Hunter Development Program Workshop Lesson Guide

Workshop Title:

Shotgun

Workshop Objective:

Participants will demonstrate the ability to use safe and proper procedures when transporting, loading firing and cleaning a shotgun.

Topic	Time	Technical Information to cover	Suggested Activities
Firearm Safety Review	2 min	10 rules of firearm safety	Instructor lead, group discussion
	3 min	Workshop range rules	Explain range rules that will govern activities during the workshop
Know your firearm	2 min	Action types	Demonstration with training firearms
	3 min	Parts of a shotgun	Point out different locations for safeties, special features that are possible or unique to manufacturers.
Know you ammunition	3 min	Parts of a shot shell	Have cutaway and disassembled shells available for inspection
	2 min	Gauge, load shotsize and shell length, Non-toxic shot	Have examples of training rounds and empty boxes available as examples for discussion.
Transporting and carrying your firearm	2 min	Safe methods of transporting firearms in various vehicles and in the field	Demonstrate and discuss
Zones of fire	3 min	How to establish a safe zone of fire for specific hunting and range activities	Lay out visible zones of fire boundaries for various hunting situations and range events to aid discussion

Topic	Time	Technical Information to cover	Suggested Activities
Firing a shotgun	2 min	Matching shot shells to the firearm	Practice with training ammo
	3 min	Mechanics of loading and unloading	Demonstration and guided practice using training ammo and training guns
	5 min	Proper gun fit	Use training guns and recoil pads to demonstrate how to adjust a gun to fit a shooter.
	3 min	Mechanics of shooting	Explain, demonstrate, discuss and practice aiming verses pointing, eye dominance, stance, mounting or shouldering
	21 min	Live fire	Set stationary targets at 25 - 40 yards. Evaluate and address any issues that may be evident as each workshop participant fires 3-5 shots. Collect targets to use for discussion of how distance affects the shot pattern. Explain how choke tube selection can alter the shot pattern related to the distance of the shot. Have pre-shot targets available as examples
Cleaning a shotgun	5 min	Process of Cleaning	Demonstrate field stripping and cleaning

HE Field Day Manual : SHOTGUN

1. Introduction

2. Safe Shotgun Handling and Operation
    - Firearm Safety
    - Parts of the Shotgun
    - Action Types
    - Shot Shells
    - Carrying a Shotgun
    - Zones of Fire
3. Shotgun Shooting Techniques
    - Differences between Rifle and Shotgun Shooting
        - Illustrating Focus
    - Stance
    - Shouldering
        - Flashlight Drill
    - Swing, Lead, and Follow Through
4. Hunting Application
    - Chokes and Patterning

Recognizing Shootable Distances

5. Live Fire Suggestions

1. Introduction

A. Opening Statement
B. Introduction of Instructors
C. Purpose of the Course – to provide instruction to new shooters on how to safely and correctly handle a shotgun at home, on the range, and in the field.

2. Safe Shotgun Handling and Operation

A. Firearm Safety – Discuss the 10 rules of firearm safety and provide examples for new shooters.

1. Always point the muzzle in a safe direction.
2. Treat every firearm as though it were loaded.
3. Be sure of your target and what is in front of and beyond it.
4. Keep your finger off the trigger until you are ready to shoot.
5. Make sure your firearm is safe to operate and you have the correct ammunition.
6. Never shoot at a hard surface or water.
7. Do not run, jump or climb with a loaded firearm.
8. Unload firearms when not in use
9. Firearms and ammunition should be stored separately and safely.
10. Avoid alcohol, prescription, over-the-counter, and other drugs before and during shooting.

B. Parts of the Shotgun – Point out and explain the parts of the shotgun so that new shooters will be familiar with the location and terminology of the part. Parts to include are:

1. Muzzle
2. Sight
3. Barrel
4. Rib
5. Forestock
6. Magazine
7. Chamber
8. Trigger and Trigger Guard
9. Safety
10. Comb or Cheek Rest
11. Butt

C. Action Types – Explain the differences between the actions and how they operate.

1. Bolt
2. Lever
3. Break or Hinge
4. Pump
5. Semi-automatic

D. Shot Shells – Point out and explain the parts of a shot shell; explain gauge, shot size, shell length.

1. Parts of a Shot Shell
    a. Shell or Casing
    b. Primer
    c. Powder
    d. Wad
    e. Shot

2. Gauge – the number of lead balls of the same diameter as the bore of the shotgun needed to weigh 1 pound: 12 lead balls .729 inches in diameter (the bore diameter of a 12 gauge shotgun) weigh 1 pound.

3. Shot Size – The size and kind of shot in the shot shell; examples include birdshot, bb, buckshot, and slugs.

4. Shell Length – The length of the shot shell; emphasize that not all shotguns can shoot all shot shells, and that students should check the barrel of their firearm to see what it is chambered for.

E. Carrying a Shotgun – Demonstrate the different carry methods and provide examples of when to use each.

1. Sling Carry – Good for long walks in open country, not recommend for thick brush.
2. Trail Carry – Do not use when walking behind someone or through snow or brush
3. Cradle Carry – Comfortable and reduces arm fatigue
4. Elbow or Side Carry – Comfortable, but least amount of muzzle control; not recommend when walking behind someone or through snow or brush.
5. Shoulder Carry – Good for walking beside or behind someone, do not use if someone is behind you.
6. Two-Handed or Ready Carry – Provides best control

F. Zones of Fire – Discuss the importance of establishing safe zones of fire while shooting, both on the range and in the field.

A zone of fire is the area where a shooter can safely fire their shotgun. This zone spans roughly 45 degrees directly in front of the shooter. When multiple shooters are present, each should be

spaced 25 to 40 yards apart and always in sight of each other; this is especially important for groups of hunters. Each shooter in the group should know and understand where their zone of fire is, as well as the zone of fire for each member in their group. Communication is essential for making sure each member of the group knows and understands where they can safely shoot.

3. Shotgun Shooting Techniques

A. <u>The difference between shooting a Rifle and a Shotgun</u> – Discuss the difference between aiming a rifle (stationary targets) and "pointing" a shotgun (moving targets).

Shooting a rifle involves sighting in on a stationary target and aiming for a particular spot (a bull's eye when target shooting or the vital area of a game animal if hunting). With few exceptions, shooting a shotgun involves trying to hit a moving target; if you use the same methods as you did when shooting the rifle, you will more than likely miss the target. This is because when shooting a rifle you aim using sights; when shooting a shotgun, you "point" the shotgun and move it with the target. This is a much more instinctive action than when shooting a rifle and requires regular practice to develop and maintain.

Even though a sight, usually a bead, is present on most shotguns, they are largely irrelevant for hitting a moving target because we are not aiming! Using the sight draws focus to the gun barrel, and away from the target.

To illustrate, stand at the front of the room and hold a hat in front of your chest. Ask the students to hold one arm out, with their thumb up, placing it over the hat with both eyes open. Ask them to focus on the hat; their thumb should become blurry as their eyes focus past it and bring the hat into clear focus. Next, ask them to

focus on their thumb; the hat should now become blurry while their thumb is clearly visible.

In this demonstration, the hat is the target and their thumb is the barrel of the shotgun. When they focused on the hat, they could see their thumb in front of the hat even though it was blurry while still seeing the target clearly; this is what the typical sight picture should be for shooting a moving target. With both eyes on the target, the shooter will be able to keep the target in focus, while still being aware of where the barrel of the shotgun is in relation to the target.

If a shooter tries to aim with a shotgun while shooting a moving target (closing one eye or focusing on the sight), their sight picture will be similar to when the students focused on their thumb; their gun barrel and sight will be in focus while the target becomes blurry. A moving target is challenging enough to hit when it is in focus; imagine how much harder it is when the target is out of focus!

B. Stance – Explain and demonstrate how to stand when shooting a shotgun: feet shoulder width apart, knees slightly bent, body squared toward the target and leaning slightly in the same direction. Explain how this stance provides easier movement to keep track of a moving target versus the stance for shooting a rifle.

C. Shouldering – Explain and demonstrate how to shoulder a shotgun, with the head erect and the comb coming to rest against the cheek first and then the stock coming to rest against the shoulder.

Practice Suggestion: Consistency when shouldering a shotgun greatly increases accuracy. Demonstrate to students how to practice shouldering using the flashlight drill.

Be sure the firearm is unloaded and pointed in a safe direction before starting the drill. With a flashlight in the end of the muzzle, stand a few feet back from the halfway point of a wall; the flashlight should be turned on. Now slowly raise the shotgun to a shouldered position while keeping both eyes on the light. The object is the keep the light focused on the seam of the wall and ceiling the entire time the gun is being shouldered. As an added component, practice shouldering the shotgun while moving to the target by sweeping the shotgun from your starting point at the halfway point to the right hand corner (left to right motion). Again, the object of the drill is to focus on the light and keep it on the seam of the wall and ceiling the entire time. Repeat this step but move the shotgun to the left hand corner (right to left motion).

By focusing on the light and keeping it on the seam, a natural shouldering position is encouraged without ever focusing on the firearm. Once a student knows how to shoulder a shotgun correctly, the flashlight drill allows them to build the muscle memory necessary to perform the motion consistently without thought.

D. Swing, Lead, and Follow Through – Explain and demonstrate the proper technique for shooting a moving target with a shotgun. Explain the swing through and sustained lead methods; the concept of lead; and follow through.

    1. Swing Through – Explain how to come up behind the target and swing "through" it.

    2. Sustained Lead – Explain how this method differs from the swing through method by mounting the shotgun ahead of the target.

3. Lead – The perceived distance between the target and the barrel of the gun.

4. Follow Through – Continuing to move the shotgun with the target while pulling the trigger and then after the shot is fired.

4. Hunting Application

A. Chokes – Explain the effect of choke on a shot pattern and the different choke sizes; explain to students that choke needs to be matched to the game they are hunting and that it is preferable to use the tightest choke recommended for the game they're hunting to avoid lightly wounding and loosing game.

B. Patterning – Explain the process for patterning and provide examples if possible of patterning targets.

Patterning is similar to the "sight in" process for rifles; it allows you to see what the distribution of shot is for the ammunition you are intending to use when you go hunting, at the distance you expect to shoot from. Patterning your shotgun before hunting season begins will tell you if the ammunition and choke combination you are using will be sufficient for the game you are hunting.

C. Recognizing Shootable Distances – Explain to students that as ethical hunters, it is their responsibility to shoot within the effective range of their firearm and within the range of their ability to avoid wounding and losing game. If possible, provide patterning boards to demonstrate (see Live Fire Suggestions, B).

5. Live Fire Suggestions

While not required, these suggestions are provided to help reinforce the material covered in this lesson plan.

A. Allow students to shoot patterning boards before moving to clay targets; this will give new shooters a chance to feel the recoil of their firearm without having the challenge of a moving target to also contend with.

B. Set up patterning boards at distances between 20 and 60 yards and allow participants to shoot them. Review the hits on the target to demonstrate effective range and shooting within ability to reduce wounding and loosing game.

C. If possible, provide participants with more than one target presentation; some shooters have an easier time hitting a left-to-right crossing target when they first start out versus a straight away target.

D. If time allows and participants are interested, demonstrate cleaning a shotgun after the live fire portion of the course has concluded. If time does not allow for a demonstration, refer participants to the owner's manual of their particular firearm.

Hunter Development Program Workshop Lesson Guide

Workshop Title:

Wildlife Identification

Workshop Objective:

Participants will demonstrate the ability to identify wildlife species that are native to Georgia using a variety of signs.

Topic	Time	Technical Information to cover	Suggested Activities
Wildlife ID Basics	15 min	Taxonomic classifications and common terms	Review Taxonomy. Review common terminology using examples to reinforce definitions. Provide a common terminology list.
What to look for	35 min	Body shape, distinctive skull features, fur, tracks and preferred environment	Discuss using samples and examples. Guided practice
Practice Activity	10 min		Set up samples of animal signs for practice ID

HE Field Day Manual : Wildlife Identification

1. Introduction
2. Wildlife ID Basics
    - Taxonomy
    - Terms
3. What to Look For: Follow the Clues
    - Body Shape and Fur
    - Skull
    - Tracks
    - Environment
4. Wildlife ID Activity
    - Materials
    - Set Up
    - Example Answer Sheet

Class Time: 2 hours

1. Introduction

A. Opening Statement
B. Introduction of Instructors
C. Purpose of the Course – to provide instruction on how to identify wildlife through various signs, whether in a classroom and looking at specimen samples, or while in the field.

2. Wildlife ID Basics

A. Taxonomy – Taxonomy is the organization and classification of living organisms. Species are grouped together by their similar characteristics, whether through physical or genetic traits. Classifications sometimes change, as new evidence is discovered to support moving one species from one group to another.

The system goes as follows, from broadest category to narrowest:

Kingdom
Phylum
Class
Order
Family
Genus
Species

To help students remember the order of organization, consider teaching the following mnemonic device: **K**ings **P**lay **C**hess **O**n **F**at **G**oats' **S**tomachs.

For this module, all specimens are organized under the following Kingdom, Phylum, and Class:

Kingdom – Animalia (Animal Kingdom)
Phylum – Chordata (Animals with backbones)
Class – Mammalia (Mammals)

The specimens in the YHEC Wildlife ID Guide are organized by their Order, then Family (names ending with "idae"). Each individual specimen has a scientific name (written in italics) that is made up of its Genus (first letter capitalized) and its Species (all lower case). Many specimens belong to the same Genus, but will have a different Species name, called the specific epitaph.

Because some animals have several common names that can change from place to place, scientists use scientific names to avoid confusion. For example, a ground hog also goes by these common names: marmot, whistle pig, and woodchuck. To avoid confusion, a scientist would use the name *Marmota monax* when writing a paper or giving a presentation.

B. Common Terms – there are several common terms used to describe the physical characteristics of animal specimens. The following are used throughout the YHEC Wildlife ID Guide and this Manual.

1. General Terms
   Carnivorous – Eats meat.
   Herbivorous – Eats vegetation.
   Omnivorous – Eats both meat and vegetation.

2. Fur Terms

Pelage – the fur, hair, or wool of a mammal

Guard Hairs – longer hairs of an animal's pelage that help to protect the under fur from damage and moisture.

Vibrissae – commonly called whiskers, these long stiff hairs on the snout and brow of mammals aid in tactile sensory input.

3. Skull Terms

Cranial Ridge – Ridge(s) on top of skull

Sagittal Crest – A raised ridge of bone running the length of the skull down the midline; the attachment of lower jaw muscles to this ridge "increases bite power." Present in carnivores and omnivores.

3. What to Look For: Follow the Clues – Determining what a specimen is accurately often involves becoming a detective and gathering all the clues you can about the specimen to make an informed decision. Whether you find a specimen in the field or are looking at a specimen in the classroom, take the following aspects of the specimen into consideration as you determine what animal it is.

A. <u>Body Shape and Fur</u> – Many animals, whether as a group or as individuals, have certain characteristics that separate them from others; this includes body shape and fur. Questions to ask are: Does the animal look like a dog, a cat, a mouse, etc? Does it have thick fur, thin fur, or very little fur? Are there any distinguishing colors, markings or patterns on the fur?

B. <u>Skull</u> – The shape of the skull and the teeth in the jaw bones can tell a lot about the specimen. First look at the shape of the skull: does it look a dog, a cat, a mouse, etc? Many animals have very distinctive skull shapes, and other

characteristics that set them apart. Some specimens may have ridges or crests on their skulls that help to distinguish them.

Next, look at the teeth: teeth tell us what and how an animal eats. If a specimen has flat teeth, used for grinding and mashing, then most likely it is a herbivore. Sharp teeth, used for cutting and tearing, mean the specimen is most likely a carnivore. A mix of these two kinds of teeth mean the specimen is mostly likely an omnivore, eating both vegetation and meat. Other characteristics include the arrangement of teeth (where they are located in the mouth) and which teeth are most prominent; for example, rodents have very pronounced incisors).

C. Tracks – Looking at the tracks of a specimen can tell you how it moves and interacts with its environment. What shape is it? Do its toes look like fingers, hooves, or more like a paw? Does the track contain claw marks (remember that cats, unlike other animals, have retractable claws and do not walk with them out).

D. Environment – Where you find a specimen at is one of the most important clues: it ties together all of the other clues you've observed. Many animals are adapted to live in a specific habitat where: they find the food they need (skull and teeth), they can blend in to the type of foliage present in that environment (body shape and fur), and they establish their territories (tracks).

4. Wildlife ID Activity – There are a number of ways that a Wildlife ID activity can be conducted; how to do it best will depend on individual situations. At any event, every effort should be made to provide a variety of specimens and samples for use during the activity. If you do not have samples of your own, contact your regional Hunting and Shooting Education Specialist.

A. Materials – To provide participants with as many opportunities as possible to test their ID skills, an ID activity should incorporate several specimens and samples (fur, tracks, and skulls). Make sure all samples are in good condition, as a deteriorated skull or fur sample can unintentionally increase the difficulty. For track samples, molded casts can be used, as well as the cast positives (the "foot") and cast negatives (the print). If cast positives are available, consider using sand or similar materials to create impressions for more realistic ID practice (several brands of "kinetic sand" are available commercially; this is a good material to use as it does not dry out and is self-adhering, so it won't make a mess).

   The YHEC Wildlife ID Guide is available for participants to study from. Avoid providing samples of specimens that do not appear in the Guide, as many participants may have never seen or studied the specimen before.

B. Set Up –As mentioned above, there are a number of ways to format an ID activity; how to set it up will be determined by individual situations. Whatever format you choose, be sure to have adequate tables and space to place specimens so that participants can clearly tell which sample goes with which number and station. Have each sample marked clearly with a number and be sure participants know in what order they are to supposed to ID the specimens. If plenty of space is available, consider having multiple stations that are sample specific (ex: Station 1 is Fur, Station 2 is Skulls..) with multiple samples at each station. If space is limited, mix up what samples are provided to cover as many specimens as possible.

   An example answer sheet for ID activities has been provided in Appendix A. Please note on the example answer sheet that an answer bank has been provided that contains more answers than

will be used; this is meant to test the participants and guide them to "Follow the Clues" in determining the ID of each sample.

Appendix A: Example Answer Sheet

Please Print Clearly

Name: _____

Team: _____ Rotation: _____

Instructions: Please print all answers clearly; answers that cannot be read will not be scored and counted as a missed point. If you change your answer, erase all marks and write your new answer in clearly. A list of *possible* answers has been provided; *not all will be used*. Provide an answer in each answer space; a blank answer space will be counted as a missed point.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Gray Fox
Red Wolf
Common Muskrat
White-tailed Deer
Bobcat
Nine Banded Armadillo
Coyote
Striped Skunk
Virginia Opossum
Marsh Rabbit
Eastern Spotted Skunk
Eastern Chipmunk
Northern Raccoon
Little Brown Bat
Nutria
American Beaver
Long Tailed Weasel
Red Fox
Eastern Cottontail Rabbit
Cougar
North American River Otter
Southern Flying Squirrel
American Black Bear
Eastern Gray Squirrel

9. _____

10._____

YHEC Animal Identification Guide

Order Didelphimorphia – Opossums

Family Didelphidae

Virginia Opossum …….....3

Order Chiroptera – Bats

Family Verspertilionidae – Evening Bats

Little Brown Bat…….....5

Order Xenarthra – Anteaters, Armadillos, and Tree Sloths

Family Dayspodidae – Armadillos

Nine Banded Armadillo……6

Order Lagomorhpa – Hares, Rabbits, and Pikas

Family Leporidae – Hares and Rabbits

Eastern Cottontail Rabbit…….....8

Order Rodentia – Rodents

Family Castoridae – Beavers

American Beaver…….....10

Family Muridae – Mice, Rats, and Voles

Common Muskrat……13

Family Sciuridae – Squirrels

Eastern Gray Squirrel……..15

Eastern Chipmunk……....17

Order Carnivora – Carnivores

Family Canidae – Foxes and Wolves

Coyote……..19

Gray Fox……...21

Red Fox……....23

Family Felidae – Cats

Bobcat……...25

Family Mephitidae – Skunks

Stripped Skunk…….....27

Family Mustelidae – Badgers, Otters, and Weasels

Northerrn River Otter……..29

Family Procyonidae – Raccoons and Ringtails

Northern Raccoon……31

Family Ursidae – Bears

American Black Bear……...33

Order Artiodactyla – Even-toed Ungulates (Hoofed Animals)

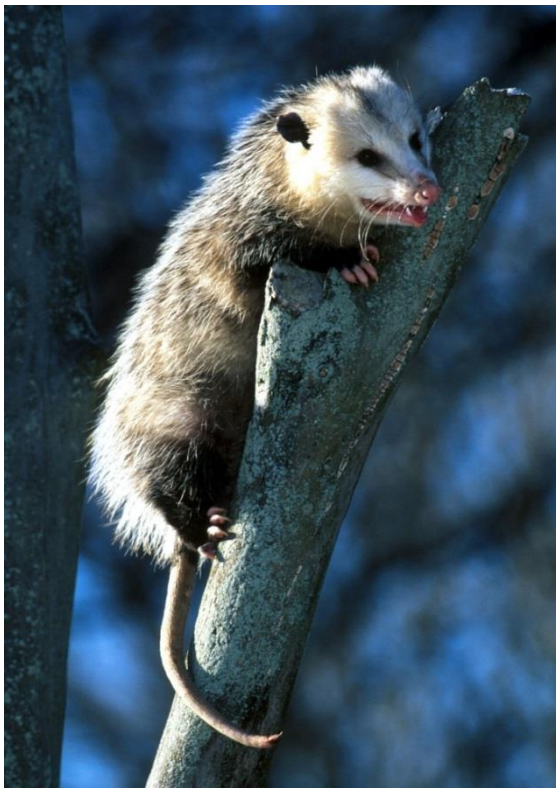
Family Cervidae – Deer and Elk

White-tailed Deer…….....36

Reference:

Trani, M. K., Ford, W. M., & Chapman, B. R. (Eds.). (2007). *The land manager's guide to mammals of the South* (pp. 59-63, 193-198, 222-225, 237-242, 252-257, 314-318, 404-409, 417-421, 435-440, 446-451, 452-456, 463-469, 470-474, 480-485,512-517, 518-525, 533-539). Nature Conservancy.

Virginia Opossum (*Didelphis virginiana)*



Description:

Medium sized mammal with a scaly semi-prehensile tail, furless leathery ears, and a pointed snout. Thick pelage on back, with long guard hairs; hairs are white at the base and black or brown at the tip, guards hairs are white or black tipped. White or gray face with dark colored belly; legs and feet are black, while toes and ears are black with white tips.

Habitat and Abundance:

Found in abundance in a variety of habitats throughout the Southeast, though commonly associated with woodland habitats.

Diet:

Omnivorous; eats a variety of plant matter, vertebrate and invertebrate prey, and is a known scavenger.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Little Brown Bat (*Myotis lucifugus)*

Description:

Small to medium sized bat with glossy fur. Wings are dark brown to black with little hair. Pelage on back can be tan, olive-brown, to dark brown, while fur across the chest and stomach is gray tinged with pale yellow.

Habitat and Abundance:

Rare to common throughout most of Georgia and the Southeast. Lives in colonies of a few individuals to several hundred; colony size can vary between summer and winter.

Diet:

Insectivorous; most commonly feeds on flying nocturnal insects in and around aquatic habitats.

Conservation Concerns:

Threatened locally by habitat destruction (disturbance of caves and buildings where colonies are roosting), disturbance of wetland feeding areas, and White Nose Syndrome (shown below).

Nine Banded Armadillo (*Dasypus novemcinctus)*

Description:

Characterized by a bony carapace that covers most of the body; named for the nine flexible bands across the middle of the carapace. Bony plates on back and head. Scantily haired, leathery skin is colored yellowish brown to yellowish gray. Long white claws on toes and twelve rings surround the tail.

Habitat and Abundance:

Non-native species found abundantly throughout the Southeast in a variety of habitats. Constructs burrows and nests underground.

Diet:

Omnivorous; primarily feeds on invertebrates, but known to eat small reptiles, birds' eggs, some vegetation and scavenge for carrion.


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Eastern Cottontail Rabbit (*Sylvilagus floridanus*)

Description:

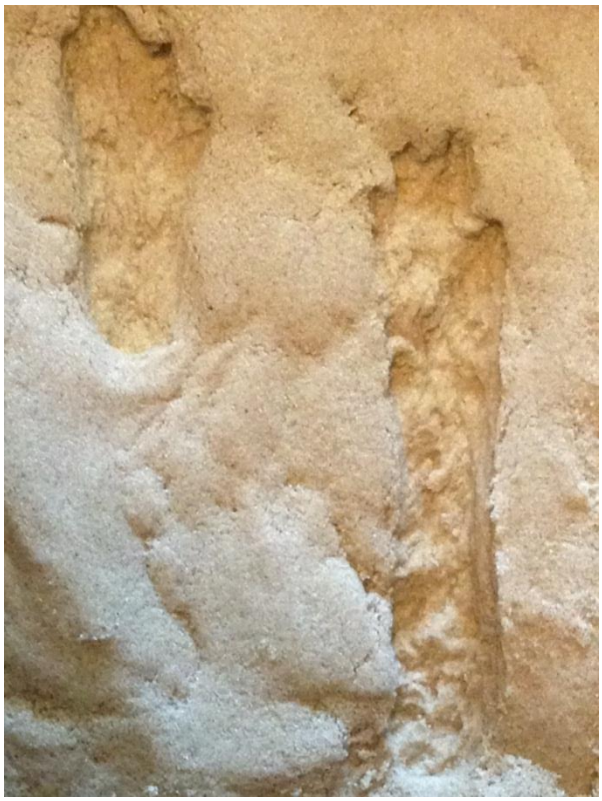
Medium sized rabbit with long, pointed ears. Brown to rust color pelage on back and sides with black penciling. Belly is white to gray. Ears do not have a black border; a white spot is usually present on the forehead.

Habitat and Abundance:

Most widely distributed rabbit in North America; found in several habitats throughout the Southeast, but most commonly associated with cover types found between wooded areas and open fields (edge or boundary habitat).

Diet:

Herbivorous; eats grassy vegetation in the summer and woody vegetation during the winter.

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American Beaver (*Castor canadensis*)

Description:

Largest rodent in North America. Large, compact body, scaled and horizontally flattened tail, short legs with webbed feet. Dense under-fur with long guard hairs; color ranges from blonde to dark brown.

Habitat and Abundance:

Abundant throughout the Southeast; most commonly associated with natural lakes and ponds with low seasonal fluctuation, low wave activity, and slow moving streams. Construct "lodges" of mud and wood in open water; often have several underwater entrances and several chambers. Will often make nests and dens along banks of larger rivers and lakes.

Diet:

Herbivorous; eats a variety of herbaceous and woody vegetation.

Similar Species:

Can be distinguished from Common Muskrat (*Ondatra zebithicus*) by larger body size and the orientation of the tail (horizontally flattened versus vertically flattened). Skull is larger and thicker.

Front Foot

Hind Foot


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Common Muskrat (*Ondatra zibethicus*)

Description:

Pelage composed of dense under-fur with long, glossy guard hairs. Usually tan to brown on top, with lighter coloration on the belly. Feet and tail are dark brown to black, hind foot partially webbed; tail is vertically flattened and scaled.

Habitat and Abundance:

Abundant regionally throughout the Southeast. Primary habitat includes ponds, lakes, ditches, canals, and marshes; usually avoids open water. Live in dens along river banks or will construct conical houses out of available vegetation.

Diet:

Omnivorous; eats mostly plant matter supplemented with locally available shellfish and fish.

Similar Species:

Skull can be distinguished from American Beaver (*Castor canadensis*) by size; smaller body and vertically flattened tail.


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Eastern Gray Squirrel (*Sciurus carolinensis)*

Description:

Medium sized tree squirrel with "salt and pepper" wash over a mostly gray pelage. White underside, with brown coloration mid-back, on flanks and legs. Bushy tail with alternating bands of black and brown, with white tip. Color can vary in individuals and populations from melanistic (black) to albino.

Habitat and Abundance:

Abundant throughout Georgia and the Southeast; local populations can vary with the availability of mast (acorns and nuts) producing trees and yearly mast crop production. Strongly associated with eastern deciduous hardwood forests with an abundance of mast producing trees. Will inhabit natural cavities in trees and make nest out leaves.

Diet:

Omnivorous; diet primarily consists of nuts, seeds, buds, and flowers from oak, hickory, and pecan trees. Will supplement diet with fungi, birds' eggs and nestlings.

Similar Species:

Skull similar to Eastern Chipmunk (*Tamias striatus*) but is larger with a more narrow pallet and lacks cheek teeth.


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Eastern Chipmunk (*Tamias striatus*)

Description:

Small ground squirrel with reddish brown fur. Large brown stripe running down the back is bordered by narrower darker stripes, which contain a white stripe. Grizzled appearance across back and sides, with lighter coloration across the belly. Light colored facial stripe above eye bordered by darker stripe. Flattened tail is well furred, with dark coloration on top and grayish coloration underneath.

Habitat and Abundance:

Abundantly found in hardwood and mixed pine forests habitats in the Southeast; not commonly found bellow the fall line in Georgia due to the predominantly pine forest habitat.

Diet:

Omnivorous; known to hoard food in and around its burrows. Diet includes a variety of nuts and seeds, fungi, invertebrates, and occasionally small vertebrates.

Similar Species:

Differentiated from Eastern Gray Squirrel (*Sciurus caroleninses*) skull by size, a wider pallet, and the presence of two peg-like cheek teeth, one to each side (circled on the following page).


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Coyote (*Canis latrans*)

Description:

Medium to large sized wild canid (dog) species with long legs. Pelage across the back is gray mixed with yellow or brown coloration and black tipped hairs. Underside can be a pale cream color, or gray with yellowish tint. Face is reddish brown or gray with erect ears. Bushy, black tipped tail.

Habitat and Abundance:

Non-native species that moved into the South with the extirpation (local extinction) of the Red Wolf (*Canis rufus*). Inhabits a wide variety of habitats.

Diet:

Carnivorous; wide variation in diet from region to region, will eat whatever prey is available.

Similar Species:

Skull can be distinguished from both Red Fox (*Vulpes vulpes*) and Gray Fox (*Urocyon cineroargenteus*) by size and a lack of temporal ridges. Tracks are similar, but larger in size with the middle toes closer together.


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Gray Fox (*Urocyon cinereoargenteus*)

Description:

The only canid (dog) species in North America that can climb trees; uses this ability to escape predators and hunt for small birds. Medium sized canid with reddish-gray pelage with "salt and pepper" wash. Distinct black stripe runs down back and top of tail. Red and yellow colored sides and flanks, with white cheeks and throat. Bushy tail with black tip.

Habitat and Abundance:

Found throughout the Southeast, most commonly associated with deciduous forest habitats, but will inhabit a variety of habitats. Prefers to hunt in open fields during summer and fall, and woodlands during winter and spring. Will den in burrows, both self-made and those abandoned by other animals, hollow logs, rock out crops, and some have been reported to den in cavities of standing trees.

Diet:

Carnivorous; primarily preys on rodents, but is also known to eat insects, fruit, carrion, and Virginia Opossum (*Didelphis virginiana*).

Similar Species:

Skull can be differentiated from Red Fox (*Vulpes vulpes*) by "U" shaped temporal ridges on top of skull.

Red

Fox (*Vulpes vulpes*)

Description:

Medium sized canind (dog) with reddish-yellow pelage. Legs, feet, and back of ears are black, while cheeks, throat and belly are white. Some variation does occur, with some specimens coat colors ranging from "blonde" to silver-blue-to black.

Habitat and Abundance;

Found throughout most of the Southeast and Georgia, inhabits many habitats, but most commonly found in woodlands near open fields and grasslands.

Diet:

Carnivorous; preys upon rodents and invertebrates, will scavenge and supplement diet with fruit and berries.

Similar Species:

Skull is similar to Gray Fox (*Urocyon cineroargenteus*); can be distinguished by "V" shaped temporal ridges on top of skull. Tip of tail of is white, while Gray Fox tail is tipped black.


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Bobcat (*Lynx rufus*)

Description:

Medium sized felid (cat) with pelage ranging in coloration from gray-brown, red-brown, or yellow-brown. Underside is yellow to white. Black spots usually visible throughout, black bars on front legs. Backs of ears are black and sometimes end in a black tuft. Hair on side of face forms ruff with sideburn-like appearance. Tail is short with black tip, white underneath.

Habitat and Abundance:

Found throughout the Southeast, inhabits almost every terrestrial habitat available. Prefers habitats with dense undergrowth and high prey densities. Will den in brush piles and sometimes uses abandoned burrows.

Diet:

Carnivorous; rodents comprise a large part of diet, but will also prey on birds, reptiles, insects, other small mammals, and occasionally White-tailed Deer (*Odocoileus virginianus*).


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Striped Skunk (*Mephitis mephitis*)

Description:

Medium sized mustlelid (weasel) with oily, dense fur that is usually black or dark brown in coloration. Prominent white stripe that starts as a point on the forehead and expands over the neck and shoulders to split into two stripes that run the length of the body to the tail. Short legs with long claws on forefeet, small triangular head, bushy tail often tipped white. Females are smaller than males. Known for pungent odor sprayed as a defense mechanism, will often display several warning signs before spraying.

Habitat and Abundance:

Common throughout the Southeast and Georgia, in all habitat types. Digs dens for use during winter, or will use abandoned burrows; females often den communally. Brush piles, stumps, hollow logs, and culverts are common dens during spring and summer.

Diet:

Omnivorous; eats a variety of insects, small mammals, reptiles, and shellfish, as well as plant and vegetable matter.


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Northern River Otter (*Lontra canadensis*)

Description:

Large mustlelid (weasel) with long, hydrodynamic body, short legs, webbed hind feet, and tapered tail. Fur is think, short, and glossy, with coloration ranging from dark brown to reddish-brown. Throat is often grayish to brownish-white. Broad muzzle with stiff vibrissae (whiskers).

Habitat and Abundance:

Found throughout the Southeast, regional populations vary as the species recovers from over harvesting and habitat loss. Inhabits a wide range of aquatic habitats, except for brackish and saltwater areas. Habitat selection depends upon availability of fish, deep pools, slow moving water, and denning sites. Will use dens dug by other animals, hollow logs and other natural shelters.

Diet:

Carnivorous; feeds primarily on fish and aquatic invertebrates. Will also prey on amphibians, small mammals, and water snakes.


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Northern Raccoon (*Procyon lotor*)

Description:

Stocky, medium sized mammal with gray to blackish-brown pelage, sometimes with undertones of yellow, brown, or red. Underside is lighter. Bushy tail with 4-6 black rings, each foot has 5 toes. Broad head with pointed nose, white coloration but black patches surrounding the eyes create a prominent mask.

Habitat and Abundance:

Found throughout the Southeast and Georgia; inhabits a variety of habitats, but is more abundant in hardwood bottomlands near streams, ponds, and wetlands. Will den in hollow trees, brush and lumber piles, structures, and abandoned burrows.

Diet:

Omnivorous; preys upon invertebrates (insects and shellfish), small mammals, birds' eggs, some species of snakes, nuts, seeds, berries, and other plant matter.


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American Black Bear (*Ursus americanus*)

Description:

Large, powerful body, massive legs and feet, strongly recurved claws on the toes. Pelage is usually black, occasionally with a white patch on the chest. Muzzle is tapered with brown coloration; small eyes and rounded ears. Males are heavier than females.

Habitat and Abundance:

Uncommon throughout the Southeast; found only in small pockets of Georgia. Inhabits a range of habitats, from hardwood forests in north Georgia, and pine and marsh habitats in central and south Georgia. Will den in hollow trees and logs, brush piles, caves, rock outcroppings, and thickets.

Diet:

Omnivorous; diet changes seasonally. Consumes large amounts of berries, seeds, nuts, shoots, tubers, and agricultural crops. Will prey on numerous insects, Virginia Opossum (*Didelphis virginiana*), Nine banded Armidillo (*Dasypus novemcinctus*), Feral Pig (*Sus scrofa*), Northern Raccoon (*Procyon lotor*), and

White-tailed Deer (*Odocoileus virginianus*).

Conservation Concerns:

Threatened by habitat loss and increased bear-human interactions and conflicts.

Front Foot

Hind Foot

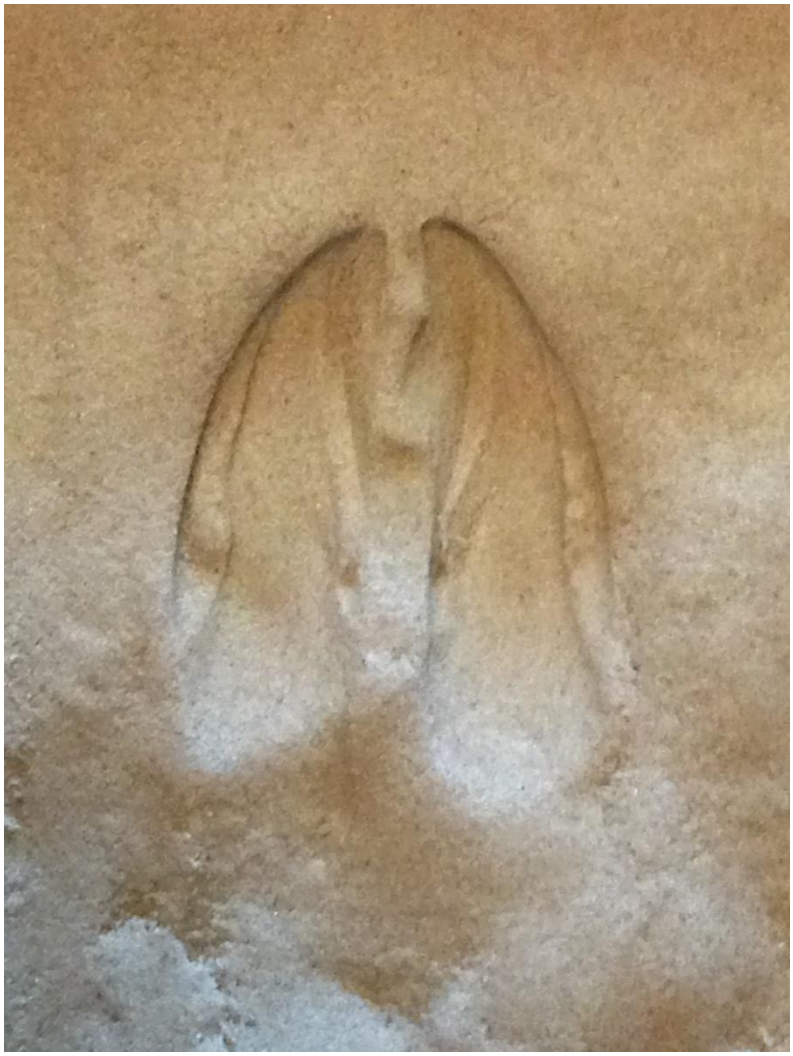
White-tailed Deer (*Odocoileus virginianus*)

Description:

A large, long legged ungulate (hooved animal) with tall ears. Juvenile pelage is tan to reddish-brown with white spots. Adult pelage ranges in color from grayish-brown to reddish-brown. Belly, insides of legs and ears are white; white band around eyes and muzzle, and white throat patch is present. Underside of tail is white and held erect when startled. Sexually dimorphic (different visible physical characteristics between males and females): males are larger and bear antlers; antlers begin to grow in April and are shed between January and March. Antlers consist of tines (points) rising from a main beam.

Habitat and Abundance:

Widely abundant throughout the Southeast; inhabits a large variety of forests types and habitats wherever forage is plentiful.



Diet:

Herbivorous; will opportunistically feed on any available vegetation, including agricultural crops, nuts, seeds, shoots, and grasses.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