

TODAY'S HUNTER



Photo was provided by the New York Dept. of Environmental Conservation.

New York

a guide to hunting responsibly and safely

WELCOME TO HUNTER EDUCATION IN NEW YORK

Hunting is an important part of New York's history. Generations have enjoyed our rich variety of game species including deer, bear, turkey, and a variety of waterfowl and small game animals and the excellent hunting opportunities they provide. Prior to the beginning of official hunter education courses, hunting traditions were passed down through family members and mentors in the field.



The state recognized a need for hunter education to further enhance hunting ethics and gun safety. Starting in 1949 New York became the first state to implement a mandatory hunter education course. Since its inauguration this course has certified over 3,000,000 students.



This manual and class will provide you with the knowledge and skills you will need to be a safe, responsible, and ethical hunter with hopes to ensure the continuation of the hunting tradition for present and future generations. The course is designed to meet the standards for hunter training established by the International Hunter Education Association (IHEA).



GOALS OF THE NEW YORK STATE SPORTSMAN EDUCATION PROGRAM

- Reduce the number of annual hunting incidents to zero.
- Promote the highest ethical standards in hunting and trapping through compliance with laws and regulations.
- Increase student understanding of their responsibility for stewardship, conservation, wildlife, habitat protection, and management.
- Form a partnership between the NYSDEC Sportsman Education Program and volunteer instructors to educate hunters and trappers to be safe, knowledgeable, responsible, and involved.
- Increase hunting and trapping participation.

BE SMART! BE SAFE! BE RESPONSIBLE!

'Today's Hunter in New York' and the 'Today's Hunter Worksheet' can be found online at www.dec.ny.gov.
For questions regarding the New York State Sportsman Education Program
contact us at **1-888-HUNT-ED2**.

TODAY'S HUNTER[®]

IN NEW YORK

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You should be able to...

- Give two reasons why hunter education is important.
- Name three hunting-related projects for which the Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act) funds are used.
- Describe the behavior of a responsible hunter.
- Give an example of how you can be involved in making hunting a respected sport.
- Name five sources of hunter education funding.



International Hunter Education Association (IHEA-USA)

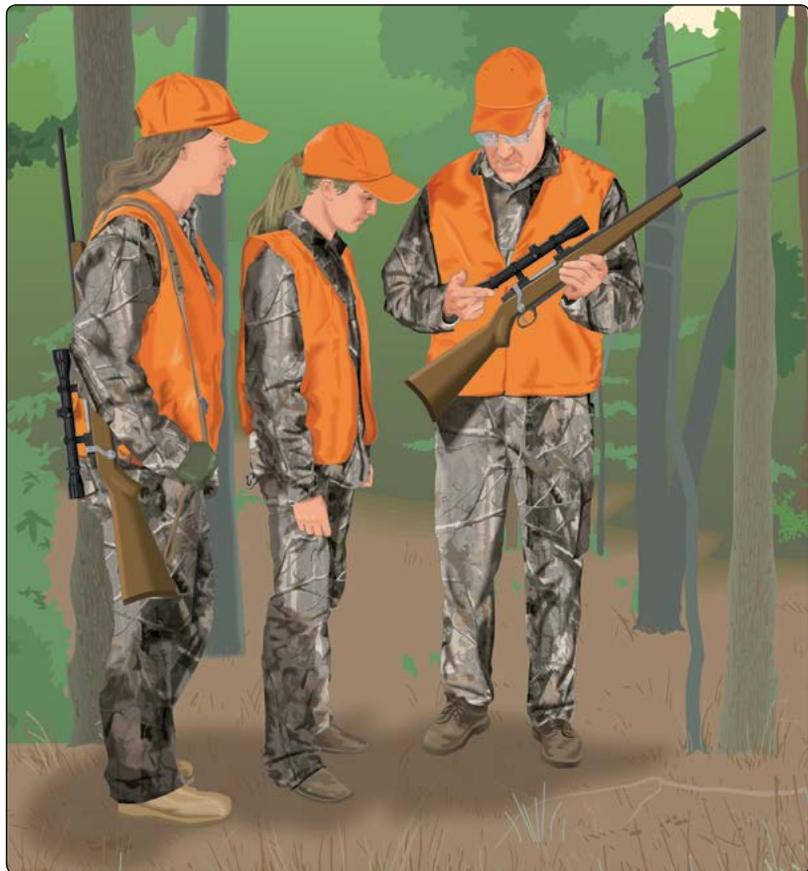
The organization's mission is to continue the heritage of hunting worldwide by developing safe, responsible, and knowledgeable hunters. Since its inception, IHEA has endeavored to:

- Serve as the primary resource for information on hunter education.
- Promote hunter education by providing opportunities for the exchange of ideas, knowledge, and experiences.
- Promote hunter education by fostering cooperative efforts among government agencies, organized groups, and industry.
- Uphold the image of hunting as a legitimate tool of wildlife management and as a recreational activity throughout North America.
- Promote programs which prevent hunting incidents.
- Cultivate honesty, self-discipline, self-reliance, responsible behavior, and good citizenship among hunters.
- Strive for constant improvement in hunter education programs.
- Fully involve volunteers and other associate members in all affairs of the International Hunter Education Association.

Why Hunter Education?

The first mandated hunter education program began in New York in 1949 to reduce hunting incidents. As hunter education programs spread across the country, safety coordinators formed what is now the International Hunter Education Association to create a core curriculum, which is the basis for this course.

- Hunter education programs have always taught young hunters the practice of firearm and hunting safety. Today, hunter education programs are about more than safety. They have been expanded to produce responsible, knowledgeable, and involved hunters—hunters who understand the importance of complying with hunting laws and behaving ethically. These programs give beginners a good foundation, and they provide a refresher for veteran hunters.
- Ultimately, the mission of hunter education programs is to develop safe, ethical, and responsible hunters and to ensure the continuation of the hunting tradition.



Responsibility, Safety Skills, Knowledge, and Involvement

Hunter education strives to instill responsibility, improve skills and knowledge, and encourage the involvement of beginner and veteran hunters. Responsible, ethical behavior and personal involvement are both essential to the survival of hunting.

■ Responsibility

A knowledgeable and skillful student of hunting will never be a true hunter unless he or she also behaves responsibly. Responsible behavior includes courtesy, respect of others and of wildlife, and involvement. Responsible hunters do not poach or act carelessly. Responsible hunters obey hunting laws; hunt fairly; practice safety rules; and develop marksmanship skills for a quick, clean kill before shooting. How you behave and how other people see you will determine hunting's future.

■ Safety Skills

Hunting-related safety skills are gained through hands-on training and practice. It is most valuable to learn these skills from an experienced hunter.

■ Knowledge

Knowledge is learning and understanding the basics of safe gun handling and hunting. Before being trained in the skill of firearm shooting, you should know how the firearm operates and how to handle it safely.

■ Involvement

Part of the process of becoming a true, responsible sportsman is becoming involved in efforts to make hunting a respected sport. That includes teaching others, working with landowners, and cooperating with game wardens. It also includes joining conservation organizations, which will help preserve habitat and promote wildlife management.

Hunter Education Funding Sources

- The U.S. Fish & Wildlife Service provides federal aid to state wildlife agencies to support a variety of hunting-related projects, including hunter education, land acquisition, and improvement of wildlife habitat. The Federal Aid in Wildlife Restoration funding was established in 1937 by the Pittman-Robertson Act (see sidebar).
- State wildlife agencies sponsor the hunter education programs that are found in each state or province.
- Non-governmental organizations (NGOs) support various hunting activities.
 - Some NGOs (Ducks Unlimited, Pheasants Forever, and Rocky Mountain Elk Foundation) work to save game species habitat.
 - Others (the IHEA-USA, the National Rifle Association, the Izaak Walton League, and the National Bowhunter Education Foundation) focus on educating hunters and promoting safe, responsible, ethical hunting practices and skills.
- Many firearm and archery manufacturers provide training materials to teach hunters how to use their products safely.
- Local hunting clubs, civic clubs, and businesses often provide the facilities and equipment for hunter education courses.

Pittman-Robertson Act

- Pittman-Robertson Act is the popular name for the Federal Aid in Wildlife Restoration Act.
- Named for the senators who sponsored the bill, President Franklin Roosevelt signed the Act into law in 1937.
- The Act helps fund the selection, restoration, and improvement of wildlife habitat and also wildlife management research.
- Amended in 1970, the Act now also funds hunter education programs and the development and operation of public target ranges.
- Funds come from an 11% federal excise tax on sporting arms, ammunition, and archery equipment, and a 10% tax on handguns. One-half of the excise tax on handguns and archery equipment is used for hunter education and target ranges. The Department of the Interior collects these funds from the manufacturers and each year distributes funding to the states and territorial areas.
- Fund distribution is based on the area of each state and its number of licensed hunters. The state covers the full amount of an approved project and then applies for reimbursement through federal aid for up to 75% of the project's expenses; the state is responsible for the other 25% of the project's cost.
- Non-hunting nature lovers equally benefit from this funding since it supports the management of wildlife areas and wetlands as well as game and non-game wildlife.
- **"Robertson's 29 words"** are a clause in the Act's language to prevent states from diverting license fees paid by hunters away from their intended purpose:

"... And which shall include a prohibition against the diversion of license fees paid by hunters for any other purpose than the administration of said State fish and game department"



You should be able to...

- Give five reasons why we have hunting laws.
- Name the three types of hunting laws.
- State how the “father of wildlife management” defined ethical behavior.
- Describe how responsible and ethical hunters show respect for natural resources.
- Describe how responsible and ethical hunters show respect for other hunters.
- Describe how responsible and ethical hunters show respect for landowners.
- Describe how responsible and ethical hunters show respect for non-hunters.
- List and describe the five stages of hunter development.
- Identify public and private land where you can go hunting.
- Give three examples of what you can do to be involved in making hunting a respected sport.

Know the Law

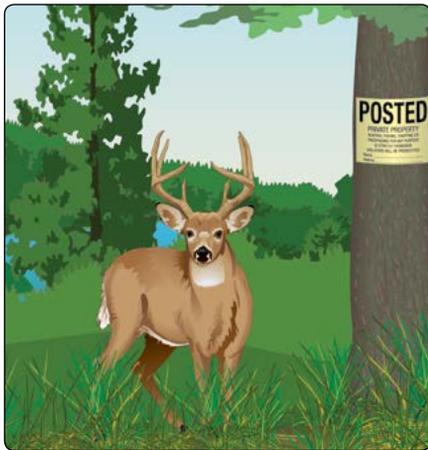
Read your jurisdiction's hunting laws and regulations booklet. Familiarize yourself with the table of contents and the topics.

Ignorance of hunting laws is not a valid excuse for violating them. It is the hunter's responsibility to review state game laws before the hunting season.

Be a responsible hunter.

Remember ...

A substantial amount of funding for wildlife management comes from the purchase of licenses, which annually raises millions of dollars.

**How Hunting Laws Are Passed**

In most states, a wildlife management agency sets hunting regulations. These agencies will have regular meetings where the public can voice their concerns and make suggestions. Hunters wishing to propose changes to the regulations should participate in these meetings or join a hunting organization that interacts with the agency.

Why Do We Have Hunting Laws?

During the 19th century, many game animals were hunted nearly into extinction. Buffalo were reduced to about 800 head, and the beaver was almost wiped out. Elk, deer, and pronghorn had been reduced to a fraction of their original number.

Hunting Laws Protect Wildlife

To conserve wildlife for future generations to enjoy, wildlife management laws:

- Regulate hunting seasons to limit hunting and avoid nesting and mating seasons.
- Limit hunting methods and equipment.
- Set “bag” limits on the number of animals that can be taken.
- Establish check stations and game tag requirements to enforce the laws.

Hunting Laws Protect People

As well as ensuring the availability of game for future generations, hunting laws:

- Establish safety guidelines for hunting to protect both hunters and non-hunters.
- Ensure adequate funding for wildlife programs by collecting license fees.

Hunting Laws Ensure a Fair Chase

- The concept of fair chase began in the Middle Ages when hunters increased the challenge of sport hunting by setting rules that limited how they took game.
- More recently, fair chase rules were developed to stem public criticism of hunters. An early model was the “fair chase principle” established in the late 1800s by the Boone and Crockett Club, founded by Theodore Roosevelt.
- Rules later banned the use of vehicles, airplanes, and radios; electronic calling; or shooting in a fenced area. Many states have made those rules into law.

Hunting Laws Ensure a Fair Distribution of Game

- Hunters who use primitive firearms, such as bows, have game to hunt.
- Bag limits and seasons ensure that all hunters have an opportunity to bag game.

Hunting Laws Help the Hunter's Image

- Responsible hunters welcome laws that enforce sportsmanlike hunting practices because the behavior of irresponsible hunters has caused some people to oppose hunting.
- Nationally, about five percent of the population hunts, and roughly the same percentage actively opposes hunting. The rest of the population is predominantly neutral. However, bad behavior by hunters could sway some of the neutral crowd into the anti-hunting camp.

Types of Hunting Laws

- **Federal laws** regulate the taking of migratory bird species, such as doves and waterfowl, ducks, geese, and swans. Doves and waterfowl breed in Canada and the United States and winter in the southern United States and Mexico. The authority to manage them is in the Migratory Bird Treaty Act, an international treaty among our three nations.
- **State and provincial laws and regulations** manage the hunting of non-migratory species, such as deer, rabbits, turkeys, and pheasants. States and provinces manage wildlife and regulate hunting using laws and regulations.
- **Municipal laws** may restrict, for example, the shooting of a firearm within a certain proximity to a home or residential neighborhood.

Hunter Ethics

- Hunting laws preserve wildlife, but **ethics** preserve the hunter's opportunity to hunt. Because ethics govern the behavior that affects public opinion of hunters, ethical behavior ensures that hunters are welcome and hunting areas stay open.
- Ethics generally cover behavior that has to do with issues of fairness, respect, and responsibility not covered by laws. For instance, it's not illegal to be rude to a landowner when hunting on his or her property or to be careless and fail to close a pasture gate after opening it, but most hunters agree that discourteous and irresponsible behavior is unethical.
- There are also ethical issues that are between the hunter and nature. For example, an animal appears beyond a hunter's effective range for a clean kill. Should the hunter hope to get lucky and take the shot? Ethical hunters would say no.

The Hunter's Ethical Code

Aldo Leopold, the "father of wildlife management," said, "Ethical behavior is doing the right thing when no one else is watching—even if the wrong thing is legal."

The ethical code hunters use today has been developed by sportsmen over time. Most hunting organizations agree that responsible hunters do the following.

- **Respect Natural Resources**
 - Leave the land better than you found it.
 - Support wildlife conservation programs.
 - Adhere to fair chase rules.
 - Know your capabilities and limitations as a marksman, stay within your effective range, and strive to improve your skills and the likelihood of a clean kill.
 - Ensure that meat and usable parts are not wasted.
 - Treat both game and non-game animals ethically.
 - Abide by game laws and regulations.
 - Cooperate with conservation officers.
 - Report all game violations.
- **Respect Other Hunters**
 - Follow and insist on safe firearm handling practices.
 - Refrain from interfering with another's hunt.
 - Avoid consuming alcohol, which can impair you to the point of endangering others.
 - Share your knowledge and skills with others.

ethics

Moral principles or values that distinguish between right and wrong; they are unwritten rules that society expects to be followed

How To Ask Landowners for Permission

- Make contact well ahead of the hunting season.
- Wear street clothes—no hunting gear or firearms.
- Don't bring companions—a "crowd" could be intimidating. Don't bring your dog.
- Don't bring a firearm unless requested.
- Introduce yourself and tell where you're from. Tell your occupation if it will build credibility and that you are a hunter education graduate.
- Explain how you will respect the property if permission is granted.
- Be polite, even if permission is denied. Your courtesy may affect the outcome of future requests.



Contact the landowner while wearing street clothes and well in advance of when you wish to hunt.

Landowner Complaints About Hunters

- Don't get permission to hunt.
- Don't tell the landowners when they arrive at or leave the property.
- Make too much noise.
- Leave litter behind.
- Carry loaded firearms in vehicles.
- Drive off the ranch roads.
- Don't leave gates as they were found (open or shut) when the hunter arrived.
- Shoot too close to neighbors or livestock.
- Leave fires unattended.
- Violate game laws.
- Drink alcohol to excess.

Remember ...

- Hunters have a duty to police their own ranks. Most states have a toll-free hotline to report poachers.
- You can exert positive peer pressure by setting a safe and ethical example. In this way, you help others become safer, more ethical hunters.
- Those who violate hunting laws are stealing not only from you and your positive efforts but also from future generations of hunters.

How To Behave If Confronted by Anti-Hunter Protesters

- Remain calm and polite, and do not engage in arguments—never lose your temper.
- Never touch an anti-hunter or use any physical force, and especially **never threaten an anti-hunter with your firearm.**
- Report hunter harassment to law enforcement authorities. If possible, record the vehicle license number of harassers.

How Hunters Make a Positive Impact

- Put in countless hours to improve wildlife habitat.
- Help biologists transplant game species and save other species from extinction.
- Encourage others to practice ethical behavior.

■ Respect Landowners

- Ask landowners for permission to hunt.
- Follow their restrictions on when and where you may hunt.
- Treat livestock and crops as your own.
- Offer to share a part of your harvest with the owner.
- Leave *all* gates the way you found them.
- If you notice something wrong or out of place, notify the landowner immediately.
- Never enter private land that is cultivated or posted, unless you have obtained permission first. Some states require written permission from landowners.



■ Respect Non-Hunters

- Transport animals discreetly—don't display them.
- Keep firearms out of sight.
- Refrain from taking graphic photographs of the kill and from vividly describing the kill while within earshot of non-hunters.
- Maintain a presentable appearance while on the street—no bloody or dirty clothing.

Personal Choice

- As in every human endeavor, there are gray areas of ethical behavior that come down to a matter of personal choice.
- Examples of gray areas of ethical behavior are:
 - Baiting deer with corn or protein pellets
 - Shooting birds on the ground, on the water, or in trees
 - Shooting from a vehicle or boat within private boundaries or on private waters

The Five Stages of Hunter Development

It should be the goal of every responsible hunter to become a true sportsman. As a hunter gains experience and skill, studies have shown that he or she will typically pass through five distinct stages of development. Keep in mind, however, that not everyone passes through all of these stages, nor do they necessarily do it in the same order.

■ Shooting Stage

The priority is getting off a shot, rather than patiently waiting for a good shot. This eagerness to shoot can lead to bad decisions that endanger others. A combination of target practice and mentoring helps most hunters move quickly out of this stage.

■ Limiting-Out Stage

Success is determined by bagging the limit. In extreme cases, this need to limit out also can cause hunters to take unsafe shots. Spending time with more mature hunters helps people grow out of this phase.

■ Trophy Stage

The hunter is selective and judges success by quality rather than quantity. Typically, the focus is on big game. Anything that doesn't measure up to the desired trophy is ignored.

■ Method Stage

In this stage, the process of hunting becomes the focus. A hunter may still want to limit out but places a higher priority on how it's accomplished.

■ Sportsman Stage

Success is measured by the total experience—the appreciation of the out-of-doors and the animal being hunted, the process of the hunt, and the companionship of other hunters.

1. Shooting Stage



2. Limiting-Out Stage



3. Trophy Stage



5. Sportsman Stage



4. Method Stage

Find Ethical Hunting Partners

- You may feel pressure from others to bend or break the law.
- Restate to your “friend” what they are asking you to do. For instance, “You are asking me to break the law by putting my tag on your deer.”
 - Does the person continue to try to persuade you? Do they show contempt for your ethics by belittling your choice?
 - If so, that person is probably not your friend and is definitely not a good hunting partner.
- The same rule of thumb works for ethical dilemmas. If a hunting partner asks you to participate in unethical behavior, consider whether the person is a good partner for you.
- The difference between an act being legal and an act being ethical is simply the difference between the letter of the law and the spirit of the law. Responsible hunters always follow the spirit of the law.

Involvement

- Part of the process of becoming a true, responsible sportsman is becoming involved in efforts to make hunting a respected sport. That includes teaching proper knowledge and skills to others, working with landowners, and cooperating with wildlife officials.
- It also includes joining conservation organizations dedicated to improving habitat and management efforts. Young hunters can be involved by joining organizations such as 4-H, Boy Scouts, and Girl Scouts, as well as by participating in wildlife projects in their local communities.
- Responsible, ethical behavior and personal involvement are both essential to the survival of hunting. How you behave and how other people see you will determine whether hunting will continue as a sport.

Learning To Make Wise Choices As a Hunter

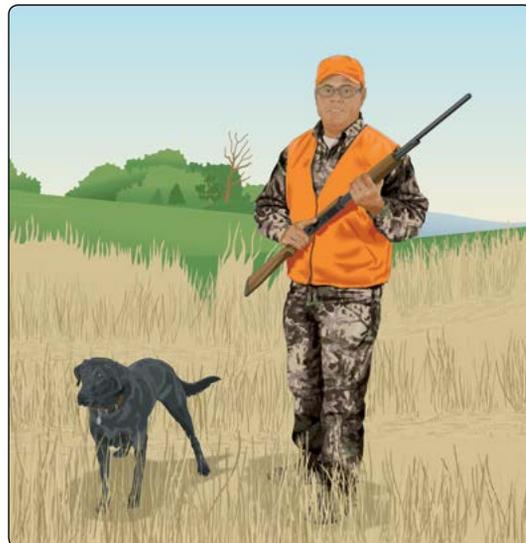
The difference between the novice hunter and the true sportsman is wisdom, which is acquired by the experience gained from making decisions, acting on them, and then seeing the consequences of your actions. This experience and wisdom will help you navigate the gray areas mentioned earlier.

- During your development as a hunter, there are good rules to guide your decision-making. When in doubt, ask yourself:
 - Is it legal?
 - Is it safe?
 - Is it ethical?
- Sometimes, the choice isn’t between right and wrong—it’s between right and right. These are the more difficult choices.
- As a hunter, always make the ethical choice—even though unethical behavior may be legal. If you do this, it will be easier to live with knowing you did the right thing, even though the results may not have been what you wanted.

Practicing Making Wise Decisions

- Choosing between two correct options, neither of which may be particularly desirable, is known as a dilemma. A dilemma arises when you must choose between two values that are important to you.
- These exercises will help you develop your decision-making skills in a more cool-headed environment. Practice the exercises with a friend or parent. Discussion enriches the experience.
- Follow these steps as you work through the exercises.
 1. Decide whether the dilemma has a right answer and a wrong answer, or two right answers.
 2. If it is a “right vs. right” dilemma, determine whether one option is more ethical than the other.
 3. If both options are ethical, give at least three possible ways to proceed.
 4. Circle the best course of action. If you’re in doubt, imagine that a television news reporter was filming your choice. What would you like to see on the evening news?
 5. Try to create a third solution that is preferable to the choices you were offered.

Note: It is in this step that you may learn the most. Consider the choice that had to be made in the story as a result of certain actions. Could different behavior earlier on have prevented reaching the difficult dilemma? This will help you learn to act while considering difficult consequences that could result.



What Would You Do?

1. You are deer hunting from a tree stand near the corner of your property and posted land. After several days of waiting, a beautiful deer comes into range. You take a careful shot, but it turns at the last instant and runs. You find hair and blood, so you start off to track the wounded deer. The trail leads directly onto posted private property. No one is nearby.

2. You are grouse hunting with your father's friend. As you are pushing through heavy cover, you hear two rapid shots. A minute later, your hunting partner arrives, holding a hawk in his hand. He comments that it's a "funny-looking grouse." You immediately tell him that it's a protected hawk and illegal to shoot. Just then, a conservation officer approaches. Your partner stuffs the hawk under a rock and starts to walk away. The officer comes to you, asks for your license, and inquires about the shooting.

3. You are woodcock hunting over a well-trained pointer. You have noticed and read about the decline in woodcock in the last 30 years. You have shot a few resident birds so far this season. Today, however, you have hit the flight birds. You have your three-bird limit by mid-morning. At lunch, a friend stops by and proposes an afternoon hunt for woodcock.

4. You have been scouting spring turkeys and have located a vocal tom. A friend from your school has a sister who is excited about hunting and has just passed hunter education. Your friend tells you that she is having no luck locating any toms and asks if you know a good spot where she can take her sister.

5. You are the parent of a new hunter. After weeks of preparation for the youth waterfowl day, you head to the duck blind. Just after legal shooting time, three ducks come whistling in to your decoy. Just as you are saying, "No shot, blacks!" two shots ring out. One bird drops and another sails away, clearly hit. The limit is one black duck due to declining numbers in the flyway.

- What do you do? List three possibilities. Circle the best choice.
- Does the dilemma have a clear right and wrong answer?
- What could you have done prior to shooting to prevent the dilemma?

- What should you do?

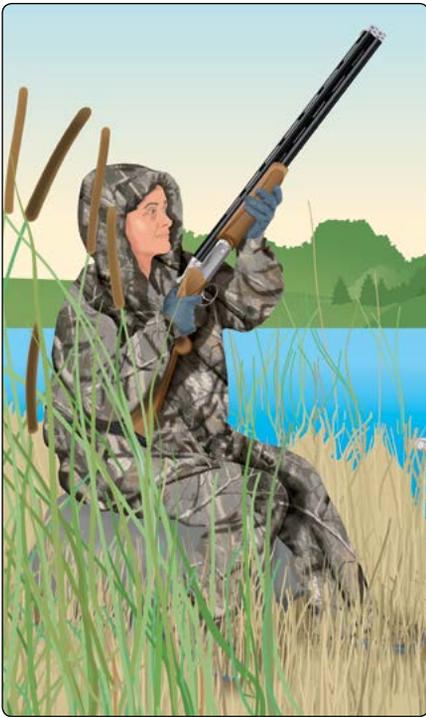
- What should you do?
- If the friend instead proposed a woodcock hunt the next day, you could take three more birds legally. Should you go? Should you take your limit?
- What kind of dilemma is this?
- What other solutions can you create?

- What do you do? List three possibilities.
- Circle the best choice and discuss why.
- Is there another way to deal with this?

- As the parent, what would you do? List three possibilities. Circle the best choice.
- Is there anything you could have done prior to this incident to avoid the dilemma?

You should be able to...

- Define “firearm.”
- Identify the basic parts of a rifle, shotgun, and handgun.
- Identify the basic components of rifle and shotgun ammunition.
- Explain how ammunition is fired from a firearm.
- Identify six types of firearm actions.
- Demonstrate proper loading and unloading of firearms with two different types of actions.
- Identify the location(s) of safeties on firearms and explain how they are used.
- Name five types of sights found on firearms.
- Describe how a rifle is different from other firearms.
- Identify and explain a rifle’s caliber and a shotgun’s gauge.
- Name the four common shotgun chokes, and explain how they differ.
- Explain the difference between lead shot, steel shot, and non-toxic shot.
- Explain the danger of mixing different gauges of shotshells.
- Explain why it is important to know your firearm’s range.
- Demonstrate cleaning procedures for a firearm.
- Demonstrate how to make a firearm safe for storage.
- Demonstrate the correct way to show a firearm to another person.



The first step to becoming a responsible hunter is knowing your equipment and how to use it safely.

What Is a Firearm?

A firearm is a mechanical device that uses pressure from a burning powder to force a projectile through and out of a metal tube. To appreciate fully the importance of firearm safety, you first must understand how firearms work. This includes knowing the parts of the firearm, the types of ammunition, how ammunition is fired, and the ranges of the various firearms used for hunting.

Basic Parts of a Firearm

Although firearms have changed a great deal since they were first invented, the terms used for their parts have changed very little. All modern firearms have three basic groups of parts.

- **Action:** The action is the heart of the firearm—the moving parts that load, fire, and eject the shells or cartridges. Several types of actions are used in modern firearms. Muzzleloaders have locks instead of actions.
- **Stock:** The stock serves as the handle of the firearm. It can be composed of one or two pieces and is usually made of wood or a synthetic material.
- **Barrel:** The barrel is the metal tube that the projectile travels through (bullets travel through the barrels of rifles and handguns; shot and slugs travel through the barrel of shotguns).

Parts of a Bolt-Action Rifle

Rifles, shotguns, and handguns have many similar parts. Shown here are the parts of a commonly used rifle—the bolt-action rifle.

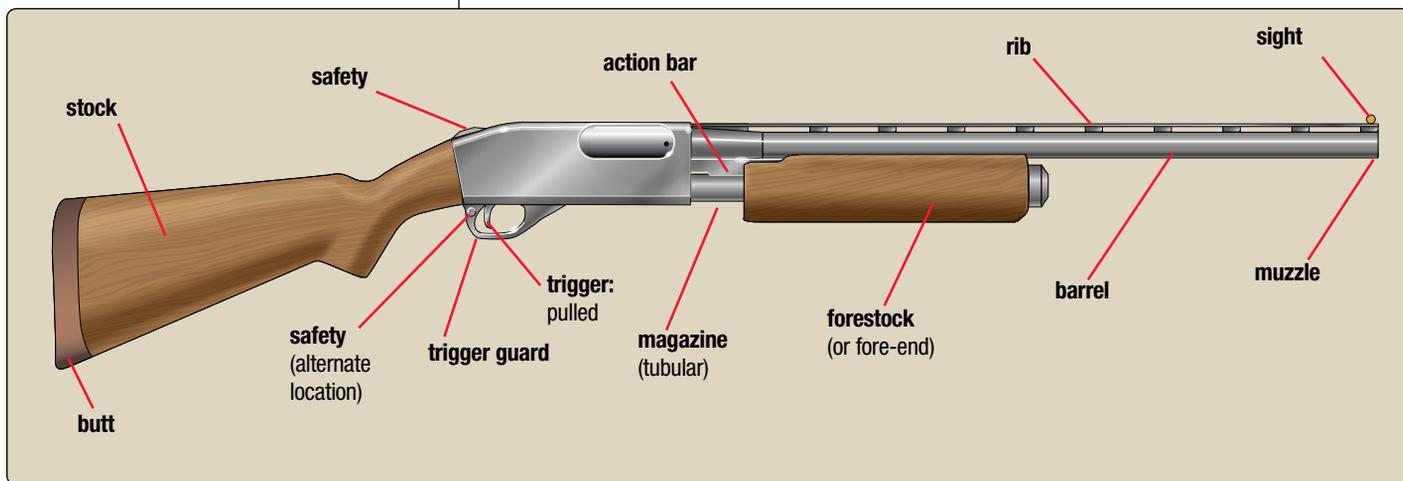


Other Firearm Parts

- bore:** Inside of the firearm barrel through which the projectile travels when fired
- breech:** Rear end of the barrel
- firing pin:** A pin that strikes the primer of the cartridge, causing ignition
- receiver:** Metal housing for the working parts of the action

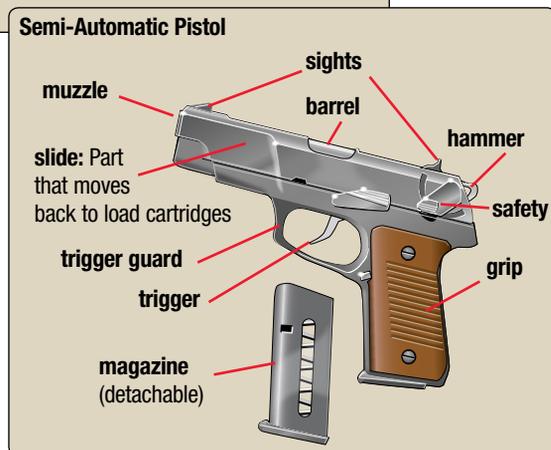
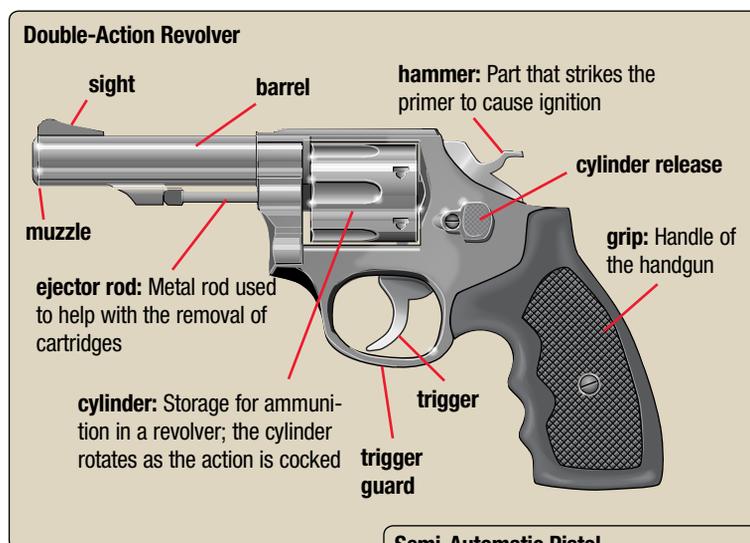
Parts of a Pump-Action Shotgun

Shotguns are another long-barreled firearm used by hunters. Below are the parts of a commonly used shotgun—the pump-action shotgun.



Parts of a Handgun

Handguns (revolvers and pistols) are short-barreled firearms sometimes used for hunting. Below are the parts of a double-action revolver and a semi-automatic pistol.



What Is Ammunition?

Modern ammunition varies depending on the type of firearm. Rifles and handguns use a **cartridge** containing a single projectile (bullet). Shotguns use a **shotshell** containing either a single slug or a large number of small projectiles (shot or pellets). However, the basic components of cartridges and shotshells are very similar.

Basic Components of Ammunition

The basic components of ammunition are the case, primer, powder, and projectile(s). Shotshells have an additional component called wad.

- **Case:** The container that holds all the other ammunition components together. It's usually made of brass, steel, copper, paper, or plastic.
- **Primer:** An explosive chemical compound that ignites the gunpowder when struck by a firing pin. Primer may be placed either in the rim of the case (rimfire) or in the center of the base of the case (centerfire).
- **Gunpowder:** A chemical mixture that burns rapidly and converts to an expanding gas when ignited. Modern smokeless powder will burn slowly when ignited in the open (outside of the case). Black powder is less stable and can be explosive when impacted or ignited in the open.
- **Projectile:** The object(s) expelled from the barrel. A bullet is a projectile, usually containing lead, fired through a rifle or handgun barrel. A slug is a solid projectile, usually of lead, fired through a shotgun barrel. Shot is a group of lead, steel, tungsten alloy, or bismuth pellets fired through a shotgun barrel.
- **Wad:** A seal and/or shot container made of paper or plastic separating the powder from the slug or shot in a shotshell. The wad prevents gas from escaping through the shot and holds the shot together as it passes through the barrel.

Rifle and Handgun Cartridges

- It's critical to select the correct cartridge for your rifle or handgun (see page 25). Carefully compare the data stamp on the barrel of the firearm against the description on the ammunition box and the stamp on each cartridge.
- Bullets used in rifle and handgun cartridges come in various designs, sizes, and weights. The bullet is made of lead but sometimes has a copper jacket. Bullets used for hunting game may have soft or hollow points designed to expand (mushroom) upon impact. Bullets used for target shooting usually have solid points that make smaller holes.
 - **Common Types of Rifle Bullets**
 - Pointed Soft Point: High velocity, accurate bullets with a flat travel path (trajectory); excellent mushrooming
 - Rounded Soft Point: Popular for low-velocity calibers; recommended for tubular magazines
 - Protected Tip: Highly accurate with excellent expansion
 - Full Metal Jacket: Maximum penetration without mushrooming; these bullets are *illegal for big game hunting in most states*
 - **Common Types of Handgun Bullets**
 - Roundnose Lead: Good penetration, little expansion
 - Full Metal Jacket: High penetration, no expansion
 - Semi-Wad Cutter: Balances penetration and expansion
 - Hollowpoint: Designed for high expansion on impact
 - Wad Cutter: Flat-ended, used for target shooting; creates clean hole in paper

cartridge

Ammunition used in modern rifles and handguns; a case containing primer, gunpowder, and a bullet

shotshell

Ammunition used in modern shotguns; a case containing primer, gunpowder, wad, and a slug or shot

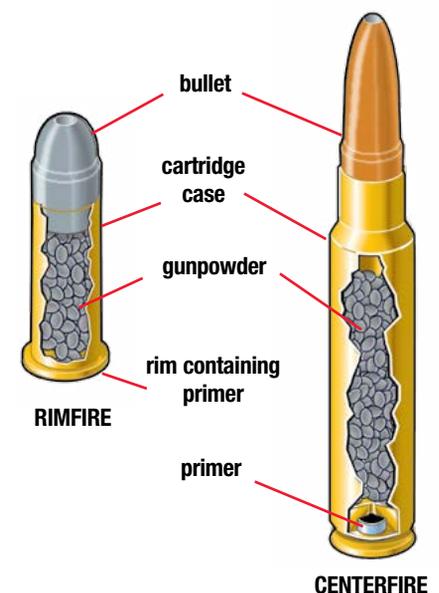
Centerfire and Rimfire Ammunition

- Centerfire ammunition is used for rifles, shotguns, and handguns. In this type of ammunition, the primer is located in the center of the casing base. Most centerfire ammunition is reloadable.
- Rimfire ammunition has the primer contained in the rim of the ammunition casing. Rimfire ammunition is limited to low-pressure loads. Rimfire cartridges are not reloadable.

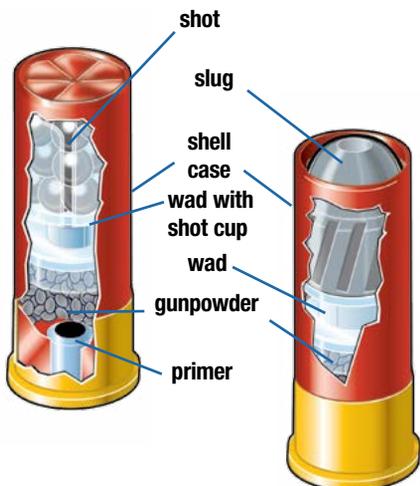
Safety Tip

In tubular magazines, the bullet tip of one cartridge rests directly on the primer of the cartridge immediately ahead. For this reason, use only rounded or blunt tips in tubular magazines.

Rifle and Handgun Ammunition



Shotgun Ammunition



gauge

Term used to designate bore diameter of a shotgun; gauge is the number of lead balls with diameters equal to the diameter of the bore that, when combined, weigh one pound

Shotshells

- Shotgun shells (shotshells) use a slug or shot as the projectile(s).
 - A slug is a solid projectile, usually of lead, used for hunting big game with a shotgun.
 - Shot are multiple pellets fired through a shotgun barrel. Shot size is adaptable to the game being hunted. This type of projectile typically is used to hunt game birds and small game animals.
- The shotshells must match the **gauge** and shell length specified by the manufacturer exactly. This information usually is found on the barrel of the shotgun. Shotguns may be chambered for 2½-inch, 2¾-inch, 3-inch, or 3½-inch shells. This refers to the length of the shell *after* it has been fired. Read more about correctly matching ammunition to your firearm on page 25.
- You also must choose the correct type and size of shot for the shotshell. In general, as the size of your target decreases, you should decrease the diameter of the shot you use.
 - As pellet diameter decreases, more shot can be placed in a standard shotshell.
 - The smaller the shot “number,” the larger the pellet diameter.
 - Shotshell marked as “magnum” means the shell has more shot or more gunpowder than a regular shell. Magnum and regular shotshells are interchangeable *if the correct gauge and shell length are used*.

Shot Sizes

U.S. STANDARD DESIGNATIONS

SHOT SIZES

Shot Number	12	9	8	7½	7	6	5	4	3	2	1	B	BB	BBB	T
Diameter (in.)	.05	.08	.09	.095	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20
Number of Lead Pellets per Ounce	2,385	585	410	350	300	225	170	135	n/a	90	n/a	n/a	50	n/a	n/a
Number of Steel Pellets per Ounce	n/a	n/a	577	490	420	317	243	192	154	125	103	86	72	61	53

BUCKSHOT SIZES

Shot Number	4	3	1	0	00	000
Diameter (in.)	.24	.25	.30	.32	.33	.36

Shot size can be adjusted for the game being hunted. As pellet diameter decreases, more shot can be placed in a standard shotshell load. The smaller the shot number, the larger the shot size.

Non-Toxic Shot

Non-toxic shot is required throughout the U.S. for waterfowl hunting. Studies showed that many waterfowl died each year because of lead poisoning. Lead pellets from traditional shotshells were picked up and digested by waterfowl. The toxic effect spread to other birds, such as the bald eagle, that consumed the poisoned waterfowl. To reduce this problem, conservationists worked with shotshell manufacturers to produce effective alternatives to lead shot—steel, tungsten alloy, or bismuth shot.

- Steel shot pellets react differently than lead when shot. Steel weighs about ⅔ as much as lead but is much harder. Steel does not deform and is not as unstable in flight. It will produce a tighter pattern than lead shot. If using steel shot for hunting, choose a steel shot size one to two sizes larger than the lead shot you would select. See page 24 for more information about shot strings for lead and steel shot.

How a Firearm Works

The same physical process is used to shoot shotshells from shotguns or cartridges from rifles or handguns. Pulling the trigger causes the firing pin to strike and explode the primer in the base of the cartridge or shotshell. The spark from the primer ignites the gunpowder, which burns rapidly and converts to a gas. The gas rapidly expands and drives the projectile(s) through the barrel with great force.

■ How the rifle and handgun fire:

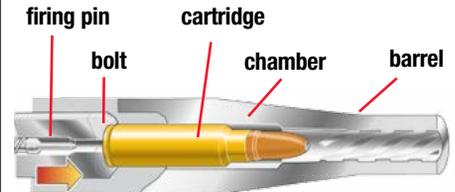
1. A cartridge is inserted into the chamber.
2. The action is closed, and the firing pin is pushed back and held back under spring tension.
3. The trigger is squeezed, releasing the firing pin, which moves forward with great force. The firing pin strikes the primer, causing it to explode.
4. The spark from the primer ignites the gunpowder. Gas converted from the burning powder rapidly expands in the cartridge.
5. The expanding gas forces the bullet out of the cartridge and down the barrel with great speed.
6. The rifling in the barrel (see page 22) causes the bullet to spin as it travels out of the barrel. The bullet's speed and escaping gases produce a "bang."

■ How the shotgun shoots:

1. A shotshell is inserted into the chamber.
2. Closing the action pushes the hammer back and holds it under spring tension.
3. Pulling the trigger releases the hammer. The firing pin strikes the primer producing sparks.
4. Heat and sparks from the primer ignite the gunpowder. Gas converted from the burning powder expands in the shell.
5. The expanding gas forces the wad and shot out of the plastic body of the shell.
6. The escaping gases produce a "bang" as the wad and shot leave the barrel.
7. The wad quickly opens and falls away. The shot cluster spreads. This spread is called the shot string.

How Ammunition Is Fired

The firing sequence for handguns and shotguns is very similar to this sequence shown for a bolt-action rifle.



- The bolt moves forward, compressing the firing pin spring and inserting a cartridge into the chamber.



- The firing pin is held back under spring tension.



- When the trigger is squeezed, the firing pin moves forward, crushing and igniting the primer in the cartridge base.



- The primer ignites the gunpowder, generating gas pressure, which forces the bullet forward and out of the barrel.

Common Actions on Rifles

Single-shot rifles are usually break or bolt actions. Repeating rifles include the bolt-action, lever-action, pump-action, and semi-automatic types. Operating the lever, bolt, or forestock ejects the empty cartridge case, chambers a new round of ammunition, and cocks the gun.



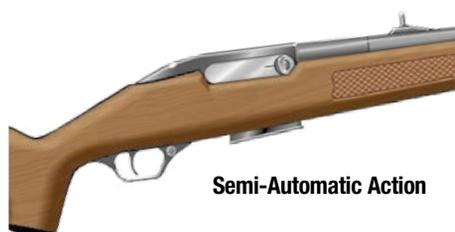
Bolt Action



Lever Action



Pump Action



Semi-Automatic Action



Break (Hinge) Action

Common Features of Firearms

All types of firearms have actions and sights, and they may have safeties or magazines. Features unique to rifles or shotguns are discussed in the following sections.

Firearm Actions

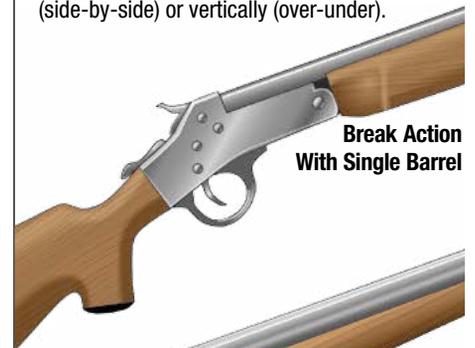
Firearms can be classified by their action type. The action of a firearm is made up of parts that load, unload, fire, and eject the shotshell or cartridge. Actions are either single-shot or repeating styles. Single-shot firearms must be reloaded each time the firearm is fired. Repeating firearms have extra cartridges or shotshells ready in a magazine, cylinder, or extra barrel.

- **Bolt Action:** A bolt-action firearm operates like opening and closing a door bolt. The bolt solidly locks into the breech, making it accurate and dependable.
 - To open the action, lift the handle up and pull it to the rear.
 - If the firearm is loaded, the cartridge or shotshell will be ejected as you pull the bolt to the rear. To make sure it's unloaded, visually check *both* the open action *and* the magazine for extra cartridges or shotshells.
 - You can store a bolt-action firearm safely by storing the bolt separately from the firearm.
- **Lever Action:** The lever-action firearm has a large metal lever located behind the trigger. This handle usually forms the trigger guard as well.
 - To open the action, push the lever downward and forward, which extracts the cartridge case from the chamber and ejects it. If a magazine holds extra cartridges, another is immediately ready to be loaded into the chamber.
 - It's often difficult to tell if a lever-action firearm is loaded. To unload, push the lever downward and forward repeatedly until no more cartridges are ejected. To make sure it's unloaded, visually check *both* the chamber *and* the magazine for additional cartridges.
 - Most models also have an exposed hammer, which can be dangerous.
 - ***Always use extra caution to keep your hands away from the trigger while working the lever action.***
- **Pump Action:** The pump-action firearm is fast and smooth. It allows the shooter to re-cock the firearm without taking his or her eye off the target. The pump action also is referred to as "slide action" or "trombone action."
 - To open the action, slide the forestock to the rear, which extracts the cartridge or shotshell from the chamber and ejects it. Sliding the forestock toward the muzzle closes the action and readies another cartridge or shell for loading. A pump-action firearm will open only after it's fired or if a release lever is pressed and the forestock is pulled to the rear.
 - To make sure it's unloaded, you must visually check *both* the chamber *and* the magazine for cartridges or shotshells.
- **Semi-Automatic (or Autoloading) Action:** As each shot is fired manually, the case of the cartridge or shotshell is ejected automatically and the chamber is reloaded automatically.
 - To open the action, you must pull back the bolt's operating handle (on a rifle or shotgun) or the slide (on a pistol). Most semi-automatics, when the bolt or slide is pulled back, will lock in the open position if the magazine is empty. If the firearm does not lock open, it means that a cartridge or shotshell from the magazine has gone into the chamber, making the firearm ready to fire. A few semi-automatics do not lock open and must be held open to check the chamber.

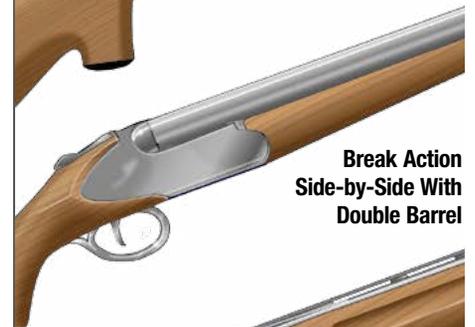
- To unload, *first remove the magazine* and lock the action open. Then make sure it's unloaded—visually check the chamber for an additional cartridge or shell.
 - When closing the action for loading, pull back to unlock the bolt or slide and then let go, allowing it to travel forward on its own. Do not guide it forward with your hand because it may not seat properly.
 - On a semi-automatic, the trigger must be pulled each time a shot is fired. This makes the semi-automatic different from the fully-automatic firearm, which fires continuously as long as the trigger is held down. ***The fully-automatic firearm may not be used for hunting or sport shooting.***
- **Break (or Hinge) Action:** The break-action firearm operates on the same principle as a door hinge. Simple to load and unload, a hinge action is often chosen as a hunter's first firearm.
- To open the action, point the barrel(s) at the ground. A release is pressed, and the stock drops downward. This allows the cartridges or shotshells to eject or to be removed manually if the firearm is loaded.
 - Hinge-action firearms have a separate barrel for each shot rather than a magazine. Most models have one or two barrels, but some have up to four.
 - Some models also have an exposed hammer(s), which can be dangerous.
- **Revolving Action:** The revolving action takes its name from a revolving cylinder containing a number of cartridge chambers. One chamber at a time lines up with the barrel as the firearm is fired. Revolving cylinders may rotate either clockwise or counterclockwise, depending on the manufacturer. This type of action usually is found on handguns but may be found on some older rifles.
- Revolving actions are referred to as either "single action" or "double action."
- **Single Action:** Will fire only after the hammer has been cocked manually.
 - **Double Action:** Pulling the trigger both cocks and releases the hammer. A double-action revolver typically also can be hammer-cocked like a single-action revolver.

Common Actions on Shotguns

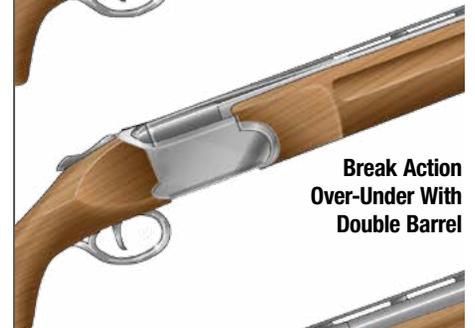
Shotguns use many of the same actions as rifles—the pump action, semi-automatic action, and bolt action. They also use a break action as either a single barrel or double barrels. The double barrels can be arranged horizontally (side-by-side) or vertically (over-under).



Break Action
With Single Barrel



Break Action
Side-by-Side With
Double Barrel



Break Action
Over-Under With
Double Barrel



Pump Action



Semi-Automatic
Action



Bolt-Action
Repeater

Typical Handgun Actions



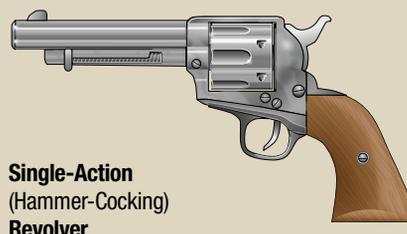
Break-Action
Pistol
(Single-Shot)



Double-Action
(Trigger-Cocking)
Revolver



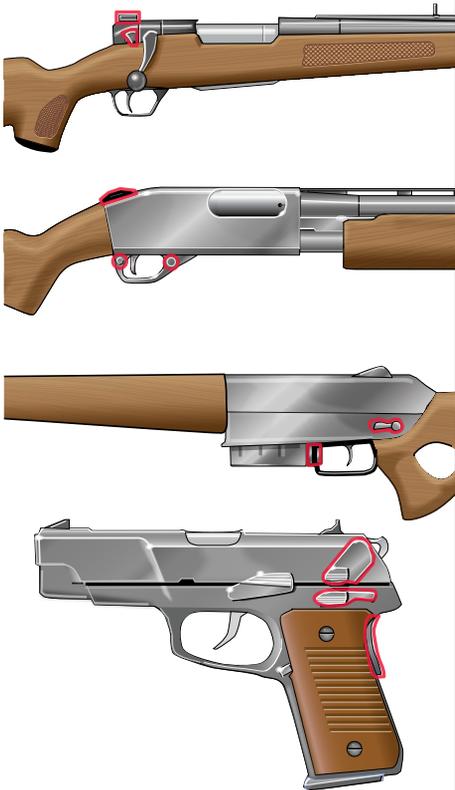
Semi-Automatic
Pistol



Single-Action
(Hammer-Cocking)
Revolver

Typical Locations of Safeties

The red outlines indicate where safeties typically are located on rifles, shotguns, and handguns.



Safety Tip

You should never replace safe firearm handling by trusting the safety on a firearm. A safety is a mechanical device that could fail. Don't release the safety until just before you shoot.

Knowing where the safety is and how it works is not always as simple as it might seem. There are many types of safeties. Sometimes persons alter or modify their guns to disable the safety. This is very dangerous, especially if the gun gets into the hands of an inexperienced shooter. Be sure you know how the safety works on your own gun or any others you handle. Never alter or modify your firearm yourself. Have an experienced gunsmith look at your gun if the safety does not work or if anything else is wrong with it.

Safety Mechanisms

A safety is a device that blocks the action to prevent the firearm from shooting until the safety is released or pushed to the “off” position. The safety is intended to prevent the firearm from being fired accidentally. However, safeties should never be relied on totally to protect against accidental shooting. **Safeties are mechanical devices and subject to mechanical failure from wear and other factors, and can fail when least expected.** Also, safeties can be bumped from the safe position unknowingly as your firearm is being handled or as it catches on clothing or tree branches.

All safeties are located around the receiver of the firearm and are usually easy to spot. Common types of safeties are:

■ Cross-Bolt Safety

- Common on pump and semi-automatic firearms
- A simple, push-button action that blocks the trigger or hammer
- Usually located at the trigger guard or ahead of the hammer

■ Pivot Safety

- Common on handguns and bolt-action rifles
- A pivoting lever or tab that blocks the trigger or firing pin
- Located on the frame (blocks trigger) or on the bolt or slide (blocks firing pin)

■ Slide or Tang Safety

- Common on some rifles and break-action shotguns
- A sliding bar or button that blocks the firing action
- Located on the tang (a metal strip behind the receiver) of break-action firearms or on the side of the receiver on some rifles

■ Half-Cock or Hammer Safety

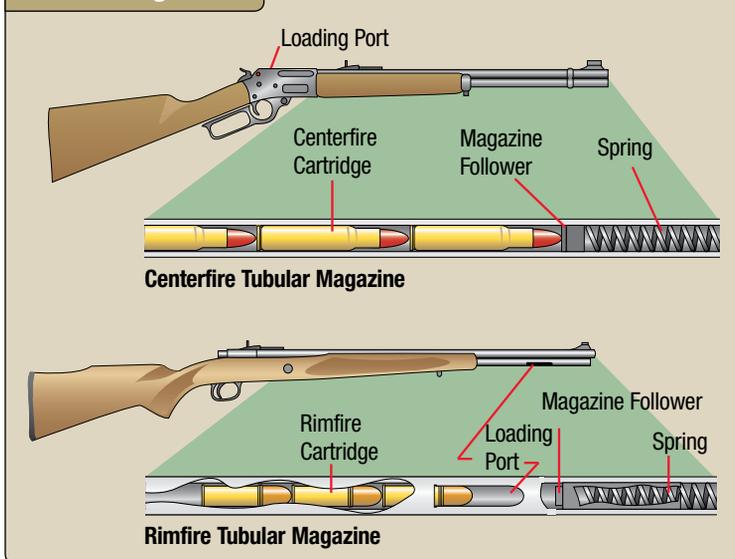
- Common on firearms with exposed hammers
- Positions the trigger at half-cock, away from the firing pin
- Engaged by placing the trigger at half-cock; some firearms automatically rebound to the half-cock position after the trigger is released
- While not a true safety, it sometimes is described as a mechanical safety device by firearm manufacturers

Magazines

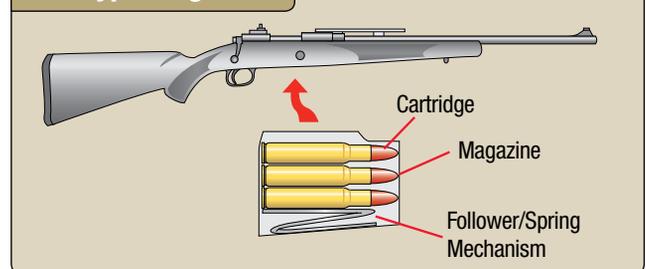
In repeating firearms, the magazine is the place that stores the ammunition that has not been fired. When you work the action, a cartridge or shotshell is picked up from the magazine and placed in the chamber ready to be fired.

- Magazines are designed with a spring and follower that push against the cartridges or shells to move them into the action. When checking a magazine to make sure it's empty, you must be able to either see or feel the follower; if you cannot see or feel the follower, there may be a cartridge or shell jammed in the magazine, which can be dangerous. Tubular magazines require close attention to make sure a cartridge or shell is not jammed in the magazine.
- Magazines may be detachable or fixed.
 - Detachable magazines allow you to remove extra ammunition from the firearm simply by removing the magazine. These include box-type magazines.
 - Fixed magazines require the ammunition to be removed manually from the gun itself. These include tubular, hinged-floorplate, and revolving magazines.

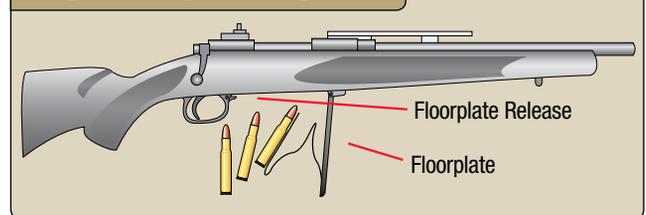
Tubular Magazines



Box-Type Magazine



Hinged-Floorplate Magazine

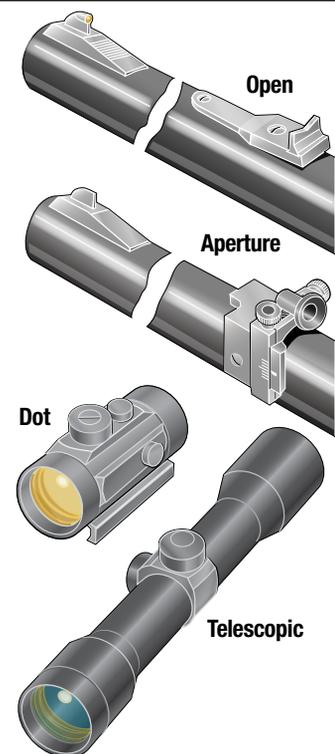


Sights

A sight is a device used to line up the muzzle with the shooter's eye so that he or she can hit the target. Sights are more critical on a firearm that fires a single projectile (rifle and handgun) than on a firearm that shoots a pattern of shot (shotgun). Shotguns usually have a simple pointing bead. Rifles typically have an open, an aperture (peep), or a telescopic sight. Most handguns have an open sight, although some specialized handguns have a dot or a telescopic sight. Read more about using sights in Chapter Four.

- **Bead Sight:** Simple round bead set into the top of the barrel near the muzzle of a shotgun. Some shotguns have a second, smaller bead about halfway back on the barrel. The shooter uses the shotgun to “point” at and follow a moving object. The bead is used only for a reference as the shotgun is pointed and moved to follow flying or running targets.
- **Open Sight:** Combination of a bead or post front sight and a notched rear sight. These sights are simple and inexpensive. Open sights allow quick sighting. To aim, you center the top of the bead or post within the notch of the rear sight and line up on the target. Open sights can be fixed or adjustable.
- **Aperture (Peep) Sight:** Combination of a bead or post front sight and a round hole set on the rifle's receiver close to the shooter's eye. To aim, you center the target in the rear peep or aperture sight and then bring the front sight into the center of the hole. An aperture sight is more accurate and adjusted more easily than an open sight.
- **Telescopic Sight (Scope):** Small telescope mounted on your firearm. A scope gathers light, brightening the image and magnifying the target, and does away with aligning rear and front sights. The aiming device inside the scope is called the “reticle.” To aim, you simply look through the scope and line up the crosshairs, post, or dot with your target. Telescopic sights are the most accurate, which makes them popular for hunting.
- **Dot Sight:** Small device mounted on your firearm. A dot sight uses electronics or optical fibers to project a glowing dot or other mark on a lens in front of the shooter's eye. Some dot sights also magnify like telescopic sights.

Types of Rifle Sights



Remember ...

Never use the scope on your telescopic sight as a binocular!

The Damascus Barrel

Damascus or “Damascus twist” barrels are older shotgun barrels that typically were made before 1900. Iron and steel ribbons were twisted and welded together. Damascus barrels are weaker than modern barrels and are not designed for the high gas pressures created by modern ammunition. Damascus barrels have a distinctive, irregular pattern of short, streak-like marks around the barrel.

If you have a Damascus barrel gun, don't shoot it. The barrel may burst slightly ahead of the chamber, crippling the shooter's hand or forearm. If you have an older firearm and are not sure if it has a Damascus barrel, go to a qualified gunsmith to identify its make before shooting it.

Rifle, Handgun, and Shotgun Bores

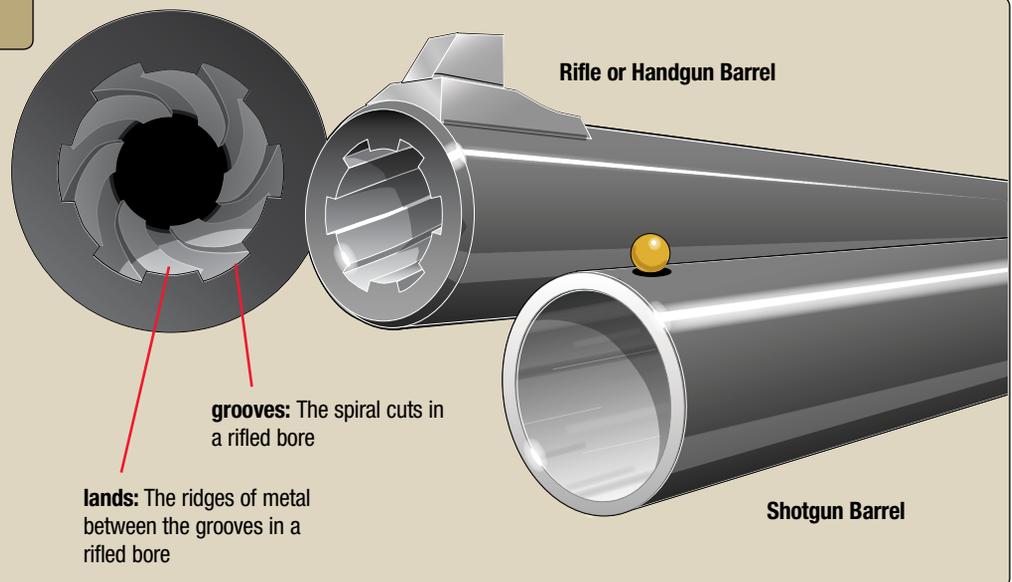
The bore of a rifle or handgun is grooved, which puts a spiral spin on the bullet for greater accuracy.

The bore of the typical shotgun barrel is smooth because rifling would spread the shot too soon. However, some shotgun barrels are rifled for shooting slugs and sabots. Also, there are “rifled” slugs and sabots, which should be used **only** in smooth-bore shotguns.

Differences Between Rifles, Shotguns, and Handguns

The main differences between rifles, shotguns, and handguns are their barrels and the type of ammunition used.

- The rifle barrel is long and has thick walls with spiraling grooves cut into the bore. The grooved pattern is called rifling.
- The shotgun barrel is long and made of fairly thin steel that is very smooth on the inside to allow the shot and wad to glide down the barrel without friction. It's thinner than a rifle barrel since it does not have to withstand as much pressure.
- The handgun barrel is much shorter than a rifle or shotgun barrel because the gun is designed to be shot while being held with one or two hands, rather than being placed against the shooter's shoulder. The bores of most handgun barrels also have a grooved pattern similar to rifles.

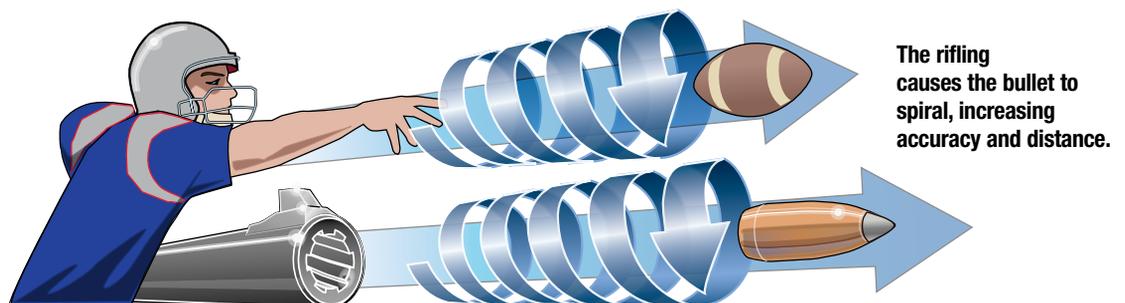


Remember ...

Reloaded shells may have wrong information or have been improperly reloaded. It's important to mark reloaded shells clearly. Use only shells or cartridges that you have reloaded yourself or that have been reloaded by a person whom you know is competent.

Rifling in the Rifle or Handgun Bore

A bullet fired from a rifle or handgun has a spiral spin that keeps it point-first in flight, increasing accuracy and distance. This is achieved by the rifling inside the barrel, from which the rifle got its name. The barrel is thick and has spiraling **grooves** cut or pressed into the bore. The ridges of metal between the grooves are called **lands**. Together, the grooves and lands make up the “rifling.”



A Rifle's or Handgun's Caliber

Caliber is used to describe the size of a rifle or handgun bore and the size of cartridges designed for different bores.

- Caliber usually is measured as the diameter of the bore from land to opposite land and is expressed in hundredths of an inch, thousandths of an inch, or millimeters. For example, a .270-caliber rifle bore measures 270/1000ths of an inch in diameter between the lands and has a larger bore diameter than a .223-caliber rifle. However, there is no standard established for designating caliber. In some cases, the caliber is given as the diameter of the bullet, which is the distance between the grooves.
- Caliber designations sometimes have a second number that has nothing to do with the diameter. For example, the popular .30-30 is a .30-caliber cartridge, but the second number is a holdover from the days when the cartridge took 30 grains of powder. The "06" in .30-06 refers to the year (1906) it became the official ammunition of the U.S. military.
- Every rifle or handgun is designed for a specific cartridge. The ammunition must match the data stamp on the firearm. For example, there are several .30-caliber firearms that use the same bullet size but are designed for different cartridges (the .30-30, .30-06, .308, and the .300 Savage). If you cannot find the caliber stamped on the firearm, take it to a qualified gunsmith.

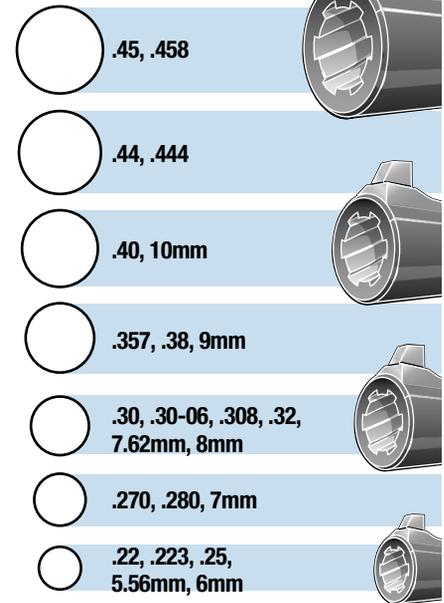
A Shotgun's Gauge

Shotguns are classified by gauge, which is a measure related to the diameter of the smooth shotgun bore and the size of the shotshell designed for that bore.

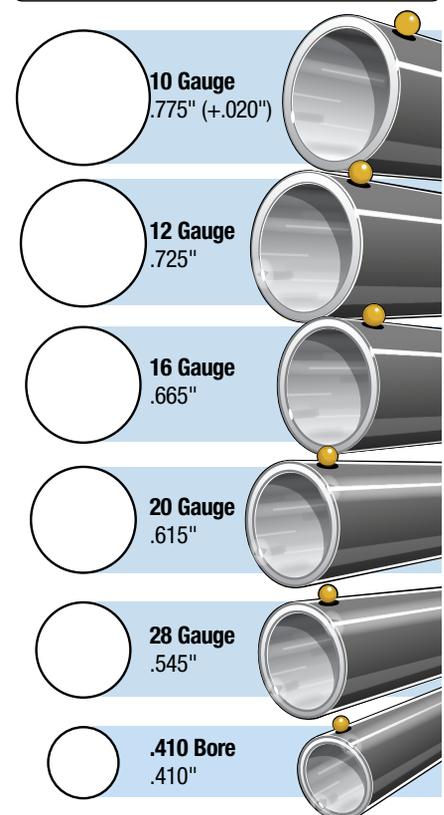
- Common shotgun gauges are 10 gauge, 12 gauge, 16 gauge, 20 gauge, and 28 gauge. The smaller the gauge number, the larger the shotgun bore. Gauge is determined by the number of lead balls of size equal to the approximate diameter of the bore that it takes to weigh one pound. For example, it would take 12 lead balls with the same diameter as a 12-gauge shotgun bore to weigh one pound. Today, however, gauge can be measured much the same way as caliber by measuring the inside bore diameter.
- The .410-bore shotgun is the only exception to the gauge designation for shotguns. It has an actual bore diameter of 410/1000ths of an inch, which is approximately equivalent to a 67½ gauge.
- Each gauge of shotgun shoots only shells of the same gauge. For example, 12-gauge guns use only 12-gauge shells.
- The gauge of a shotgun is usually marked on the rear of the barrel, and the gauge of a shell is marked on the shell as well as on the factory box.

Rifle and Handgun Calibers

Circles show bore sizes of common calibers. Having the same bore size does not mean different cartridges are interchangeable.



Shotgun Gauge Sizes



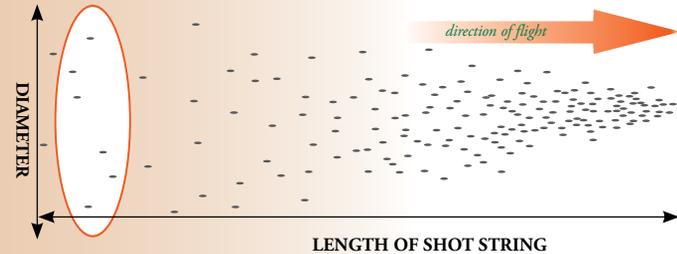
Sizes shown are the minimum inside bore diameter with a tolerance of +0.020". Data is presented courtesy of SAAMI.

Shot Strings

The illustrations of shot strings represent the full load of pellets at a particular instant in time after a shotshell is fired.

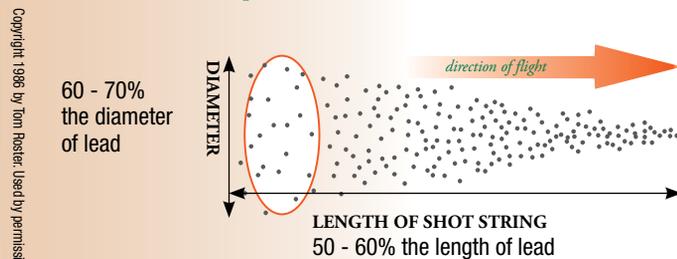
Lead Shot

1¼ ounces No. 4 shot, 169 pellets (full choke)



Steel Shot

1¼ ounces No. 2 shot, 156 pellets (full choke)



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shot string

The three-dimensional spread of shot pellets after they leave the barrel

choke

The degree of narrowing at the muzzle end of the shotgun barrel

shot pattern

The spread of shot pellets after they hit a non-moving target

Steel Shot

Steel shot is slightly lighter than lead shot of the same size—reducing its velocity and distance (range). Also, steel shot is harder than lead, so the individual pellets stay round, keeping the pattern tighter.

Some hunters use steel shot one or two sizes larger to make up for the difference in weight from lead shot. Others use the same size steel shot or even smaller steel shot to get more shot into their patterns. You should pattern your shotgun with various loads of steel shot before hunting waterfowl with it.

Effective pattern density is the key. Maximum pellet counts spread evenly across a 30-inch circle are best. Full chokes generally produce poor patterns with steel shot.

Shotgun Choke and Shot String

When a shotshell is fired from a shotgun, the pellets leave the barrel and begin to spread or scatter. The farther the pellets travel, the greater the spread of the group of pellets (shot) both in length and diameter. This spread is called the **shot string**. To control the shot string, shotgun barrels have a **choke**, which will affect the **shot pattern** when the shot string hits the target. Read more about how to pattern a shotgun in Chapter Four.

- Your distance from the target determines the choke you need. The choke of a shotgun determines shot string only. It has no bearing on shot speed (velocity) or distance (range). That is, the choke does not alter the shotgun's power—it just controls how tight or spread out the pellets will be at a specific distance.
- The spread effect of the most common chokes is illustrated below, showing how many pellets will hit within a certain area at different ranges.
 - **Cylinder** choke is an unconstricted barrel. The shot string spreads quickly.
 - **Improved Cylinder** choke has a slight constriction. It allows the shot string to spread fairly quickly. This is a good choice for quail, rabbits, and other upland game at relatively close ranges.
 - **Modified** choke has moderate constriction. The pellets stay together longer, making the shot string denser and

more useful at longer ranges. This choke is used often when dove hunting and when using steel shot to hunt for ducks or geese. There is also an Improved Modified choke that is slightly tighter than Modified.

- **Full** choke has tight constriction. The shot string holds together even longer, making this choke good for squirrels, turkey, and other game shot at 40-yard and longer ranges. Turkey hunters sometimes use Extra Full or Turkey choke for even denser patterns at long range.

Effect of Choke on Shot String at Various Distances

Circles represent the diameter of a lead shot string (in inches) as distance (in yards) increases.

Bore narrowing is exaggerated for clarity.



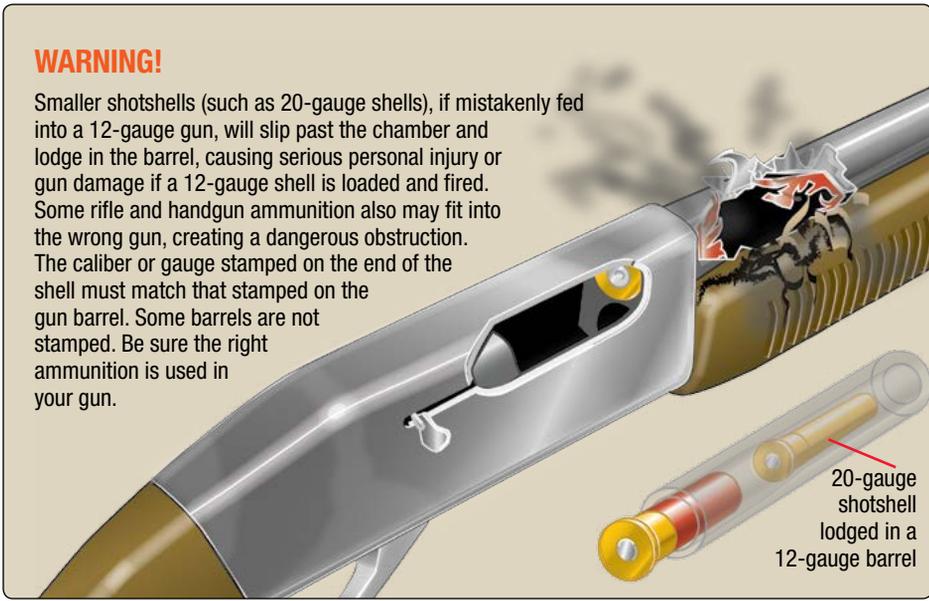
Match Firearms and Ammunition ... CORRECTLY!

With so many kinds of firearms and types of ammunition, it's not always easy to match the proper ammunition to your firearm correctly—but getting it right is critical. If you match the wrong ammunition to your gun, you can cause an explosion, injuring or possibly killing yourself and any bystanders.

- To match the proper ammunition to your rifle, shotgun, or handgun correctly:
 - Read the specific caliber or gauge designations on the side of the barrel. Match that designation *exactly*. For example, if it says “.270 Winchester,” you cannot use “.270 Weatherby.” Shotgun barrels will give the gauge and the length of the chamber (for example, “12 gauge for 2¾-inch shells” or “20 gauge magnum for 3-inch shells”).
 - Carefully read the information on the lid of the ammunition box. With shotgun ammunition, always check both the gauge and the shell length, and whether it's a magnum **load**, to ensure it matches the data on the barrel.
 - Finally, match the information on the barrel to the information on the cartridge or shotshell *before you shoot*. If in doubt, ask a more experienced shooter or a qualified gunsmith. Some store clerks, although they sell ammunition, may not know about the differences in sizes or the type of firearm you shoot.
- Safety practices that will help you avoid using the wrong ammunition are:
 - Purchase only the correct ammunition for your firearm. Buy the exact caliber or gauge and length of ammunition for which your rifle, handgun, or shotgun was designed. For example, shotshell must be the correct length for the shotgun. The data stamp on the barrel of the shotgun will identify what length shell can be used.
 - Carry only the correct ammunition for the firearm you're using. Never mix ammunition such as carrying a caliber or gauge your companion uses. A common mistake involves putting a 20-gauge shotshell into a 12-gauge shotgun. The smaller gauge shell will slide through the 12-gauge chamber and partly down the barrel, causing an obstruction. The shooter, especially when excited by the presence of game, then might insert a 12-gauge shotshell behind the 20-gauge shell.

WARNING!

Smaller shotshells (such as 20-gauge shells), if mistakenly fed into a 12-gauge gun, will slip past the chamber and lodge in the barrel, causing serious personal injury or gun damage if a 12-gauge shell is loaded and fired. Some rifle and handgun ammunition also may fit into the wrong gun, creating a dangerous obstruction. The caliber or gauge stamped on the end of the shell must match that stamped on the gun barrel. Some barrels are not stamped. Be sure the right ammunition is used in your gun.



20-gauge shotshell lodged in a 12-gauge barrel

Safety Tip



Hang fires happen when the firing pin has struck the primer and there is a delay before it fires. This can occur for several reasons, such as a faulty firing pin or spring, defective primer, or other cartridge-related problems. A misfire is when the primer fails to ignite the powder.

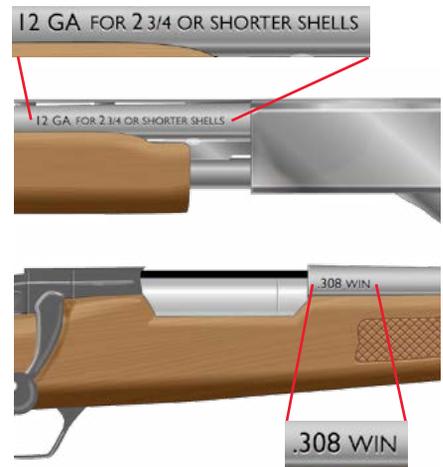
A “squib load” occurs when the projectile becomes stuck in the barrel and does not exit after firing. This can be extremely dangerous if another round is fired in the obstructed barrel.

Always treat a “misfire,” a “hang fire,” or a “squib load” as if the firearm is going to discharge at any second. Leave the action closed and retain your shooting position. Most importantly, maintain muzzle control in a safe direction at all times. Failure to follow these safe handling practices could result in a tragedy.

load

The amount of gunpowder in the cartridge or shotshell together with the weight of the bullet or shot charge

The rear of a shotgun barrel should be marked with the gauge and the length of the chamber.



The data stamp of a rifle is usually stamped toward the rear of the barrel.

History of Firearms

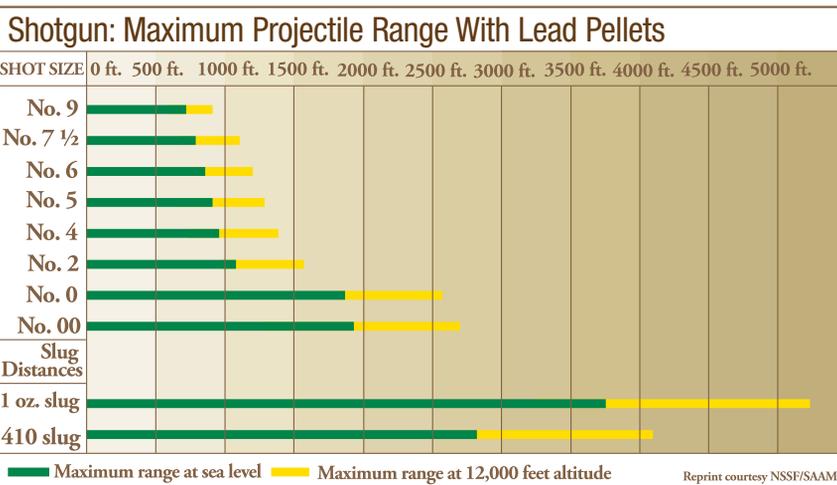
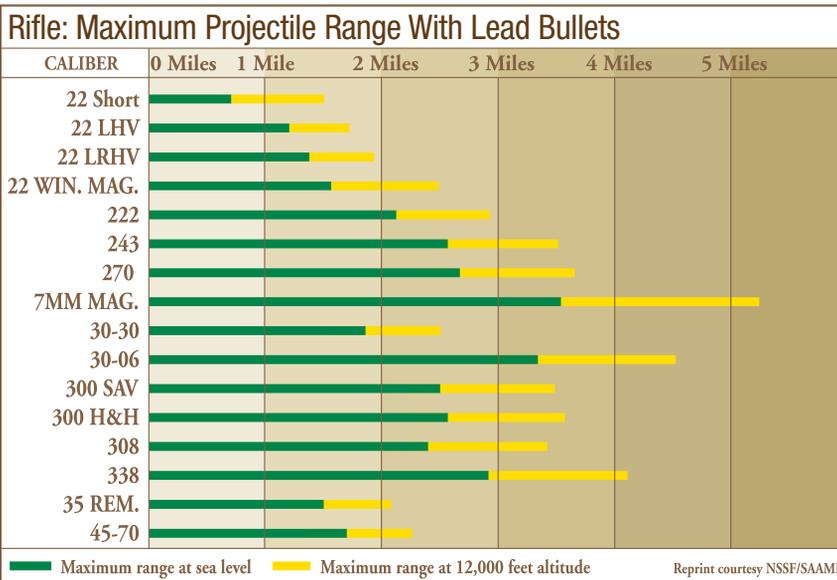
The Chinese are believed to be the first to use gunpowder, now called “black powder.” The first firearms were tubes closed at one end, usually made of brass or cast iron. Early firearms were loaded by pouring black powder and shoving a projectile into the tube from the muzzle end, and then igniting the powder using a lighted wick or match. The powder burned, creating pressure that launched metal objects or arrows. These firearms are called “muzzleloaders” due to their loading process.

Advances in ignition systems were the major changes that brought about modern firearms.

- **Matchlock ignition** was developed in the early 1400s. When the trigger is pulled, a lighted wick is lowered into a priming pan located next to a vent hole drilled into the closed end of the barrel. When the priming powder ignites, it lights the main charge.
- **Wheel lock ignition** replaced the wick of the matchlock in the 1500s. When the trigger is pulled, a coiled spring forces the rough-edged steel wheel to spin against a piece of iron pyrite, creating sparks to ignite the powder in the priming pan.
- **Flintlock ignition** appeared in the late 1600s. When the trigger is pulled, the hammer holding a piece of flint falls against a steel cover (the frizzen) sitting over the priming pan. The hammer knocks the cover out of the way, and the collision of flint and steel causes sparks that ignite the powder in the priming pan.
- The **percussion lock** (also called “caplock”) replaced the flintlock in the early 1800s. Early percussion locks used priming compounds inside a metallic foil cap placed over the vent hole. When the hammer strikes the cap, the resulting spark ignites the main charge.
- The next advance, in 1835, was to arrange a series of percussion locks and barrels on a rotating wheel (cylinder) to allow a rapid succession of shots (Paterson revolver). With a single hammer and trigger, multiple shots can be fired without reloading—a **repeating firearm**. The percussion cap revolvers are the forerunners of modern revolvers.
- The **percussion cap** also paved the way to the self-contained ammunition we have today—cartridges and shotshells. In the mid-1800s, gunpowder, the projectile, and the primer were put together into a single housing that could be loaded quickly.
- **Actions** were developed to allow shooters to load cartridges and shotshells at the rear, rather than the muzzle, end of the barrel.

Know Your Firearm’s Range

Knowing your firearm’s “maximum projectile range” is critical to being a safe and responsible hunter. The maximum projectile range tells you at what distances your firearm’s projectile could cause injury or damage to persons, animals, or objects. When hunting, knowing the “effective killing range” lets you immediately assess when a shot will give a clean kill. The effective killing range will always be less than the maximum projectile range. Learning to estimate distances and knowing your firearm’s range are important parts of hunting.



Cleaning Your Firearm

- Clean your firearms after every use to keep them in top condition. Every hunter should own a complete cleaning kit.
- Work on a cleared table or bench. Always give cleaning your full attention. Never clean a firearm while doing something else.
- Follow these basic steps to clean your firearm.
 - Point the muzzle in a safe direction, and make sure the gun is unloaded.
 - Remove all ammunition from the cleaning bench.
 - For the most thorough cleaning, field strip the firearm following the owner's manual and clean each part separately.
 - Follow the instructions in your cleaning kit. If possible, clean the barrel from the breech end, using a bore guide and a cleaning rod holding a bore-brush or patch, wetted with solvent. Pass the brush/patch all the way through the barrel. Repeat several times with fresh patches. You may need a larger brush for the chamber. Use a hand brush to clean the crevices where powder residue accumulates. Follow with a dry patch, and finish with a lightly oiled patch for the barrel and cloth for other parts.
- Use a flexible "pull-through" cleaning cable when cleaning firearms with lever or semi-automatic actions to prevent dirt, grime, or debris from being pushed into the action area.
- Use cleaning solvents in a well-ventilated area and only as directed.
- If cleaning from the muzzle end, use a muzzle protector so that you don't damage the rifling near the muzzle.

Cleaning Kit

- Assorted rod tips—brushes, mop tips, slotted tips, jag tips
- Bore light
- Clean cloths
- Cleaning rods
- Cotton swabs
- Dental mirror
- Gun grease
- Gun oil
- Gunsmith screwdrivers
- Patches appropriate for the caliber or gauge of the firearm
- Pipe cleaners
- Solvent
- Stand to hold the firearm securely in a horizontal position
- Toothbrush

Cleaning a Firearm



1. Clean barrel and metal parts with good commercial solvent.



2. Bore should be cleaned through breech end where possible.



3. Clean bore until dry patch comes through as clean as possible.



4. Run oily patch through barrel.



5. All metal parts should get light coat of oil.



6. Store in horizontal position.



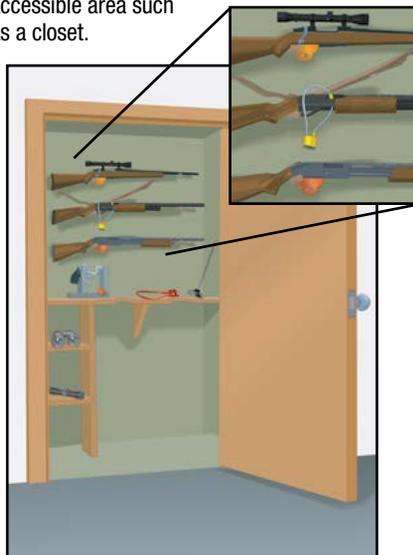
7. After storage, run a clean patch through bore before firing.



8. Remove all excess grease and oil.

Storing Firearms

Store firearms with a locking device if stored in an accessible area such as a closet.



Storing Ammunition

- Store ammunition, reloading supplies, and firearms in separate locked compartments.
- Keep all ammunition away from flammables.
- Store ammunition in a cool, dry place to prevent corrosion. Corroded ammunition can cause jamming, misfires, and other safety problems.

Safety Tip

When being shown a firearm, always check it yourself to make sure it's unloaded before taking it.



Storing Your Firearm

- Firearms must be stored *unloaded* and in a *locked* location, *separate from ammunition*. The storage area should be cool, clean, and dry. Storing firearms in closed gun cases or scabbards isn't recommended because moisture can accumulate.
- Store guns horizontally, or with the muzzle pointing down. When guns are stored upright, gravity pulls gun oil downward into the action, which forms a sticky film. Oil also can drain onto the stock, softening the wood.
- Displaying guns in glass cabinets or wall racks is an invitation to thieves and curious children. Ideally, guns should be hidden from view and locked. Storage devices with hidden compartments are available. For the best protection against theft and fire damage, purchase a safe.

Storing Firearms in the Home Safely

Responsible hunters make certain the firearms in their home are not easily accessible to anyone who may not be trained in the safe handling of firearms.

- Always carefully and completely unload sporting firearms before bringing them into the home. Never load a sporting firearm in the home.
- Store firearms in your home in a secure location inaccessible to children. Store ammunition in a separate locked location, also away from children.
- Remember to place firearms in their proper storage location as soon as you return from a hunt or from practicing at the range.
- Always carefully check firearms to make sure that they are unloaded whenever you remove them from storage.

Showing Your Firearms

To avoid accidents when showing a firearm to another person, it's important to follow certain procedures.

- Always keep the muzzle pointed in a safe direction.
- Keep the action open during display. If you show a firearm to a visitor, always open the action first to make sure the gun is not loaded.
- Only hand the gun to your guest after you have taken these precautions. Be sure the visitor keeps the action open and the muzzle pointed in a safe direction.

You should be able to...

- Define “good marksmanship,” and explain why it is important.
- List the three fundamentals of good marksmanship.
- Define “sight alignment” and “sight picture.”
- Demonstrate how to determine your master eye.
- Explain the basic steps to sight-in a rifle.
- Explain four rifle-firing techniques that will help improve accuracy.
- Demonstrate four proper positions for rifle firing.
- List the four common shotgun chokes, and give an example of when you would use each.
- Explain the basic steps for patterning a shotgun.
- Explain four shotgun-shooting techniques that will improve accuracy.
- Demonstrate proper shotgun-shooting stance.
- Explain the difference between swing-through and sustained lead when hunting with a shotgun.
- Demonstrate proper handgun-shooting stance and grip.
- State three practices for handling and storing firearms safely in the home.
- Demonstrate the four primary rules of firearm safety.
- Name the four main causes of hunting incidents.
- Demonstrate six field carries for a rifle or shotgun.
- Demonstrate proper field carries while walking two or three abreast and while walking two or three in single file.
- Demonstrate the safe method for crossing an obstacle if hunting alone and if hunting with a partner.
- Explain how to check safely to see that the barrel of a firearm is free of obstructions.
- List the steps to load and unload a firearm safely.
- Explain how to transport firearms safely in vehicles and in boats.
- Demonstrate proper spacing between hunters and the safe zone-of-fire when hunting in a group.
- Explain why self-control, target identification, and accuracy are critical for hunting safety.
- State five functions needed for hunting that are impaired if the hunter consumes alcohol or drugs.

Good Marksmanship and Accuracy

A fair amount of knowledge, skill, and experience is required to become a successful hunter. One of the essential skills is good marksmanship, which is accurately and consistently hitting the target where planned. When hunting, accuracy is critical for a clean kill. Good marksmanship is built on three fundamentals:

- Proper sight adjustment or patterning
- Proper shooting technique
- Practice

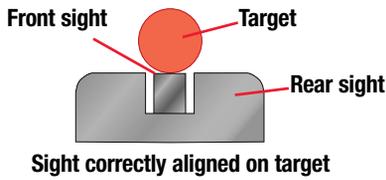
Know Your Accuracy Limits

Ethical hunters know their personal accuracy and limit their shots accordingly.

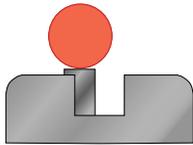
- An 8-inch paper plate is the standard target for establishing deer hunting accuracy. An 8-inch target is about the same size as the vital area of a deer. You need to be able to hit the paper plate consistently at the same distance and from the same shooting position you will be using when hunting. The fact that you can hit an 8-inch target at 100 yards from a bench rest does not mean you will be able to do the same from a standing or kneeling position.
- Before hunting, practice until you are confident you can hit the required target at the distances and from the shooting positions you expect to use in the field. When hunting, limit your shots to your most accurate range.



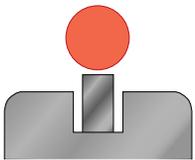
Aligning an Open Sight



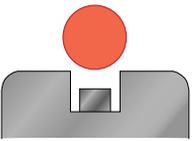
Misaligned—bullet goes right of target



Misaligned—bullet goes high and left of target



Misaligned—bullet goes high of target



Misaligned—bullet goes low of target

Safety Tip

If you are color-blind, you should be especially cautious when hunting. You may not be able to distinguish the blaze orange clothing of other hunters nor the color markings that help identify game.



Remember ...

Good vision is the foundation for good shooting and hunting safety. Have your eyes examined on a regular basis.

Rifle Firing

Sight Alignment

Sight alignment is the process of lining up rear and front sights. The sight picture is the image you see when the sights are aligned correctly with the target. To ensure that the bullet will travel to the target in your sight, it's necessary to sight-in your rifle. But before you can do that, you need to determine your dominant or "master" eye.



With an open sight, you line up the target with the blade or bead of the front sight within the notch of the rear sight.



With an aperture sight, you line up the target with the front sight within the rear peephole.



With a telescopic sight with a crosshair reticle, you line up the target with the crosshairs of the sight.



With a telescopic sight with a dot reticle, you line up the target with the dot of the sight. The dot must be centered.

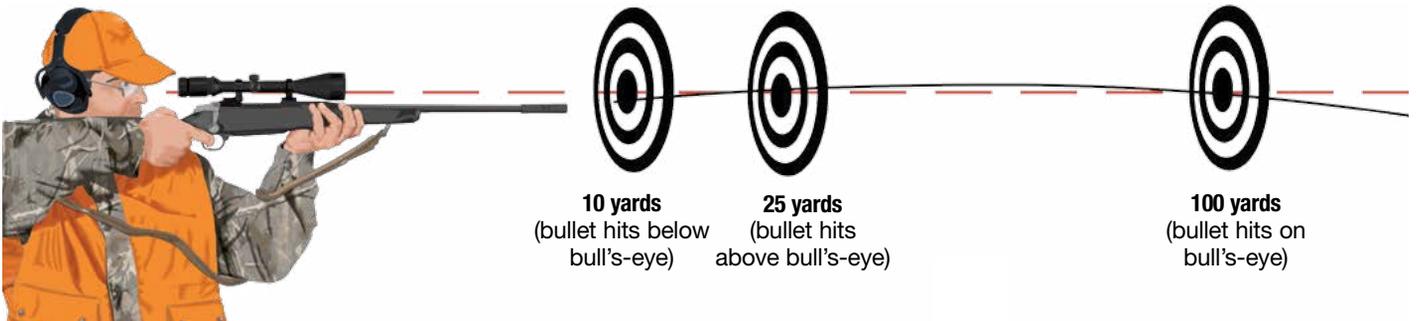
Dominant or Master Eye

- Just as you have a dominant hand, you also have a dominant eye. You need to aim with the dominant—or master—eye for the most accurate shooting. Usually your dominant eye is the same as your dominant hand, but not always.
- To determine your dominant eye:
 1. Form a triangular opening with your thumbs and forefingers.
 2. Stretch your arms out in front of you.
 3. Focus on a distant object while looking through the triangular opening and keeping both eyes open.
 4. Bring your hands slowly to your face, keeping sight of the object through the opening; the opening will come to your dominant eye naturally.
- If you're not sure, close one eye at a time. The weak eye will see the back of your hand; the strong one will be focused on the object in the triangle.



Sighting-In a Rifle

- Rifle bullets don't travel in a straight line. They travel in an arc, formed by the pull of gravity. "Sighting-in" is a process of adjusting the sights to hit a target at a specific range. Deer hunters, for example, often sight-in their rifles to hit the bull's-eye at 100 yards.
- All rifles should be sighted-in before every hunt using the ammunition you plan to use, especially rifles with peep or telescopic sights. Guns you sighted-in prior to your last outing could have been knocked out of alignment by a single jolt. That misalignment could mean the difference between a successful hunt and a disappointing experience.



- Other than ensuring accurate shots, sighting-in a rifle has other advantages:
 - Forces you to practice
 - Helps determine problems with your firing technique
 - Builds confidence in your shooting ability

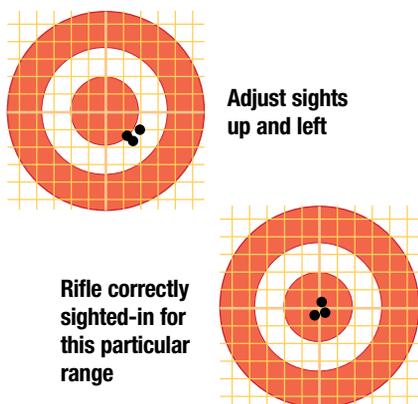
Remember ...

You must sight-in your rifle with the ammunition you plan to use. Be sure you sight-in and practice firing your rifle before you go hunting.

Optional Sighting-In Techniques

Use bore or collimator sighting-in initially to line up the rifle on the paper target. However, these techniques alone are not sufficient to sight-in a rifle. You must make final adjustments by firing the rifle with the same ammunition you plan to use in the field.

- **Bore sighting-in with bolt-action rifles:** Remove the bolt, brace the firearm on sandbags, and look directly through the bore. Correct the rifle's position until you see the bull's-eye in the center of the bore. Adjust the sights to give you a good sight picture.
- **Collimator sighting-in for rifles without bolt actions:** A collimator slips into the muzzle end of the barrel and allows you to adjust the sights much like bore sighting-in.



Use a sight-in target to adjust your sights.

minutes-of-angle

The standard measurement unit of shooting accuracy; one minute-of-angle (MOA) is 1/60 of one degree, or approximately one inch, at 100 yards

Four Fundamentals for an Accurate Rifle Shot

1. Aim carefully, aligning your sights.
2. Take a deep breath, and then release about half of it.
3. Squeeze the trigger slowly.
4. Follow through.

parallax

Optical bending of telescopic crosshairs in relation to the target

Sighting-In Procedure

- Fire your rifle from a solid bench rest with your forearm resting on a pad or a sandbag. Don't rest the gun on its barrel—it will shoot higher than normal. Ideally, use an adjustable shooting tripod with sandbags. A spotting scope is also useful.
- Sight-in instructions are printed on some targets available from retail outlets or manufacturers. The sighting-in process for most centerfire rifles begins at 25 yards and then should be repeated at 100 yards. The basic steps involve firing at least three shots carefully and consistently at a target. If the bullets form a relatively small group of holes on the target, but not where you were aiming, the sights will have to be adjusted.
- When adjusting peep or telescopic sights, the rear sights or dials are adjusted by a certain number of **minutes-of-angle** or “clicks” in a certain direction. Read the sight's instruction manual to see how much each click changes the sight at 100 yards.
- The rear sight is moved in the same direction you want your shot to move on the target. Moving shots from side to side is “adjusting for windage.” Moving shots up or down is “adjusting for elevation.”
- Specific instructions about trajectory and what fractions or inches you should be above the bull's-eye at 25, 50, or 100 yards are usually included on sight-in targets. You also might consult a ballistics chart or get help from an experienced shooter.

Rifle-Firing Techniques

Using correct firing techniques will help you steady the rifle for the most accurate shooting. Bear in mind that these are only the basics. Further study will help you understand other factors that can affect your accuracy, such as wind, heat, and **parallax**.

- **Shooting from a Rest:** When shooting in the field, the safest and most accurate shots are taken from a rest—a log, large rock, or other stable object. Don't rest the barrel directly on a hard surface, or it will shoot higher than normal—put some padding, such as a hat or a jacket, under the rifle.
- **Breathing:** Your breathing can move the rifle just enough to throw off your shot.
 - When you're ready to fire, draw a deep breath and exhale about half of it.
 - Then hold your breath as you squeeze the trigger.
 - Bear in mind that if you hold your breath too long, your heart beats faster, which increases your pulse and causes the rifle to move. If you notice this happening, take another breath and start over.
 - At times, the excitement of spotting game will make it more difficult to control your breathing. Try to relax and follow the correct procedure.
- **Trigger Squeeze:** Jerking the trigger or abruptly clenching the trigger hand can move the gun enough to cause a miss.
 - To squeeze the trigger without jarring the gun, simply apply slow, steady pressure until the gun fires.
 - Practice makes breath control and proper trigger squeeze habitual.
- **Follow Through:** After the bullet fires, it's important to continue the squeeze or follow through. That prevents you from jerking the gun before the bullet has left the barrel.

Firing Positions

There are four standard rifle-firing positions: prone, standing, sitting, and kneeling.

Prone

The prone position is the steadiest of the four positions. Because it's the easiest to hold, it's the best position for mastering the fundamentals of firing—aiming, breath control, trigger squeeze, and follow through.



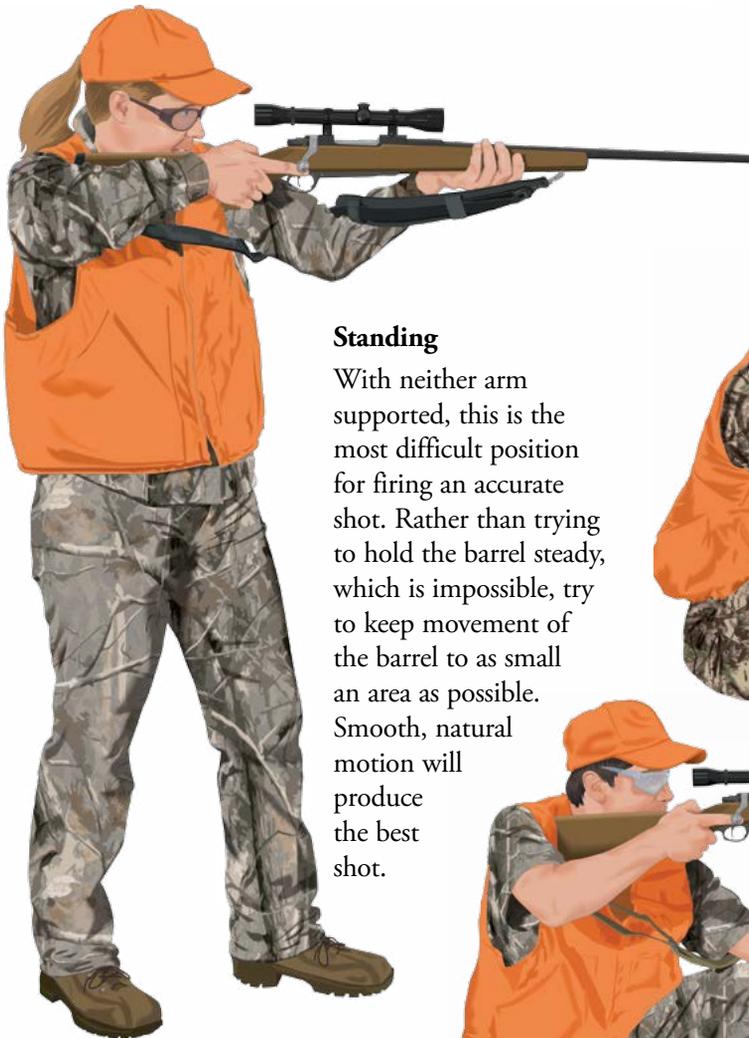
Safety Tip

Shooting a firearm can cause immediate and permanent hearing loss and can damage your vision.

- When shooting any firearm, always wear properly fitting ear protection. For target practice, use an earplug or earmuff (or both) with a high Noise Reduction Rating (NRR).

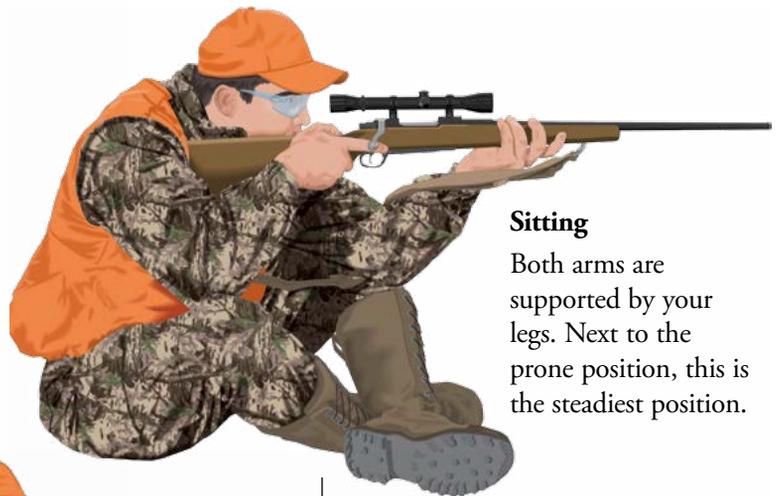
When hunting, use electronic or non-linear devices that allow normal or even enhanced hearing but block damaging levels of sound. For more information, visit the National Hearing Conservation Association website at www.hearingconservation.org.

- Also wear suitable eye protection, such as shooting glasses with high-impact lenses, when shooting to protect your vision.



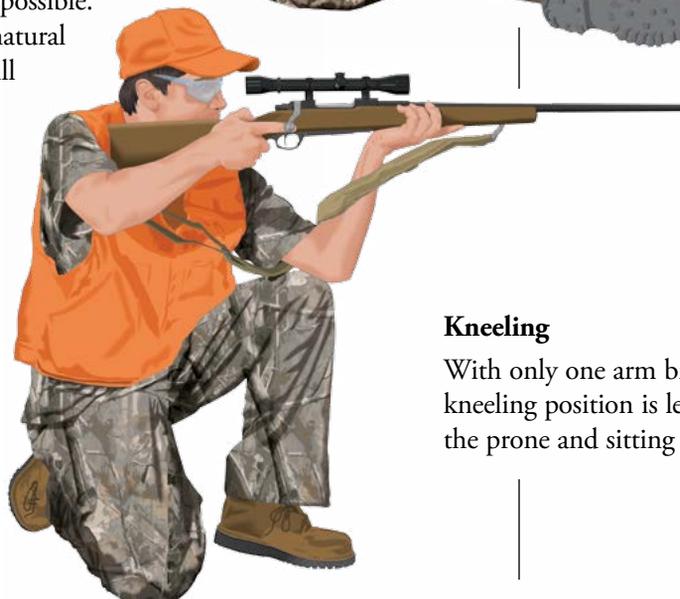
Standing

With neither arm supported, this is the most difficult position for firing an accurate shot. Rather than trying to hold the barrel steady, which is impossible, try to keep movement of the barrel to as small an area as possible. Smooth, natural motion will produce the best shot.



Sitting

Both arms are supported by your legs. Next to the prone position, this is the steadiest position.



Kneeling

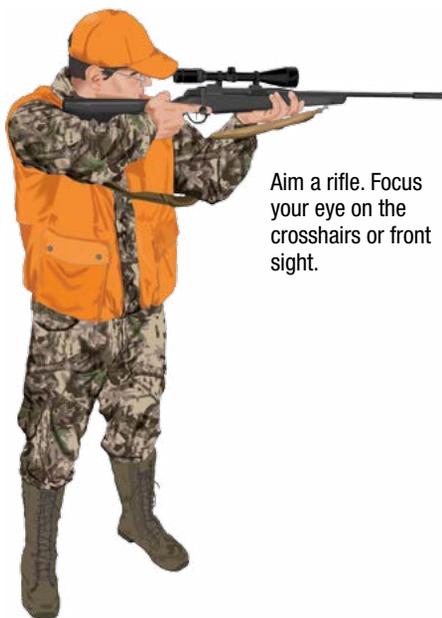
With only one arm braced, the kneeling position is less steady than the prone and sitting positions.



Point a shotgun. Focus your eye on the target.

Remember ...

Point a shotgun. Pull the trigger.
Aim a rifle. Squeeze the trigger.



Aim a rifle. Focus your eye on the crosshairs or front sight.

Shotgun Shooting

As with rifle firing, good shotgun marksmanship begins with proper preparation, which includes adjusting your gun and ammunition for maximum performance and mastering shotgun techniques.

Matching Choke to Your Quarry

- A choke allows you to fine-tune your shotgun for the type of game you're hunting. Built-in or attached to the muzzle end of the barrel, the choke is a constriction that controls the shot string, thus affecting pellet density at various distances.
- The tighter the constriction, the greater the distance that the cluster of pellets stays together. The looser the constriction, the faster the shot pattern spreads. Recall from Chapter Three that the most common chokes, ranging from tightest to most open, are:
 - Full
 - Modified
 - Improved Cylinder
 - Cylinder (unchoked)
- For example, someone hunting small, fast, close birds would generally use an Improved Cylinder or Modified choke, which creates a broad shot pattern that spreads quickly at close ranges. Conversely, someone hunting a larger, less mobile bird that is usually farther away, such as a turkey, would select a Full choke, which concentrates the shot in a smaller area. Pellet size also varies based on the size of the game. The chart below suggests choke selections for a variety of game. It is intended only as a guide—choice of choke and shot size may vary depending on ammunition, target distance, and hunting conditions. Always pattern your shotgun for the quarry you are hunting and the ammunition you are using.

Quarry	Commonly Used Choke (based on typical distance from quarry)
Goose	Improved Cylinder or Modified
Duck	Improved Cylinder or Modified
Turkey	Full or Extra Full
Pheasant	Improved Cylinder, Modified, or Full
Grouse	Improved Cylinder or Modified
Woodcock, rail, or snipe	Improved Cylinder or Modified
Dove	Improved Cylinder or Modified
Quail	Improved Cylinder or Modified
Rabbit	Improved Cylinder or Modified
Squirrel	Modified or Full

Patterning Your Shotgun

- No two shotguns will shoot identical pellet patterns. In some cases, the pattern will be off-center. In other instances, there may be gaps in the pattern. In addition to the firing characteristics of the gun, the gun's choke, the brand of shotshell, the shot size, and type of shot also affect the pattern. In order to select ammunition that provides the best performance, it's necessary to "pattern" your shotgun.
- Patterning can be done with simple, homemade targets—sheets of blank paper about 4 x 4 feet in size. A commercial target with a bull's-eye also can be used, but the bull's-eye is used only to aim at—it is not used in steps 2-4 below. To pattern your shotgun, follow these steps.
 1. Fire one shot at the center of the target (or bull's-eye) from the distance that you expect to be from your quarry (for example, 35 yards if hunting game birds). Repeat this two more times, each time with a new sheet of target paper.
 2. On each of the three targets, draw a 30-inch circle around the densest part of the shot pattern. (This is not necessarily the center of the paper.)
 3. On each of the three targets, count the number of pellet holes that fall within the 30-inch circle, marking them with the marker as you count each one.
 4. Calculate the percentage of the load that is expected to land in a 30-inch circle at the distance that you expect to be from your quarry.
 - Average the pellet counts within the 30-inch circles (add the three counts from the previous step and divide the sum by three).
 - Then divide the average pellet count by the number of pellets in the load for the ammunition you are using, and multiply this result by 100.
- The pattern of pellets within a 30-inch circle should be of a proper, even density to ensure a clean kill. The pattern should contain a sufficient percentage of the load, which should be at least 55% to 60%.
- Continue this process, trying different choke and load combinations, until you get an even pattern density with a sufficient percentage of the load within a 30-inch circle while shooting from the distance that you expect to be from your quarry.

Shotgun-Shooting Techniques

Unlike rifle firing, quick reflexes and flexibility are essential for effective shotgun shooting. Proper shotgun techniques will help you develop the rapid, fluid response you need to hit your target.

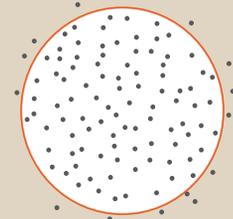
Shooting Stance

- A shotgun is almost always fired at a moving target from a standing position. You must be able to swing freely over a wide arc and maintain control. That requires a relaxed, balanced stance.
- Stand with your feet spread about shoulder-width apart and your knees bent slightly so that you are balanced perfectly. Bring your left foot slightly forward (if you're a right-handed shooter), and lean your body in the same direction. The position of the feet is important. The toes of your forward foot should point at about 45-degrees toward the target. Take the time to place your feet properly, even for a quick shot.
- Keeping your knees slightly bent makes it easier to swing with a moving target. The bent leg to the rear supports the movements of your hips, allowing you to swing smoothly.

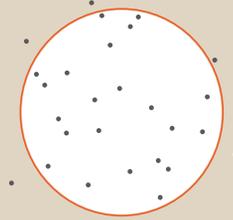
Remember ...

Shots at game birds in flight should be limited to your "maximum effective range." This is the distance at which you can hit the target consistently. Shooting beyond this distance leads to an increased number of wounded and lost birds. Also, firing at game too close may destroy the meat.

Shot Patterns



Desirable Pattern



Undesirable Pattern



Use a relaxed, balanced stance with your feet shoulder-width apart and your weight slightly forward on your left foot (if you're a right-handed shooter), and lean your body in the same direction.



Snap-Shooting

Snap-shooting is a technique to use if you must make a quick shot and the target is straight ahead at close range. You simply raise the shotgun and point where you think the target will be when the shot arrives.

■ Pointing

- Because targets usually appear suddenly and move quickly, there's no time to "aim" a shotgun. It's designed to be pointed, with the eye sighting along the top of the barrel or rib.
- The sight is usually a bead on the front of the gun. Your eye must be in line with the barrel, so it's important to position your head properly on the stock.
- When you bring the gun to your face, the stock should fit snugly against your cheek with your eye on that side above the centerline of the gun. If you can't assume that position comfortably, you may need to adjust the "gun fit."

■ Shouldering the Shotgun

- When you bring the shotgun to your shoulder, the stock should be brought to your cheek first and then back to your shoulder.
- A common error is lowering the head and cheek to the stock, instead of bringing the stock all the way up to the cheek. When done properly, with your head naturally erect, the gun butt should come always to the same spot on your shoulder.

■ Pulling the Trigger

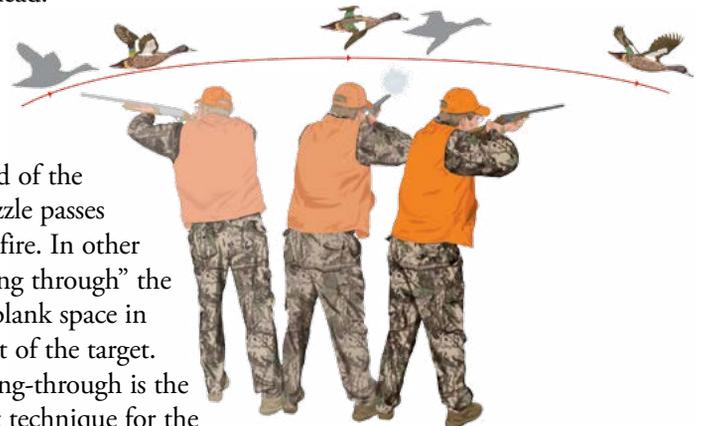
- Unlike rifle firing, quick trigger action is important when hunting with a shotgun. Slap the trigger rather than squeezing it.
- Because the trigger is pulled quickly and the body and gun are typically in motion, breath control isn't necessary.
- Continue the shotgun's swing as you pull the trigger. Stopping the swing as you shoot will cause you to hit behind a moving target.

Leading the Target

The two most common methods of leading targets at long distances are swing-through and sustained lead.

■ Swing-Through

Point your shotgun at a moving target and swing with it. Increase the speed of the gun so that the muzzle passes the target and then fire. In other words, literally "swing through" the target and fire at a blank space in front of the target. Swing-through is the best technique for the beginning student.



■ Sustained Lead

This method is a little more challenging because it requires more experience. You estimate the length of the lead necessary to hit the target and maintain that lead as you swing with the target, fire, and continue the swing.

Handgun Shooting

Hunting with handguns has been growing in popularity in recent years. Many of the fundamentals of rifle firing also apply to handguns.

Loading and Handling

- Single-action revolvers typically load through a gate on the right side of the frame. To rotate the cylinder, pull the hammer back to half-cock. For a safer carry in the holster or hand, leave an empty chamber in front of the hammer.
- Double-action revolvers have cylinders that fall downward, exposing all chambers for loading.
- Semi-automatics usually fire rounds stored in a magazine that is inserted in the grip or handle.

Position and Grip

- Body position and grip are vital to hitting the target. The hand position on the grip of a pistol is especially critical. Although the grip configuration of the revolver and semi-automatic are different, the gripping procedure is the same.
- Hold the handgun high on the grip so that the recoil is directed back to the hand and arm in a straight line. This allows better repeat shots and more accurate shooting. Use a two-handed hold whenever possible, applying pressure from front to rear.
- When hunting, use a tree trunk, steady limb, or other stable object as a rest. Placing some padding, such as a hat or a jacket, on top of a hard rest helps with your aim.

Sight Alignment

- Sight alignment, which is important in rifle firing, is even more important in pistol shooting because of the shorter distance between the sights. Typically, handgun sights consist of a square rear notch sight and a heavy square front blade sight. This arrangement is easy to align.
- Most handguns are initially sighted-in at 50 feet.

Aiming

- At the shooting range, many handgunners use a sight picture that places the bull's-eye on the top of the front sight, rather than placing it in the sights over the center of the target. However, hunters should hold the alignment directly over the vital area.
- Scopes with long eye relief have become popular with handgunners and offer exact sighting for hunters. Scopes may take longer to align on a target than open sights, but they're usually more accurate.

Shooting

The pistol shooting fundamentals of breath control, trigger squeeze, and follow through are almost identical to those in rifle firing. There are, however, some important differences to remember.

- The first joint of the finger should take up trigger pressure, not the tip as is often done with rifles.
- When a revolver is fired, powder flashing at the front of the cylinder can cause burns. Be sure to keep your fingers away from the front of the trigger area.
- The slide and hammer of a semi-automatic can deliver a bruising blow when held too close to the body. All handguns should be fired at arm's length.

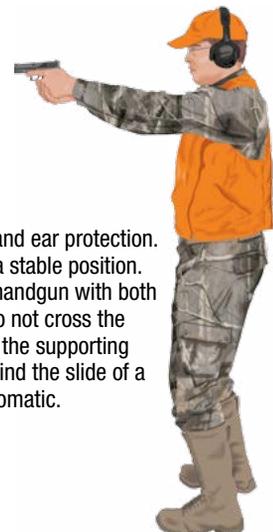
Safety Tip

- Permanent hearing loss happens gradually with each handgun blast. Choose an ear protection device with a high Noise Reduction Rating (NRR).
- Eye protection is essential when shooting a handgun to prevent damage from a ruptured shell or firearm malfunction. Wear eye protection whenever disassembling or cleaning a handgun.



Remember ...

- Carry a handgun in a safe holster with a strap.
- Draw a handgun only when you see game.
- Cock your gun only when ready to shoot.
- Keep your finger outside the trigger guard until ready to shoot.



Use eye and ear protection. Assume a stable position. Grip the handgun with both hands. Do not cross the thumb of the supporting hand behind the slide of a semi-automatic.

The Four Primary Rules of Firearm Safety

- Point the muzzle in a safe direction.
- Treat every firearm with the respect due a loaded gun.
- Be sure of the target and what is in front of it and beyond it.
- Keep your finger outside the trigger guard until ready to shoot.



The cardinal rule of firearm safety is that every gun must always be treated as if it were loaded and be pointed in a safe direction.

Remember ...

- The most common hunting incidents result from hunter judgment mistakes.
- Eighty percent of all firearm incidents occur within 10 yards of the muzzle.

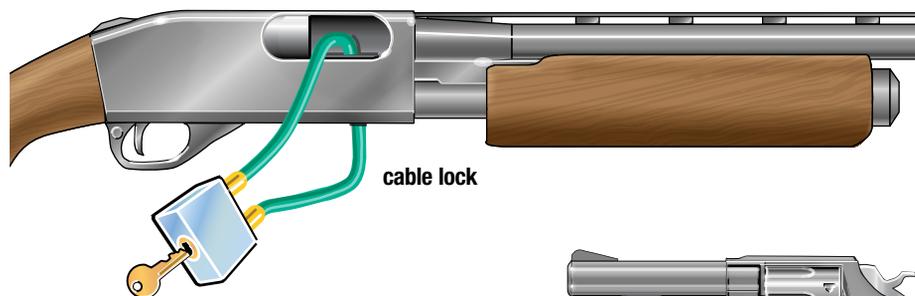
Why Firearm Safety Is Important

Whenever firearms are being handled, an incident can occur if the firearm is not handled responsibly. Preventing hunting incidents depends on knowing and understanding firearms, and handling them skillfully and safely. Responsible hunters practice safe habits until they become second nature.

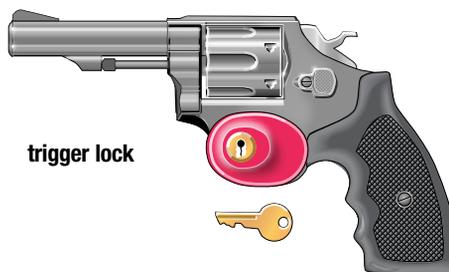
Firearm Safety in the Home

Statistics show that more than half of the fatal firearm incidents reported each year occur in the home. Since almost all incidents are caused by carelessness and lack of knowledge, it's the hunter's duty to help prevent firearm mishaps in the home.

- Most importantly, lock guns away where children can't reach them, and store ammunition in a separate location. Check to see that a firearm is unloaded before allowing it in any building or living area.
- Use trigger locks. These inexpensive safety devices fit around the trigger guard of an unloaded firearm to prevent it from being fired accidentally.
- Practice these safety rules if handling a firearm in the home:
 - Immediately point the muzzle in a safe direction when you pick up a firearm.
 - Keep your finger off the trigger.
 - Always check to see that the chamber and the magazine are empty.
- If a gun is taken from storage to show friends, be sure they understand safe gun-handling rules. See also "Showing Your Firearms" in Chapter Three.



cable lock



trigger lock

Hunting Incidents

- From a law enforcement perspective, a hunting incident occurs when a hunter directly or indirectly causes personal injury or death while using a firearm or bow.
- More broadly defined, a hunting incident is any unplanned, uncontrolled action that occurs while using a sporting arm. It can include near misses.
- Being responsible in order to prevent hunting incidents is your first priority.

Four Main Causes of Hunting Incidents

- **Hunter Judgment Mistakes**, such as mistaking another person for game or not checking the foreground or background before firing
- **Safety Rule Violations**, including pointing the muzzle in an unsafe direction and ignoring proper procedures for crossing a fence, obstacle, or difficult terrain
- **Lack of Control and Practice**, which can lead to accidental discharges and stray shots
- **Mechanical Failure**, such as an obstructed barrel or improper ammunition



Be sure of the target and what is in front of it and beyond it. If you cannot see what lies beyond the target, do not take the shot.

Identifying Your Target

Always identify your target “from tip to tail” before firing.

- One of the most common causes of hunting incidents is a hunter mistaking another hunter for game.
 - The hunter sees only part of the target but allows his brain to fill in what’s missing.
 - To avoid being mistaken for game, always wear blaze orange.
- It is illegal to kill certain game or one gender of the animal.

Using Firearms at the Shooting Range

A successful hunt begins with target practice at the shooting range.

Many rules that govern safe firearm handling in the field apply to the shooting range. But a shooting range has additional requirements.

- Read all range rules that apply to the type of shooting you will do that day.
- If there is a range master, be sure to follow his or her instructions while shooting.
- When not shooting, unload your firearm and leave it on the range line or bench until you’re given further instructions.
- Don’t handle your firearm while other shooters are downrange. Step away from the firing line or bench until the range is clear and the range master instructs you to approach the line or bench.
- If no range master is present, all shooters must decide on safety commands beforehand so that it’s clear when someone intends to go downrange.
- Anytime a person is beyond the firing line or downrange, unload your firearm and step away from the line until the other person returns.
- Under no circumstances should you shoot a firearm when someone is downrange or past the firing line.
- Always wear hearing and eye protection, even if you’re watching others shoot.
- Respond immediately to anyone calling for a “cease fire.”

Trail Carry



Shoulder Carry



Elbow or Side Carry



Cradle Carry



Sling Carry

Two-Handed or "Ready" Carry



Safely Carrying Firearms in the Field

There are several ways to carry a gun safely and still have it ready for quick action. Three rules apply to all carrying methods:

- Muzzle pointed in a safe direction and under control
- Safety "on" until immediately before you're ready to shoot
- Finger outside the trigger guard

Proper Field Carries

■ Trail Carry

Leaves a hand free for balance, but don't use it when you're behind someone. Not recommended when walking in snow or brush—debris can get in the barrel.

■ Shoulder Carry

Good choice when walking beside or behind others. Don't use it if someone is behind you.

■ Two-Handed or "Ready" Carry

Provides the best control, particularly in thick brush or weeds, or when you need to fire quickly. Do not use if someone is beside you.

■ Elbow or Side Carry

Comfortable, but it has the least muzzle control. It also can snag in brushy terrain. Use it when no one is in front of you.

■ Sling Carry

Easy carry for long treks through open country. Keep a hand on the sling when walking so that it doesn't slide off your shoulder if you trip. Not recommended for thick brush because the gun could be knocked from your shoulder.

■ Cradle Carry

Comfortable and secure; reduces arm fatigue. If someone is walking beside you, carry the gun on the opposite side so that the muzzle points away from the other person.

Selecting the Right Carry When Hunting With Others

Carry selection is based primarily on muzzle control and terrain.



- If three hunters are walking side by side, the ones at the sides may carry their guns pointing either to the side away from their party or to the front. The one in the center should keep the gun pointing to the front or up.

- If three hunters are walking single file, the one in the lead should have the gun pointed ahead but never over the shoulder. The one in the middle must have the gun pointed to the side. The hunter in the rear may point the gun to either side or the rear.



- When facing another hunter, any carry is safe except the trail carry or forward-facing elbow or side carry.
- Remember that the same rules for safe carry apply when your hunting companion is a dog.



Checking for Obstructions

Occasionally you may trip or stumble in the field, accidentally dipping the barrel into the ground or snow. Immediately check for an obstruction.

- Point the muzzle in a safe direction.
- Open the action, and make sure the firearm is unloaded.
- Check for debris in the barrel. If the firearm is a break action, look through the barrel from the breech end, or use a barrel light to inspect the barrel for obstructions.
- Remove any obstructions with a cleaning rod.
- Check the barrel again to make sure no debris remains.

Remember ...

In addition to gun handling, several other factors affect your safety during the hunt:

- Weather, especially the sun's glare
- Pests, such as fire ants, snakes, and bees
- Your emotional state
- Your stamina, especially when hunts are physically demanding

Crossing Obstacles

- Always unload guns before crossing fences or other obstacles or before negotiating rough terrain.
- Cross wire fences close to a fence post to prevent damage to the fence.
- After unloading it, place the gun on the other side of the fence or obstacle to be crossed, with the muzzle pointed away from you and your crossing point. Then cross the fence and retrieve your gun.



- Pull a gun toward you by the butt—never by the muzzle.
- If two people are crossing, one person gives the other person both guns, crosses first, and then receives the unloaded guns from the other hunter.

Safely Loading and Unloading Firearms

Even something as simple as loading or unloading a firearm can result in tragedy if it isn't done properly. Here's how to do it safely.

■ Loading

- Point the muzzle in a safe direction.
- Open the action; make sure the barrel is unobstructed.
- Put the safety on if the firearm can be loaded with the safety on.
- Load the ammunition.
- Close the action.
- Put the safety on if you were not able to do so before loading.



■ Unloading

- Point the muzzle in a safe direction.
- Put the safety on if it is not already on.
- Keep your finger outside the trigger guard.
- Open the action.
- Remove the ammunition by first detaching the magazine. Eject cartridges or shells if it's the only way to remove them. (See "Firearm Actions" in Chapter Three for details on specific actions.)
- Make sure the gun is empty by checking both the chamber and the magazine.

Remember ...

Removal of ammunition from the magazine or removal of the magazine from the firearm does not mean the firearm is unloaded!

Typical Gun Cases

Padded, soft-sided case

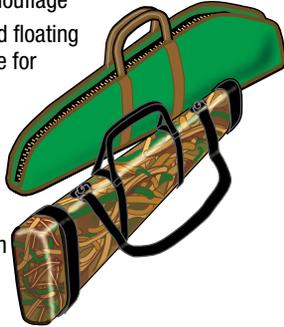
Material: Canvas, nylon, neoprene, polyester, or leather

Advantages:

- Light, easy to handle and store
- Many designs accommodate scoped rifles
- Offered in camouflage
- Waterproof and floating cases available for duck hunters
- Less costly than hard cases

Disadvantage:

- Less protection than hard-sided cases



Lockable, hard-sided case

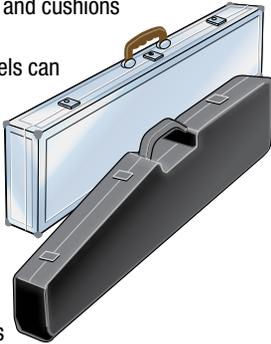
Material: Aluminum or composite

Advantages:

- Lightweight but sturdy
- Meets airline standards
- Can include deep foam padding that holds firearm in place and cushions impact
- Composite models can be molded to fit firearm
- Available in waterproof models

Disadvantage:

- Bulkier and costlier than soft-sided cases



Gun sock

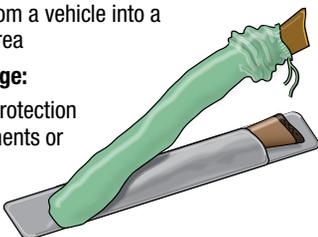
Material: Durable stretch fabric (polyester/ acrylic) or soft pile materials

Advantages:

- Lightweight protection from dust, dirt, and moisture
- Offered in camouflage
- Often used as a second case to carry a firearm from a vehicle into a hunting area

Disadvantage:

- Minimal protection from elements or impact



Safely Transporting Firearms

Transporting firearms involves both legal and safe practices. In addition to federal laws, there are regulations that vary from state to state.

General Rules

- Always unload and case firearms before transporting them. In many states, this may be the law. The action should be open or the gun broken down, whichever makes the firearm safest if it's mishandled.
- Firearms should not be displayed in window gun racks because the display may provoke anti-hunter sentiment. It's also an invitation to thieves.
- Lean a firearm against a secure rest only. A vehicle does not provide a secure resting place. A gun that falls over might accidentally discharge or be damaged.



Safe Zone-of-Fire

The area in which a hunter can shoot safely is referred to as a zone-of-fire. Before setting off in a group, hunters should agree on the zone-of-fire each person will cover. A zone-of-fire depends on many factors, including the hunter's shooting ability, the game being hunted, the hunting environment, and the hunting strategy being used. A hunter's zone-of-fire changes with every step. This is particularly true of groups hunting birds, rabbits, or other small game.

- For safety purposes, it's best to have no more than three hunters in a group. For new hunters, two is a safer number until they become familiar with maintaining a proper zone-of-fire.
- Hunters should be spaced 25 to 40 yards apart and always in sight of one another. Each hunter has a zone-of-fire which spans about 45 degrees directly in front of each hunter. (Some states require an adult to be immediately beside a youth hunter. In this case, the adult should be a supervisor only—not a hunter.)
- A way to visualize 45 degrees is to focus on a distant, fixed object that is straight out in front of you. Stretch your arms straight out from your sides. Make a fist with your thumbs held up. Gradually draw your arms in toward the front until both thumbs are in focus without moving your eyes. This will give you your outer boundaries.



- If three hunters are walking side by side hunting pheasants, the hunter in the center will shoot at birds flushed in the middle which fly straight away. The other hunters will shoot at birds flying toward their end of the line.
- If a bird turns and flies back across the line of hunters, it's best if all three hold their swings and do not fire. The same is true of a rabbit scurrying back between the hunters.
- No hunter, especially when swinging on game, should allow his or her gun to point at a person. Better to pass up a shot than risk injuring someone or damaging property.
- Everyone hunting in these situations should wear daylight blaze orange whether it's required by law or not.

Safety Tip

A hunter's zone-of-fire changes with every step. It's important to remain alert and aware of your companions' locations at all times.



Only one hunter should aim at the target. Also, hunters should only shoot if there is an adequate backstop. Don't shoot at a "skylined" animal.

Safety Tip

When hunting in a group, hunters should shoot only at game in front of them.

Remember ...

A rifle scope should never be used as a binocular.



The best thing you can do for your safety and the safety of others is simple ...

Don't drink and hunt!

Because you can drink faster than your system can burn the alcohol off, there is an increasing level of alcohol in your blood. This level is referred to as Blood Alcohol Concentration (BAC).

Hunt Ethically and Responsibly

Never take these kinds of shots:

- Game you can't identify
- Running game when you don't have time to check your zone-of-fire
- "Skylined" animals on a hill where you can't check what lies beyond your target
- Game that's clearly out of range
- When the missed shot's angle would cause your bullet to travel its maximum trajectory and could injure others
- Shooting at a flock, which has a higher likelihood of wounding rather than killing
- When objects in the foreground could deflect your shot
- Game at which another hunter is shooting
- When a bullet is likely to ricochet off flat or hard surfaces such as rocks, water, or trees
- Any unlikely shot, regardless of how desirable the target may be

Other Safety Considerations**Self-Control and Target Identification**

- Some hunters may become overly anxious or excited on a hunt, which can lead to careless behavior. They may fire at sounds, colors, movements, or unidentified shapes, or simply shoot too quickly. In the excitement after hitting their target, they may swing a loaded firearm toward their companions or run with the safety off toward a downed animal.
- Self-control is an essential aspect of hunter safety. Only shoot when you know the target is legal game and that no people, domestic animals, buildings, or equipment are in the zone-of-fire—remember that bullets can pass through game and continue on for some distance with deadly force.
- Slow, careful shooting is not only safer, but it also produces a higher degree of success.

Accuracy

- Shooting accurately is not only the key to successful hunting, but it's also a safety factor. Some incidents, often deadly ones, have occurred when stray bullets have hit people out of the shooter's sight. Be sure you have a proper backstop before you shoot.
- Accuracy is also essential for achieving a clean kill. No real sportsman wants to wound game and cause needless suffering. You must learn how to hit the vital organs of the game you hunt. Knowing your game, equipment, and skill level will tell you when you're in position to make a clean kill.

Alcohol and Drugs

- Consuming alcohol before or during the hunt increases the risk of incidents because it impairs several functions.
- Drugs can have a similar effect. If you have to take prescription medicine, check with your physician to see if it's safe to take while hunting.

How Alcohol and Drugs Impair Hunting Skills

Physical Function	Skill Impaired
Fine motor control	Marksmanship
Judgment	Safe zone-of-fire
Hearing	Location of game
Color perception	Game identification
Reaction time	Quickness
Vision	Game identification
Coordination	Muzzle control
Communication	Distinct speech

You should be able to...

- List advantages and disadvantages of hunting from an elevated stand.
- Name the accessory you should wear at all times when climbing a tree and when on a tree stand.
- Demonstrate how to haul a firearm into an elevated stand safely.
- Demonstrate a safe position and the zone-of-fire when hunting with a partner in a boat.
- Name the accessory you should wear at all times when hunting from a boat.
- Demonstrate what to do to help retain body heat if you are stranded in chilly water.
- List seven rules for safe and ethical operation when hunting with an all-terrain vehicle.

Hunting from Elevated Stands

Elevated stands place the hunter above ground level. They can be tree stands placed in or against trees, or free-standing structures. They have become increasingly popular in recent years with both firearm and bow hunters. While they offer certain advantages, they also have some drawbacks, including a degree of risk.

■ Advantages

- Provide a wider field of vision—game is spotted sooner than at ground level
- Allow time to plan for best shot through earlier detection of game
- Position a hunter above the animal's normal field of vision
- Make a hunter's scent harder to detect and movement less noticeable
- Make a hunter more visible to other sportsmen so that he or she is less likely to be hit by a stray bullet
- Provide a good backstop because usually shooting at a downward angle

■ Disadvantages

- Increase risk of injury resulting from falling
- Can be difficult to carry, especially large, portable stands
- Provide no protection from cold or wind
- Give little room for movement
- Cannot move toward game while hunting

Types of Elevated Stands

■ Portable Tree Stands

Portable tree stands can be safe and environmentally friendly. Commercial stands that are manufactured, certified, or tested to industry standards are best.

Homemade stands should not be used. You should follow the manufacturer's instructions and also practice installing a tree stand at ground level before you go hunting. Portable tree stands come in three basic types.

- **Hang-On Stands:** These simple stands provide about four square feet of space. They must be hauled into place and secured to the tree with belts or chains. These stands require separate climbing aids such as segmented ladders or climbing sticks. When installing a climbing aid, determine your climbing route first. Attach the aid to the tree so that it extends above the stand's platform and you can step down onto the platform.
- **Climbing Stands:** These platform stands are designed for trees with straight trunks and consist of two sections, which are also the climbing aids. A hunter "walks" the stand up a tree by moving one section with the hands and one with the feet. While on the ground, you must adjust the stand to allow for the tapering of the tree as you go up. When climbing, go slowly, take small steps, and always keep the two sections connected with a tether. This type of stand is

Types of Elevated Stands



Hang-On Stand



Climbing Stand



Ladder Stand



Tower Stand

Elevated Stand Location

- Place a stand adjacent to game trails or where game sign is abundant.
- Place a stand no higher than necessary.
- Never place a stand in a dead tree, in trees with large overhanging dead limbs, or on or near utility poles.
- Select only trees that are straight.
- Locate the stand downwind from the animals' expected route.
- Never place stands on fence lines or near another landowner's property.

Elevated Stand Safety

Merely climbing into or out of a tree stand or other elevated platform to hunt puts you at risk. Long hours spent waiting in a stand, as well as poor hunting techniques, can lead to accidental falls. To protect yourself, use good judgment and follow these recommendations, always putting safety first.

- Purchase a commercial stand that is manufactured, certified, or tested to industry standards.
- Read the manufacturer's instructions and watch the video that accompany the stand. Review this information each season before using the stand.
 - Contact the manufacturer if the instructions are missing or confusing.
 - Share the information with anyone else who uses your stand.
- **Attach your FAS to the tree while at ground level, and keep it attached throughout your hunt—from the time you leave the ground until you get back down.**
- Use a tree stand only during daylight hours.
- Practice first with your tree stand and FAS at ground level, using all safety devices that were included with the stand. Then continue to practice, gradually going higher.
- Get enough sleep to ensure that you are well rested before using a tree stand.
- Carry a signaling device, such as a whistle, to let others know if you have a problem.
- Take your time and plan every move you make while installing and using an elevated stand.
- Check your stand carefully prior to each use. Do not leave a stand attached to a tree for more than two weeks.
- Never exceed the weight limit of your stand or FAS. Remember that the weight includes you plus your equipment.
- Do not climb with anything in your hands or on your back.
- Use a haul line.
- Raise and lower all hunting equipment on the opposite side of the tree from your climbing route.



Full-Body Harness

Vest Harness (Full-Body Harness With Suspension Relief)



not suited for trees with shaggy bark or with branches between the ground and the desired elevation. Never use these stands on trees covered with ice or snow.

- **Ladder Stands:** Ladder stands usually provide a platform 10 to 20 feet above the ground. The built-in ladder lets you use these stands with a wider range of trees. Due to their size and weight, hunters normally assemble and set up ladder stands before the first day of hunting. Three to five people are needed to erect or take down a ladder stand safely. When setting up the stand, clear the base area of all rocks and debris, making sure the ground is level. Then lean the stand against the tree and chain or strap it into place. Use all parts of the stand when installing it.

■ Tripods, Quadpods, or Tower Stands (Free-Standing)

An alternative to a tree stand is a tower stand. These stands are similar to a ladder tree stand but are free-standing and can be placed anywhere that has a firm base.

Fall-Arrest Systems (FAS)

You should use a fall-arrest system (FAS) that is manufactured to industry standards. Carefully read the manufacturer's instructions for proper use of your FAS, and follow all safety guidelines.

- Most tree stand falls occur when a hunter is climbing up or down a tree. Always use a properly fitting FAS that includes a full-body harness at all times when your feet are off the ground. (When using a ladder stand, attach your FAS to the tree and tighten the tether as soon as you reach the top of the ladder.) Make sure your FAS includes these components:
 - A full-body harness—the vest harness is a very effective style of full-body harness
 - A lineman's-style belt—used when climbing up and down the tree
 - Tree strap—goes around the tree
 - Tether—attaches the harness to the tree strap
 - A suspension relief strap—provides a loop to stand in if you fall
- Single-strap belts and chest harnesses do **not** meet industry standards.
- Follow the manufacturer's instructions for your FAS plus these safety guidelines.
 - With an adult present, practice adjusting and using your FAS at ground level before hunting from an elevated stand.
 - Attach the FAS tree strap to the tree so that the strap is at head level when you are standing. Attach the tether to the tree strap so that you have **no** slack while seated in your stand. If you fall, you do not want your feet to drop below a level that would keep you from climbing back onto the platform.
 - When climbing into or out of a tree stand, always use three points of contact with your hands and feet.
 - Keep a firm hold on the climbing system as you enter or leave a platform, and don't let go until you're certain you are secure.
 - If you fall:
 - Do not panic. Your FAS will hold you.
 - Signal for help.
 - Get back onto the platform as quickly as possible.
 - Use the suspension relief strap to avoid suspension trauma if you cannot get onto the platform or the ground. If you do not have a suspension relief strap, move your legs by pushing off from the tree to keep your blood flowing.
 - Discard any FAS that shows signs of wear and tear or has been worn during a fall. Also adhere to the expiration date sewn into the FAS by the manufacturer.
- Injuries or death can occur when hunting from a stand if hunters do not wear and use their FAS properly. Hunters who choose not to wear their FAS should stay on the ground to hunt.

Hauling Hunting Equipment into a Stand

- Never carry your hunting equipment up or down the tree with you as you climb. Always use a haul line.
- Before attaching the haul line to your hunting equipment:
 - If using a firearm, unload it and open the action.
 - If using a bow, put the arrows in a covered quiver and secure the quiver to your bow.
- Use a haul line of heavy cord attached to your stand to bring up your hunting equipment or to lower it prior to climbing down from your stand.
 - If using a firearm, attach the haul line to the firearm's sling so that the firearm hangs with the muzzle pointed down.
 - If using a bow, attach the haul line between the bow's limb and the bowstring so that the arrow fletching points down.
- Slip the end of the haul line through your belt—leave it untied so that it can pull free if you fall. Put on your FAS, secure yourself to the tree, and climb to your stand.
- After you are in the stand and secure, haul up your hunting equipment and untie the haul line.

Hunting With Boats

Hunters often use boats in difficult conditions, such as wind, cold, and snow. Special care must be exercised to ensure a safe trip.

Trip Preparation

- Leave a float plan with family or friends. It should detail where you're going and when you plan to return.
- Be sure the boat is large enough to carry you and your gear safely.
- Load gear low in the boat, and distribute the weight evenly.
- Have a personal flotation device (life jacket) on board for each passenger to wear.
- Have throwable personal flotation devices on board in case someone falls overboard.
- Stow required visual distress signals.
- Check an up-to-date weather forecast before heading out.
- Cancel your trip if wind and water conditions aren't safe.

Transporting Firearms in a Boat

- The same rules apply as when transporting firearms in a vehicle—unload and case firearms before transporting them. The action should be open or the gun broken down, whichever makes the firearm safest.
- Before boarding the boat, place the unloaded firearm into the bow of the boat with its muzzle pointing forward.
- When hunting with others, the first person settles in the bow position facing forward after the first gun is placed. Next, place the second unloaded firearm in the stern of the boat with its muzzle pointing rearward. Then the second person settles in the stern position facing rearward. Repeat the procedure with the remaining firearms and hunters.

Zone-of-Fire in a Boat

When duck hunting, the back-to-back position is the safest, with the zone-of-fire confined to a 180-degree area in front of each hunter.



Remember ...

Don't press your luck in cold weather. At the first sign of a storm, head for shore.



Types of Personal Flotation Devices (PFDs)

Type I

Wearable Offshore
Life Jacket



Type II

Wearable Near-Shore
Buoyant Vest



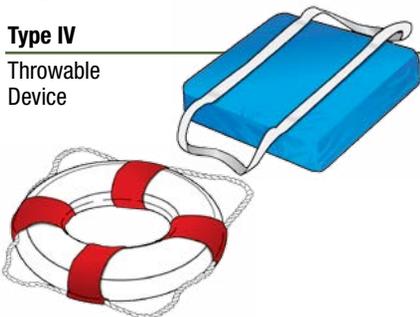
Type III

Wearable Flotation Aid



Type IV

Throwable
Device



Personal Flotation Devices

The U.S. Coast Guard requires you to carry a certain number and type of personal flotation devices (PFDs) on your boat, depending upon the boat and the number of people on board. Find out your state's requirements well in advance of any trip.

■ Equipping Your Boat With PFDs: The Minimum Requirements

- All boats must have a wearable PFD for each person on board.
- PFDs must be in good and serviceable condition, be readily available, and must fit the wearer correctly.
- Boats at least 16 feet long must carry a Type IV throwable device in addition to a wearable PFD for each person.
- In determining what type of PFDs you need, consider these factors as they relate to you and your passengers:
 - Weight
 - Body fat
 - Chest size
 - Clothing
 - Typical range of water conditions

■ Trying on Your PFD

- Make sure it fits comfortably snug.
- Test it in shallow water by relaxing and letting your head tilt back.
 - You should be able to keep your chin comfortably above water and breathe easily.
 - If not, replace with a more buoyant PFD.

■ Inspecting Your PFDs

Inspect the PFDs on your boat before each trip to make sure each device is in good and serviceable condition. Replace any that are not.

- There are no rips or tears.
- Straps, buckles, and zippers work properly.
- Inflatable PFDs have no leaks.
- Inflation cylinders on inflatable PFDs are the proper type and are fully charged.

■ Caring for Your PFD

- Don't alter your PFD.
- Don't place heavy objects on top of the PFD or use it as a kneeling pad or boat fender.
- Let the PFD drip dry before stowing it in a well-ventilated place.
- Don't leave the PFD on board for long periods when the boat is not in use.
- Don't dry your PFD on any direct heat source.
- Label the PFD with your name if you are the only wearer.
- Practice throwing your Type IV device. Cushions throw best underhand.

■ Using a PFD in Real-World Conditions

A PFD that you've tested in calm summer waters will not behave the same way on a stormy day when you're outfitted in hunting gear. Factors that can affect your PFD's performance include:

- Weather and water conditions
- Your clothing
- Items in your pockets

Surviving Water Emergencies

- Always wear a U.S. Coast Guard–approved personal flotation device (life jacket) while you're in the boat. Life jackets will not only keep you afloat, but they'll also help you keep warm.
- If you get caught in a storm and your boat swamps or capsizes, stay with the boat. Most small boats will float even when upside down or filled with water. Signal passing boats by waving a bright cloth or raising an oar if one is available.
- Placing an oar under your back and shoulders and another under your legs can help you float. If decoys are in reach, stuff them inside your jacket.
- Chest waders and hip boots also will help you stay afloat.
 - If in chest waders, trap air in the waders by bending your knees and raising your feet. Lie on your back.
 - If in hip boots, trap air in the boots by bending your knees. Lie on your stomach.
- Equip your boat with a means for re-entry (ladder, sling, etc.) to use if you should fall into the water.

Cold Water Immersion and Hypothermia

- Sudden immersion into cold water can cause immediate, involuntary gasping; hyperventilation; panic; and vertigo—all of which can result in water inhalation and drowning. Immersion in cold water also can cause sudden changes in blood pressure, heart rate, and heart rhythm, which also can result in death.
- Prepare for boating in cold water conditions by always wearing a secured life jacket. Also wear layered clothing for insulation.
- The best prevention is to take all measures necessary to avoid capsizing your boat or falling into cold water in the first place. If you do fall into cold water:
 - Don't panic. Try to get control of your breathing. Hold onto something or stay as still as possible until your breathing is controlled.
 - When your breathing is under control, *perform the most important functions first* before you lose dexterity (10-15 minutes after immersion).
 - Put on a PFD immediately if you don't already have one on. Don't take your clothes off unless absolutely necessary—they help insulate you.
 - Focus on getting out of the water quickly before you lose full use of your hands, arms, and legs. Try to reboard your boat, even if it is swamped or capsized. Get as much of your body out of the water as possible—the rate of heat loss will be slower than if immersed in water.
 - If you cannot get out of the water quickly, act to protect against rapid heat loss. In as few as 10 minutes, you may be unable to self-rescue.
 - Stay as motionless as possible, protecting the high heat loss areas of your body, and *keep your head and neck out of the water*.
 - Safety typically looks closer than it actually is, so staying with the boat is usually a better choice than swimming.
 - Adopt a position to reduce heat loss. If alone, use the HELP (Heat Escape Lessening Posture); if there are others in the water with you, huddle together.
 - Be prepared at all times to signal rescuers.
- Read more about the symptoms of and treating hypothermia in Chapter Eight.

Safety Tip

If you fall into the cold water, remain clothed; clothing helps retain body heat.



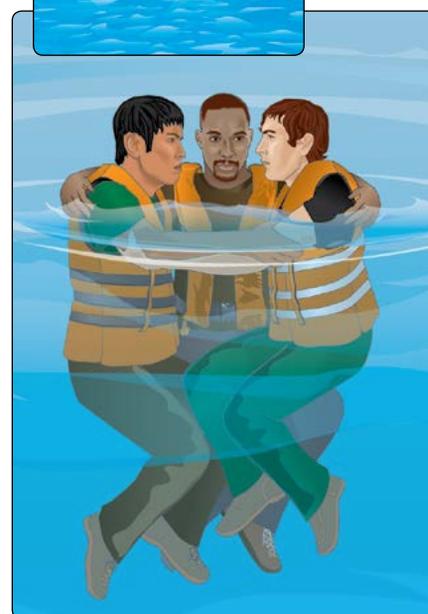
Recognizing Advanced Stages of Hypothermia

When a victim has these symptoms, dry clothing, heat, and medical attention are required immediately:

- Bluish-white appearance
- Weak heartbeat
- Shallow breathing
- Rigid body muscles
- May be unconscious



HELP
Heat Escape
Lessening
Posture



Huddle
Retains body heat and increases survival time

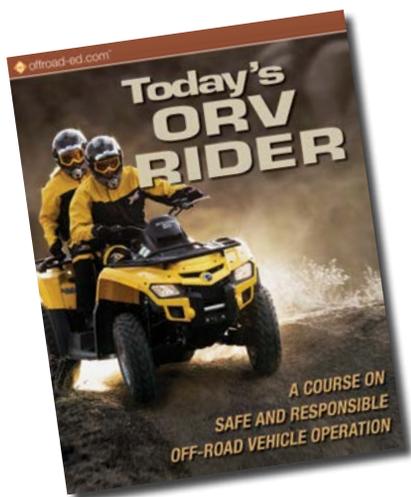
Remember ...

Shooting from vehicles is unsafe, unethical, and in many instances illegal.

Considerations When Hunting With All-Terrain Vehicles (ATVs)

- In many states, it is illegal to hunt from any motorized vehicle, including ATVs; this includes molesting, stirring up, or driving any game animals or game birds with a motorized vehicle.
- It is illegal in some states to operate an ATV off the trail, or there may be trails specifically closed to ATV use.
- In many states, it is prohibited to operate an ATV off roads or trails in a manner that damages or disturbs the land, wildlife, or vegetation.
- Some states require that ATVs be equipped with approved and operating spark-arresting mufflers and comply with sound regulations.

Safety Education for ATVs



Today's ORV Rider is a safety education course that instructs students how to operate ATVs safely.

Hunting With All-Terrain Vehicles

All-Terrain Vehicles (ATVs) are special-purpose vehicles that require safety education, protective clothing, responsible handling, and good judgment.

- They're useful for traveling into back country, but they can damage the environment if used recklessly. They also require training and practice to handle them safely on rough terrain.
- Prepare yourself and your family by becoming certified with a state-approved safety education course (see sidebar).
- Studies show that many ATV accidents occur when the rider unexpectedly encounters an obstacle, such as a rock or a ditch. Maintaining a safe speed is critical.



- Before hunting with ATVs on private land, be sure to get the landowner's permission.
- Always follow the rules for safe and ethical operation.
 - Wear a helmet approved by the Department of Transportation.
 - Wear protective clothing, including goggles, gloves, and boots.
 - Carry firearms unloaded, cased, and on a proper gun rack.
 - When using the plastic scabbard mounted on an ATV, clear the inside of the scabbard of debris and check your firearm's muzzle for obstructions.
 - Stay on the main roads and trails.
 - Pick your route carefully to minimize terrain damage.
 - Don't drive over crops or planted fields.
 - Don't shoot from an ATV.
 - Use ATVs only to get to the hunting area or to haul an animal from the woods.

You should be able to...

- Explain why it is important to know how to recognize your quarry.
- Name the four basic animal characteristics that can be used for identification.
- Describe five different hunting strategies.
- List three benefits of trapping.
- Identify three types of traps, and tell when you would use each.
- List three safe trapping practices.
- List five ways to reduce the risks of turkey hunting.
- Explain why it is important to know where to place a vital shot for the game you are hunting.
- Identify the vital zones for various game when viewed from different angles.
- List four types of shots, and tell when they should be used and when they should be avoided.
- Explain what to do when approaching downed game.
- State the first thing you should do after you are sure your game is dead.
- List the three main causes of meat spoilage.
- List the basic steps for field dressing game.
- List five precautions you should take to protect against chronic wasting disease.

Planning and Preparation

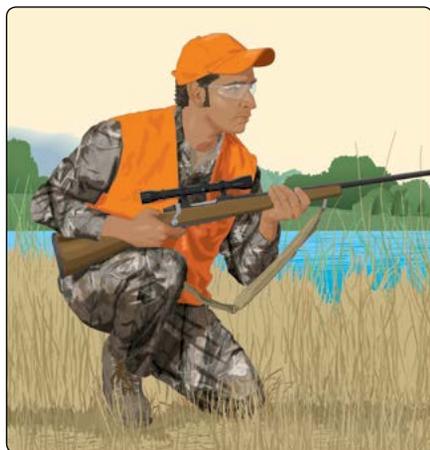
- A successful hunt begins with careful planning and preparation. The process usually requires more time than the hunt itself.
- Here are some steps you should take to prepare for a hunt.
 - Educate yourself about the game you'll be hunting and its environment.
 - Obtain the most current state regulations.
 - Buy appropriate clothing and gear for the environment.
 - Secure lease arrangements and permits (dogs and horses may require a veterinarian's certificate or a current vaccination record).
 - Visit the site in the off-season to prepare blinds and cabin facilities.
 - Sight-in rifles, handguns, and bows; pattern shotguns.
 - Sharpen your skills at the shooting range.
 - Pack extra firearms, scopes, bow strings, etc.

Know Your Quarry

- Of all the steps of preparation, educating yourself about the game you're hunting is one of the most critical. Understanding your quarry will increase your success and add to the enjoyment of the experience as well.
- In many cases, knowing your quarry is also necessary to ensure that you're taking legal game. For example, you may need to determine the sex of game birds on sight or quickly recognize protected species as they move into firing range. If you hunt in a region where white-tailed and mule deer occupy the same area, you'll need to know how to identify both.
- There are many ways that wild animals are classified, but hunters are concerned with four basic categories.
 - **Large mammals:** Big game, such as deer, elk, and bear
 - **Small mammals:** Small game, such as rabbits, squirrels, and raccoons
 - **Upland birds:** Turkey, grouse, quail, and dove
 - **Waterfowl:** Ducks and geese



It is critical that you educate yourself about your quarry when preparing to hunt. Understanding game species will add to your enjoyment and increase your chances of success as well.



Still hunting often involves stopping for long periods to scan and listen for game.



Stalking often involves following tracks to lead you to the type of game you are hunting.

Animal Characteristics

Whatever you're hunting, a basic understanding of an animal's characteristics will help you develop an effective strategy for identifying and tracking it.

- Animals can be identified by four basic characteristics.
 - **Distinctive Markings:** The black cheek patch on male pronghorns; the “flags” of the white-tailed deer; the face pattern on a gray fox; the green head on a mallard drake; the red, white, and blue on the head of a male turkey
 - **Sounds:** The drumming of grouse, the familiar honk of the goose, the gobble of a strutting “tom,” the grunt of the deer, the howl of the coyote
 - **Movement:** The strut of a tom turkey, the fast or slow wingbeats of some waterfowl, the zigzag in-flight pattern of the common snipe when flushed
 - **Group Behavior:** Flock patterns, such as the familiar “V” shape of certain migratory birds; various types of herd behavior
- Further study will help you learn other ways to identify and understand your quarry, including signs the animal leaves, camouflage capability, and behavior.

Hunting Strategies

Hunting techniques are skills honed through education and experience. Ideally, beginners should seek the guidance of experienced hunters on their initial hunts.

Still Hunting

- As the name implies, still hunting is walking stealthily through an animal's habitat, stopping frequently—sometimes for long periods—to scan and listen for game. Typically, big-game hunters use this method in unfamiliar terrain or where stands are impractical or forbidden.
- As a general rule, spend at least ten times longer being still and observing than walking. Keep a low profile; a human silhouette will spook many game species. Use binoculars in open terrain to identify movement properly.
- If you still hunt effectively, game will be unaware of your presence but so will other sportsmen. To avoid being mistaken for game by other hunters, always wear blaze orange.

Stalking

- The difference between still hunting and stalking is that when stalking, you follow signs leading to a particular type of game or group of animals, or close the distance to game already spotted.
- You may follow tracks on trails or a morning “dew” trail through leaves and brush. Or you may follow sounds or scents of animals, such as elk, sheep, or collared peccaries. Or you may simply sneak closer to an animal for a better shot.
- Stalking requires total focus because you must remember to keep downwind, stay quiet, stay alert, and remain patient.
- It is extremely dangerous to stalk a turkey. It is impossible to know if the sound you hear is another hunter “calling” or if another hunter is stalking the same turkey. For safety, do not hunt turkey by stalking.

Posting

- Posting involves sitting or standing in one spot. The location may offer a vantage point or a spot near the animal's trails.
- Posting is effective when you know where game is traveling each day and you're not allowed to use a blind or stand.
- The key to setting up a posting site is finding a location that allows you to freely swing your firearm or draw your bow.

Ground Blinds

- Ground blinds are makeshift or temporary structures located on the ground that conceal the hunter. They're made of everything from plywood to branches.
- You should situate ground blinds downwind, based on the normal wind pattern during a given time of day, such as morning; away from the sun; and where the foreground and background are safest.

Elevated Stands

- As discussed in Chapter Five, elevated stands (tower stands or tree stands) offer a number of advantages to both firearm and bow hunters. Tower stands are above-ground seats or blinds that conceal the hunter above the level of the quarry. Tree stands are stands placed in or against trees.
- You should check the condition of elevated stands routinely. Also, inspect for insects, owls, and small mammals before entering the stand.

Game Calling

- Calling is an effective technique for most animals. There are a variety of sounds that can be imitated to draw game to you.
 - **Territorial sounds:** Deer “rattling,” elk “bugle,” a turkey “gobble”
 - **Feeding sounds:** A feeding duck’s “chuckle”
 - **Distress sounds:** Inviting coyotes, bobcats, or foxes to feed
- There are hundreds of sounds that can attract all types of wildlife. A skillful hunter uses sounds to attract animals close enough for an effective shot.

Driving

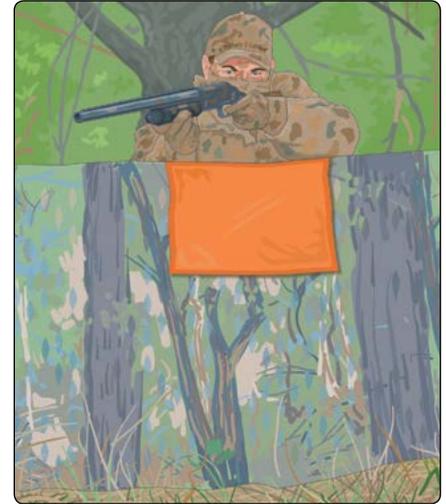
- Driving involves a group of hunters, some acting as “drivers” and others as “posters.”
 - Drivers spread out across a field or woods and push game out of cover.
 - Posters take positions at the end of the cover to intercept game pushed out by the drivers.
- The success of a drive depends on good organization and being familiar with the terrain.
- It is critical that everyone involved in the drive is aware of the position of other drivers and posters. Wear blaze orange, and never shoot in the direction of another hunter.

Flushing

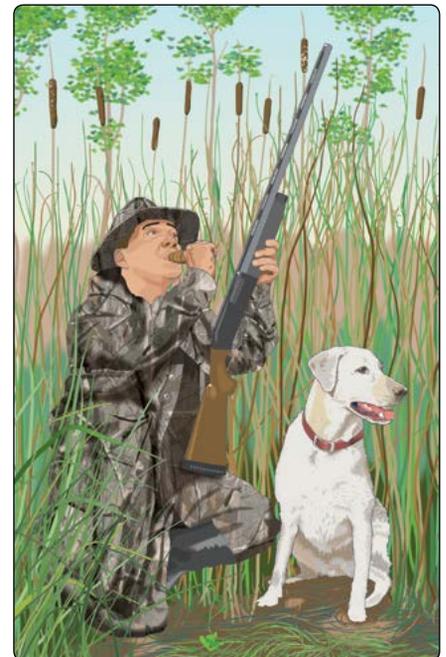
- Flushing involves using noise, movement, or dogs to cause game to become nervous and leave cover.
- Pause frequently when attempting to flush game. By varying your pace, your quarry may think it has been detected and be more likely to leave cover.

Dogs

- There are several breeds of dogs that can be used for hunting different game species. Some dogs can be used to hunt several types of game animals.
 - **Pointers** are used primarily for upland game birds.
 - **Retrievers** are large, hearty dogs used primarily to retrieve waterfowl; they also can be trained to hunt other game birds.
 - **Spaniels** are used mainly as flushers.
 - **Hunting Hounds** are used to hunt deer in some states.



Ground blinds, often made of branches, conceal the hunter. In situations where the display of blaze orange is needed, mark the exterior of your blind with orange. This may be a legal requirement in some states.



A skillful hunter uses sounds to attract the quarry close enough for an effective shot.

Remember ...

When hunting with a group, it is illegal in most states to use your license tag on another person's kill.



A trained hunting dog can be an excellent hunting partner.

A Trapper's Code of Ethics

When used properly, traps can be an effective tool for hunting and wildlife management. Trappers should educate themselves about the type of traps appropriate for the animal they're seeking and adhere to the trapper's code of ethics.

1. Have the landowner's permission before trapping on private land.
2. Do not set traps in areas where farm animals or pets may be caught.
3. Set traps to capture the target animal in the most humane way possible. Set traps that will drown the animal if you can.
4. Record trap locations accurately.
5. Check traps daily, preferably in the early morning.
6. Put waterproof name and address tags on all traps.
7. Dispose of animal carcasses properly so that you won't offend others.
8. Make an effort to trap only the surplus animals from each habitat, leaving an adequate breeding stock.
9. Promptly report diseased animals to wildlife authorities.
10. Assist farmers and other landowners who are having damage problems with wildlife.
11. Support and help train new trappers.
12. Know and follow all trapping regulations; obtain all required licenses, tags, and permits; and take a trapper education course (required in some states).

water set

A trap or snare that, when set, is completely or partially submerged by water

Trapping

The trapping of wildlife species for food and furs has long been a part of human existence. Since prehistoric times, man has utilized traps of one design or another to provide the basic needs for survival. However, in the modern era, trapping is more a tool of wildlife management and a form of recreation than a quest for food. Organizations and individuals opposed to trapping say it is unnecessary and harmful to the environment, but the opposite is true.

Today, trapping is a highly regulated activity. Anyone who traps must follow strict rules established and enforced by state fish and wildlife agencies. Restrictions on species that may be harvested, harvest seasons, trap types, trapping methods, and areas open to trapping are some of the guidelines and regulations that state agencies regularly review, implement, and enforce.

Benefits of Trapping

- Helps control animal populations by minimizing:
 - Starvation
 - Spread of diseases
 - Damage or destruction of habitat
- Helps reduce damage to personal property:
 - Flooding caused by beaver dams
 - Destruction of trees
 - Killing of livestock or pets
- Protects certain endangered or threatened species from predators
- Helps with wildlife restoration (see Chapter Nine)
- Catches elusive species for wildlife research
- Provides funding through sales of licenses
- Provides recreation, food and other products, and supplemental income

Best Management Practices (BMPs)

The International Association of Fish and Wildlife Agencies is developing a set of Best Management Practices for trapping.

- These guidelines will:
 - Identify the best equipment and practices that can be used to trap furbearers.
 - Address the welfare of captured animals.
 - Focus on the safest, most efficient, most humane, and most practical trapping techniques.
- To learn more, visit www.fishwildlife.org/?section=best_management_practices.

Selecting a Trap

Using the correct size and type of trap is essential to achieving a high level of efficiency while meeting animal welfare criteria.

- Traps generally fall into two categories.
 - **Quick-Kill Traps**
 - **Body-Grip Trap:** Designed for a quick kill, this trap is made of frame wires that clamp the furbearer's body.
 - **Snare:** This is a special type of trap that works as a quick-kill trap when used in a **water set**. It is less expensive, lighter in weight, and less likely to freeze in cold weather than other types of traps. Check the state's regulations for snares before using them.

• Live-Hold Traps

- **Box Trap:** A land-only trap, it consists of a mesh box with a swinging door to let the animal in but not out. Cage traps should be used when the possibility of catching pets is high. However, they are difficult to conceal and may be avoided by some animals.
- **Foothold Trap:** Used on land or in water, the trap holds an animal's foot and typically will cause little damage to the animal. The most common types are longspring and coilspring traps.
- **Cable Device:** This device is less expensive, lighter in weight, and less likely to freeze in cold weather than other traps. A loop of cable encircling the animal gets smaller as the animal pulls and relaxes when the animal stops pulling.

■ Use the correct type of trap for the animal you're trapping.

- **Body-Grip Trap:** Mink, beaver, muskrat
- **Box Trap:** Raccoon, skunk, opossum, fisher, or trapping near residential areas
- **Foothold Trap:** Coyote, red fox, gray fox
- **Snare:** Limited by state's regulations
- **Cable Device:** Coyote, red fox, gray fox, beaver

Following Trapping Guidelines

■ Observe safe trapping practices.

- Learn about the furbearers you plan to trap. Then you can place your trap line to limit the possibility of non-target catches. If you are using a box or foothold trap, be sure the pan tension is appropriate for the weight of the animal you plan to trap.
- Use the appropriate bait, lure, or other attractant to minimize the capture of non-target species.
 - Species have selective needs for food.
 - Bait should not be visible to prevent non-target species, such as hawks and owls, from being caught.
 - Many states prohibit setting traps near large carcasses to attract animals and regulate the bait or attractant that can be used.
- Choose your trap location carefully.
 - Avoid locations where the animal could get tangled in fences or other objects that could cause injury.
 - Select a location that minimizes the chance that objects or debris will prevent the trap from functioning properly.
 - Place traps away from well-traveled paths or residential areas. Remember that pets are not always on a leash.

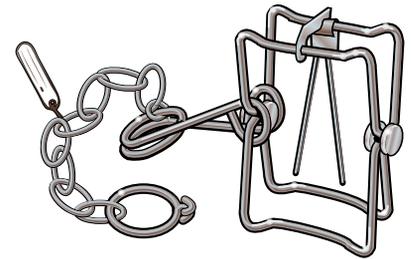
■ Release any non-target species quickly and without causing the animal harm. The steps listed below provide a general procedure to release non-target species. Talk with experienced trappers to learn the best procedures for different species.

- Use a catchpole to restrain the animal.
- Pin the animal's head to the ground to restrain it.
- Cover the head to calm the animal.
- Use a shield (plywood or similar material) as a protective barrier.
- Open the trap, and release the animal.
- Keep the barrier between you and the animal.

Types of Traps

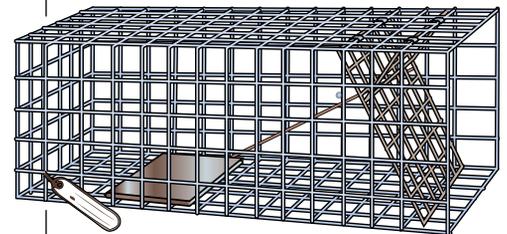
Quick-Kill Trap

Body-Grip Trap

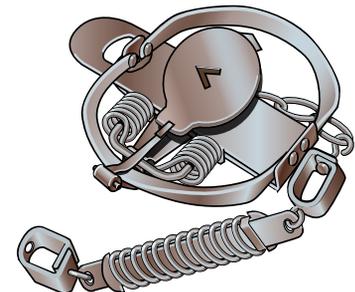


Live-Hold Traps

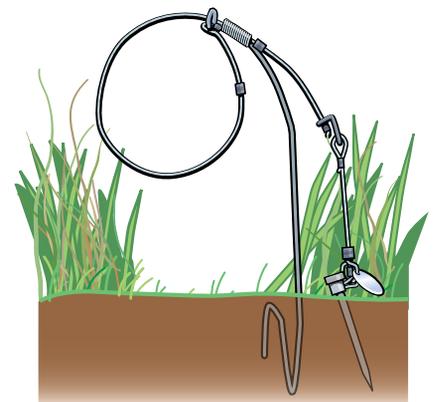
Box Trap



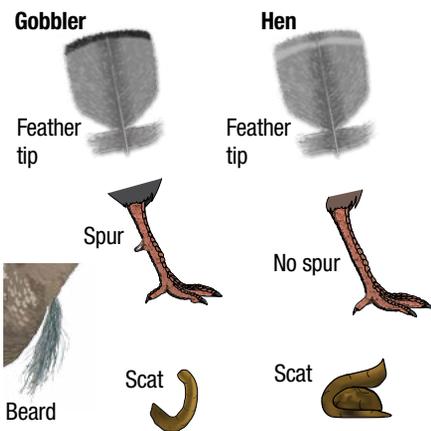
Foothold Trap



Cable Device



Turkey Characteristics



beard

A tuft of stiff filaments projecting from below the turkey's neck

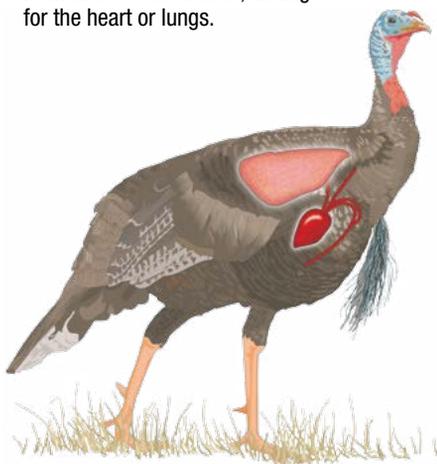
gobbler

A male turkey

jake

A young male turkey

The most effective firearm shot for a turkey is to the head and neck. The preferred shot angle for bowhunters is broadside, aiming for the heart or lungs.



- Dispatch trapped animals in the most humane way possible.
 - **Shooting:** The preferred way to kill a trapped animal is to shoot it in the head with a small caliber firearm, such as a .22-caliber rimfire rifle, which will not damage the animal's fur. Prior to shooting, remember the four primary rules of firearm safety (see Chapter Four).
 - **Drowning Traps:** At some locations, traps can be set to drown the animal when caught. One example is a snare placed in the water.
 - **Blunt Force:** The least preferred way to dispatch a trapped animal is by using blunt force to the back of the animal's head.

Hunting Turkeys Safely

While turkey hunting can be very enjoyable, injuries and fatalities occur each season. Normally this occurs when a hunter fails to identify the target properly, mistaking the sound or movement of another hunter as the activity of a wild turkey. The hunter shoots at a flash of red or blue or in the direction of the sound of a turkey call.

All hunters need to wait patiently and identify their target properly prior to pulling the trigger. Because wild turkey hunting methods include wearing full camouflage and sitting nearly motionless, turkey hunters need to be even more aware of their surroundings. All too often the activities that increase the chance of harvesting a turkey also increase the chance that a hunter will be shot by mistake.

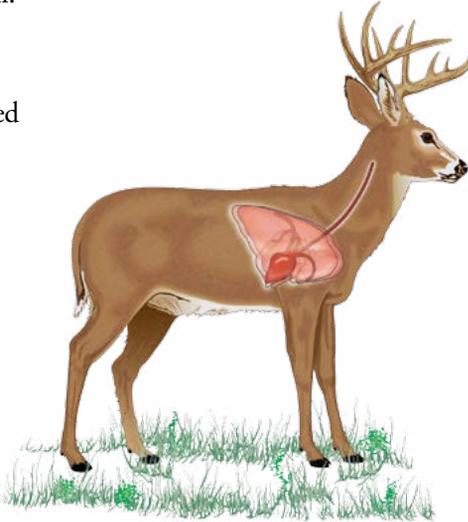
- Hunters can reduce the risks significantly by following good safety guidelines.
 - Wear blaze orange when entering or leaving the hunting area. When you're set up to call, you can put on your camouflage.
 - Identify your target, head to tail. Never shoot when you believe you recognize one area of the target.
 - Always aim a firearm at the head and neck of the turkey.
 - Always look for other hunters. Never assume you are alone in the woods.
 - Assume that any noise you hear has been made by a human being.
 - If you do see another hunter, don't move. Remain perfectly still, and either speak to the hunter in a normal voice or call out loudly if the hunter is farther away. Make absolutely sure that the hunter knows you're there before you move.
 - If you use camouflage, cover your entire body, including your face. Don't wear or use anything that is red, white, blue, or black. These colors are present on turkeys, and wearing them puts you at increased risk.
 - Never carry harvested turkeys or decoys in the open. Conceal them completely, and wrap them in blaze orange.
 - Use a flashlight in the dark. It alerts other hunters to your presence, and it prevents falls and accidents.
- When hunting, be sure you know the characteristics which distinguish wild turkeys. In the spring, female wild turkeys are nesting and are not hunted.
 - In addition to the **beard**, male turkeys can be identified by white on top of the head, red and blue waddles on the face and neck, and conspicuous spurs on the legs.
 - Hen turkeys weigh about 10 pounds and are smaller than **gobblers**, which weigh from 17 to 25 pounds. **Jakes** weigh from 10 to 15 pounds.
 - In the spring, gobblers strut, preen, and gobble to attract a mate. Hens neither strut nor gobble.

Vital Shots

Every hunter wants to bring home the game he or she is seeking; true sportsmen strive to do it by inflicting a minimal amount of suffering. To achieve these twin goals, it's essential that you understand the anatomy of the game you're after and learn how to place a shot for a clean kill.

Where To Shoot

- The most effective shots are delivered to an animal's vital organs—heart and lungs. In large game animals, these organs lie in the chest cavity behind the front shoulder. A lung shot is the most effective shot for big game.
- The area of the vital organs contains major blood vessels and arteries. A shot in this area causes considerable bleeding. If the animal doesn't die immediately and tries to flee, it will leave a blood trail that's easy to track.
- Aside from being a good marksman, the key to a clean kill is patience. Hunters should limit shots to the vital organs only. If you do not have clear shot to the vital organs, wait until the animal presents the best possible shot.



Remember ...

It's difficult to hit a vital area on an animal that is running or moving straight away from you. Rather than risk crippling the animal or ruining meat, wait for a better shot.

Remember ...

A clean kill improves the flavor of game meat. A wounded animal that has to be chased down yields strong-flavored meat because waste products, produced by stress, accumulate in the flesh.

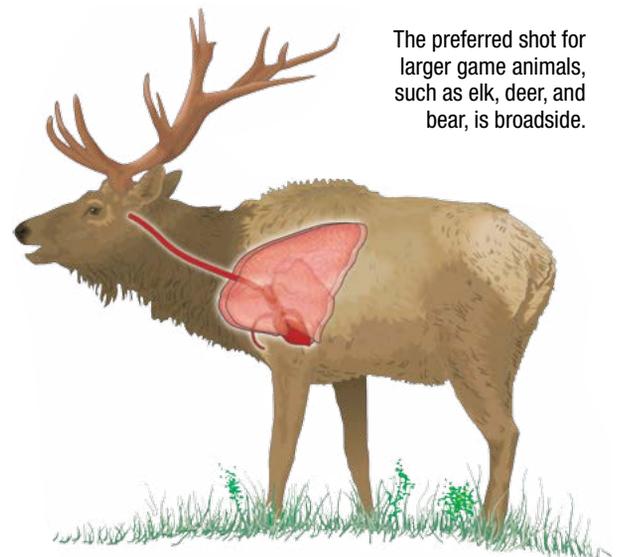
Choosing the Proper Shot Angle

The shot angle is the angle at which the animal is standing in relation to the hunter. Knowing which angles offer the most effective—and least effective—shots is an essential part of being a responsible hunter.

■ Broadside

The broadside shot angle is the preferred shot angle for both firearm and bow hunters for larger game animals, such as elk, deer, and bear.

- **Firearm:** The broadside position offers several excellent shots for a firearm hunter. The best target is the shoulder and chest area. A bullet of the correct weight and fired from a firearm adequate for the game will break the shoulder bone and enter the lungs or heart.
- **Bow:** The broadside angle offers the best shot for the largest big game animals, such as elk, deer, and bear. For most big game, the aiming spot is straight up from the back side of the front leg, one-third of the way up from the bottom of the chest. An arrow will penetrate the ribs but not the shoulder bone; so wait until the near leg is forward, and aim behind the shoulder.



The preferred shot for larger game animals, such as elk, deer, and bear, is broadside.

Trailing Wounded Game

It is a hunter's ethical responsibility to stop the hunt and search for any wounded animal.

- You should wait for at least a half-hour to an hour before trailing a deer, unless the downed deer is in sight.
- Make a practice of carefully observing every movement of a game animal after you shoot it. Investigate the ground and trail after shooting before assuming you missed.
- Once at the site of the shot, look for signs:
 - Blood on the ground or vegetation
 - Broken twigs or branches, or scattered leaves
 - A "dew" line if early in the morning
 - Tracks
 - Hair, meat, or bone fragments
 - Downhill trails, especially toward water
- If you lose a trail, search in a circular or grid pattern and try to pick up the trail again.
- Use blaze orange flagging to mark the blood trail in case darkness or weather forces you to quit the search and return the next day. Marking the blood trail also shows where to look for more signs if you lose the trail. Be sure to remove the orange flagging after use.

■ Quartering-Away

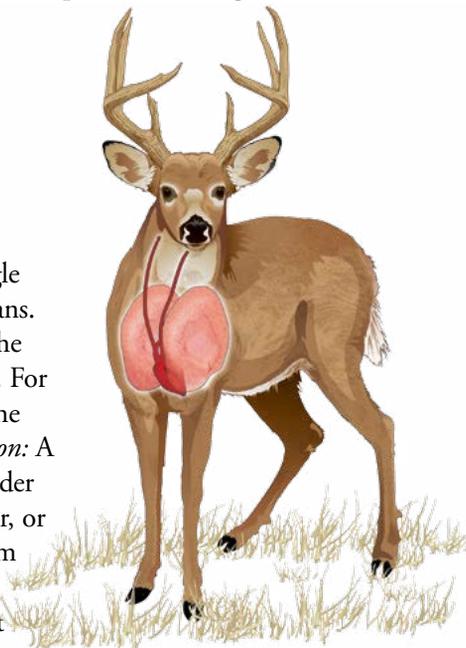
The quartering-away shot angle is when your target is facing away from you, but at an angle. The animal is usually looking away from you. The quartering-away shot angle offers a good opportunity for a clean kill on antelope, white-tailed deer, mule deer, black bear, and other big game of similar size or smaller.

- **Firearm:** For firearm hunters, the quartering-away position offers several aiming spots on all big game. The area just behind the shoulder is the best aiming spot for direct penetration of the vital organs. Focus on hitting the chest area above the opposite front leg.
- **Bow:** This is not a good shot for bowhunters on larger game because their massive stomachs and intestines will block a clean shot to the lungs or heart. The opposite front leg is a good reference point for aiming.

■ Quartering-Toward

The quartering-toward shot angle is when the animal is facing toward you, but at an angle. Since the animal is typically looking your way, it most likely will spot your movements.

- **Firearm:** The quartering-toward angle presents a clean shot to the vital organs. A shot can be taken at this angle if the gun is already trained on the animal. For an effective hit, aim at the front of the shoulder of the near front leg. *Caution:* A light bullet may deflect off the shoulder bones of large game, such as elk, deer, or large bears. Be certain to use a firearm and ammunition adequate for the game you hunt and the angle of shot you might select.
- **Bow:** This angle offers a poor shot opportunity and **should not be taken.** Heavy shoulder bones shield the majority of vital organs from broadhead-tipped arrow penetration. Also, bowhunters should never fire an arrow at an animal that is looking at them.



■ Head-On

Head-on shots rarely result in a clean kill and **should not be taken** by hunters using firearms or bows. Since the animal is looking directly at you, it can quickly turn, jump, or run and spoil the shot. Often the animal is only wounded, which ruins a lot of meat.

■ Rear-End

The rear-end shot **should not be taken** by hunters using firearms or bows.

Approaching Downed Game

- A downed deer or other large animal should be approached carefully from above and behind the head.
 - If the animal appears to be dead, wait a short distance away for a few minutes. Watch for any rise and fall of the chest cavity.
 - Notice if the eyes are closed—the eyes of a dead animal are usually open. You can be certain that the animal is dead if the eye doesn't blink when touched with a stick.
- If the animal is still alive, it should be finished with a shot to the base of the ear. If you wish to mount the head, place your shot in the heart-lung area. For bowhunters, the only option is placing an arrow in the heart-lung area.
- Once the animal is dead, immediately tag it, indicating the date of kill. Then begin field dressing.

Field Care of Game

The way you handle game after it's harvested can have a significant impact on the quality of the meat.

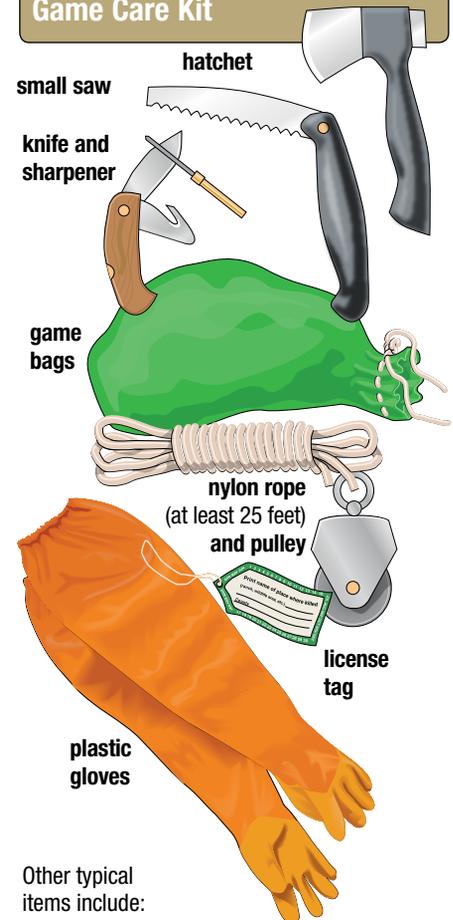
Field Care Basics

- The growth of bacteria is the cause of spoiled meat. Three factors contribute to bacteria growth.
 - **Heat:** Heat is the number one concern. Bacteria grow rapidly in a carcass, especially if it's allowed to stay warm. Meat begins to spoil above 40° Fahrenheit. The higher the temperature—and the longer the meat is exposed—the greater the chance of spoilage. This is particularly true with large game.
 - **Moisture:** Moisture also encourages the growth of bacteria.
 - **Dirt:** Dirt can introduce bacteria.
- Basic field dressing techniques help cool game by removing entrails, which lowers body heat by allowing air into the body cavity. As a rule, it's best to field dress immediately.
 - When cooling the body, use available shade. Hang deer, if possible. For larger animals like deer, elk, and moose, you should prop the carcass open with a clean stick to allow air to circulate.
 - In warm weather, it's helpful to place squirrels and doves in a cooler after dressing, as long as they remain dry.
 - Dispose of entrails carefully. Don't leave them lying by the side of a road or near a residence where they can be dragged home by a dog.
 - Keep meat clean by covering it with cheesecloth. This also protects it from flies, which lay eggs in exposed flesh. Rubbing meat with black pepper will also repel insects. If you have to drag the game to camp, try to keep dirt and debris out of the chest cavity.
 - Because moisture damages meat, don't use excessive amounts of water to wash the cavity. Allow it to dry.
 - If you plan to process the animal yourself, skin the animal as soon as possible to allow the carcass to cool.
- Finally, a sure way to ruin meat—as well as earn the disdain of non-hunters—is to tie the animal to the hood or roof of a car, where it's exposed to heat, exhaust fumes, road salt, and airborne dust.



Approach downed game from above and behind the head; wait a short distance away, watching for any rise and fall of the chest cavity.

Game Care Kit



Other typical items include:

- Black pepper to repel insects
- Cheesecloth bags for organs you plan to use as meat (heart, liver)
- Cooler and ice
- Disposable plastic gloves
- Fluorescent orange flagging
- Foil
- Gambrel and pulley system
- Hand towels
- Large bag for caped or trophy head
- Plastic bags for cleanup
- Plastic or cotton gloves
- Salt (noniodized) for hide care

Field Dressing Large Game

1. Wear plastic or latex gloves. If the animal is a male and your state allows it, remove the sex organs with a sharp knife. Otherwise, leave the sex organs attached to the carcass.
2. Between the hind legs, make a short cut down to the pelvic bone. (See figure 1.)
3. Slit the skin up to the breastbone. Peel back the skin and fur. (See figure 2.)
4. With the knife blade up, start at the pelvic cut and cut through the muscle layer. As you go, pull the muscle layer up and away from the stomach and intestines to make sure they aren't punctured.
5. Cut around the anus, and tie it off.
6. Cut the windpipe and esophagus at the upper neck. Grab the windpipe with both hands, and pull down hard. The entrails will pull free down to the midsection. (See figure 3.)
7. Slice through the diaphragm on each side of the animal to free the intestines.
8. With both hands, grab the entrails and pull down hard. All of the entrails should come out.
9. Cut through the seam in the pelvis where the bones grow together. (See figure 4.)
10. Finish cleaning out the deer, and prop the carcass open to promote cooling.
11. To drain any remaining blood out of the body cavity, hang the animal up for about 20 minutes or rest it on a slant.
12. While the animal is draining, remove the skin.

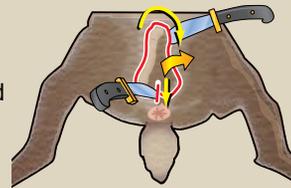


figure 1

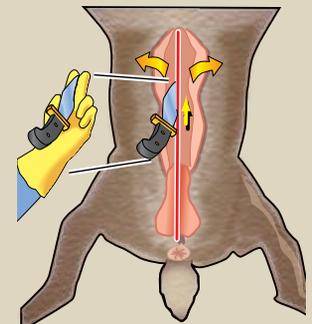


figure 2



figure 3



figure 4

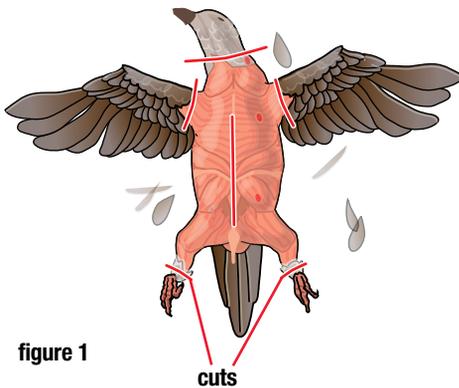


figure 1

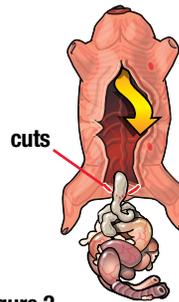


figure 2

Field Dressing Game Birds

1. Wear plastic or latex gloves. On the bird's abdomen, pluck the feathers or remove the skin.
2. Remove the head, feet, and wings. Make a cut along the soft lining tissue on the abdomen. (See figure 1.)
3. Reach inside up to the neck and pull backwards. Most of the entrails should pull free. (See figure 2.)
4. Clean out the lungs and around the anus.
5. Wipe the inside to remove blood, and allow air to circulate.
6. Store the bird in a cool, ventilated place.

Field Dressing Small Game

1. Wear plastic or latex gloves.
2. If you want, skin the small game animal, such as a rabbit, before making the cut to remove the entrails (step 3). If you skin a rabbit, also remove the head, feet, and tail. (See figure 1.)
3. Placing the blade at the anus, cut through the skin and pelvic bone.
4. Cut up to the breastbone, placing a finger under the blade to avoid cutting any organs.
5. Reach into the body cavity, and pull the esophagus and windpipe loose. (See figure 2.)
6. Remove the entrails.
7. Wipe out the cavity, and allow the carcass to cool.

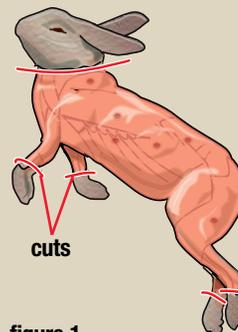


figure 1



figure 2

Transporting Game

- Keep the dressed game cool and free of insects. If you've quartered the animal, pack the quarters in ice chests—don't process the deer beyond quartering until you reach your final destination. Be sure to keep proper "evidence of sex" if required by your game laws.
- Most hunters take their game to a commercial meat cooler, where a typical white-tailed deer can be properly aged up to three or four days at 40° Fahrenheit.

Protecting Against Chronic Wasting Disease

- Chronic wasting disease (CWD) is a naturally occurring disease of the brain and nervous system in deer and elk.
- CWD belongs to the family of transmissible spongiform encephalopathies (TSE) that attacks the brains of deer and elk, producing small lesions that eventually result in death.
- CWD has not been shown to be transmissible to humans and should not prevent you from hunting.
- If you hunt deer or elk in states or provinces where CWD has been detected, check with the state's fish and wildlife agency regarding any special regulations or advice for hunters.
- Always take the same precautions you would follow to protect against other pathogens or diseases, especially when field dressing or butchering deer or elk.
 - Never shoot or handle a deer or elk that appears sick.
 - Wear latex or rubber gloves when field dressing or butchering a deer or elk.
 - Do not use household knives or utensils.
 - Remove all internal organs.
 - Bone the deer or elk (remove the meat from the bones and spinal column).
 - Avoid cutting through bones or the spinal column (backbone).
 - Never eat the brain, eyeballs, spinal cord, spleen, or lymph nodes of a deer or elk.
 - If you saw off antlers or through a bone, or if you sever the spinal column with a knife, be sure to disinfect those tools prior to using them for the butchering or removal of meat.
 - Remove all fat, membranes, and connective tissue from the meat. Note that normal field dressing and trimming of fat from meat will remove lymph nodes.
 - Always wash your hands and tools thoroughly after dressing and processing game meat.
 - Use a 50/50 solution of household chlorine bleach and water to disinfect tools and work surfaces. Wipe down counters, and let them dry; soak knives for one hour.
- You can find more information on the Internet at www.cwd-info.org.



When transporting game, be sure to keep it covered to avoid offending others.

Field Dressing Larger Game

Here are some additional tips for dressing large game.

- Because it's harder to move larger animals, you may need to skin and quarter the animal to pack it out, particularly in a remote area.
- If you're unable to hang the animal for skinning, begin by making a lengthwise cut and removing one side of the hide. Then turn the animal onto the skinned hide and skin the other side.
- To keep dirt off the meat, use the inside of the removed hide as a protective mat as you quarter the animal.
- Put each quarter in a game sack, and attach the sacks to a backpack frame for the hike out.

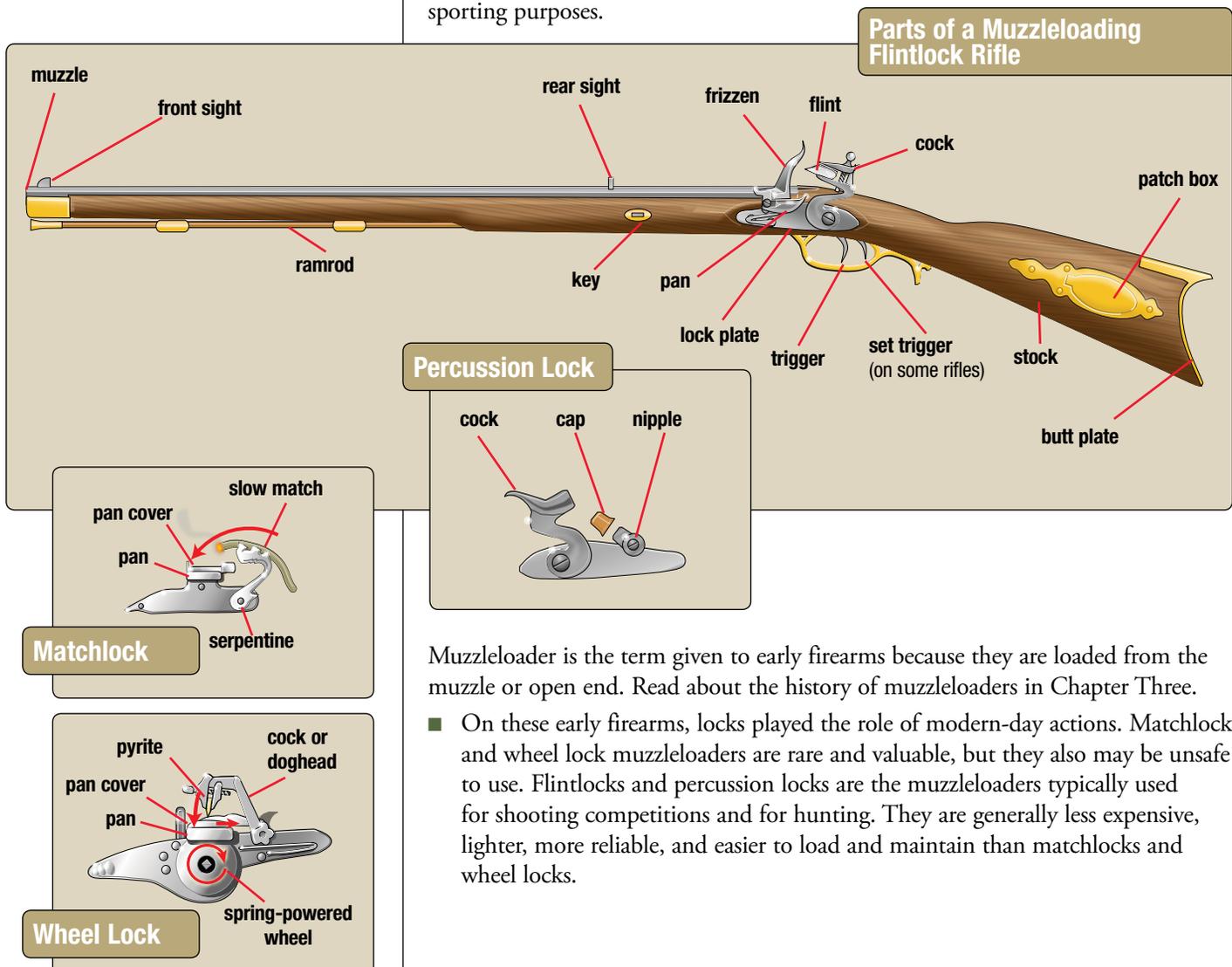


You should be able to...

- Identify the basic parts of a muzzleloader.
- Explain why you should use only black powder or a synthetic substitute in muzzleloaders.
- State three safety practices when using muzzleloaders.
- Demonstrate safe loading and unloading of a muzzleloader.
- Demonstrate safe firing of a muzzleloader.
- Identify the common bow types and their basic parts.
- Identify the basic parts of an arrow.
- List the different types of arrowheads and the primary use of each.
- State three safety practices for archers.
- Explain additional precautions that must be practiced when using broadheads.
- Explain the safety rules that should be followed when using a crossbow.
- Demonstrate how to nock an arrow and how to draw and anchor the bow.
- Demonstrate how to use a bowsight and how to aim a bow instinctively.

Know Your Muzzleloader

Primitive hunting arms include the muzzleloader firearm, the bow and arrow, and the crossbow. Today, these hunting arms are sought as collector's items and used for sporting purposes.



Muzzleloader is the term given to early firearms because they are loaded from the muzzle or open end. Read about the history of muzzleloaders in Chapter Three.

- On these early firearms, locks played the role of modern-day actions. Matchlock and wheel lock muzzleloaders are rare and valuable, but they also may be unsafe to use. Flintlocks and percussion locks are the muzzleloaders typically used for shooting competitions and for hunting. They are generally less expensive, lighter, more reliable, and easier to load and maintain than matchlocks and wheel locks.



- Muzzleloaders are most commonly rifles. However, there are also smooth-bored muzzleloaders—shotguns. Shotgun muzzleloaders can have either a single barrel or double barrels joined side-by-side. When loading the double-barreled muzzleloader, it's critical to avoid putting the two loads down the same barrel. Double-barreled guns usually have two locks, one for each barrel. This allows the shooter to fire each barrel separately before the gun is reloaded. Most double-barreled guns were designed with two triggers.
- Muzzleloading handguns come as both pistols and revolvers. Pistols are mainly single-shot. The revolvers contain multiple-shot chambers. Chain firing muzzleloading revolvers can be dangerous. When the chamber round is fired, it produces sparks that could accidentally ignite loads in another cylinder(s). Therefore, be sure to protect each load in the cylinder with a coating of grease to prevent sparks from entering the open end of the other cylinders.
- Black powder is the only type of powder that should be used in muzzleloaders. However synthetic substitutes, such as Pyrodex®, also can be used. Don't use modern-day smokeless powders in muzzleloading firearms. Use only the type of powder that is recommended by the manufacturer of the muzzleloader. Using the wrong type of powder in a muzzleloader can cause serious injury.

Basic Muzzleloader Safety and Skills

Cleaning a Muzzleloader

- Firing a muzzleloader leaves a corrosive residue inside the barrel that causes pitting and reduces accuracy. The buildup of residue, called fouling, also will make loading difficult.
- To avoid fouling, swab the barrel with a moist patch after each shot. The patches or cleaning rags used to wipe the barrel must be the correct size and should be made of cotton or approved synthetic materials. Follow the recommendations of retailers who sell muzzleloaders or those who regularly use muzzleloaders.
- Thoroughly clean a muzzleloader after each shooting session. Black powder residue can damage the barrel if left overnight.
- Clean the gun's lock periodically. Normally it's held in place by one or two bolts. Once the lock has been removed, scrub both sides with an old toothbrush and hot water. Make sure the entire lock is completely dry, and then lightly oil and replace it.

Ammunition for Muzzleloaders

Three types of projectiles—the round ball, the bullet, and shot—are used in muzzleloaders. Most are melted and cast from pure lead.

Round balls are used mainly for target practice but also can be used for hunting. Bullets are preferred for hunting because they are generally more accurate at certain ranges. Shot pellets are designed to spread, just as with today's shotguns.

Black powder is made of potassium nitrate (saltpeter), sulfur, and charcoal. When ignited, it causes a dense cloud of white smoke. It comes in four sizes or granulations.

- **Fg:** Coarse grain typically used in cannons, rifles larger than .75 caliber, and 10-gauge shotguns or larger
- **FFg:** Medium grain typically used in larger rifles between .50 and .75 caliber, 20-gauge to 12-gauge shotguns, and pistols larger than .50 caliber
- **FFFg:** Fine grain typically used in smaller rifles and pistols under .50 caliber and smaller shotguns
- **FFFFg:** Extra-fine grain typically used as a priming powder in flintlocks

Pyrodex® and Clear Shot are black powder substitutes that can be used in amounts equal to black powder, but loading may vary. Be sure to get instructions from a qualified gunsmith for loading procedures. Substitutes are not recommended for use in flintlocks because they may not ignite from sparks as easily.

Basic Muzzleloader Safety

Muzzleloaders take significantly more knowledge to operate than modern firearms. They also present greater risks. Several rules must be followed to ensure safe operation.

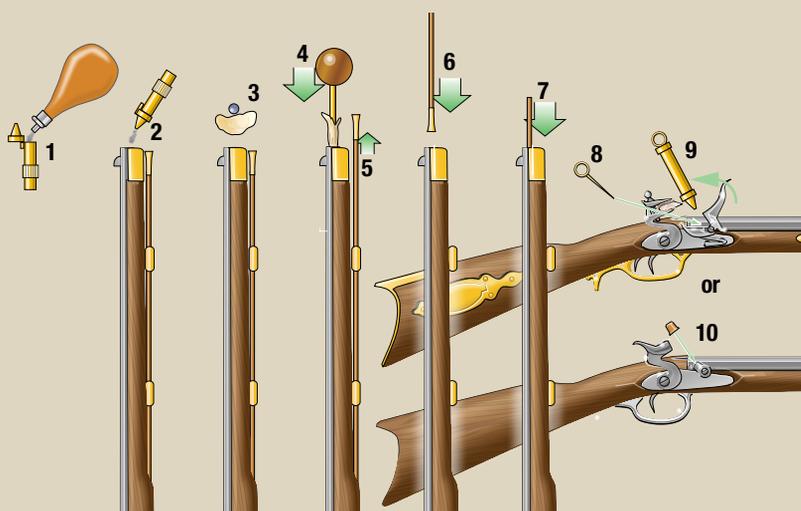
- Keep the muzzle pointed in a safe direction. Do not lean over, stand in front of, or blow down the muzzle.
- Use only black powder or a safe substitute in a muzzleloading firearm.
- Wait until you're ready to fire before you prime or cap a muzzleloader.
- Always wear shooting glasses and ear protection when shooting a muzzleloader; a long-sleeve shirt is also advisable.
- Never smoke while shooting or loading or when near a powder horn or flask.
- Load a muzzleloader directly from a calibrated powder measure—do not load from a horn, flask, or other container. A loose spark or glowing ember in the barrel can cause the powder to explode.
- Load only one charge at a time.
- Unload a muzzleloader before bringing it into your home, camp, or vehicle.
- Stay with your charged muzzleloader at all times.

Loading a Muzzleloader

- Loading or charging a muzzleloading firearm presents some special concerns because it requires the muzzle to be pointed upward.
- For rifles, position the butt on the ground between your feet. You should be facing the underside of the barrel. The muzzle should be pointed upward and away from your body. Never work directly over the muzzle.
- Determine if the gun is already loaded by checking the barrel with a marked ramrod, which has an “unloaded” or empty marking. If you aren't sure, consult an experienced muzzleloader user or gunsmith.
- Measure out the proper amount and type of powder using the calibrated powder measure. Replace the powder flask's cap, and swing the flask to the other side of your body. Pour the powder into the barrel from the measure. Tap the barrel to make sure all powder falls to the breech end.
- Center a lubricated precut patch over the muzzle. You can lubricate the patch using a manufactured lubricant or using saliva by placing it in your mouth. Lay the ball on the patch with the sprue or flat side up, if the ball comes with this feature. Then seat the ball and start it down the barrel using the short starter.
- Use the longer ramrod to push the ball the rest of the way, making sure it's seated well on the powder charge. Push the ramrod in short strokes, gripping it just a few inches above the muzzle. If you use longer strokes, you might accidentally snap the rod and injure your hands or arm. Your ramrod should be marked to show when the ball is properly seated over a specific load, such as 70 grains of FFFg powder.

Steps for Loading a Muzzleloader

1. Measure powder charge.
2. Pour measured powder down barrel.
3. Place patch and ball on muzzle.
4. Tap ball into barrel with starter.
5. Take out ramrod.
6. Ram ball down barrel.
7. Be sure ball is completely seated.
8. Clear vent hole with pick if necessary.
9. On flintlock muzzleloader, pour powder into pan and close frizzen.
10. On percussion lock muzzleloader, place cap on nipple.



Unloading a Muzzleloader

- Unload a muzzleloader by discharging it into a suitable backstop. Do not fire into the air or into the ground at your feet in case the projectile ricochets.
- When a muzzleloader is unloaded, place your ramrod or loading rod in the barrel before leaning the firearm against a good rest—this will prevent debris from falling down the barrel and blocking the touchhole.

Firing a Muzzleloader

- **Percussion Lock Muzzleloader:** When you're ready to fire the muzzleloader safely, place the percussion cap on the nipple. Be sure that your surroundings and your backstop are safe. Then aim and fire.
- **Flintlock Muzzleloader:** When priming a flintlock, pull the hammer to a half-cock position and open the priming pan cover. Check your flint, making sure the setting is tight and properly adjusted. Insert a vent pick or fine wire into the barrel's touchhole to make sure the opening is clear. With your pan primer, fill the pan about three-fourths full of FFFFg powder. Close the frizzen and pull the hammer to full cock when you're ready to fire the shot safely.
- After firing, place the hammer in the half-cock position and swab the barrel to remove sparks that might be inside.



Hang Fire and Misfire Situations

Sometimes a muzzleloader will not fire immediately when the trigger is pulled. This is known as “hang fire” and requires great caution because the gun might fire some time after the cap or flint created the initial sparks.

Other times a muzzleloader may not fire at all. This is known as a “misfire” and also requires great caution.

Keep these safety tips in mind if a hang fire or misfire occurs.

- Keep the gun pointed in a safe direction, preferably downrange.
- Don't take it anywhere that it could injure someone or damage property if it fires.
- If a muzzleloader doesn't fire properly, consider obtaining help from an experienced shooter to unload it using a ball discharger. Some types of firearms may be discharged by an inexperienced shooter as follows if caution is used.

Discharging a Hang Fire

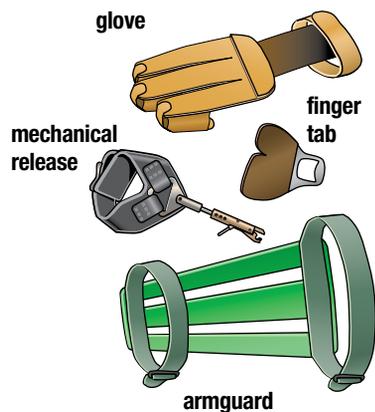
- **On a Flintlock Firearm**
 - Wait for at least 30 seconds.
 - Re-prime the pan, and try again. Wait for another 30 seconds.
 - If the firearm still fails to fire, you may have a misfire. Use a CO₂ discharger to remove the round and powder charge. If the CO₂ discharger fails, consult your owner's manual for proper procedures to unload your firearm safely.
- **On a Percussion Lock Firearm**
 - Wait for at least 30 seconds.
 - Place another cap on the nipple, and try again. Wait for another 30 seconds.
 - If the firearm still fails to fire, you may have a misfire. Use a CO₂ discharger to remove the round and powder charge. If the CO₂ discharger fails, consult your owner's manual for proper procedures to unload your firearm safely.
- **On an In-Line Firearm**
 - Wait for at least 30 seconds.
 - Place a fresh cap on the nipple. Try again, and wait for another 30 seconds.
 - If the firearm still fails to fire, you may have a misfire. Consult your owner's manual for proper procedures to unload your firearm safely.

History of the Bow and Arrow

The use of the bow and arrow is recorded as early as 3000 B.C.

- The Egyptians used bows shorter than a man's height, with arrows two feet long or more.
- Early bows were "C" shaped. When shooting these bows, the archer would pull the string with a ring held around the thumb. The early longbow was 5–6 feet in length and was usually made of yew. The legend of Robin Hood romanticized the longbow.
- Native American Indians were America's first bowhunters. European settlers brought their skills to America and contributed to the development of bows and arrows in the U.S.
- In 1879, the National Archery Association was founded. It initiated the first U.S.-sponsored tournament in 1879.
- Bowhunting did not really take off until the 1950s and 1960s as hunters learned more about this sport and about newer bows that were being developed.
- Like other methods of hunting, the bowhunter first must acquire the knowledge and skills necessary to be a safe and responsible hunter.

Accessories



- To protect the three fingers that draw the bowstring, archers wear three-fingered gloves or finger tabs, or use mechanical releases.
- A mechanical release snaps onto the string and is pulled back with the shooting hand. The archer pulls a trigger to release the string.
- An armguard protects the inner part of the bow arm during release as the string snaps back. The armguard prevents the bowstring from hitting loose clothing and also helps protect the arm if an arrow breaks during release.

Know Your Bow and Arrow

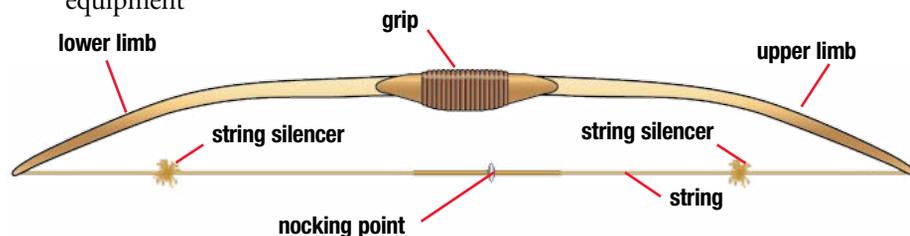
Modern bows can shoot arrows more than 200 yards, at speeds of more than 135 miles per hour. Any bow can be dangerous at any range and should be handled responsibly. However, the bow is a short-range hunting tool. Shots are usually limited to 40 yards or less; at this range, the arrow penetrates and can even pass through an animal. Most shots are taken at 20 yards or less.

Common Bow Types

Proper bow selection and fit are essential to your accuracy and performance when bowhunting.

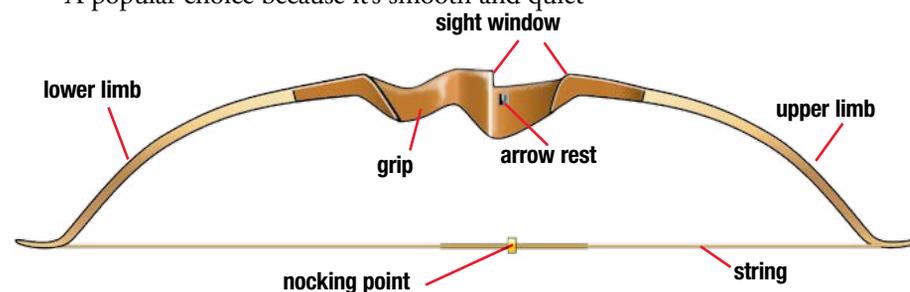
■ Longbow (Stick Bow)

- The "traditional" bow, which has straight limbs that form an arc when strung
- Used by those interested in traditional shooting with little additional equipment



■ Recurve Bow

- Much like the longbow, but the limbs curve back away from the belly of the bow, which can provide more power in a shorter bow than the longbow
- A popular choice because it's smooth and quiet



■ Compound Bow

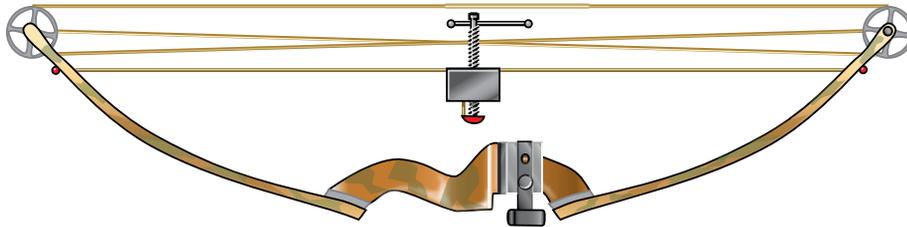
- The most popular bow for both hunting and target shooting
- A bow with many styles, but they work basically the same way; wheels and cables attached to the limbs make it easier to hold at full draw (pulled completely back) and able to propel an arrow faster than either a longbow or recurve bow



Stringing a Bow

The safe and easy way to string a recurve bow or longbow is to use a bowstringer. The push-pull or step-through method can be hazardous to yourself or your bow.

- A bowstringer is simply a strong cord with a loop or pocket at each end that fits over the limb tip of recurve bows and some longbows. By standing on the loose middle of the cord after it's attached to the tips, the limbs can be flexed as the handle is pulled. This allows the bowstring to be slipped safely into place.
- To replace compound bow strings, you must use a bow press or have double tears at the end of each cable. Double tears allow you to change strings by stepping on the string being replaced first and on the new string second. A bow press is used to place and hold tension on the limbs, allowing the strings to be changed. Inexperienced bowhunters should have a qualified dealer or individual replace the string on a compound bow.



Parts of an Arrow

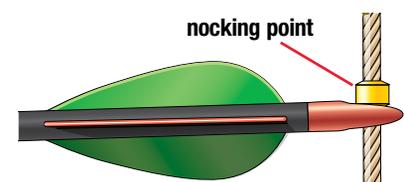
Arrows have four parts.

- **Shaft:** The long spine of the arrow. Modern arrow shafts are made of wood, fiberglass, aluminum, or carbon. The arrow, regardless of shaft material, must have the correct stiffness to match the bow. As an arrow is released, the shaft bends before straightening in flight. Incorrect stiffness will cause the arrow to fly erratically and inaccurately.
- **Fletching:** The plastic vanes or feathers on an arrow. Fletching creates wind drag and also can cause the arrow to spin similar to a rifle bullet, providing stability and accuracy in flight. Fletching is made up of three or more vanes or feathers. One of the feathers will be a different color and is called the “cock” feather. The remaining feathers are referred to as the “hen” feathers.
- **Arrowhead:** The point of the arrow. Many different kinds of arrow points are available, each with a different purpose and advantage.
- **Nock:** A slotted plastic tip located on the rear end of the arrow that snaps onto the string and holds the arrow in position. There is a certain point on the bowstring, called the “nocking point,” where arrows are nocked. Fine tuning of this location, by moving it up or down the bowstring, is usually required.

Arrow Parts



Nocking Point



Types of Arrowheads



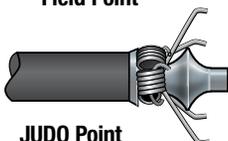
Bullet Point



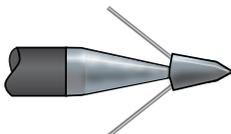
Blunt Point



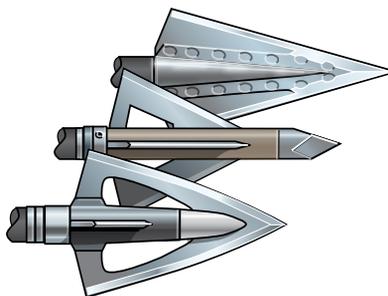
Field Point



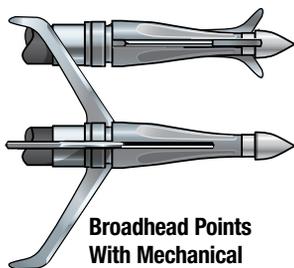
JUDO Point



Fish Point



Broadhead Points

Broadhead Points
With Mechanical
(Expandable) Blades*Remember ...*

Broadheads kill by cutting blood vessels, unlike the high energy shock of bullets. Hemorrhage is typically the result. A responsible bowhunter will use razor-sharp broadheads and only take shots that allow a clear, close shot to the vital area of the game animal.

Common Types of Arrowheads

- **Bullet point:** Steel point used for target shooting and small game hunting.
- **Blunt point:** Used for small game hunting and some types of target shooting; made of steel, hard rubber, or plastic.
- **Field point:** Steel point used for target shooting and small game hunting.
- **JUDO point:** Designed with spring arms attached to catch in grass and leaves, preventing arrow loss; used for “stump” shooting and small game hunting.
- **Fish Point:** Long, barbed or spring-loaded arrowhead that spears fish and secures them until landed with an attached line.
- **Broadhead:** Used primarily for big game hunting. The number of steel blades it contains may vary. The only arrowhead that may be used for big game hunting is the broadhead. It must be solidly built and always razor-sharp. Many states have laws governing the minimum diameter and number of cutting edges of the broadhead used to hunt big game.
 - **Mechanical (Expandable) Blade Broadhead:** Blades are retracted close to the ferrule before the shot. Upon impact, the blades expand to expose the cutting edges. These are recommended for use only with bows rated 50 pounds or more because most require additional energy to open upon penetration.

Know Your Crossbow

A crossbow is a bow with a rifle-like stock that shoots bolts or short arrows. Safe use of a crossbow requires following the safety rules for both firearms and bows.

- Many states have laws which limit the use of crossbows.
- Never travel with a loaded, cocked crossbow.
- Like conventional bows, the crossbow is limited to short-range shooting. For most crossbows, 30–40 yards is the maximum range.
- Always unload your crossbow by firing it safely into a target or into the ground.
- Always practice these crossbow safety rules:
 - Keep your fingers below the flight groove.
 - Beware of objects around the bow’s limbs.
 - Never “dry fire” a crossbow (see page 72).
 - Keep the rail properly lubricated.



Bowhunting Safety and Skills

Many states require a bowhunter education course to hunt legally with archery equipment. Even if not required, taking a course will give you an excellent start to becoming a safe and skillful bowhunter.

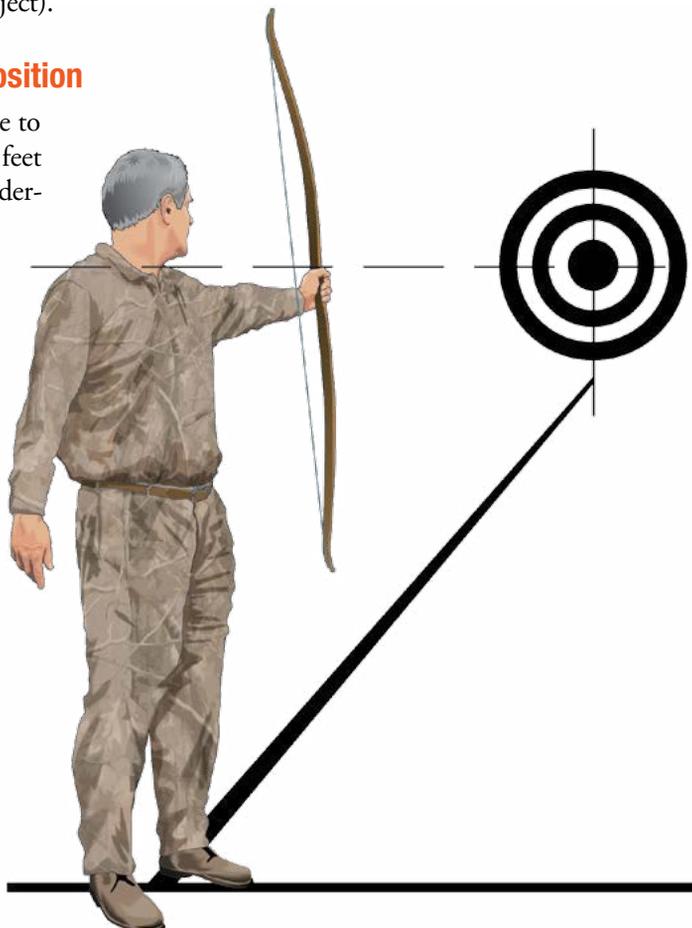
Bow Shooting Safety

An arrow is as deadly as a bullet, so the basic safety rules that govern firearm shooting also apply to archery. Although shooting accidents are rare among bowhunters, they do happen. Archers must obey a few common safety rules, whether on the range or in the field.

- Release an arrow only when the path to the target and beyond is clear.
- Make sure there's something to stop the arrow if you miss—never shoot over the horizon.
- Avoid shooting an arrow in the general direction of another person. Arrows are easily deflected. A small twig, unseen by you, can cause an arrow to veer dangerously off course.
- Don't shoot straight up. A falling arrow carries enough force to penetrate the human skull.
- Carry arrows in the nocked position only when slowly approaching game—never nock an arrow or draw a bow if someone is in front of you.
- Use a haul line to raise a bow and quiver into a tree stand to avoid serious injury (see “Hauling Hunting Equipment into a Stand” in Chapter Five for more on this subject).

Bow Shooting Position

Stand at a right angle to the target with your feet approximately shoulder-width apart. The stance should feel comfortable and balanced. If you prefer, you may slide your front foot back a little, creating a slightly open stance.



Archery Equipment Safety

Before practicing or hunting, an archer must examine each arrow to make certain there are no cracks or breaks in the shaft and that the nock is in good condition. A cracked or broken nock can be replaced, but a shaft that has cracks or breaks should be discarded.

Never use a cracked arrow. The shaft may shatter on release and be driven into the shooter's wrist or arm. Some common types of damage to look for are:

- Cracks and splinters in wood arrows
- Creases, dents, or cracks in aluminum arrows
- Crushed sidewalls on fiberglass or graphite arrows

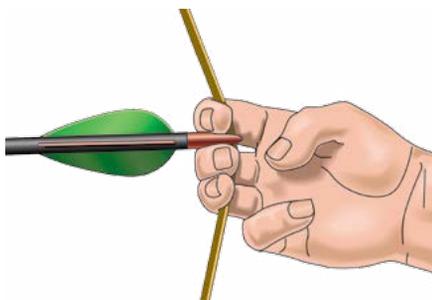


Always keep broadheads in a covered quiver.

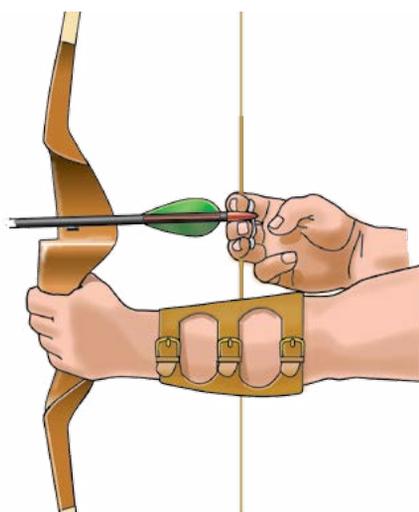
Broadhead Safety

Many archers' injuries come from broadheads. Broadheads must be kept razor-sharp for hunting, which creates a safety problem if they are handled carelessly. To prevent injury:

- Use a special wrench to screw on broadheads. This device covers the blades while a broadhead is being tightened on an arrow. If a wrench isn't used, the slightest slip can cause a serious cut. When sharpening broadheads, always stroke the blade away from your hands and body.
- Keep broadheads covered with a quiver while traveling to and from the field. Many arrow injuries occur while loading or unloading equipment in vehicles.
- While dressing bow-killed game, remember that the broadhead may remain in the animal. Use great caution until all parts of the broadhead have been found.



When the arrow is nocked and the bow is raised, the cock feather points to the left if you are right-handed.



If you are right-handed, raise the bow as you pull back the string with the three drawing fingers of your right hand. Simultaneously extend your left arm.

Safety Tip

A bow should never be “dry fired.” Releasing a string without an arrow nocked transfers energy back to the limbs instead of the arrow. The bow can fly apart, injuring anyone nearby.

Nocking an Arrow

- A nocked arrow should be positioned about a quarter inch above the arrow rest on the bow handle. On most bows, a small brass band called a “nock point” is crimped onto the bowstring to mark the correct position.
- To nock the arrow:
 - Grasp the arrow between the thumb and index finger of the right hand (if you’re a right-handed shooter).
 - With your left hand, hold the bow parallel to the ground about waist high, string toward the body.
 - Lay the arrow shaft on the bow’s arrow rest.
 - Align the slot in the nock with the string, while making sure that the cock feather points up (while the bow is parallel to the ground).
 - Pull the arrow back until the string snaps into the slot.

Drawing and Anchoring the Bow

- To draw the bow:
 - Grip the bow handle firmly in the left hand, but don’t squeeze.
 - With your bow arm straight, raise the bow to a point that your arm is parallel to the ground, while simultaneously drawing the string back to your “anchor point” with your shooting hand. The anchor point may be the corner of your mouth, your cheekbone, or your chin.
- Practice will help you determine your best anchor point—one that’s both comfortable and provides the most accurate shooting. Your fingers should touch the same anchor point each time you draw the bow.



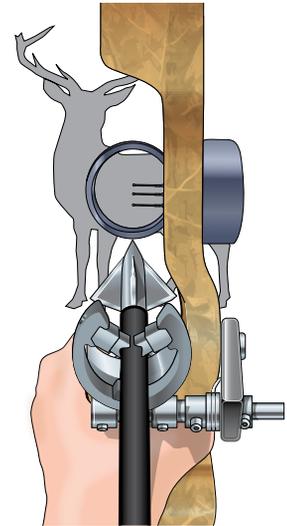
Aiming the Bow

There are two main methods for aiming bows—bowsights and instinctive aiming.

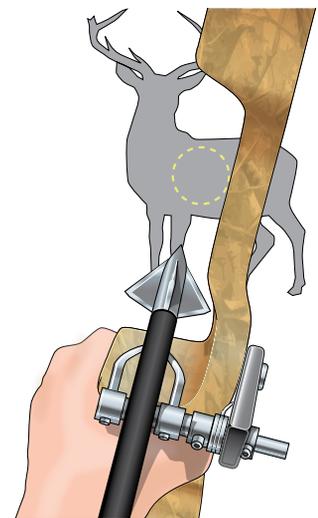
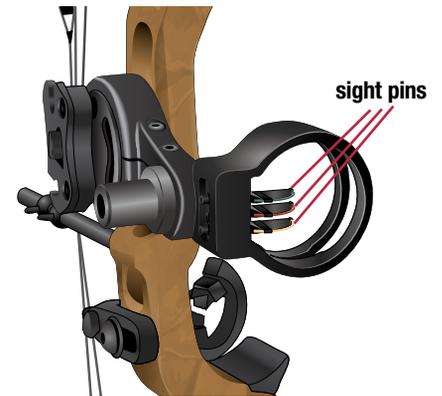
- **Bowsights** work best when the distance to the target is known. For instance, when hunting from a tree stand or blind, you can measure the distance to the area where you expect the game to appear. Then it's a matter of lining up the appropriate sight pin on the target. In hunting situations where it's hard to know the exact distance to the target, bowsights may not work well. The key to using bowsights is to practice judging distances.
- **Instinctive aiming** is more versatile than the bowsight method. You simply look at the intended target with both eyes open and release. You adjust the aim for different distances by instinct developed with practice. Instinctive aiming takes longer to perfect than the bowsight method, but it eliminates much of the guesswork from shooting under some hunting conditions.

Holding and Releasing the Bow

- Allow your fingers to slip quickly away from the string. This gives the arrow a straight, stable flight.
- Keep your bow arm pointed directly at the target after the release. If the bow is jerked on release, the arrow will fly off target.
- Follow through by leaving your drawing hand at the anchor point well after the string is released.



With bowsights, you line up the appropriate sight pin on the target.



With instinctive aiming, you simply look at the intended target with both eyes open and release.

Physical Conditioning

- Hunting demands more physical exertion than you're accustomed to doing. Conditions that hamper your ability to hunt safely and responsibly include:
 - Allergies or asthma
 - A heart condition
 - Excess weight
 - Poor physical conditioning
 - Vision or hearing impairments
- Your mental condition impacts your performance as well.
- Prepare for your hunt by getting in shape well in advance. The amount of time that it will take to get in shape will depend on your physical condition and the difficulty of the planned hunt. Consider being examined by your family physician, who can best judge your overall physical preparedness for hunting.

Clothing

- Clothing also can affect your ability to perform safely and responsibly. Select clothing based on the weather you expect, while being prepared for the worst.
- In warm weather, wear a hat and light clothing that covers as much of your skin as possible to prevent heat exhaustion or sunburn.



- Cold weather conditions call for clothing that is worn in layers. Layers offer superior insulation. Also, as weather warms up, you can shed a layer at a time to stay comfortable. Layers should include:
 - A vapor transmission layer (material such as polypropylene)—worn next to the body; it should release moisture from the skin while retaining warmth.
 - An insulating layer—weightier or bulkier; it should hold warm air around you.
 - A protective outer layer—available in various weights and materials according to conditions; it should protect the inner layers from water and wind.

- The most important clothing choices are a blaze orange hat *and* blaze orange outerwear—a shirt, vest, or jacket. Blaze orange clothing makes it easier for one hunter to spot and recognize another hunter because nothing in nature matches this color. The orange color of the clothing should be plainly visible from all directions. This is required by law in many states.



Other Clothing Essentials

- A hat or cap with earflaps and gloves to retain body heat—most body heat is lost through the head and hands; gloves also protect your hands from abrasions and rope burns
- Footwear that is sturdy, suitable for the conditions you'll encounter, and broken in before the hunt
- Two layers of socks—polypropylene against the skin and a wool outer layer

Remember ...

Wool is the best all-around choice for insulation because it provides warmth when wet. The best clothing combination in bad weather is polyester or polypropylene underwear and shirt, wool pants, heavy jacket, and water repellent rain pants and parka. Soaking wet clothing can lose heat several hundred times faster than dry clothing. Cotton clothing (underwear, T-shirts, jeans, flannel shirts) is a poor choice for cold, wet weather. When wet, cotton loses its already limited insulating ability and can cause rapid transfer of heat away from the body, increasing the risk of hypothermia.

Day Pack/Survival Kit and Equipment

In addition to your hunting gear, which includes your firearm—or bow—and field-dressing equipment, you also should prepare a day pack that includes emergency supplies. Although the contents will vary based on conditions and personal preference, an emergency day pack could include:

- Base plate compass with signal mirror
- Candle
- Emergency high-energy food
- Extra boot laces
- Extra pair of glasses
- Extra two-day supply of prescription medicine
- Fire starters—waterproof matches, butane lighter, etc.
- First-aid kit
- Fishing line and hooks
- Flashlight with spare batteries and bulbs
- Folding saw
- Iodide tablets for water purification
- Knives
- Map
- Metal, waterproof carrying case that can double as a cooking pot
- Nylon rope
- One-sided razor blade
- Plastic sheet or large garbage bag
- Poncho
- Signal flares
- Small can of lighter fluid
- Snare wire or twine
- Thermal foil blanket
- Tissues
- Water
- Whistle (plastic)

Additional Equipment

- Binoculars or spotting scope
- Biodegradable trail markers
- Duct tape
- Hatchet or ax
- Pencil and paper pad
- Shovel
- Sleeping bag appropriate for climate

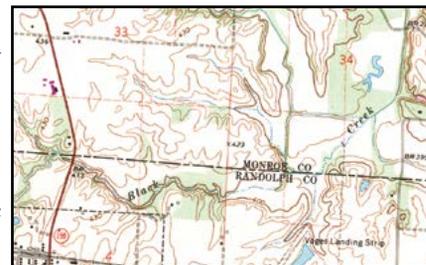
Remember ...

Metal objects, such as knives, gun barrels, belt buckles, etc., will affect a magnetic needle.

Using Topographic Maps and Compasses

Reading a Topographic Map

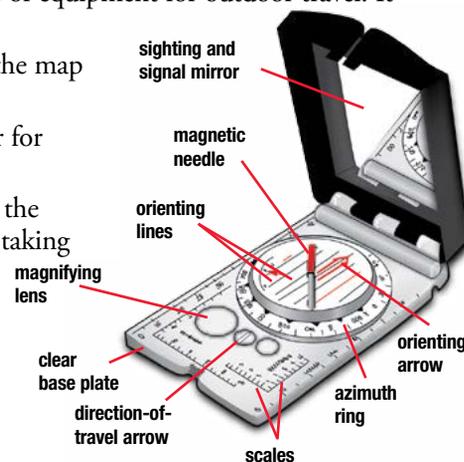
- Whenever you're in a remote or unfamiliar area, a topographic map and compass are a must.
- Topographic maps are created from aerial photographs and reveal the contours of the land, including hills, ridges, and valleys, as well as lakes, rivers, creeks, trails, and roads.
 - Contour lines show the elevation of the ground.
 - Contour intervals reveal how much vertical distance there is between each contour line—closely spaced contour lines indicate very steep slopes.
 - Contour lines that are sharply tapered indicate an uphill direction.
 - Rounded contour lines typically indicate a downhill direction.



Selecting a Compass

The orienteering compass is a critical piece of equipment for outdoor travel. It should have these features:

- Clear base plate that allows you to see the map underneath
- Straight sides for aligning two points or for drawing lines
- Liquid-filled needle housing that keeps the magnetic needle relatively steady when taking readings
- Two arrows:
 - A direction-of-travel arrow, painted on the base plate, is used to point the compass at your destination.
 - An orienting arrow, located in the needle housing, is used to orient your compass to your map.



Understanding Declination

- Topographic maps are drawn to true north (North Pole). However, a compass points to magnetic north, which is in the Hudson Bay area. The difference between true north and magnetic north is called “declination.”
- When true north and magnetic north are aligned (0° declination), the compass needle points to true north. If you're east or west of 0° declination, the compass is not in line with true north.
- A diagram on topographic maps shows whether magnetic north is to the east or west of true north and by how many degrees.
- You can correct for declination when you use a compass and a map to take a bearing, as described below.

Using a Compass To Take a Bearing Visually

When visibility is subject to change, such as from hills or fog, take a bearing on your destination while you can see it. Then, when it's out of sight, use the bearing to find your direction. To take a bearing:

- Hold the compass level, and point its direction-of-travel arrow toward your destination.

- Rotate the azimuth ring until the orienting arrow lines up with the magnetic needle. Be sure the north end of the needle (usually red) points to N, not S.
- Find where the degree markings around the azimuth ring line up with the direction-of-travel arrow. That degree mark is your bearing.

Using a Compass and Map To Take a Bearing

If you know your current location on the map and want to travel to another mapped location:

- Lay out the map on a flat surface and remove any metal objects from the area.
- Place the flat edge of the compass (the side parallel to the direction-of-travel arrow) along the line between the two points. Be sure the direction-of-travel arrow points toward your destination.
- Orient the map to north.
- Without moving the compass, rotate the azimuth ring until the orienting arrow (indicated by N) and the orienting lines point northward on the map, as indicated by the map's north arrow or vertical lines.
- Turn the map and compass together until the magnetic needle lines up with the orienting arrow.
- Correct for east or west declination.
 - Rotate the azimuth ring left or right using the direction and the number of degrees given on the map.
 - Do not rotate the compass itself. It's okay if the magnetic needle does not line up with the orienting arrow.
- Find where the degree marking around the azimuth ring lines up with the direction-of-travel arrow. That's the bearing to your destination.

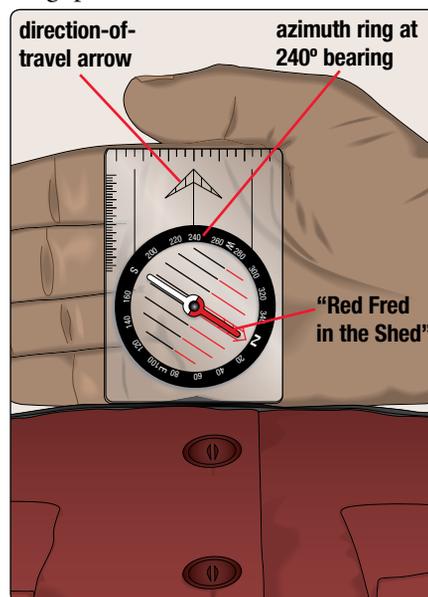
“Red Fred in the Shed”: Using a Compass

Think of the rhyme “Red Fred in the Shed” to remember how to use a compass. As you perform the steps below, remember the following.

- Move your body—not the compass.
- Think of the *red* magnetic needle as “red Fred.”
- Think of the orienting arrow as the “shed.”
- To use the compass to follow a specific bearing, put “red Fred in the shed.”

For example, if you want to travel at a bearing of 240°, follow these steps.

- Turn the azimuth ring until the 240° mark is lined up with the direction-of-travel arrow.
- Keep the compass level as you point the direction-of-travel arrow directly away from your waist.
- Keeping the compass in the same position with your body, turn your body until the red needle lines up inside the orienting arrow (think of it as putting “red Fred in the shed”). You now are facing a bearing of 240°.
- Move in the same direction that the direction-of-travel arrow points. Be sure to keep red Fred in the shed as you go.



Map Resources

Topographic maps are available at many outdoor stores or may be obtained from the U.S. Geological Survey at www.usgs.gov. Or contact the USGS by calling toll-free 1-888-ASK-USGS (1-888-275-8747).

National Forest Service Motor Vehicle Use Maps (MVUMs) show forest road networks and restrictions. They are available from the U.S. Forest Service at www.fs.fed.us.

Remember ...

If you're an experienced map reader, you can:

- Read terrain.
- Determine direction.
- Follow rivers, valleys, and ridges.
- Find your location in relationship to your camp.
- Identify areas preferred by game animals.

Global Positioning System (GPS)

- The Global Positioning System (GPS) is a navigation system based on a network of 24 satellites. Users with a GPS unit can determine their exact location (latitude and longitude) in any weather conditions, all over the world, 24 hours a day.
- 
- GPS satellites circle the earth twice a day and transmit information to the earth. GPS receivers use this information to calculate the user's location by comparing the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver the distance from the satellite. By calculating the distances from several satellites, the receiver can determine and display the user's location on the GPS unit.
 - Once the user's position is determined, a GPS unit can calculate other information—bearing, trip distance, distance to destination, sunrise and sunset times, and more.
 - GPS receivers are accurate to within 15 meters (49 feet) on average. Certain atmospheric factors and other sources of error can affect the accuracy. Accuracy can be improved with a Differential GPS (DGPS) or WAAS (Wide Area Augmentation System).

Remember...

When you find yourself in a survival situation, the most important tool is your brain.



Stop when you realize you've got a problem. The first thing to do is admit to yourself that you are in trouble.

Think about what you need to do to survive.

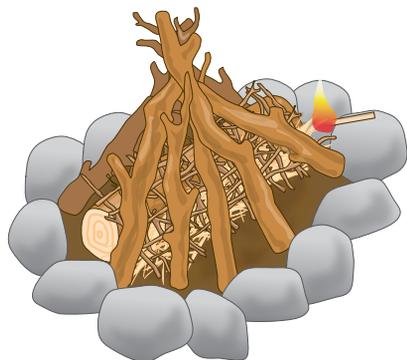
Observe the area, and look for shelter, fuel, etc.

Plan how you are going to use your survival kit and your other available resources. Don't wait until dark to plan!

Remain calm. Think clearly. Use the tools you have available to you.

Rules of Survival

- Give a responsible person your hunting plan as discussed previously.
- Don't travel or hunt alone.
- Take enough food and water to last for several days in an emergency.
- Bring a map and compass, and always orient yourself before leaving camp.
- Wear layered clothing and take extra clothing, preferably wool and polyester, with you.
- Plan your outings so that you can return to camp before dark.
- Never leave camp without taking fire-starting equipment and a foil blanket.
- Don't panic if you become lost.



A tepee of larger sticks enclosing the kindling is a good way to start a fire.

Survival Skills

Planning and preparation should keep you from having an outdoor misadventure. If something does go wrong, switch into survival mode.

Most everyone who treks into the wilderness gets turned around occasionally. How you respond in the early stages often determines if your disorientation becomes a temporary inconvenience or a traumatic ordeal. If you keep a cool head, you'll usually get your bearings fairly quickly.

Think through recent events to see if you can retrace your path. If you decide you can't return to your camp or car, commit yourself to spending the night where you are. If you remain in one spot, it's very likely that you will be found in a few days.

You now have three priorities: shelter, fire, and signal.

Preparing a Shelter

- Start preparing your camp well before dark. Look for a natural shelter, such as a rock overhang or a thick stand of evergreens. The site should be dry and well drained, and protect you from the wind. Ideally, it also should be near water and plenty of firewood.
- If no natural shelter is available, pick an area with materials nearby to build a lean-to or debris hut.
- A lean-to is constructed by leaning branches against a horizontal support to form a frame for a roof. Be sure to orient the opening away from the wind. Cover the frame with evergreen branches to block wind or precipitation. Leaves and twigs are another option. If you need additional protection, you can add side walls.
- Build your fire where its heat will radiate into the shelter. Your sleeping area should be located between the shelter wall and the fire.



Starting a Fire

- If there is snow on the ground, build the fire on a platform of green logs or rocks. If the terrain is dry, clear a patch of bare dirt to avoid starting a grass or forest fire.
- Gather everything you need before starting the fire. Pile fuel ranging from small twigs to fuel logs next to the fire site. Collect more fuel than you think you can use; you may need more than you estimate.
- Pile fine twigs, grass, or bark shavings loosely as a base. If you can't find dry kindling, remove bark from trees. Use your knife to shave dry wood from the inside of the bark.
- Place slightly larger sticks on the starter material until you have a pile about 10 inches high.
- If there's no breeze, light the kindling in the middle of the base. If there is a breeze, light one end of the kindling so that the flame will be blown toward the rest of the fuel. As the kindling lights and the flames spread to the larger twigs, slowly add more wood to the blaze. Add larger pieces as the fire grows. A large fire will throw more heat and be easier to maintain.

Signaling for Help

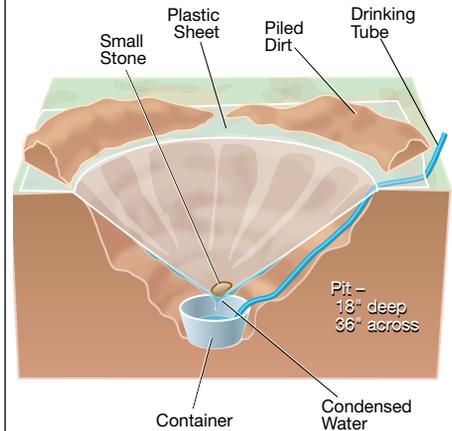
- When you decide to stay put and wait for rescue, prepare help signals as soon as possible.
- The international emergency sign for distress is three of any signal: three shots, three blasts on a whistle, three flashes with a mirror, or three fires evenly spaced. If you're near an open space, walk an "X" in the snow, grass, or sand. Make it as large as possible so that it can be seen easily from the air. Placing branches, logs, or rocks along the "X" will make it more visible. Do not light signal fires until you hear an aircraft. Adding green boughs, preferably pine if available, to the fire will help create smoke.
- Once you have a shelter, fire, and your signal prepared, you can focus on water and food.

Drinking Enough Water

- Even in cool weather, you need two to four quarts of water a day. Under most conditions, humans can only last about three days without water.
- Pure drinking water is rare, even in the most remote regions. Clear mountain streams often are contaminated by *Giardia lamblia*, a parasite that causes serious intestinal sickness in humans.
- The best way to purify water is by boiling it for at least five minutes. Chemical purifiers such as iodide or chlorine and filter systems can be used, but some may not be satisfactory. Never make survival problems worse by drinking unsafe water.

Finding Food

- Humans can go for two weeks or more without food. Although the need for food is not that urgent, you'll be more comfortable and clear-headed if you eat. Anywhere there is game, there is food, but probably not what you're accustomed to eating.
- Before you head into a remote area, it's a good idea to read up on what's edible in that particular region. Hopefully, you'll be able to use your hunting equipment to harvest the bulk of your food.



Solar Still

Solar stills can provide emergency drinking water. Ground water condenses on a plastic cone set in the ground and drips into a collecting pan.

To make a solar still:

- Dig a pit 3 feet wide by 18 inches deep.
- Place a shallow container in the center.
- Run a tube from the container to the edge of the pit.
- Lay clear plastic over the pit and place a rock or a little soil in the center to form a cone.
- Draw water through the tube to avoid disturbing the still.
- Make several stills if you have no other source of water.

Personal Locator Beacon

Personal locator beacons (PLBs) provide a distress and alerting system for use in a life-and-death situation. A PLB is a small transmitter that sends out a personalized emergency distress signal to a monitored satellite system. When you buy a PLB, you must register it with the National Oceanic and Atmospheric Administration (NOAA). PLBs are a highly effective and internationally recognized way to summon help.



Remember ...

Hypothermia is the number one cause of outdoor fatalities.



Hypothermia is often induced by cold, wet conditions, such as rain, snow, sleet, or immersion in water.

Coping With Extreme Weather

Some of the most common and dangerous risks to hunters result from exposure to extreme weather.

Hypothermia

Hypothermia occurs when your body loses heat faster than it can produce it, causing your core body temperature to fall. Hypothermia is often induced by cold, wet conditions, such as rain, snow, sleet, or immersion in water.

Moisture from perspiration, humidity, and dew or rain on bushes and trees also can soak your clothing over time, putting you at risk in cold weather. Wet or damp clothes will draw heat out of your body more rapidly than cold air. Wind lowers your body temperature as it evaporates moisture from your body. Resting against cold surfaces also will draw heat from your body.

■ Prevention of Hypothermia

- Hypothermia can be prevented by dressing properly, by avoiding potentially dangerous weather conditions, and by drying out as quickly as possible when you get wet.
- High-calorie foods, such as chocolate, peanuts, or raisins, provide quick energy that helps your body produce heat.

■ Symptoms of Hypothermia

- Uncontrolled shivering—usually the first obvious symptom, but ceases as hypothermia progresses
- Slow, slurred speech
- Memory loss
- Irrational behavior, such as removing clothing
- Lack of body movement
- Sleepiness
- Unconsciousness, which could lead to death



■ Treatment of Hypothermia

- Find shelter for the victim.
- Remove wet clothing, and replace with dry clothing and other protective covering. If there is no dry clothing, use a fire to dry one layer at a time.
- Give warm liquids to rehydrate and rewarm, but never give the victim alcohol to drink. Quick-energy foods also produce inner body heat.
- For mild cases, use fire, blankets, or another person’s body heat to warm the victim.
- In more advanced stages, rewarm the victim slowly by placing one or more persons in body contact with the victim. Place canteens of hot water insulated with socks or towels on the groin, armpits, and sides of the neck of the victim.
- A victim at or near unconsciousness must be handled gently, and not immersed in a warm bath or exposed to a large fire, which can lead to traumatic shock or death. Immediately contact emergency medical personnel to evacuate the victim to a hospital for treatment.

Frostbite

Frostbite occurs when tissue freezes. The best prevention is to avoid severe weather. If you’re caught in extremely cold weather, pay attention to your head and extremities, such as fingers, toes, ears, and nose. Wear a face cover if the temperature is below 0° Fahrenheit. If you experience any symptom of frostbite, treat immediately.

■ Symptoms of Frostbite

- Skin discolors.
- Prickly or tingling feeling occurs as ice crystals form.
- Pain may be present initially, then disappears as frostbite progresses.
- In severe cases, victim experiences a loss of feeling in the affected area.

■ Treatment of Frostbite

- Warm the affected area with body heat, but avoid rubbing the area—it can damage tissue.
- Don’t use hot water or other external heat sources, which could cause burns.
- Wrap with warm, dry clothing.
- Get to a warm shelter.
- Drink hot liquids.
- Get medical attention.

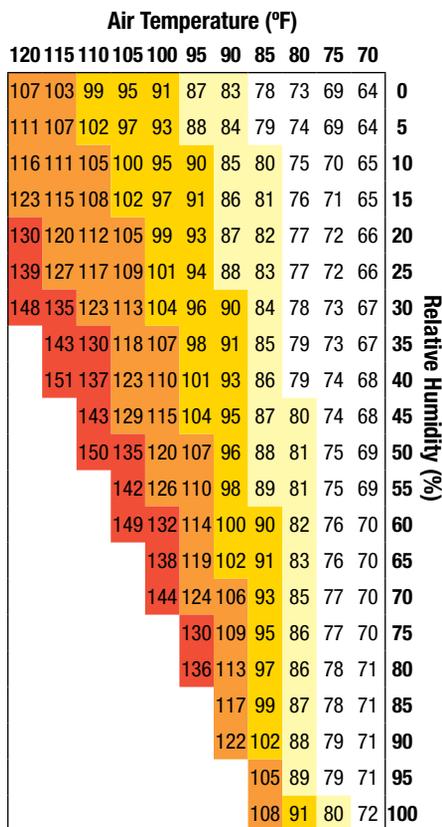
Basics of Cold Survival Without Fire

- Wear proper type of clothing (no cotton).
- Stay dry. Use water-repellent outer garments.
- Build a shelter. The best is a nylon tarp shelter as it will protect you from wind, rain, and snow. Insulate the floor of the shelter with pine boughs, if available.
- Avoid contact with cold surfaces (the ground, rocks, or snow).
- Wrap your body in a thermal foil blanket. This will maintain a temperature of 60° F inside the wrap even when the outside temperature is -10° F.
- Limit your physical activity to conserve energy.

		Wind Speed (mph)													
		5	10	15	20	25	30	35	40	45	50	55	60		
Air Temperature (°F)	40	36	34	32	30	29	28	28	27	26	26	25	25	40	
	35	31	27	25	24	23	22	21	20	19	19	18	17	35	
	30	25	21	19	17	16	15	14	13	12	12	11	10	30	
	25	19	15	13	11	9	8	7	6	5	4	4	3	25	
	20	13	9	6	4	3	1	0	-1	-2	-3	-3	-4	20	
	15	7	3	0	-2	-4	-5	-7	-8	-9	-10	-11	-11	15	
	10	1	-4	-7	-9	-11	-12	-14	-15	-16	-17	-18	-19	10	
	5	-5	-10	-13	-15	-17	-19	-21	-22	-23	-24	-25	-26	5	
	0	-11	-16	-19	-22	-24	-26	-27	-29	-30	-31	-32	-33	0	
	-5	-16	-22	-26	-29	-31	-33	-34	-36	-37	-38	-39	-40	-5	
	-10	-22	-28	-32	-35	-37	-39	-41	-43	-44	-45	-46	-48	-10	
	-15	-28	-35	-39	-42	-44	-46	-48	-50	-51	-52	-54	-55	-15	
	-20	-34	-41	-45	-48	-51	-53	-55	-57	-58	-60	-61	-62	-20	
	-25	-40	-47	-51	-55	-58	-60	-62	-64	-65	-67	-68	-69	-25	
	-30	-46	-53	-58	-61	-64	-67	-69	-71	-72	-74	-75	-76	-30	
-35	-52	-59	-64	-68	-71	-73	-76	-78	-79	-81	-82	-84	-35		
-40	-57	-66	-71	-74	-78	-80	-82	-84	-86	-88	-89	-91	-40		
-45	-63	-72	-77	-81	-84	-87	-89	-91	-93	-95	-97	-98	-45		

Frostbite occurs in 15 minutes or less

Wind chill is given in the body of the table. The National Weather Service issues a Wind Chill Advisory when wind chills are expected to reach -10° F. A Wind Chill Warning will be issued when wind chills are expected to be -20° F or lower.



Heat Index	General Effect of Heat Index
	Fatigue possible with prolonged exposure and/or physical activity
	Sunstroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
	Sunstroke, heat cramps, or heat exhaustion likely and heat stroke possible with prolonged exposure and/or physical activity
	Heat stroke highly likely with continued exposure

Heat Exhaustion

Heat exhaustion is the opposite of hypothermia: the core body temperature increases, usually as a result of hot and humid conditions plus a lack of water.

■ Prevention of Heat Exhaustion

- Drink plenty of water.
- Take frequent breaks if you're hiking to or from your hunting spot, especially when carrying a large load.
- Dress in layers, and shed layers as physical activity increases.

■ Symptoms of Heat Exhaustion

- Pale and clammy skin
- Weakness
- Nausea
- Headache
- Muscle cramps

■ Treatment of Heat Exhaustion

- Move the victim to a cool place.
- Have the victim lie down and elevate their feet.
- Cool the victim with cold packs or wet cloths. Fan them.
- If the victim is conscious, give them cold water.
- If the victim's condition does not improve within 30 minutes, seek medical help.

Heat Stroke

Heat stroke should be treated as a medical emergency—it can be fatal.

■ Symptoms of Heat Stroke

- Dry, hot, and flushed skin—dark or purple in color
- Dilated pupils
- Rapid, weak pulse
- Shallow breathing
- High temperature—may be in excess of 106° Fahrenheit

■ Treatment of Heat Stroke

- Move the victim to a cool place. Remove heavy clothing; light clothing can be left in place.
- Immediately cool the victim by any available means. An effective method is to wrap the victim in wet towels or sheets, and fan the victim. Keep cloths wet with cool water. If ice is available, place ice packs at areas with abundant blood supply (e.g., neck, armpits, and groin). Continue cooling the victim until their body temperature drops to 102° Fahrenheit. Stop at this point to prevent seizures and hypothermia. Keep head and shoulders slightly elevated.
- All heat stroke victims need hospitalization. Seek medical attention as fast as possible. Continue cooling en route.

Basic First Aid

Every hunter should take a first-aid course to learn what to do in case of injuries. Below are some common injuries that could occur while hunting.

Bleeding

- Severe bleeding is a life-threatening medical emergency. The rapid loss of just two pints of blood can result in shock and loss of consciousness. A victim can bleed to death in a short time.
- **To stop bleeding:**
 - Apply direct pressure on the wound.
 - Cover with a sterile gauze pad—or the cleanest cloth readily available. Concerns about infection are secondary when it comes to preventing massive blood loss.
 - Press the pad firmly over the wound using the palm of your hand. Don't lift the pad to check the wound—it will only renew bleeding.
 - When a pad becomes soaked, put a fresh one directly over the old pad.
 - If the wound is on a limb and there's no fracture, raise the limb above the level of the heart. Gravity will reduce the blood pressure in the limb.
- Direct pressure and elevation are usually sufficient to stop bleeding. If profuse bleeding continues, try shutting off circulation in the artery that supplies blood to the injured limb.

Broken Bones

- You can assume someone has a broken bone if pain lasts more than a few minutes, moving the injured area is difficult, or there is swelling in the injured area.
- If you have to transport the victim a long distance, it's best to immobilize the joint above and below the break to prevent further injury and relieve pain. Don't try to straighten the limb—splint it the way you found it.
- For a broken foot, do not remove the shoe. Tie a pillow or thick padding around the foot over the shoe.
- **To splint a broken leg:**
 - Place a blanket or some other type of thick padding between the legs.
 - Bind the injured leg to the uninjured one with strips of cloth.
 - Bind the legs together snugly at several places above and below the painful area.

Burns

- First-degree burns and second-degree burns with closed blisters are best treated with cold water.
 - Immerse the burned area, or cover it with cloths that have been soaked in cold water—don't use ice water.
 - Avoid using butter or any type of greasy ointment because they can interfere with healing and cause an allergic reaction.
- Second- and third-degree burns with open blisters should be wrapped with a loose, dry dressing.

Remember ...

Every hunter should take a first-aid course and a course in cardiopulmonary resuscitation (CPR) to be prepared to handle outdoor emergencies. A prepared hunter also will carry a complete first-aid kit.

Moving an Injured Person

Moving a victim with a back or neck injury should be left to paramedics or other professionals since permanent damage could result from improper handling.

If a victim must be pulled to safety, move him or her lengthwise and headfirst, supporting the head and neck. Keep the spine in alignment.



First-Aid Kit

- 2-inch-square sterile gauze pads
- 2-inch-wide gauze bandage roll
- 4-inch-square sterile gauze pads
- 42-inch-square cloth for triangular bandage or sling
- Antacid
- Antibiotic salve
- Aspirin
- Assorted adhesive dressings
- Assorted butterfly dressings
- Cell phone
- Cotton swabs
- Decongestant
- Eye dropper
- Hand sanitizer
- Instant chemical cold packs
- Instant chemical hot packs
- Latex gloves
- Moleskin
- Needles
- One-half percent hydrocortisone cream
- Petroleum jelly
- Roll of 1-inch adhesive tape
- Roll of 2-inch adhesive tape
- Safety pins
- Scissors
- Single-edged razor blades
- Sterile eyewash
- Thermometer
- Tweezers

Carbon Monoxide Poisoning

- Improperly working camp stoves and lanterns, as well as wood and charcoal fires, can produce lethal carbon monoxide.
- Symptoms of carbon monoxide poisoning include headache, dizziness, weakness, and difficulty in breathing. The victim's skin can turn red, and he or she can lose consciousness.
- Get victims into fresh air immediately, and keep them lying quietly. Prompt medical care is essential.

Chest Wounds

- A bullet striking the chest can cause a sucking chest wound—a deep, open wound of the chest wall that allows air into the chest cavity.
- All chest injuries are very serious and need immediate medical attention.
- **To respond immediately to a chest wound:**
 - Use the palm of your hand to cover the wound until a bandage is located.
 - Cover the wound with sterile gauze, a clean cloth, plastic, or foil.
 - Make sure the wound cover forms an air-tight seal.
 - Hold the gauze in place with a bandage or tape.
 - If the victim has trouble breathing, remove the bandage and replace it quickly.
 - Transport the victim to the hospital with the injured side down.

Shock

- Shock can result from any serious injury. Symptoms include pale, cold, clammy skin; rapid pulse; shallow breathing; and fear in the victim.
- **To treat shock:**
 - Keep the victim lying on his or her back. In some cases, shock victims improve by raising their feet 8–10 inches.
 - If the victim is having trouble breathing, raise the victim's head and shoulders about 10 inches rather than raising the feet.
 - Maintain normal body temperature, and loosen any restrictive clothing.
 - Try to keep the victim calm and comfortable, and get medical help as quickly as possible.

Snakebite

- Most doctors agree that the best response is to rush the victim to a hospital emergency room. Do not try to remove poison from snakebites. Cutting and suctioning the bite can do more harm than good.
- Fear and panic aggravate snakebite reactions. Calm the victim as much as possible. Keep the victim in a reclining position to slow the spread of venom. If the bite is on a limb, keep the wound at or below the level of the heart.

You should be able to...

- Define “wildlife conservation,” and explain how it differs from preservation.
- List the five essential elements for wildlife habitat.
- Define “carrying capacity.”
- List the factors that limit wildlife populations.
- Explain the role of hunting in wildlife conservation.
- Give five examples of wildlife management practices, and explain how each helps conserve wildlife populations.
- Explain why the correct identification of wildlife is crucial for hunting.
- List the five groups commonly used to divide wildlife.
- Give one example of a large mammal and some of its distinguishing features.
- Tell where to find more information on identifying characteristics, habitat, and range of common wildlife species.

Wildlife Conservation

- The concept of wildlife **conservation** has been around since ancient times. Restrictions on taking game are mentioned in the Bible, and the first official hunting season may have been established in the 13th century by Kublai Khan.



- Today, wildlife conservation has evolved into a science, but its goal remains essentially the same: to ensure the wise use and management of renewable resources. Given the right circumstances, the living organisms that we call renewable resources can replenish themselves indefinitely.
- **Preservation** is another means of protecting or saving a resource, such as by outlawing hunting of endangered species. Both preservation and conservation are necessary to sustain resources for future generations.

conservation

Wise use of natural resources, without wasting them

preservation

Protection of natural resources that does not include any consumptive use

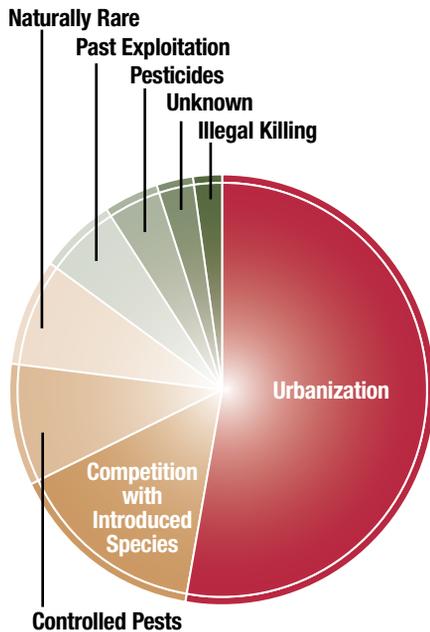
wildlife management

Science and practice of maintaining wildlife populations and their habitats

habitat

Complete environmental requirements of an animal for survival: food, water, cover, space, and arrangement

Causes of Threatened and Endangered Species



Of the possible causes for a species becoming endangered or threatened, legal hunting equals 0%.

Hunting Opportunities on Public Lands

All states have federal- or state-owned public lands that are available for hunting. Public lands may have regulations that control hunting on these properties and may require special permits. Check with your state's wildlife agency and get maps before you go.

Public lands that may be open for hunting:

- State parks and forests
- State-owned wildlife management areas
- National forests
- National parks
- National Wildlife Refuge properties
- Bureau of Land Management properties
- Bureau of Reclamation properties

Lessons in Wildlife Management

- Initially, **wildlife management** in the United States was skewed toward protection. In the early 1900s, for example, wildlife managers attempted to preserve a mule deer herd in the remote Kaibab Plateau of Arizona. Hunting was banned, and predators were destroyed. The result was severe overpopulation, **habitat** destruction, and mass starvation.
- The Kaibab Plateau was opened to hunting in 1929, which brought the population into balance with the habitat. Today, a large, healthy herd of mule deer inhabits the area.
- Around the same period, a similar event took place in Pennsylvania. Deer had been brought into the state after the native population was thought to be extinct. With most of the predators eliminated and little hunting allowed, the herd grew out of control. As the food supply dwindled, thousands of white-tailed deer starved to death.
- From these hard lessons, wildlife managers learned that there is more to conservation than just protecting wildlife. They discovered that nature overproduces its game resources and that good wildlife management yields a surplus that can be harvested by hunters.

The North American Model of Wildlife Conservation

In the mid-19th century, hunters began to realize the importance of wildlife conservation. Then, in the first two decades of the 20th century, sportsmen from the United States and Canada started developing a set of guiding principles for managing wildlife resources. Called the North American Model of Wildlife Conservation, these seven principles continue to evolve today and provide the foundation for the success of fish and wildlife conservation in North America.

- **Wildlife is held in trust for the public.** No one owns wildlife. Instead, the government holds this resource in trust for the benefit of all people.
- **The selling and trading of wildlife is controlled.** State and federal laws regulate the sale of dead game animals and migratory birds, including their parts and products.
- **Laws and regulations determine how wildlife is allocated.** Policies set by lawmakers, with input from the general public, regulate not only access to wildlife but also how wildlife may be used.
- **The reasons for killing wildlife must be valid.** Wildlife can be killed only for legitimate purposes—for food and fur, in self-defense, or for protection of property.
- **Wildlife is an international resource.** As such, hunting and fishing shall be managed cooperatively across state and province boundaries.
- **Science plays a key role in managing wildlife.** Decisions regarding wildlife management, use, and conservation are based on sound scientific knowledge and principles.
- **Opportunities for hunting, fishing, and trapping shall be democratic.** Every citizen in good standing—regardless of wealth, social standing, or land ownership—is allowed to participate in the harvest of fish and wildlife within guidelines set by lawmakers.

Habitat Management

- The habitat is where a species fulfills its basic life needs: nourishment, procreation, and rest. If not managed properly, urban development can result in habitat loss, which presents the greatest threat to wildlife. Habitat management, the most essential aspect of wildlife management, safeguards the essential elements to meet these needs.
 - **Food and water** are necessary to all wildlife. Competition for these elements among species makes cover, space, and arrangement top priorities.
 - **Cover** protects animals from predators and the weather while they feed, breed, roost, nest, and travel. Cover ranges from thick weeds and brush to a few rocks piled together.
 - **Space** is necessary for adequate food among wildlife, territorial space for mating and nesting, and freedom from stress-related diseases.
 - The ideal **arrangement** places food, water, cover, and space in a small area so that animals minimize their energy use while fulfilling their basic need for nourishment, procreation, and rest.
- **Edge effect** refers to the consequence of placing two contrasting ecosystems adjacent to one another. Most animals locate where food and cover meet, particularly near water. An example would be a river bottom, which offers many animals all their habitat needs along one corridor.

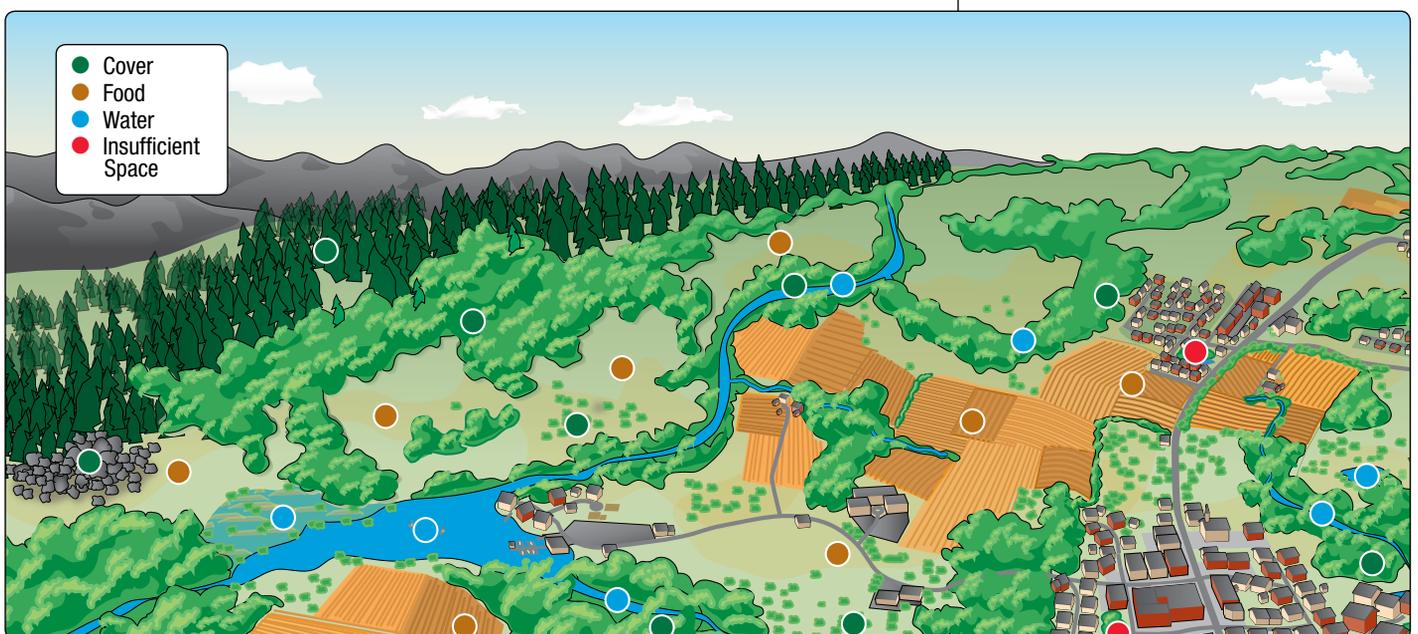
Balancing Act

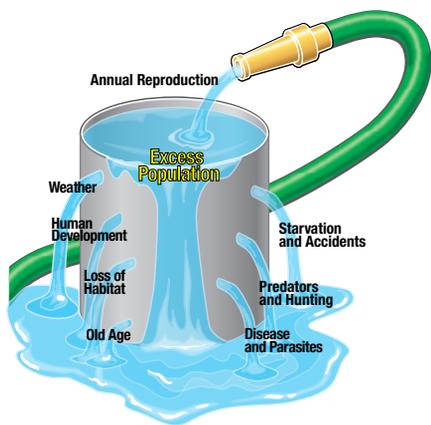
Habitats must be in balance in order to support wildlife. Remove a certain population of plants or animals from a community, and the community may not survive. This typically happens when urban development pushes into wildlife areas.



Remember ...

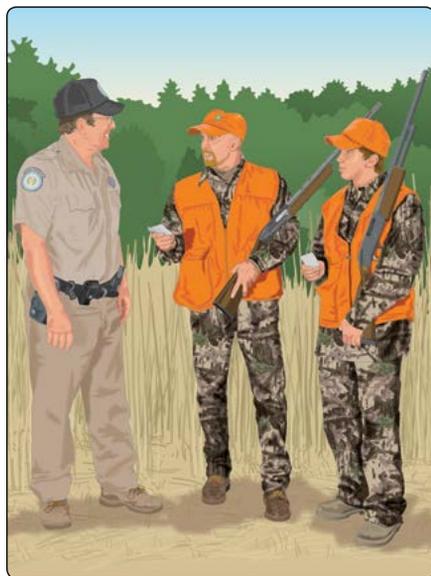
No North American animal has become extinct because of sport hunting.





carrying capacity

The number of animals the habitat can support throughout the year without damage to the animals or to the habitat



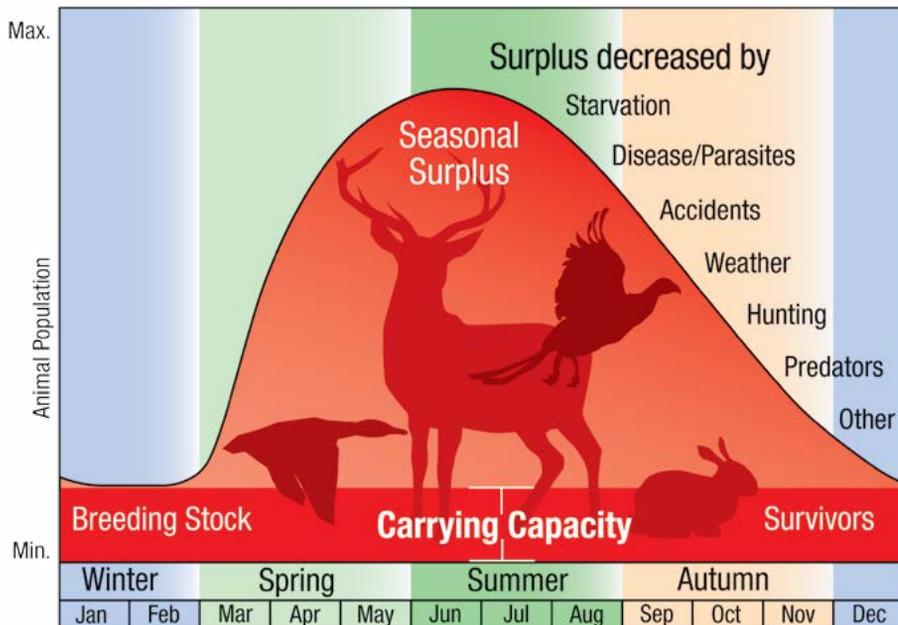
Hunters and Wildlife Conservation

Hunters spend more time, money, and effort on wildlife conservation than any other group in society. In addition to participating in the harvest of surplus animals, hunters help sustain game populations by:

- Filling out questionnaires
- Participating in surveys
- Stopping at hunter check stations
- Providing samples from harvested animals
- Helping fund wildlife management through license fees

Carrying Capacity

- The resources in any given habitat can support only a certain quantity of wildlife. As seasons change, food, water, or cover may be in short supply. **Carrying capacity** is the number of animals the habitat can support all year long. The carrying capacity of a certain tract of land can vary from year to year. It can be changed by nature or humans.
- **Factors that limit the potential production of wildlife include:**
 - Accidents
 - Disease/parasites
 - Hunting
 - Old age
 - Pollution
 - Predators
 - Starvation
- If the conditions are favorable, wildlife populations produce a surplus, which can be harvested on an annual, sustained basis.



The Hunter's Role in Wildlife Conservation

- Hunting is an effective wildlife management tool. Hunting can help maintain some wildlife populations at lower levels to protect wildlife habitat and personal property. Regulated hunting has never led to threatened or endangered wildlife populations.
- Hunters play an important role by providing information from the field that wildlife managers need.
- The sale of hunting licenses is a primary funding source for state wildlife agencies to manage game and non-game species.

Wildlife Management and Conservation Principles

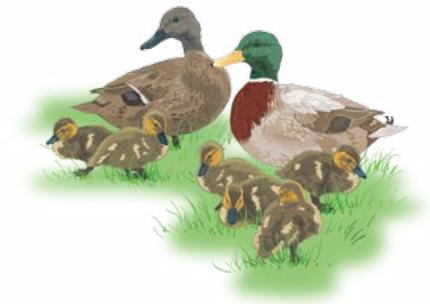
- Wildlife management is a science. The wildlife manager's job is to conserve, restore, and manage wildlife species. Wildlife biologists apply the basic principles of ecology to maintain and manage wildlife populations. Wildlife biologists develop management goals and create plans to meet those goals. They are involved in developing regulations to protect or restore threatened and endangered species, allow for the harvest of surplus animals, or reduce overabundant wildlife populations.
- In a sense, a wildlife manager's task is similar to a rancher's. Just as a rancher limits the number of animals in a cattle herd to a level that the habitat can tolerate, wildlife managers try to keep the number of animals in balance with their habitat. In addition to looking at the total number of each species in a habitat, wildlife managers also monitor the breeding stock—the correct mix of adult and young animals needed to sustain a population.
- To manage a habitat, wildlife managers must consider historical trends, current habitat conditions, breeding population levels, long-term projections, and breeding success. With that knowledge, wildlife managers have a variety of practices at their disposal to keep habitats in balance.

Wildlife Management Practices

- **Monitoring Wildlife Populations:** Wildlife managers continuously monitor the **birth rate** and **death rate** of various species and the condition of their habitat. This provides the data needed to set hunting regulations and determine if other wildlife management practices are needed to conserve wildlife species.
- **Habitat Improvement:** As **succession** occurs, the change in habitat affects the type and number of wildlife the habitat can support. Wildlife managers may cut down or burn forested areas to promote new growth and slow down the process of succession. This practice enables them to increase the production of certain wildlife species.
- **Hunting Regulations:** Hunting regulations protect habitat and preserve animal populations. Regulations include setting daily and seasonal time limits, bag limits, and legal methods for taking wildlife.
- **Hunting:** Hunting is an effective wildlife management tool. Hunting can help maintain some animal populations.
- **Predator Control:** Sometimes **predators** are reduced to enable some wildlife populations to establish stable populations, particularly threatened or endangered species.
- **Wildlife Restoration:** Restoration or restocking of animals has been successful in many parts of the nation. Animals are trapped in areas where they are abundant and released in other areas of suitable habitat.
- **Controlling or Preventing Disease and Its Spread:** Disease can have a devastating effect on wildlife. Avian cholera, for example, poses a serious threat, especially to ducks and geese on crowded wintering grounds. Once avian cholera occurs, managers must work to prevent its spread by gathering and burning waterfowl carcasses daily.
- **Management Funds/Programs:** In addition to the Pittman-Robertson funds, many states have initiated programs that help finance conservation efforts.

Beneficial Habitat Management Practices

- Brush pile creation
- Controlled burning
- Diking
- Ditching
- Food plots and planting
- Mechanical brush or grass control
- Nuisance plant or animal control
- Timber cutting
- Water holdings



Suppose each adult pair of waterfowl produces six young each year and none of the factors that limit wildlife production are active. At the end of the fifth year, the initial pair will have grown to over 2,000 waterfowl.

birth rate

The ratio of number of young born to females of a species to total population of that species over one year

death rate

The ratio of number of deaths in a species to total population of that species over one year

succession

Natural progression of vegetation and wildlife populations in an area; for example, as trees grow and form a canopy, shrubs and grasses will disappear along with the wildlife that use them as cover

predator

Animal that kills other animals for food

Some Large Mammals



White-Tailed Deer



Black Bear

Wildlife Identification

- Developing wildlife identification skills is a basic requirement for hunters. Knowing the key characteristics of animals will help you distinguish between similar species and between the male and female of the same species. Mistakes in identification can lead to illegal harvest of game or non-game animals. To identify game properly, you must learn to recognize key characteristics of the animal you're hunting.
- Identifying animals accurately is a skill that improves with experience. It can be difficult, especially when you must observe quickly or when the differences between animals are subtle. Sometimes the difference between animals in the same species is only the size of their ears or distinctive coloring. Scat and tracks provide additional clues for identifying species.
- Many resources are available to help you increase your knowledge of wildlife. Good sources of information are books, television shows featuring hunting and nature topics, and websites such as that of the U.S. Fish & Wildlife Service (www.fws.gov).
- It is common to categorize wild animals into groups that are similar in some way; for example:
 - Large mammals
 - Small mammals
 - Upland birds
 - Waterfowl and wetland birds
 - Birds of prey
- Within each of the groups above, species may be “threatened” or “endangered.”
 - Some species are protected from hunting because their numbers are small and they produce no surplus to harvest. The bald eagle and whooping crane are examples of protected species.
 - Animals that are labeled “threatened” or “endangered” are protected by law.



Mallard



White-Tailed Deer

Large Mammals

- The large mammal group typically includes horned animals, antlered animals, bears, and large members of the wild cat or wild dog families.
- Horned or antlered animals have these key characteristics.
 - Horns are hollow and are not shed. Wild sheep and goats have horns.
 - Antlers are solid bone and are shed annually. Members of the deer family have antlers and rub their antlers on trees.
 - Horned and antlered animals are cloven-hoofed (their hooves have two parts).
 - Horned and antlered animals are ruminants (they chew cud). A ruminant digests its food in two steps. First they eat food and regurgitate it (cud), and then they eat it a second time. They have a hard upper pad that they use to mash their food.

Small Mammals

- Two of the most common small game animals are rabbits and squirrels. By studying these animals, you can learn to recognize their tracks.
- Some small mammals that are sought after primarily for their pelts are called furbearers. Two popular breeds are fox and mink.



Eastern
Cottontail
Rabbit



Fox
Squirrel



Red Fox



Mink

Upland Birds

- Popular upland birds that are found across the country include turkeys, pheasants, grouse, and quail. The term “upland” refers to where they are often found.
- The basic shape of upland birds is similar to chickens. They also have short, rounded wings that are good for short flights and strong legs that are good for running.
- Most male upland birds have more colorful feathers than the females. The female’s plain feathers help her provide camouflage cover for her nest.



Wild Turkey



Ruffed Grouse



Ring-Necked Pheasant

Characteristics of Mammals

- Mammals are warm-blooded animals with hair. Young are nourished with milk from the mother.
- Mammals can be carnivorous (meat eating), herbivorous (plant eating), or omnivorous (meat and plant eating).
- Mammals seek to regulate their temperature. Mammals in cold climates must keep warm, and mammals in hot climates must keep cool.
- Small mammals live shorter lives than large mammals, in general.
- Mammals vary in social behavior—some species live in groups, and other species are solitary except when mating or raising offspring.

Some Small Mammal Tracks



Eastern
Cottontail
Rabbit



Fox
Squirrel



Red Fox



Mink

Waterfowl Feet

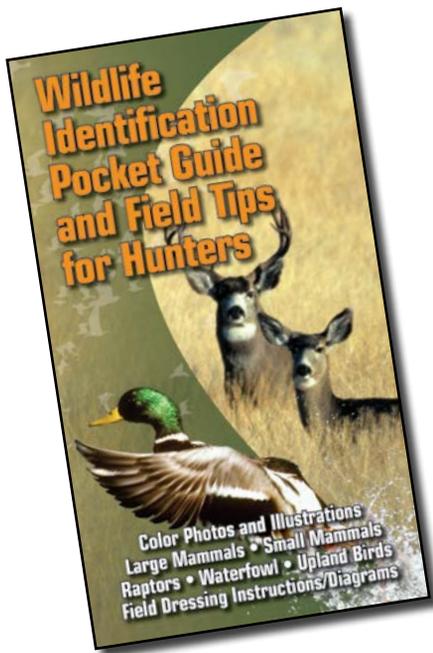
Diving Duck



Puddle Duck



Today's Wildlife® gives the identifying characteristics, habitat, and range of most of the wildlife you may encounter.



Waterfowl and Wetland Birds

- Waterfowl are warm-blooded animals that live on or near water, and include diving ducks and puddle ducks.
- Puddle ducks are found primarily on the shallows of lakes, rivers, and fresh-water marshes. Puddle ducks prefer to feed on or near the water's surface. They launch themselves directly upward when taking off.
- Diving ducks inhabit large deep lakes and rivers, coastal bays, and inlets. Diving ducks obtain most of their food by diving. They must run across the water to build up speed to take off.



Canada Goose



Wood Duck

- Wetland birds live close to water in marshy and coastal areas. Examples of wetland birds are cranes and pelicans.



Wilson's (Common) Snipe



Red-Tailed Hawk



Osprey

Birds of Prey

Birds of prey feed on other birds or mammals. Examples are eagles, falcons, and owls. Birds of prey are found throughout North America. All of these birds are protected.

As a responsible hunter, you should educate yourself about wildlife prior to your hunt. The ability to identify species accurately will make you a better hunter and will increase the enjoyment of your hunting experience.



The Facts About Trapping

Trapping is an enjoyable tradition for many people. Unlike hunting, there are no age limits for trapping, so youngsters can actively take part in it. To be successful, trappers have to know a lot about nature and the animals they trap. Trapping is an important part of America's and New York's history and was the main reason for exploring many parts of North America.

Trappers provide pelts, a valuable renewable resource, to the fur industry which provides fur garments to the public. The value of raw furs produced

in New York for the world fur industry is in the millions of dollars each year and is shared by approximately 10,000 trappers.

QUESTIONS AND ANSWERS ABOUT TRAPPING

Why is trapping allowed?

Trapping is authorized in the New York State Environmental Conservation Law. These laws provide for a highly regulated activity, closely monitored by the Department of Environmental Conservation (DEC). Wildlife biologists recognize trapping as an important wildlife management tool. Trapping is scientifically monitored and regulated by professional wildlife biologists with the DEC to ensure that the most humane methods are used and that animal populations are secure. For many species, trapping is the only viable management tool available.

What do you mean by "wildlife management tool?"

Wildlife management is a complex, scientific discipline concerned with habitat loss, animal damage control, public health and safety, and the responsible treatment of animals. Our goal is to apply this science to maintain, restore, and protect wildlife populations. Maintaining a balance between people and animals is often a big part of our job. Trapping is a proven method for conserving and managing our State's wildlife resources.

How is trapping regulated?

Anyone who traps must follow very strict rules established by the DEC. Some of the ways in which trapping is regulated include restrictions on species, seasons, types of traps, the methods traps may be set, and areas in which trapping is permitted. Only licensed trappers are allowed to participate.

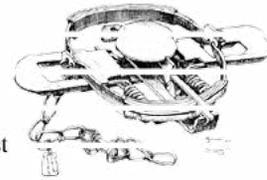
What are traps like?

Many people unfamiliar with modern trapping think of traps as big, powerful devices with teeth that were used to capture bears and other large animals in the 1800s and early 1900s. In New York and nearly all states, such devices have been prohibited for many decades. Modern traps are effective, efficient, and humane. In fact, the same traps used by trappers are used by wildlife researchers to safely capture animals for research. Animals caught in traps by wildlife biologists are fitted with radio-collars, and released alive and well to study their behavior. New York and most other states have done extensive research on traps, and developed best management practices (BMPs) to identify the very best traps available. These traps are humane, efficient, and selective. DEC teaches trappers (both new and experienced) about these traps, and more and more trappers are finding them to be "state-of-the-art." Read more about BMPs at http://jjedev.com/~fishwild/?section=best_management_practices.

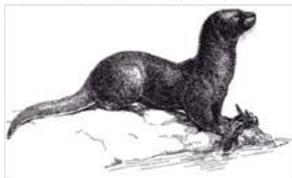
LEGAL RESTRICTIONS ON TRAPPING:

- Trapping is strictly regulated and enforced by New York State's professional wildlife biologists, technicians and enforcement personnel.
- DEC regulates which species can be trapped, when they can be trapped, and in some cases how many can be trapped.

- Only abundant species of wildlife can be legally trapped. Since the start of modern wildlife management in the 1930s, no animal populations in the U.S. have become endangered or extinct from regulated trapping.
- Each state mandates the style and size of traps which can be used.
- Only licensed trappers are allowed to participate during a trapping season, which lasts only a few months out of the year.
- Many states require trappers to complete a special course prior to obtaining a license. These courses provide information on furbearing animals, equipment and methods of catching them, and the ethical responsibilities of today's trapper. **In New York State, all new trappers must pass a free trapper education course to get a trapping license (for more information on trapper education classes go to: <http://www.dec.ny.gov/outdoor/92274.html>).** There are no age limits for the course or license.
- It is illegal to disturb trapping equipment, trap set-up, or wild animals in legally-set traps.
- To be legal in New York State, each trap must have the name and address or license identification number of the trapper.
- Trappers are required to check their traps every day in most of New York, or within 48 hours in remote areas.
- Trappers must fill out a "furbearer possession tag" and keep it with the pelts or un-skinned carcasses of bobcat, fisher, marten and otter. Possession tags can be printed from the Department website at: http://www.dec.ny.gov/docs/wildlife_pdf/furbearerposstag.pdf. Trappers must also get a plastic pelt seal for some animals. Hunters taking bobcat must also complete a furbearer possession tag.



TRAPPING AND WILDLIFE MANAGEMENT:



- Experts from all 50 state fish and wildlife agencies and other conservation groups involving the environment, natural resources and animal welfare are working together to improve and modernize trapping through scientific research.
- The Association of Fish and Wildlife Agencies, in conjunction with numerous partners, developed BMPs for trapping as a way to help improve the welfare of captured animals and trap technology.
- Trapping is used to re-establish wildlife populations into unoccupied former ranges. For example, the restoration of fishers and river otters to portions of New York was made possible through the use of trapping.
- Trapping is an important way for biologists to collect information about wildlife, including information about wildlife diseases like rabies that can also affect people.
- Threatened and endangered species also benefit from regulated trapping. Sea turtles, black footed ferrets, whooping cranes and other rare species are protected from predation. Habitat damage caused by nutria and muskrats is lowered when their numbers are reduced by trapping..
- Ground nesting birds including many rare shorebirds, ground nesting game species, and waterfowl benefit from regulated trapping. The removal of surplus raccoons and skunks through trapping provides these bird species with an increased chance of nesting success.
- Regulated fur trapping is a useful tool in the control of nuisance wildlife such as beaver and muskrats which can cause flooding and millions of dollars of damage to roads, buildings, crops and forests.



- Controlling muskrat numbers in large marshes serves as habitat management that benefits many species of wildlife using these marshes.
- Trappers use a variety of traps including foothold and cage style live traps to solve wildlife problems around homes.

Hunters: Be a Good Neighbor ~ When you ask permission to hunt, ask where anyone may be trapping on the property. That way you can avoid interfering with a fellow sportsman's trap line.

The Sportsman Education Program provides free courses in Hunter Education, Bowhunter Education, Trapper Education, and Waterfowl Identification.
Funded in part by Federal Aid in Wildlife Restoration, supported by taxes on hunting equipment.



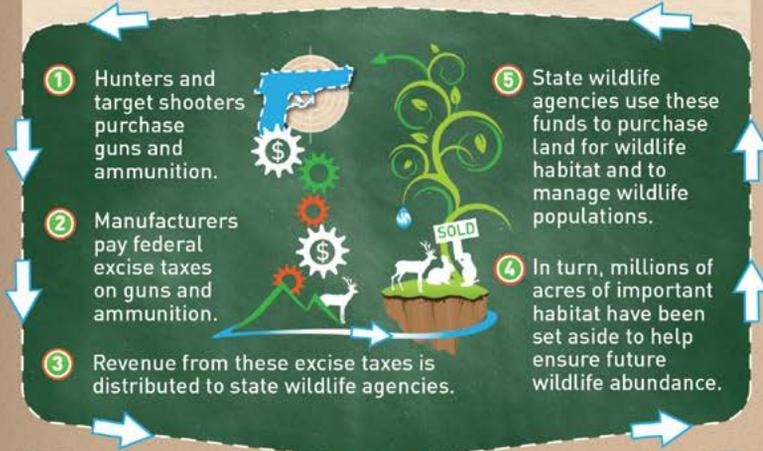
The content on this page was provided by the New York Dept. of Environmental Conservation.

NATIONAL SHOOTING SPORTS FOUNDATION®

HOW WILDLIFE IS THRIVING BECAUSE OF GUNS & HUNTING

Since the late 1930s, hunters, target shooters and the firearms industry have been the nation's **LARGEST** contributors to **conservation**, paying for programs that benefit America's wildlife and all who love the outdoors.

HOW IT WORKS



This System Has Provided **MORE THAN \$9 Billion** For Conservation So Far

Where the Money Goes

Buy, develop, maintain and operate wildlife management areas

Research projects focused on wildlife conservation

Hunter safety and education programs



Construction and maintenance of public target shooting ranges

Quick History

Early 1900s
As many wildlife species are dwindling in numbers or disappearing, firearms industry steps forward and asks Congress to redirect excise tax on sale of guns and ammo to help fund wildlife conservation.

1937
Congress passes and President Franklin D. Roosevelt signs the Pittman-Robertson Federal Aid in Wildlife Restoration Act into law.

1938 to today:
Revenue from this act has purchased millions of acres of prime habitat that is maintained by state wildlife agencies. These lands, where game and non-game species flourish, are purchased with sportsmen's dollars but used by all Americans.

THEN & NOW

White Tailed Deer Population		
1900	500,000	32,000,000 TODAY
Ducks / Waterfowl Population		
1901	FEW	44,000,000 TODAY
Rocky Mountain Elk		
1907	41,000	1,000,000 TODAY
Wild Turkeys		
1900	100,000	7,000,000 TODAY
Pronghorn Antelope		
50 YEARS AGO	12,000	1,100,000 TODAY

OTHER WAYS SPORTSMEN CONTRIBUTE

Excise taxes combined with revenue from hunting and fishing license sales fund the majority of state wildlife agency budgets.



\$81 Million CONTRIBUTED ANNUALLY

Duck stamp proceeds are used by the government to buy or lease wetland habitat for ducks, geese and hundreds of non-game birds and animals.



SOME HEROES OF THE MOST SUCCESSFUL CONSERVATION MODEL IN THE WORLD ARE:



Before you go afield...



NYSDEC, Wildlife, 625 Broadway, Albany, NY 12233-4754

To order more, write:

ASK

PERMISSION

SEE LANDOWNER

Provided Free by NYSDEC



NYS Fish & Wildlife Management Board
in cooperation with NYSDEC

For more information: 1-888-HUNT-ED2

Private Property

More than half of America's adults and millions more youngsters enjoy wildlife-associated activities. New York State has millions of acres, home to hundreds of wildlife species. Since 85 percent of the state is privately owned, many people rely on private landowners for outdoor recreation. For instance, nearly two-thirds of the hunting in New York State is on private lands.

Posting

Many private lands on which New Yorkers depend for outdoor recreation are posted. Much of the property is posted because owners want to know who is using their land and manage the amount of use. On lands that are not intensively used for recreation, a reputation for careless and irresponsible behavior by a minority of people results in posting. Sportsmen's organizations and state government have established programs to improve the conduct of outdoor recreationists and help create better relationships with landowners. These programs seem to be working, since the rate of additional posting has slowed substantially in recent years. However, posting is still increasing, but not as rapidly.

Posting is a problem for both outdoor recreationists and the landowners. Posting reduces the amount of land available for

people seeking land for hunting or hiking and adds expense in time and money for the landowners. Often, posting does not produce the results desired by landowners. Responsible people, who might be welcome, stay away; while unruly people simply ignore posters and trespass on the property.

Permission

A common complaint is that people don't ask permission from landowners to use their property. Even landowners who post are likely to say "yes" to people who show their respect for private property by asking first. Most rural landowners are generous people who will gladly help visitors, but the number of those who no longer say "yes" is increasing.

You Can Help

A poor image of outdoor recreationists is one reason why access to private property is shrinking. If recreationists demonstrate courtesy to landowners and respect for property, the situation could improve. If, however, trespassing, littering and vandalism occur, access will continue to be denied. As an outdoor recreationist, you can help improve this unfortunate image by ASKing permission. You can show your respect for landowners' rights and concern for their property by ASKing, even on unposted property.

Permission Checklist

ASK...BEFORE your trip. Your chances of gaining access are better if you ask ahead of time. Don't show up on opening day or at inconvenient times or with a gun in your hand.

ASK...WHEN you can go. Just because you fished there in May, don't assume you can go back in September. Check in with the landowner when it's convenient for him.

ASK...WHAT is permitted. Permission to hike doesn't mean you can pick berries. Permission to hunt may not include permission to drive your off-road vehicle on the property.

ASK...WHERE certain activities are allowed. Shooting may disturb nearby farm animals. Ask where to park.

ASK...WHO is welcome. More than two or three people can be an unwelcome crowd. Keep your group small.

ASK...ABOUT special concerns. Is the landowner's family likely to be in woods or fields? Do the neighbors mind shooting? Where are the property boundaries?



Landowner's Checklist

If you post ASK permission symbols put you in control.



ASK permission symbols are small blue stickers to attach to a corner of your posted signs. They simply tell people to see you to ask permission. They don't replace posting or alter the legality of your signs.

Posted signs alone just keep responsible law-abiding people away. If you would rather have them, instead of trespassers, on your property, ASK symbols are a great option.

- Let considerate people know they can ask permission.
- You give visitors instructions.
- Keep visitors' vehicles where they belong.
- Responsible people can help you watch your property.
- Hunters can help you control nuisance wildlife.
- Make your posters more effective.
- Let trespassers know somebody else is there.
- No strings attached: no agreements to sign, no commitment, no unwanted publicity.

I agree to conduct my self safely, fully, respecting the landowner, or using it, I accept the responsibility for the activities which I pursue. I agree to follow the instructions of the landowner who I understand that the lack of him, the landowner from liability for my engages in hunting, fishing, trapping and certain other activities, or negligent or malicious failure to guard or warn.

Signed: _____ Date: ____/____/____

Landowner's Name: _____ Address: _____

Vehicle Make: _____ Year: _____ Color: _____
Vehicle Lic. No. _____ No. in Party: _____

Other licenses, tag no. _____

Permission dates: from ____/____/____ to ____/____/____

Limitations: _____

I hereby give permission to enter my property for the purpose reverse side of this card. Multiple, safety, responsibility, and liability responsibility for their actions.

Signed: _____ Date: ____/____/____

Landowner's Name: _____ Address: _____

Call 1-800-TIME

LANDOWNER PERMISSION RECORD
LANDOWNER COPY

Permission given to: _____

Address: _____

Vehicle Make: _____ Year: _____ Color: _____
Vehicle Lic. No. _____ No. in Party: _____

Other licenses, tag no. _____

Permission dates: from ____/____/____ to ____/____/____

Limitations: _____

I hereby give permission to enter my property for the purpose reverse side of this card. Multiple, safety, responsibility, and liability responsibility for their actions.

Signed: _____ Date: ____/____/____

Landowner's Name: _____ Address: _____

Call 1-800-TIME

ASK permission brochures, stickers and cards can be obtained free from DEC Regional Offices

A Word About Liability

Whether or not the land is posted, the New York State General Obligations Law protects landowners from liability for non-paying recreationists engaged in hunting, fishing, canoeing, boating, trapping, hiking, motorized vehicle operation for recreation, snowmobiling, or dog training. The protection does not apply in cases of willful or malicious failure to guard or warn against dangers.

Also, normal liability insurance which most property owners have, usually protects them against lawsuits. Your liability insurance policy or insurance agent can provide details.

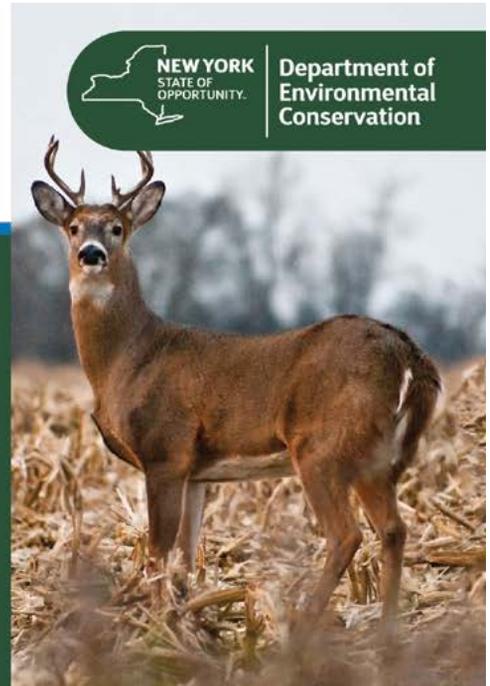
High-Tech Bullets and Slugs

Non-Lead Ammunition for...

Good Hunting

Improved Conservation

High-Quality Meat



Non-Lead Ammunition: A Better Choice

Soft, easily molded and heavy, lead has long been the most common type of ammunition. With early firearms such as muzzleloaders, lead bullets retained their shape, but modern, higher-velocity centerfire rifles often cause lead bullets (even those sheathed in copper) to fragment upon impact.

Fortunately, today's harder copper and other copper alloy bullets and slugs typically remain intact on impact, transferring more energy to the target by folding downward into "petals" that greatly expand the surface area. The result is a very effective, quick, humane kill and more edible, uncontaminated meat.

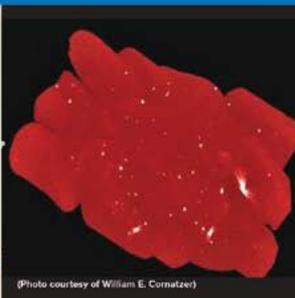
Fragmentation vs. Mushrooming



Comparison of two .270-caliber bullets shot into a modified rain barrel for collection to simulate performance on game. The copper jacket lead-core bullet (left) is heavily fragmented compared to the solid copper bullet (right) that retained its original shape upon impact.

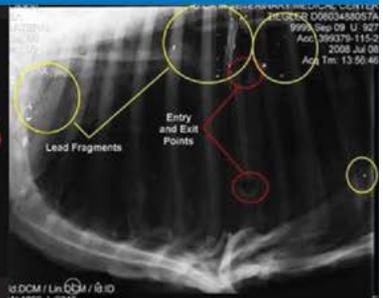


Shotgun slugs made of copper fold into "petals," expanding the slug's surface area better than slugs made of lead.



(Photo courtesy of William E. Cornatzer)

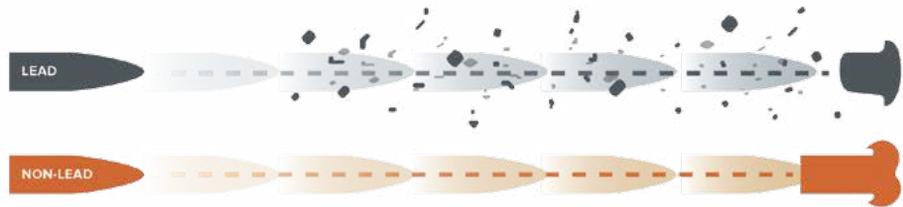
CT-scan showing lead fragments (appearing white) in 20 one-pound packages of ground venison.



W. E. DOM / UNICOM / © 10 W. 4006 / 1-2018

Radiograph of a deer's chest illustrating fragmentation of a lead ballistic tip rifle bullet.

Lead's Risk for People and Wildlife



When lead and lead-core bullets fragment on impact, hundreds of tiny lead particles scatter throughout the tissue—up to 18 inches from the wound. Some of these fragments are too small to be seen, felt, tasted, or removed. These lead particles can ruin the quality and yield of game meat and pose a risk to people and scavenging animals.

Lead damages the organs, particularly the central nervous system, including the brain. People and wildlife who eat lead-tainted game meat are at risk. Scavenging wildlife may feed on lead-contaminated gut piles or unrecovered carcasses. Clear evidence of lead poisoning has been found in bald eagles in New York State. Non-lead ammunition helps eliminate these risks.

PROS AND CONS

Performance:

Copper ammunition is accurate. Technology is improving the ballistic qualities of solid copper and other monolithic bullets, and they often surpass those of lead bullets. To get the best results from non-lead ammunition, try different brands, as every firearm handles ammunition differently. It is important to note that copper bullets of the same grain weight as lead bullets are longer. This longer bullet will react differently in the gun barrel and to its rifling, yielding different ballistics. Reducing the grain weight of the copper bullet will give you similar ballistics to the higher grain weight of the lead bullet. The benefit to the shooter will be lighter recoil and thus more accurate shots. However, re-sighting one's firearm for copper bullets and slugs is necessary as this ammunition will shoot slightly differently than lead.

Cost:

Non-lead ammunition is similar in cost and quality to premium-grade lead ammunition. Although high-quality ammunition may seem expensive, it is one of the most important pieces of equipment purchased for a hunt and often represents only a small portion of the total cost of hunting.

Meat Quality:

Little or no fragmentation of non-lead bullets means that more high-quality meat can be taken home from a harvest, and this source of exposure to lead in people, wildlife and the environment is reduced.

Product Availability:

Non-lead ammunition for specific calibers may not be as easy to find as lead-based ammunition. With demand for such ammunition increasing however, more caliber options are becoming available. A wide range of non-lead bullets and cartridges is available from major manufacturers. Ask your local gun store to check on availability.

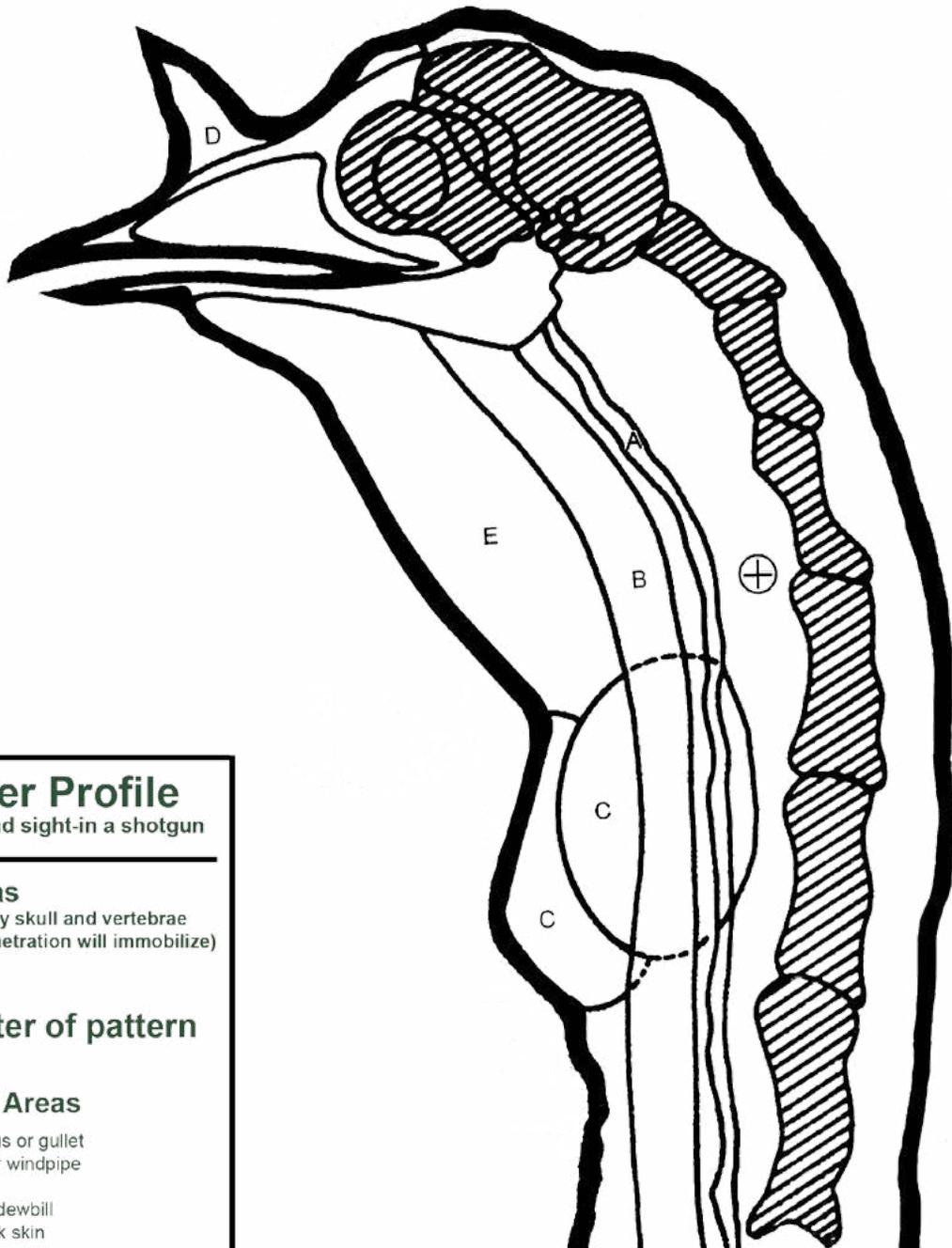
www.dec.ny.gov

CONNECT WITH NYSDEC



Primary Rules of Hunter Safety

- Assume every firearm is loaded
- Keep the muzzle pointed in a safe direction
- Keep your finger off the trigger until firing
- Be sure of your target and what is beyond
- Wear hunter orange



Gobbler Profile
to pattern and sight-in a shotgun

Vital Areas

 Bony skull and vertebrae
(penetration will immobilize)

 Center of pattern

Non-Vital Areas

A. esophagus or gullet
B. trachea or windpipe
C. wattle
D. snood or dewbill
E. loose neck skin

Is it a turkey?
Does it have a beard? (in spring)

Make copies for practice

Drawing by John M. Idstrom from x-ray of adult spring gobbler by Paul H. Pelham D.V.M. Used by permission of Wildlife Section, Minnesota Dept. of Natural Resources.

Turkey Hunting Tips

NEED TO KNOW RULES:

- You will need a hunting license and a turkey permit while afield.
- Refer to all the hunting regulations, including season dates and bag limits, in the annual hunting and trapping regulations guide before you go afield.
- Hunting hours are ½ hour before sunrise until noon during the spring season and sunrise to sunset during the fall season.
- You may hunt with a shotgun or handgun only when using shot no larger than #2 and no smaller than #8.
- You may **not** take a turkey with a rifle, or with a handgun firing a bullet.
- You may hunt with a bow or crossbow.
- Immediately after taking a turkey, you must fill out the carcass tag in ink and attach it to the bird.

- Always assume that any call or footsteps you hear are from another hunter. Don't shoot until you clearly see the whole turkey and know its sex.
- If you see another hunter, talk to him or her clearly, and don't move. Never wave or use a turkey call to alert another hunter.
- Turkeys are tough. You need to be close (30 yards or less). A clear head and neck shot is best. Do not try to shoot them in the body or when they are flying.
- Be sure to pattern your gun before the season. Practice using your firearm and the shot size you will be hunting with. Know your personal limitations and the limitations of your firearm.
- When calling, sit still with your back against a big tree to hide you from turkeys and stalkers.
- Never wear turkey colors—red, white, or blue.
- Wear hunter orange when going in or out of the woods and while walking around. When sitting still waiting for a turkey, put hunter orange on a tree near you. If you take a turkey or carry a decoy, wrap it in hunter orange

TURKEY HUNTING SAFETY TIPS:

- Don't stalk! More than half of turkey hunting injuries happen when one hunter stalks another.

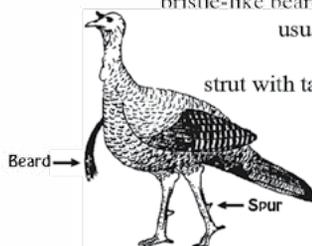
Visit www.dec.ny.gov for more information

Gobbler or Hen ?

Only bearded wild turkeys may be taken in the Spring. This helps protect females at nesting time. A few hens have beards. They are legal to shoot but you can avoid shooting bearded hens if you know these differences:

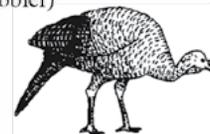
Gobbler

red, blue and white
dark brown-black
bristle-like beard 1 inch to 1 foot long
usually 1/2 inch or longer
gobble, drum
strut with tail fan and wing droop
larger than hen

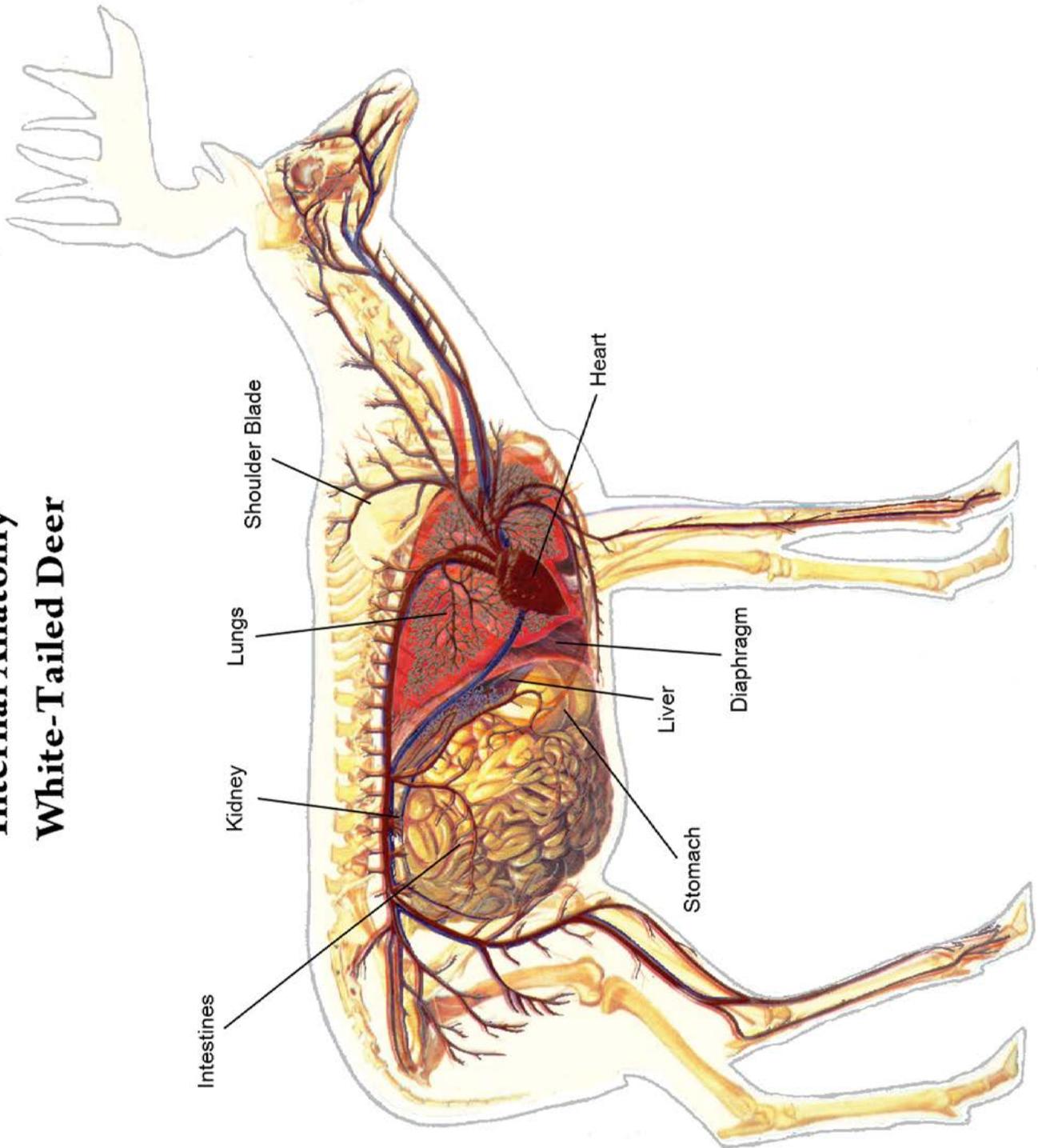


Hen

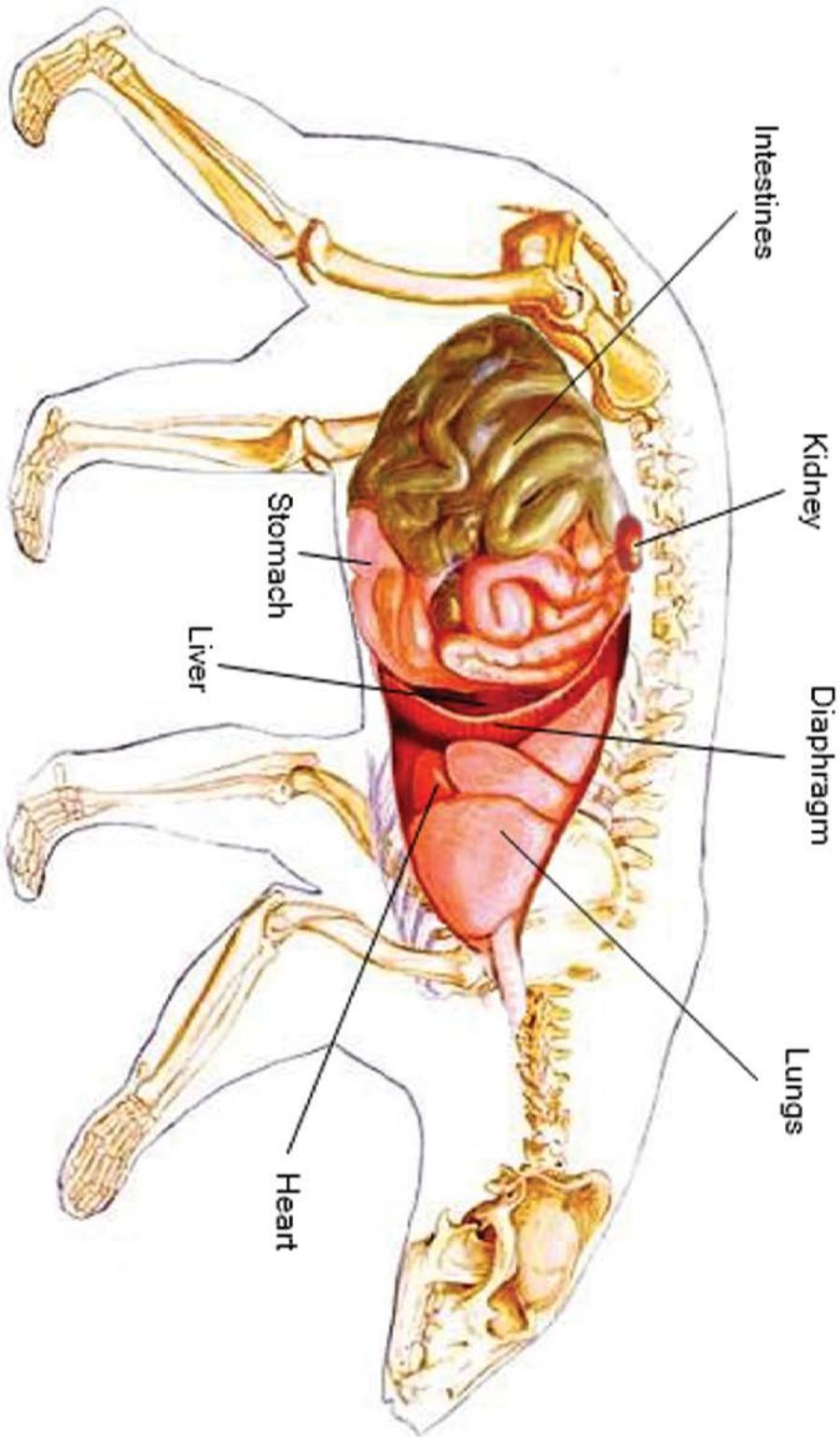
blue-gray
light rusty-brown
usually no beard
usually no spurs
yelp, cluck, cut
usually does not strut
smaller (1/2 to 3/4 size of gobbler)



Internal Anatomy White-Tailed Deer



Internal Anatomy American Black Bear



**New York State Department of Environmental Conservation
Sportsman Education Program**

Permission Form

Required for minors to handle and discharge firearms during a hunter education course

Parents or Legal Guardians of Students Under 16 Years Old:

Fill out and sign the form below. Your written permission is required by law to allow students under 16 years old to handle and discharge firearms during a hunter education course.

The minimum age to take a hunter education course is 11 years old.

The minimum age to purchase a license is 12 years old (licensed adult supervision is required until age 16).

About the Hunter Education Course:

Trained instructors, certified by the Department of Environmental Conservation, provide lessons in the safe handling of firearms. Most courses include shooting exercises. Students under 12 years old are allowed to handle only air guns, laser guns and inert (training aid) firearms.

In addition to firearms safety, the hunter education course teaches basic outdoor skills and responsible hunting techniques. Emphasis is on helping students become people who will: respect people, wildlife, and nature; be safe, responsible and ethical hunters; appreciate the role of humans as a part of nature; and support conservation.

Parents are urged to participate with their child in completing homework assignments. Discuss the lessons together and help the student find the correct answers to the quiz questions, without actually providing the answers.

Note to instructors: This form is your proof that instructors are authorized by the parent or guardian of the student whose name appears on this form to supervise that student in firearms handling and shooting exercises in your courses. Refer to your Sportsman Education Program Instructor Manual for rules regarding student age requirements and use of firearms by minors in courses. Keep this form for at least one year after the completion of the course.

Bring this completed form to your first Hunter Education class

**New York State Department of Environmental Conservation
Sportsman Education Program
Permission to Handle and Discharge Firearms**

I, _____ am the parent or legal guardian
(Print name of parent or legal guardian)

of _____, whose date of birth is ____/____/____
(Print name of student) (Print date of birth)

and I hereby give my permission for him or her to possess a rifle, shotgun, or air gun for the purpose of loading and firing under the immediate supervision, guidance, and instruction of a hunter education instructor certified by the New York State Department of Environmental Conservation, during a hunter education course.

Signature _____ Date _____ Telephone Number _____
(Parent or legal guardian sign) (Print today's date)

Revised 11/15

The content on this page was provided by the New York Dept. of Environmental Conservation.

New York State Department of Environmental Conservation
Sportsman Education Program
Student Examination Answer Sheet

Name: _____

Date of Birth: _____

Date of Test: _____

Check the box for the test you are taking:

Hunter Education

Trapper Education

Bowhunter Education

Section 1, Questions 1-40, for all tests

Multiple Choice: Select only one answer for each question and completely fill in the circle

as in this example: 1. (a) (b) (c) (d) if the correct answer is "c"

1. (a) (b) (c) (d)

11. (a) (b) (c) (d)

21. (a) (b) (c) (d)

31. (a) (b) (c) (d)

2. (a) (b) (c) (d)

12. (a) (b) (c) (d)

22. (a) (b) (c) (d)

32. (a) (b) (c) (d)

3. (a) (b) (c) (d)

13. (a) (b) (c) (d)

23. (a) (b) (c) (d)

33. (a) (b) (c) (d)

4. (a) (b) (c) (d)

14. (a) (b) (c) (d)

24. (a) (b) (c) (d)

34. (a) (b) (c) (d)

5. (a) (b) (c) (d)

15. (a) (b) (c) (d)

25. (a) (b) (c) (d)

35. (a) (b) (c) (d)

6. (a) (b) (c) (d)

16. (a) (b) (c) (d)

26. (a) (b) (c) (d)

36. (a) (b) (c) (d)

7. (a) (b) (c) (d)

17. (a) (b) (c) (d)

27. (a) (b) (c) (d)

37. (a) (b) (c) (d)

8. (a) (b) (c) (d)

18. (a) (b) (c) (d)

28. (a) (b) (c) (d)

38. (a) (b) (c) (d)

9. (a) (b) (c) (d)

19. (a) (b) (c) (d)

29. (a) (b) (c) (d)

39. (a) (b) (c) (d)

10. (a) (b) (c) (d)

20. (a) (b) (c) (d)

30. (a) (b) (c) (d)

40. (a) (b) (c) (d)

Section 2, Questions 41-50 for Hunter Education test ONLY

Questions 47-50 are matching: Select only one answer for each question and completely fill in the circle

41. (a) (b) (c) (d)

47. (a) (b) (c) (d)

42. (a) (b) (c) (d)

48. (a) (b) (c) (d)

43. (a) (b) (c) (d)

49. (a) (b) (c) (d)

44. (a) (b) (c) (d)

50. (a) (b) (c) (d)

45. (a) (b) (c) (d)

46. (a) (b) (c) (d)

For Instructor Use Only

40 Questions		50 Questions	
# Wrong	% Correct	# Wrong	% Correct
1	98	1	98
2	95	2	96
3	93	3	94
4	90	4	92
5	88	5	90
6	85	6	88
7	83	7	86
8	80	8	84
9	78	9	82
10	75	10	80
11	73	11	78
12	70	12	76
13	68	13	74
14	65	14	72
15	63	15	70
16	60	16	68
17	58	17	66
18	55	18	64
19	53	19	62
20	50	20	60

SCORE: _____ **%**

THE TEN COMMANDMENTS OF FIREARM SAFETY



1. **Watch that muzzle!** *Keep it pointed in a safe direction at all times.*
2. **Treat every firearm with the respect due a loaded gun.** *It might be, even if you think it isn't.*
3. **Be sure of the target and what is in front of it and beyond it.** *Know the identifying features of the game you hunt. Make sure you have an adequate backstop—don't shoot at a flat, hard surface or water.*
4. **Keep your finger outside the trigger guard until ready to shoot.** *This is the best way to prevent an accidental discharge.*
5. **Check your barrel and ammunition.** *Make sure the barrel and action are clear of obstructions, and carry only the proper ammunition for your firearm.*
6. **Unload firearms when not in use.** *Leave actions open, and carry firearms in cases and unloaded to and from the shooting area.*
7. **Point a firearm only at something you intend to shoot.** *Avoid all horseplay with a gun.*
8. **Don't run, jump, or climb with a loaded firearm.** *Unload a firearm before you climb a fence or tree, or jump a ditch. Pull a firearm toward you by the butt, not the muzzle.*
9. **Store firearms and ammunition separately and safely.** *Store each in secured locations beyond the reach of children and careless adults.*
10. **Avoid alcoholic beverages before and during shooting.** *Also avoid mind- or behavior-altering medicines or drugs.*

Hunter's Resource Directory

International Hunter Education Association-USA (IHEA-USA)

800 East 73rd Avenue, Unit 2
Denver, CO 80229
303-430-7233
Fax: 303-430-7236
www.ihea-usa.org

The Izaak Walton League of America

707 Conservation Lane
Gaithersburg, MD 20878-2983
301-548-0150
E-mail: info@iwla.org
www.iwla.org

National Bowhunter Education Foundation (NBEF)

P.O. Box 2934
Rapid City, SD 57709
605-716-0596
Fax: 605-716-1434
E-mail: info@nbef.org
www.nbef.org

National Rifle Association (NRA)

11250 Waples Rd.
Fairfax, VA 22030
1-800-672-3888
www.nra.org

National Shooting Sports Foundation

Flintlock Ridge Office Center
11 Mile Hill Rd.
Newtown, CT 06470-2359
203-426-1320
www.nssf.org

Ducks Unlimited

One Waterfowl Way
Memphis, TN 38120
1-800-45DUCKS
www.ducks.org

Wild Sheep Foundation

720 Allen Ave.
Cody, WY 82414
307-527-6261
www.wildsheepfoundation.org

National Wild Turkey Federation (NWTF)

P.O. Box 530
Edgefield, SC 29824
1-800-THE-NWTF
www.nwtf.org

Quail Forever/Pheasants Forever

1783 Buerkle Circle
St. Paul, MN 55110
1-877-773-2070
www.quailforever.org
www.pheasantsforever.org

Rocky Mountain Elk Foundation

5705 Grant Creek
Missoula, MT 59808
1-800-CALLELK
www.rmef.org

The Ruffed Grouse Society

451 McCormick Rd.
Coraopolis, PA 15108
412-262-4044
www.ruffedgrousesociety.org

Waterfowl USA

The Waterfowl Building Box 50
Edgefield, SC 29824
803-637-5767
www.waterfowlusa.org

Whitetails Unlimited

P.O. Box 720
Sturgeon Bay, WI 54235
920-743-6777
www.whitetailsunlimited.com

