizards" are important fish bait. However, amphibians form a major part of animal life. They deserve our interest as much as the other animals.

BIRDS

FEEDERS AND HOUSES

The main reason for putting up feeders and houses around your home is to attract birds for you to observe and study. Of course, you will be helping them, too.

Birds are pretty particular about where they live and what they eat. A perfect bluebird house wouldn't do at all for a cardinal. Seeds that are relished by a white-throated sparrow would be ignored by a chickadee. So, if you want to attract many different kinds of birds you will need to put up the kinds of houses and feeders that they like.

There are some places where you can attract only certain kinds of birds and no others. This is caused by the kind of country

surrounding your home. Some species of birds prefer open farmland; others like pine woods. There are others that live in hardwood swamps and some that prefer thick brushy areas. Try to find out what birds live in the surrounding country and furnish the kinds of food and shelter they prefer.

Bird feeding can be helpful or harmful. In the wintertime, when natural food is scarce, birds that are fed become very dependent on the person who feeds them. They get out of the habit of searching for natural food. To quit feeding them in winter, especially in bad weather, is cruel. During very cold weather birds need much food because they use more energy to keep warm. Suppose a bird has learned to depend on you for food. He comes to the feeder one cold, gray winter morning. The countryside is covered with snow and ice. He looks forward to a nice meal that will give him the strength and warmth to live through the bad weather. He finds the feeder empty because you didn't want to go out into the cold. This could mean life or death for him and you may lose a feathered friend.

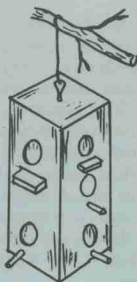
IDENTIFYING CHARACTERISTICS

There are many different groups of birds. Each group has certain characteristics that are found in all the birds of that group. Let's look at a few bird groups.

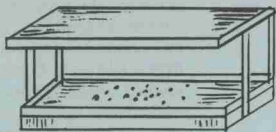
The *Scratchers* or *Gallinaceous* birds (chickens, turkeys, grouse, quail, pheasants). These birds have feet designed for scratching and they are better runners than fliers. Their wings are short and broad. They have short, heavy bills designed mainly for seed eating. Usually they are found in flocks or coveys and the young can feed themselves immediately after hatching. Most species nest on the ground.

The *Perchers* or *Passerine* birds (most of our songbirds). Feet designed for perching. Their wings are usually longer and narrower than those of the Scratchers, and they are strong fliers. The size of the bill varies with the species. Usually the seed eaters have short, pointed bills. The insect feeders usually have moderately long, pointed bills. Some species form flocks and others do not. The young have to be fed and cared for by the parents. Most nest in trees and shrubbery.

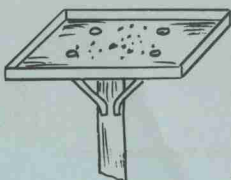
The *Goatsuckers* (Whippoorwills, Chuck-Will's Widow, and Nighthawks). Feet and



LIMB FEEDER



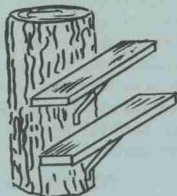
WINDOW FEEDER



TRAY FEEDER



BOTTLE FEEDER



SHELF FEEDER

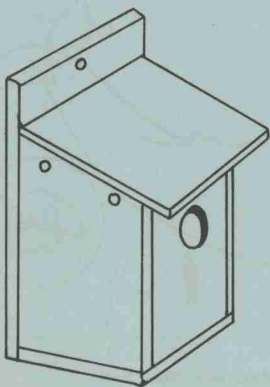
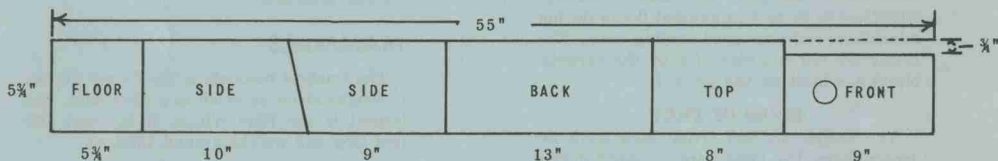


SUET ON TREE TRUNK



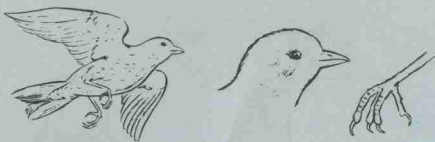
LOG FEEDER

BIRD FEEDERS



BLUEBIRD SPECIAL

Because bluebirds like to nest in houses erected for them around our homes, this plan is suggested as one of the simplest and most efficient boxes to build. The key to success is to have the entrance hole $1\frac{1}{2}$ inches in diameter and no perch just beneath the entrance. These two features discourage other birds which may attempt to use the house. For best results the house should be from 6 to 12 feet above the ground, and have a hinged top or bottom so the box may be cleaned out after each nesting.



Perching Bird Characteristics



Scratching Bird Characteristics

legs very tiny and weak, very poor walkers. Strong flyers with long, narrow, pointed wings. Mouth very wide; beak very short, designed for catching insects in flight. Whip-poorwills and Chuck-Will's Widows seldom form flocks, the pairs are usually solitary. Nighthawks form disorganized flocks during migrations and over good feeding areas. The young are fed and cared for by the parents. Nests are built on the ground.

BIRDS OF PREY

The hawks and owl divide their work between them. The hawks are on patrol during the day and the owls take over at night. Even though they form two separate groups

of birds, they have some characteristics in common. Their feet are designed for strongly grasping their victims and the claws are long, curved and sharp. Their beaks are hooked and pointed for tearing flesh. They are strong flyers. Different types of hawks have different shaped wings. Those that prey on birds usually have narrow wings while those that prey on rodents usually have broad wings. Owls have broad wings with special feathers that make no noise in flight. Hawks and owls are specially adapted for their jobs. They have very good eyes and ears.

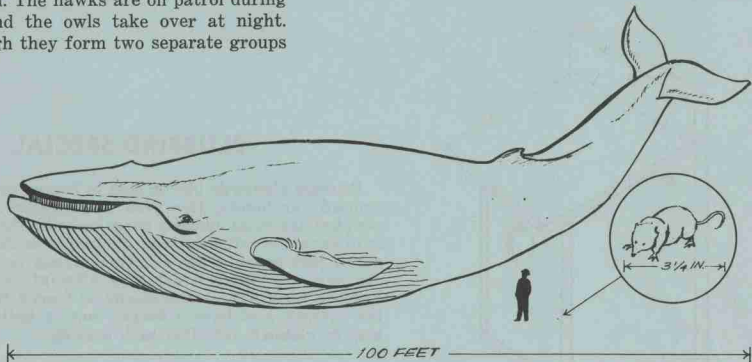
The birds of prey take some game and songbirds, as well as occasional chickens. They also take many rats and mice and quite a few insects. In fact they are more helpful than harmful because of their controlling these pests.

THE VALUE OF BIRDS

Birds benefit man in many ways. They help control some of our insect and weed pests (they sometimes spread weed pests, too). They provide us with hunting sport and food. They also give us many hours of recreation if we will take the time and develop the interest to enjoy watching these colorful creatures.

MAMMALS

The smallest mammal is the Pigmy Shrew. It weighs about as much as a dime does. The largest is the Blue Whale. It is about 100 feet long and weighs around 150 tons.



Compare the Sizes of These Mammals: Blue Whale, Man, Pigmy Shrew

Mammals can be separated from all other animals because they have hair and suckle their young. Whales look somewhat fishlike, but they are warmblooded, have hair (a little "mustache"), and the baby nurses its mother.

There is much variety among different types of mammals. Some spend their lives in water, others live in trees. Some eat meat; others live on plants only. Some have horns; some are "bareheaded." Some walk on four legs; others on two. Some even fly (bats are our only flying mammals. Flying squirrels glide but do not fly).

We are more familiar with mammals than any other major group of animals. This is

because we have domesticated so many of them and because they live much the same as we do. After all, we are mammals, too.

SOURCES OF INFORMATION

Whenever you need information about some part of your project, go to your school or town library, the encyclopedia, and bookmobile. Your club wildlife leader has a list of free or inexpensive leaflets and booklets from which you can choose the material you need.

With all the information available to you, you can build up a sizeable conservation library in your home or club.

WILDLIFE CONSERVATION RECORD

Date Completed: _____
(Month) (Day) (Year)_____
(Name of club member) (Age) (Community 4-H Club)_____
(Address) (County)_____
(Name of Parents) (Years in Club Work)**Conservation** is _____

_____**Wildlife** is _____

Fish:

- I caught _____ bream, _____ bass, _____ catfish and/or _____ trout this year.
- Two kinds of fish that have a small, fleshy adipose fin behind their dorsal fin are _____ and _____.
 - _____, _____, _____ have needle-like spines in some of their fins.
 - _____ do not have scales, but do have "whiskers".
 - Bass and bream both belong to the "sunfish" family. _____ are about three times as long as high and _____ are about two times as long as high.

Birds:

- I have _____ bird houses and _____ bird feeders in operation. The kinds of birds that nested in the houses are _____, _____ and _____. The kinds that used the feeders are _____, _____, _____ and _____.
- I have _____ species of birds on my lifetime record.
- The differences between the beak, feet, and wings of a quail (or other bird of your choice) and a hawk (or other bird of your choice) are (describe):

Mammals:

1. Mammals are animals that _____

2. I have observed the following wild mammals in my community: _____, _____,
_____, _____, _____, _____

3. I have identified and made casts of the following animal tracks: _____, _____,
_____, _____, _____, _____

Other:

My study area is about _____ acres in size. My census chart shows that the following animals are
found on the area: _____, _____, _____, _____,
_____, _____, _____, _____, _____

Other wildlife activities I have performed are:

Write a story "What I Have Done and What I Have Learned In This Project" and attach to the record.

I have checked this record and found
it to be satisfactorily completed. I have
read the story.

WILDLIFE CONSERVATION RECORD

Date Completed: _____
(Month) (Day) (Year)_____
(Name of club member) (Age) (Community 4-H Club)_____
(Address) (County)_____
(Name of Parents) (Years in Club Work)

1. I have repeated and explained the 10 Commandments of Gun Safety to my club leader's satisfaction.

2. A **game animal** is _____

3. The wild ancestor of the _____ (farm animal) is _____.

4. The seven poisonous snakes of North Carolina are: _____,
_____, _____, _____,
_____, _____, _____.

5. I can identify _____ songbirds, and my lifetime record contains _____ species.

Fish:

I found the following species of fish in my pond: _____,
_____, _____, _____, _____,
_____, _____, _____.

I can identify _____ (Bream); _____,

_____ (catfish); _____, _____ (minnows); and/or _____,

_____ (trout).

a. An **animal** is _____.b. A **mammal** is _____.c. An **amphibian** is _____.d. A **reptile** is _____.e. A **songbird** is _____.f. A **predator** is _____.

I went fishing and caught:

Number	Species of Fish	Bait Used
_____	_____	_____
_____	_____	_____
_____	_____	_____

Reptiles:

The pit-vipers have the following characteristics _____
_____ and the coral snake can be recognized by _____

Birds:

I have _____ feeders and _____ houses in operation. The following birds nested in my houses this year:
_____, _____, _____, _____, _____
I have found _____ species of birds that winter in my community.
I have _____ new birds on my life-time record.
I think hawks and owls are important birds because: _____

Mammals:

I have added _____ track casts to my collection, I can now identify the tracks of _____ mammals.
My study area has _____ tree dens that are used by _____, _____; and _____
burrows that are used by _____, _____, _____ and _____.
Other animal homes found there are _____

Other:

I maintained a conservation bulletin board at my school.
I can identify _____ plants that are used as food by wildlife.
My animal census chart shows that these animals are found on my area during September, October, and
November: _____, _____, _____, _____,
_____.

My other wildlife activities are:

Write a story "What I Have Done and What I Have Learned In This Project" and attach to the record.

I have checked this record and found it to be satisfactorily completed. I have read the story.

MAKE MAP OF STUDY AREA HERE

FIELD NOTES



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Extension Wildlife Specialist

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