

TNATIONAL BOWHUNTER EDUCATION FOUNDATION TODAY'S BOWHUNTER

*The
Responsible
Bowhunter's
Guide*





The IBEP is offered in all 50 states, all Canadian provinces, and 26 additional foreign countries. The shaded areas above indicate the states and provinces where you are legally required to take an IBEP course prior to obtaining a bowhunting license. Always check local laws as regulations may change or special regulations may exist in some areas.

The states and provinces requiring an IBEP course are:

- Alaska
- Connecticut
- Idaho
- Maine
- Montana
- Nebraska
- New Brunswick
- New Hampshire
- New Jersey
- New York
- Nova Scotia
- Quebec
- Rhode Island
- South Dakota
- Vermont

Bowhunter education also is offered in these countries:

- Australia
- Austria
- Belgium
- Croatia
- Denmark
- Estonia
- Finland
- France
- Germany
- Iceland
- Italy
- Latvia
- Lithuania
- Mexico
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Russia
- Slovenia
- South Africa
- Spain
- Sweden
- Switzerland
- United Kingdom



MISSION STATEMENT

To promote responsible bowhunting through education

THE INTERNATIONAL BOWHUNTER EDUCATION PROGRAM (IBEP) IN NORTH AMERICA

The International Bowhunter Education Program was first advocated by Bill Wadsworth who utilized experience from his association with the Boy Scouts of America to obtain worldwide acceptance of the curriculum. It was through his dedication that the National Bowhunter Education Foundation (NBEF) was formed. Wadsworth served as the first executive director of the organization.

Today, the NBEF administers the International Bowhunter Education Program (IBEP) in cooperation with state and provincial hunter education programs and state bowhunter organizations. Most instructors work on a volunteer basis.

The IBEP is used in all states and Canadian provinces and follows the standards of the International Hunter Education Association, a professional organization of hunter education administrators from throughout North America. While basic hunter education courses include archery and bowhunting, the IBEP provides more in-depth skill information to help you become a more effective and responsible bowhunter.

Hunter education is currently required in all 50 states, 10 Canadian provinces, three Northwest Territories, and Mexico. A separate bowhunter education course is required in many of the states and provinces to comply with the bowhunting laws and regulations in those jurisdictions (see sidebar).

HOW BOWHUNTER EDUCATION IS FUNDED

Funding for bowhunter education comes from a variety of sources. The U.S. government charges excise taxes on sporting arms, ammunition, handguns, and archery equipment. These fees collected from the firearm and archery manufacturers then are distributed to the states (similar practices exist in Canada and Mexico). States and provinces also collect their own fees through such sources as hunting license sales, conservation stamps, fines, and arrests.

Funding also comes through organizations such as: National Bowhunter Education Foundation, International Bowhunting Organization, Pope and Young Club, Safari Club International, and The Bowhunting Preservation Alliance. These organizations raise money through membership fees and donations from fundraising efforts. Money also comes from corporations and private donations. Many times this is utilized to fund special training aids or to help specific programs within bowhunter education. And, of course, some funds come directly from students who attend bowhunter education classes.

TODAY'S BOWHUNTER

The Responsible Bowhunter's Guide

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Project STAND is a comprehensive educational outreach program of the NBEF designed to significantly decrease tree stand accidents and deaths. For more information, visit www.projectstand.net.



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Foreword

It is only right to say a word about the founder of the National Bowhunter Education Foundation. Bill Wadsworth dedicated his life to bowhunter education. It was late in the year of 1967 when Bill and a small group of bowhunters met in upstate New York to write a book about bowhunting. Their desire to write the book had been fueled by what they had seen while participating in the previous bowhunting season for deer. At that moment, their goal was simple: To find a way for archers who hunted game with bow and arrow to get all the facts about bowhunting BEFORE they ventured into the wilds to learn via trial and error.

The resulting first book was printed in 1969 by the New York State Field Archery Association and sold for \$1.25. Soon after the initial publication, the bowhunter education course began to take form; experienced bowhunters began to follow the guidelines in the book and pass on the basic facts about bowhunting. For the first time, subjects such as knowing conservation law, the “unwritten law” of the bowhunter, facts on how an arrow harvests game, bowhunting safety, how to practice, lures, calls, scents, bowhunting methods, shot placement, and the responsibilities of being a bowhunter were being taught in an organized bowhunter education class.

As chairman of the conservation and bowhunting committee of the National Field Archery Association (NFAA), Bill Wadsworth’s top priority was

bowhunter education. Thanks to the support of the NFAA, the International Bowhunter Education Program (IBEP) was taught in state after state and later in the Canadian provinces. An expanded manual entitled *Bowhunting Deer* was published.



In Bill’s words:

“If bowhunting as we know and enjoy it is to survive, we must be hunters who appreciate and respect the environment in which we hunt, as well as maintain a strong desire to uphold the highest standards for our sport.”

In 1979, the IBEP became a nonprofit organization, separate from the NFAA, known as the National Bowhunter Education Foundation (NBEF). Twenty-one volunteers, many of whom came from the nucleus of those originally a part of the NFAA conservation and bowhunting committee, became board members and directed the program. To this day, millions of volunteer hours have been logged by dedicated bowhunters who continue in the spirit of those who began the course back in 1967. Every year, approximately 70,000 bowhunters are educated through the IBEP, which is still administered by the NBEF.

During his lifetime, Bill Wadsworth presided over numerous state, national, and international organizations related to bowhunting. Because of his distinguished volunteer efforts in creating and promoting the IBEP, he received numerous awards and citations. In 1999, Bill was inducted into the Archery Hall of Fame. Bill’s tireless energy, boundless enthusiasm, and love of the sport of bowhunting are all very much a part of what is taught today. Bill Wadsworth was a shining challenge to all of us.

Bill Wadsworth, pictured above, has been called the “Father of Bowhunter Education.”

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Bowhunter’s Resource Directory Inside Back Cover

You should be able to...

- Identify several people who have contributed significantly to modern bowhunting and describe their contributions.
- Define “bowhunting” and list some of its benefits.
- List special challenges that set bowhunting apart from hunting with modern firearms.
- Name funding sources for hunter and bowhunter education.
- Give reasons why you bowhunt or would like to bowhunt.



Dr. Saxton Pope and Arthur Young are widely regarded as the “Fathers of Bowhunting.”

The History of Modern Bowhunting

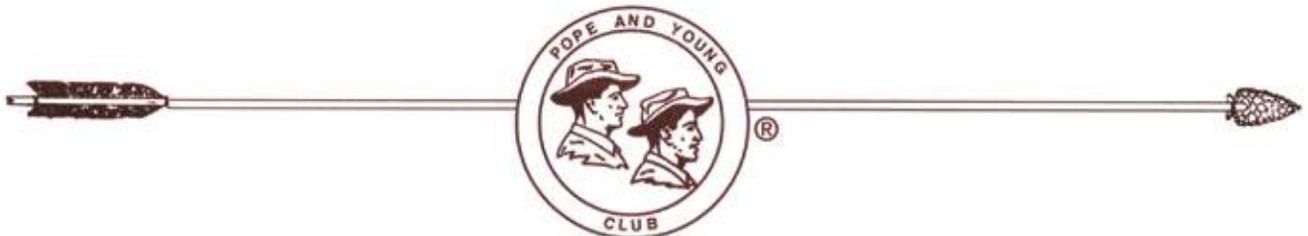
Bowhunting dates back to the Stone Age and can be traced throughout history in many regions around the world, including Asia, Europe, and North America. Native Americans were skilled bowhunters. While their bows and arrows were often crude, they overcame the limitations of their equipment with their exceptional ability to stalk within close range of wary prey. The ability to get close to game remains the essence of all bowhunting today.

As immigrants moved into North America, they gradually combined European and Native American archery techniques and technology. The first archery club in America, known as the United Bowmen of Philadelphia, was formed in 1828. The writings of bowhunters Will and Maurice Thompson helped popularize bowhunting in the 1860s and 1870s. In 1878, Maurice Thompson published the book *The Witchery of Archery*, which inspired many more individuals to pick up a bow and arrow. In 1879, the newly founded National Archery Association (NAA) held the first U.S.–sponsored tournament.

The Development of Modern Bowhunting

Dr. Saxton Pope and Arthur Young are widely regarded as the “Fathers of Bowhunting.” In the early 1900s, Pope and Young cared for Ishi, the last known survivor of the Yana tribal group in California. Ishi impressed them with his bowhunting skills. He demonstrated how he made his equipment and stalked and shot game. Pope and Young followed his lead and took a variety of large and small game with archery equipment. In 1923, Pope published the book *Hunting with the Bow and Arrow*, which introduced many Americans to bowhunting.

In the 1940s, Doug Easton started producing quality aluminum arrows. In the 1950s, showman and master archer Howard Hill popularized bowhunting with demonstrations, movie appearances, and a trip to Africa, where he hunted and shot many species of animals. Hill developed his archery skills and shot powerful longbows using 100-pound-plus draw weights. He delighted crowds with trick shots at long distances and unusual angles.

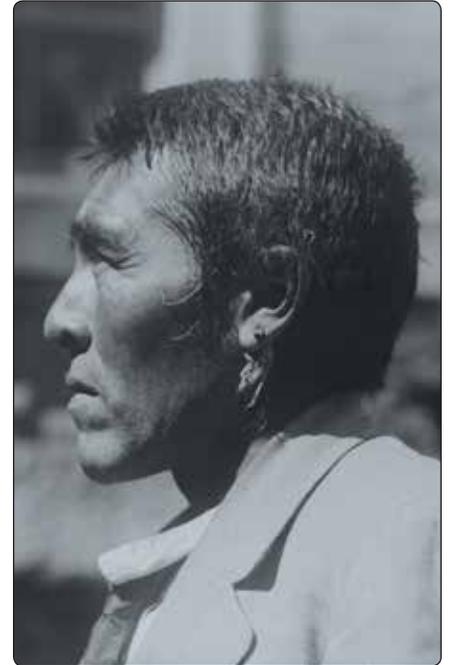


From the late 1950s through the 1970s, Fred Bear, Ben Pearson, and Earl Hoyt furthered the development of bowhunting equipment. Educational programs based on their techniques, including exciting films of some hunts in the early 1970s, did much to popularize the sport of bowhunting. More importantly, these men manufactured and sold bowhunting equipment at affordable prices.



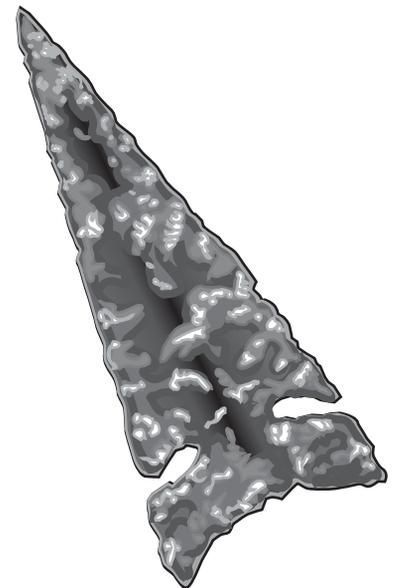
Fred Bear helped further the development of bowhunting equipment.

An important technological development during this period was the invention of the compound bow. Holless Wilbur Allen applied for a patent on the compound bow in June 1966. The patent application was entitled “Archery Bow with Draw Force Multiplying Attachments.” Allen sent an early prototype of his compound bow to Tom Jennings, a California bowmaker, who, with Allen, became the first manufacturer of compound bows. Not long afterward, Olympus and Carroll and many other archery companies began production.



Ishi was the last known survivor of the Yana tribal group in California. Dr. Saxton Pope and Arthur Young cared for him in the last years of his life, and Ishi shared his bowhunting knowledge—making equipment, stalking game, and shooting game—with them.

Ishi used handmade obsidian points similar to the one pictured below.



Why do you hunt with a bow?

When asked this question in a national survey, hunters gave the following responses:

58%	Challenge
24%	Lengthened season
13%	Less crowded
11%	Earlier start
6%	Change of pace
6%	Other reasons
4%	Peace and quiet
3%	Fun

Bowhunting and Its Benefits

Bowhunting is the act of pursuing or taking wild game animals using a bow and arrow. This practice, however, is about more than the pursuit or killing of game. Even though providing meat for the table is a satisfying feat, there are many more benefits of bowhunting.

- **Wildlife Management:** Bowhunting is an effective wildlife management tool used to promote the growth of healthy animal populations and improve habitats, especially in areas overpopulated with deer and in places where modern firearms are restricted.
- **Recreation:** Bowhunting provides outdoor activities for more than three million Americans.
- **Economic:** Bowhunters contribute more than \$13 billion per year to U.S. retail sales.
- **Aesthetic:** Bowhunting experiences in the outdoors can be deeply satisfying. Many hunters see bowhunting as a form of art.
- **Education:** Bowhunting provides a lifetime of learning experiences.
- **History:** Bowhunting offers insights into history, cultural traditions, and the hunting heritage.
- **Social:** Bowhunting brings together people of all abilities and backgrounds.
- **Therapeutic:** Bowhunting offers an escape from the fast-paced and stressful demands of modern life.
- **Health:** Wild game meat is healthier than domestic meat raised for human consumption. Archery also provides year-round activity for individuals and families.



Challenges of Hunting With a Bow and Arrow

Bowhunting presents a number of challenges; however, there are three special challenges that set it apart from hunting with modern firearms.

- Before attempting to hunt with a bow and arrow, bowhunters first should become proficient archers, which requires dedication, practice, and the development of distance-judging skills.
- Bowhunting is done at a much closer range than rifle hunting; therefore, it often requires a higher degree of stealth and sheer effort to get into position to make the shot (similar to fly fishermen among anglers).
- Bowhunters must become adept at scouting, tracking, and recovering game, all of which take perseverance and patience.

While these challenges may be too great for some, many find that these elements add to the pleasure of hunting. Bowhunting is a unique emotional experience because you are so close to the game.

Along with the special satisfaction that bowhunting offers comes the responsibility to achieve a quick, clean, and humane kill. Therefore, it is critical that bowhunters master bowhunting techniques and learn the anatomy and behavior of the game hunted.

Facts About Bowhunting

Bowhunting is an important aspect of life for many Americans. A 2011 survey funded by the U.S. Fish & Wildlife Service discovered the following facts.

- More than 13 million Americans hunt, which represents about 6% of the population.
- Thirty-three percent of hunters report that they have hunted with a bow.
- Bowhunting continues to grow in popularity, especially in recent years.
- From the 2012 “Archery Participation Among Adult United States Residents” survey funded by the Archery Trade Association and conducted by Responsive Management, the average age of adult bowhunters in the U.S. is 37.

How Bowhunter Education Is Funded

Funding for bowhunter education comes from the following sources:

- **Federal Funds**—U.S. excise taxes on sporting arms, ammunition, handguns, and archery equipment; fees collected from firearm and archery manufacturers
- **State and Provincial/Territorial Funds**—Fees collected from state and provincial hunting license sales, conservation stamps, fines, arrests, and other sources
- **Organizations**—National Bowhunter Education Foundation, International Bowhunting Organization, Pope and Young Club, Safari Club International, and The Bowhunting Preservation Alliance
- **Donations**—Money from private donations and corporations, which is distributed to various governmental and non-governmental groups
- **Student Fees**—Fees paid by students attending bowhunter education classes

Differences Between Hunting With Bow & Arrow and Modern Firearms

	Bowhunting	Rifles/Shotguns
Power Source:	Bending limbs	Smokeless powder
Support:	Archer's body	Shouldered stock
Effective Range:	Around 20 yards	100 yards or more
Trajectory:	High arch	Slight arch
	Short	Long
Killing:	Cutting/Bleeding	Shocking/Bleeding
Projectiles:	Broadheads	Bullets/Shot
Main Safety Concern:	Falls from tree stands	Muzzle control & shooting injuries

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 factors that limit wildlife populations.
- Explain the role of hunting in wildlife conservation.
- Give examples of wildlife management practices, and explain how each helps conserve wildlife populations.
- Explain why the correct identification of wildlife is crucial for bowhunters.

conservation

The wise use and planned management of a natural resource to prevent over-exploitation, destruction, or neglect

preservation

When natural resources are allowed to take their own course without human usage, management, or intervention

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 by setting land aside as “forever wild.” Preservation means no consumptive use of timber, wildlife, or other resources.
- Both preservation and conservation are necessary to sustain resources for future generations.

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 results were 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.

Habitat Management

- The most critical aspect of wildlife conservation is **habitat** management. Habitat loss presents the greatest threat to wildlife.
- Five essential elements must be present to provide a viable habitat: **food, water, cover, space, and arrangement.**



Water



Cover



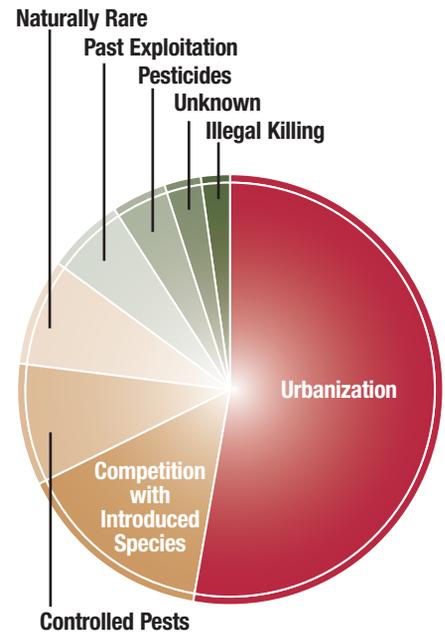
Food

- The need for food and water is obvious.
- Cover is needed not only to provide shelter from the elements and predators but also to protect animals while they are feeding, breeding, roosting, nesting, and traveling. Cover can range from thick weeds and brush to a few rocks piled together.

wildlife management

The art and science of interrelating wildlife populations and habitats in a manner that strikes a balance with the needs of people

Causes of Threatened and Endangered Species



Modern legal hunting is not shown in the pie chart because it does NOT cause a species to become threatened or endangered.

habitat

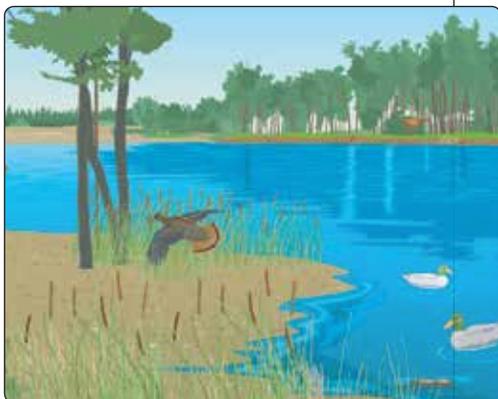
Complete environmental requirements of an animal for survival: food, water, cover, space, and arrangement

Remember...

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

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.



Before Urban Development



After Urban Development

edge effect

Habitat conditions of an area created when two types of habitat are brought together

- Space is necessary to avoid over-competition for food. Some animals also need a certain amount of territorial space for mating and nesting. When crowded, some species may develop stress-related diseases.
- Arrangement refers to the placement of food, water, cover, and space in a habitat. The ideal arrangement allows animals to meet all of their needs in a small area so that they minimize the energy they use traveling from food to cover to water.

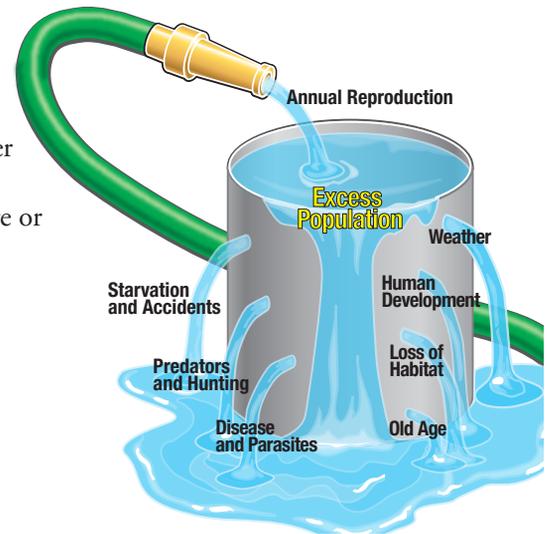


Space and Arrangement

- Most animals can be found where food and cover meet, particularly near a water source. This is called **edge effect**.
 - River bottoms are ideal, offering many animals all their habitat needs along one corridor.
 - Edge effects can be in the form of topographical or vegetation edge such as the saddle of a mountain range.
 - For example, quail will spend much of their time where shrub and grassland areas converge.

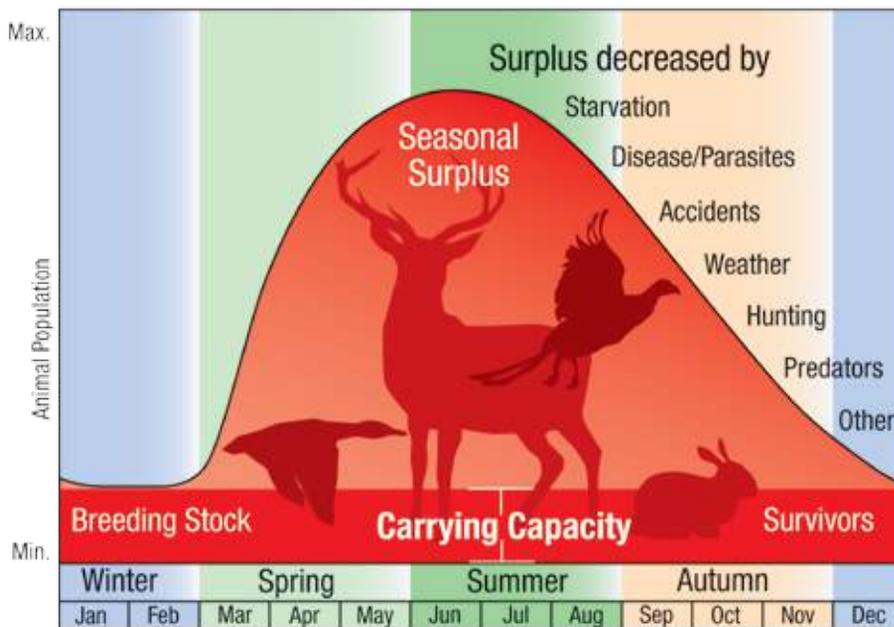
Carrying Capacity

- The resources in any given habitat can support only a certain number of wildlife. As seasons change, food, water, or cover may be in short supply causing damage to the animals or the habitat. **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 wildlife populations include:
 - Starvation
 - Disease and Parasites
 - Accidents
 - Weather
 - Hunting
 - Predators
 - Loss of Habitat
 - Human Development
 - Old Age
- If the conditions are balanced, game animals will produce a surplus, which can be harvested on an annual, sustainable basis.



carrying capacity

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



The Hunter's Role in Wildlife Conservation

- Since wildlife is a renewable natural resource with a surplus, all hunters help control wildlife populations at a healthy balance for the habitat. Regulated hunting has never led to threatened or endangered wildlife populations.
- Hunting is an effective wildlife management tool. Hunters play an important role by providing the information from the field that wildlife managers need.
- Funding from hunting licenses has helped many game and non-game species recover from dwindling populations.

Hunters and Wildlife Conservation

Hunters, including bowhunters, 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
- Funding wildlife management through license fees

Beneficial Habitat Management Practices

- Preparing/planting food plots
- Conducting controlled burning
- Creating brush piles
- Cutting timber
- Pruning/thinning
- Ditching
- Creating diking/levees
- Controlling nuisance plants or animals
- Controlling brush or grass mechanically
- Creating watering holes
- Enhancing soil (fertilizing and liming)
- Creating wetlands
- Restoring streams
- Creating nest boxes

birth rate

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

death rate

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

succession

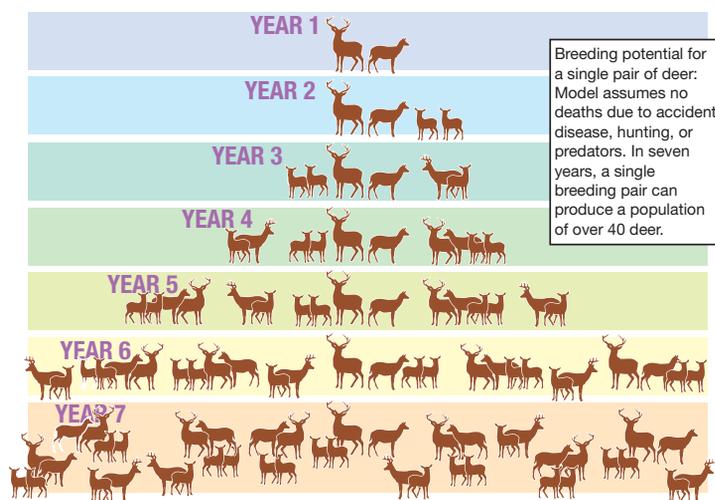
The natural replacement of vegetation or wildlife populations by other vegetation or wildlife populations in an orderly and predictable manner; for example, as trees grow and form a canopy, shrubs and grasses will disappear along with the wildlife that use them as cover

predator

Animal that kills other animals for food

Wildlife Management and Conservation Principles

- The wildlife manager's job is to maintain the number of animals in a habitat at or below the habitat's carrying capacity so that no damage is done to the animals or to their habitat.
- In a sense, a wildlife manager's task is similar to a rancher's. Just as a rancher will limit 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 a 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 habitats 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 practices help wildlife managers keep animal populations in balance with their habitat and provide funding for wildlife management.
- **Predator Control:** Controlling **predators** enables wildlife populations to establish stable populations, particularly threatened or endangered species. Forms of predator control include predator hunting and trapping.

- **Artificial Stocking:** Restocking of game animals has been successful in many parts of the nation. Trapping animals in areas where they are abundant and releasing them in other areas of suitable habitat is an example of restocking.
- **Controlling or Preventing the Spread of Disease:** 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 cholera occurs, managers must work to prevent its spread by gathering and burning waterfowl carcasses daily.
- **Management Funds/Programs:** In addition to funding from the **Pittman-Robertson Act**, many states have initiated programs that help finance conservation efforts.

Wildlife Identification

- Developing wildlife identification skills is a basic requirement for all hunters. Mistakes 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 can be a challenge. Sometimes the difference between animals in the same species is subtle, such as the size of their ears or distinctive coloring. Recognizing tracks, scat, food sources, and habitat types also can help you identify animals.
- Some species are protected from hunting because their numbers are low and they produce no surplus to harvest.
- Listed below are animals that are commonly bowhunted. **Be sure to check your state or provincial regulations for species that are legal for bowhunting.**

Pittman-Robertson Act

Approved by Congress in 1937, the Act provides funding for the selection, restoration, and improvement of wildlife habitat and for wildlife management research

Antlers vs. Horns

Members of the deer family (which includes caribou, deer, elk, and moose) have antlers. Antlers are solid bone and are shed annually. They are one of the fastest growing natural materials in the world. Antlers grow from the tip while horns grow from the base. Except for caribou, only male deer have antlers.

Horns are found on bison, sheep, goats, and pronghorns. Unlike antlers, true horns are hollow and grow continuously. If broken, they do not grow back. They consist of a keratin sheath surrounding a core of bone. Female sheep have half-moon horns while rams have horns that are longer and heavier and curve around the sides of their heads. Female mountain goats have horns that are longer, straighter, and thinner than Billy goats. The horn sheath of a pronghorn has characteristics of both antlers and bones because it's made of keratin surrounding the bony core yet is shed annually.

White-Tailed Deer



Male Whitetail



Reddish-brown to blue-gray or tan coloring; underside of tail is white, producing a "flag"

when raised off the rump. Antlers on male primarily consist of main beam with tines growing from it. Maximum antler size occurs between 5–7 years of age.



Female Whitetail

Habitat and Habits:

Range movements limited to one to three miles, depending on sex, age, and habitat. Herbivore. Lives up to 10 years. Male is polygamous with most whitetails in North America rutting in November. One to two spotted fawns typical.

How To Distinguish Adult White-Tailed Deer from Fawns*

Fawns

- Short, square bodies (look like a "briefcase" from a distance)
- Short necks and less muscle development
- Rarely have swaying backs or sagging bellies
- Ears appear large in comparison to head

Adults

- Larger, rectangular-shaped bodies (look like a "suitcase" from a distance)
- Long necks



Briefcase Suitcase



How To Identify Buck Fawns*

- Presence of developing antlers
- Head appears more flat and less rounded between ears



How To Identify Doe Fawns*

- No developing antlers
- Head appears slightly rounded between ears

rut

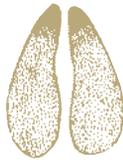
The period of sexual excitement and breeding in deer

*Information courtesy of the Quality Deer Management Association: www.qdma.com

Pronghorn



Male Pronghorn



White-hoofed with reddish to tan coloring. Large white rump patch, short white tail;

rump hair stands up when alerted or fleeing. Two broad white bands across neck. Male has large black jaw patch and larger, slightly curved horns with single prong growing forward.



Female Pronghorn

Habitat and Habits: Lives in open prairies, plains, and brushlands. Herbivore. Lives up to 14 years. Male is polygamous; rut runs Aug.–Nov. Two grayish-brown fawns typical.

Bighorn Sheep



Male Bighorn Sheep



Dark brown to gray coloring; white rump patch with short darker tail. Two heavy, tapering, curled brown horns on male; smaller and less curled on female.



Female Bighorn Sheep

Habitat and Habits: Lives in rocky, mountainous terrain, preferring bluffs or steep slopes. Herbivore.

Lives up to 15 years. Male is polygamous; rut runs Nov.–Dec.; males engage in battles, butting heads. One small brown lamb typical.

Moose



Male Moose



Dark brown with grayish legs. Large overhanging snout; dewlap on throat. Antlers on male are massive, palmate, and flat.



Female Moose

Habitat and Habits: Lives in forests with lakes and swamps. Herbivore. Lives up to 20 years.

Male is polygamous; rut runs Sept.–Oct. Usually one calf; light reddish-brown with dark stripe down back.

Mule Deer



Male Mule Deer



Reddish coloring in summer and blue-gray in winter. Cream-colored rump patch with black-tipped cream tail. Ears are larger than the white-tailed deer. Antlers branch equally.



Female Mule Deer

Habitat and Habits: Lives in forests, desert shrubs, thickets of shrubs or trees, grasslands, plains, foothills, and river bottoms.

Herbivore. Lives up to 16 years. Male is polygamous; rut runs Oct.–Dec. One to two spotted fawns typical.

Woodland Caribou



Male Woodland Caribou



Dark brown with whitish neck, underside, rump, and above each hoof. All males and more than half of females have semipalmated antlers with a prominent vertical tine over nose. Females' antlers are smaller.



Female Woodland Caribou

Habitat and Habits: Found in boreal coniferous forests, alpine tundra, and muskegs (peat bogs). Herbivore.

Lives up to 10–12 years. Male is polygamous; rut is late Sept. Grayish-brown fawns.

Elk



Male Elk



Dark brown to tan coloring; yellowish rump patch and tail. Large, spreading antlers on male.



Female Elk

Habitat and Habits: Lives in mountain pastures in summer and on wooded slopes in winter. Herbivore. Lives up to 15 years. Male

is polygamous; rut runs Sept.–Nov. Usually one calf; spotted until three months of age.

Mountain Lion (Cougar)



Large, tan-gray cat with long, brownish-tipped tail.

Habitat and Habits: Lives mainly in rugged mountains and sometimes in forests and swamplands. Carnivore. Lives up to 18 years. Makes a food “cache” out of uneaten prey. Mainly nocturnal; dens found in caves, rock crevices, and other concealed locations. Two spotted cubs can be born throughout year.



Black Bear



Color varies from black to cinnamon in West and black in East; face always brown; usually a small white patch on chest. Male much larger than female.

Habitat and Habits: Lives primarily in forest and swamps in East; in forest and wooded mountains in West. Omnivore. Lives up to 30 years. Nocturnal; usually solitary, except mother with cubs. Mates Jun.–Jul. Typically two cubs, born in winter.

Hunters must take extra precautions when hunting in areas where there are bears. For more information, visit this website:

<http://fwp.mt.gov/fishAndWildlife/livingWithWildlife/beBearAware/default.html>



Feral Hog



A medium-sized, hoofed mammal; descendent of the domestic hog. Varies greatly in color but most often black.

Upper tusks curl up and out along sides of mouth. Wild hogs may be infected with swine brucellosis, which can be transmitted to people who come in contact with infected blood.

Habitat and Habits: Lives in forested mountainous areas, brushlands, dry ridges, and swamps. Omnivore. Lives up to 10–15 years. Travels in groups. Three to twelve young born anytime during the year.



Coyote



Medium-sized to large with gray to reddish-gray fur, more tan on legs, feet, and ears; dark-tipped tail; whitish belly and throat.

Habitat and Habits: Lives in prairies, open woodlands, shrublands, and variety of habitats. Carnivore. Lives up to 8–10 years. Mainly nocturnal but can be active anytime. Five to ten pups born Apr.–May.



Red Fox



Medium-sized, reddish-yellow; can range from darker to lighter; bushy tail with white tip; usually dark legs and paws.

Habitat and Habits: Lives in mixed woodlands, farmland, and open country. Carnivore. Lives up to 10 years. Three to seven young born Apr.–May.



Wild Turkey



Large, long-legged bird; dark and iridescent body; featherless, reddish head. Male larger and more iridescent than female. Wild turkeys are native to North America and there are five subspecies: Eastern, Osceola (Florida), Rio Grande, Merriam's, and Gould's.

Habitat and Habits: Lives in open woodlands, brush country, thickets of shrubs or trees, river bottoms, and hardwoods. Lives up to 12 years. Polygamous males. Mating call is a gobble; normal calls are clucks, putts, and purrs. Nests in depressions; 6–20 whitish eggs.



Eastern Fox Squirrel



Larger, rusty-yellowish with orange-red underside; bushy tail tipped with darker hairs.

Habitat and Habits: Lives in open woodlands, river bottoms, and pine forests with interspersed clearings. Herbivore. Lives up to 10 years. Two to five young born in Jan. and May.

Eastern Gray Squirrel



Medium-sized with inner yellowish-rusty and gray or white-tipped hairs; lighter underside; bushy tail with varying dark hairs tipped white or yellow.

Habitat and Habits: Lives in forests, river bottoms, pine forests interspersed with hardwoods, and clearings. Herbivore. Lives up to 15 years. Two to five young per litter.

Red Squirrel



Smallest of tree squirrels in its range. Yellowish or reddish back and whitish belly; bushy tail.

Habitat and Habits: Lives in pine, spruce, or mixed hardwood forests. Nests in tree cavities or branches. Herbivore. Lives up to 10 years. Three to seven young born Mar.–Apr.

Virginia Opossum



Small- to medium-sized with gray to dark gray fur; whitish face and small ears; rat-like tail.

Habitat and Habits: Lives in woodlands, water, and farming areas. Omnivore. Lives up to three years. Nocturnal. Up to 14 young per litter several times a year. Young remain in mother's pouch for several months.

Mink



Medium-sized with dark brown fur and white chin patch; tail slightly bushy.

Habitat and Habits: Lives in stream, pond, and lake habitats. Carnivore. Polygamous. Four to ten young born Jan.–Mar.

Common Muskrat



Small-sized with brown to grayish-brown fur and grayish underside; black, scaly tail; partially webbed hind feet.

Habitat and Habits: Lives in marshes, ponds, and streams. Omnivore, feeding on aquatic vegetation, frogs, and small fish. Two to six young per litter; 2–3 litters per year.

American Beaver



Medium-sized, brown rodent; naked tail, scaly and paddle-shaped. Large, chestnut-colored front teeth; webbed short feet for swimming.

Habitat and Habits: Lives in streams, ponds, or lakes. Constructs houses of sticks, logs, and mud or burrows in banks; builds dams serving as habitat. Lives up to 11 years. Two to four kits born Apr.–Jul.

Black-Tailed Jackrabbit



Medium-sized; grayish-brown fur with large black-tipped ears and black streak on top of short tail.

Habitat and Habits: Lives in prairies, shrublands, and semi-arid deserts. Herbivore. Lives up to 5–6 years. Two to four young per litter.



Eastern Cottontail Rabbit



Small-sized with brownish-gray fur with cottontail; large ears but not as large as jackrabbit.

Habitat and Habits: Lives in heavy brush in forests, farmlands, thickets of shrubs or trees, swamplands, and weed patches. Herbivore. Lives up to 3–4 years. Four to seven young per litter; 3–4 litters per year.



Striped Skunk



Medium-sized with black fur and white stripes from head to tail.

Habitat and Habits: Lives in semi-open prairies, thickets of shrubs or trees, and mixed woods near water. Omnivore. Mostly nocturnal. Five to six young born in May.



Prairie Dog



Small-sized with tan to reddish fur; small ears and light-colored underside; black-tipped short tail.

Habitat and Habits: Lives in dry upland prairies in colonies or “towns” of burrows. Herbivore mostly but may eat some insects. Lives up to 7–8 years. Three to five young born Mar.–Apr.



Common Raccoon



Medium-sized with dark and light mixed fur and distinctive black mask across white face. Small- to medium-sized ears; ringed tail.

Habitat and Habits: Lives in woods near cliffs and water. Omnivore. Lives up to 7–10 years. Nocturnal. Two to seven young born Apr.–May.



American Badger



Medium-sized with short black legs and yellowish-gray hair. White stripe over head to nose; white cheeks; black patch in front of each ear. Long front claws for digging.

Habitat and Habits: Lives in open grasslands, deserts, and thickets of shrubs and trees. Carnivore, feeding mainly on small rodents. Lives up to 12 years. Two to five young born Feb.–May; one litter per year.



Porcupine



Large rodent, size of small dog; chunky body with short legs. Color varies from black or brown in East and yellowish in West. Sharp spines on rump and tail.

Habitat and Habits: Lives in forests or in brushy areas. Herbivore; likes salt. Lives up to 7–8 years. Primarily nocturnal. Mates in fall; one young born May–Jun.



Dusky (Blue) Grouse



Male is gray with orange-yellow or red comb over eye; yellow skin on neck; gray band at end of dark tail. Female is brown with dark tail.

Habitat and Habits: Lives in coastal rain forest and just below mountain timberline. Makes a “whoop, whoop, whoop, whoop” call. Nests in shelter of stumps or rocks; 5–10 cream-colored eggs with brown spots.

You should be able to...

- List archery and bowhunting safety rules.
- Define “bowhunter responsibility.”
- List words that describe a responsible bowhunter.
- Give reasons for bowhunting laws and regulations.
- Look up these hunting regulations for your area:
 - Legal bowhunting seasons
 - Legal methods and equipment for bowhunters such as required bow weight or broadhead regulations
 - Legal methods and equipment for physically challenged bowhunters
 - Tagging requirements
- Define “ethics.”
- Give examples of bowhunting responsibilities for each of the following: your personal limitations, your equipment, the landowner, game animals and resources, and your hunting companions.
- Define the “rule of first blood.”
- Explain hunter behaviors that lead to negative perceptions and anti-hunting sentiment.
- List hunter actions that promote a positive public image.



Do not drink alcohol or take mood-altering drugs before, during, or after activities associated with bowhunting.

nock

Verb: To nock an arrow is to fit an arrow to the bowstring to ready it for shooting.

Noun: The slotted plastic tip on an arrow that serves as the attachment point to position an arrow on the bowstring

covered arrow quiver

A device with a shatter-resistant cover or hood that holds arrows, protects the shooter and others from accidental contact with arrow points, and provides safe transport of arrows in the field

Archery and Bowhunting Safety

Archery and bowhunting safety rules cover all aspects of using a bow and arrow, including storing, handling, and shooting.

Archery Safety

In many states, a bow and arrow are considered a firearm, and the same rules and regulations that apply to firearms also apply to bows and arrows. Always check local laws, and follow these archery safety rules.

- Only point the bow and arrow in a safe direction.
- Only **nock** an arrow when it's safe to shoot.
- Be sure of your target and what is in front of it, immediately behind it, and beyond it.
- Never shoot over a ridge.
- Only shoot when you have a safe range or shooting area, and a safe backstop or background.
- Avoid dry-firing a bow (releasing the bowstring without a nocked arrow). It may cause serious damage to the bow and can injure the archer.
- Do not shoot an arrow straight up in the air.
- Wear an armguard and finger protection while shooting bows and arrows.
- Handle arrows carefully. Protect yourself and the arrow points with a **covered arrow quiver**.
- Use a bow-stringer for stringing longbows and recurve bows.
- Immediately repair defects in equipment.
 - Prior to each use, check your bow for cracks, dents, breaks, separating laminates, peeling glass, and defects in mechanical parts.
 - Check the bowstring regularly, and replace it if it becomes worn or frayed. Frequent use of bowstring wax greatly extends the life of a bowstring.
 - Check arrows for cracks, dents, or bends; discard any that have permanent flaws.

- Store your bows in bow cases—preferably hard cases—and store recurves and longbows unstrung.
- Store arrows in quivers and accessories in a sturdy box or padded bag.
- Keep your emotions under control, and think about safety first.
- Do not drink alcohol or take mood-altering drugs before, during, or after shooting a bow.

Bowhunting Safety

Bowhunting safety rules apply to proper handling of equipment in transit or in the field. They supplement archery safety rules learned at home or at the practice range and include the following.

- Obey archery and field safety rules at all times while bowhunting.
- Hunt and shoot within your own physical limitations.
- Exercise regularly and stay in good shape, especially before strenuous hunts.
- Let family or friends know exactly where you will be hunting.
- Transport equipment in protective cases to prevent damage. For airline travel, use a protective hard-sided case that can be secured.
- Dress properly for the worst weather conditions you expect to encounter.
- Carry basic survival gear every time you go afield, even for short hikes.
- Carry a flashlight, extra bulbs, and batteries. Always turn on your flashlight while walking to or from your tree stand in low-light conditions.
- Make every effort to rejoin your hunting companions at agreed-upon times.
- Clearly identify the specific game animal you intend to shoot before releasing an arrow.
- Do not shoot at an animal standing on a ridge top (a “skyline” shot) where you can’t identify a safe background.
- Place arrows in a covered quiver prior to moving around in the field.
- Always carry broadheads in a sturdy quiver that fully covers razor-sharp blades.
- Carefully cross barriers or obstacles with arrows securely in the quiver.



Keep broadheads in a quiver, especially when negotiating rough terrain.



Dress properly for the worst weather conditions you expect to encounter.

Characteristics of a Responsible Bowhunter

Look over the list of words below, and choose three words or phrases that best describe a responsible bowhunter:

- Safety-conscious
- Competitive
- Ethical
- Honest
- Environmentalist
- Woodsman
- Experienced
- Prepared
- Marksman
- Law-abiding
- Respectful
- Neat and clean
- In control
- Knowledgeable
- Naturalist
- Knows game laws
- Well-known

Be prepared to explain your choices.

Know the Law

Ignorance of hunting laws is not an excuse for violating them.

A Responsible Bowhunter

What Does Responsibility Mean for the Bowhunter?

Responsibility means personal accountability; you are accountable for your actions. Because bowhunting is not a spectator sport, you manage your actions by following legal and ethical guidelines.

Bowhunting Regulations

Bowhunting regulations are laws passed by a country, state, city, province, or territory to:

- Protect resources.
- Protect property rights.
- Protect people.
- Ensure fair chase.
- Ensure equal opportunity, or the quantity and quality of game.
- Gather information.
- Manage wildlife populations.

Every bowhunter must follow bowhunting regulations to behave responsibly and comply with state or provincial legal requirements. These regulations are passed by boards or commissions following a public hearing process. Public hearings are required to give bowhunters and others an opportunity to provide input or address issues prior to the enactment of statutes or rules and regulations.



Hunting is a privilege that can be taken away if hunting laws are violated. A hunting license can be revoked after a hunter is convicted of a serious violation or repeated offenses.

Every jurisdiction publishes a booklet containing current hunting regulations. All bowhunters should become familiar with the requirements well before the hunting season begins. Most hunting regulations are available on the Internet or at places that sell hunting licenses and sporting goods.

Categories of hunting laws that bowhunters must be aware of include:

- Legal bowhunting seasons
- Legal hunting methods and equipment
- Special provisions for physically challenged bowhunters
- Animal tagging requirements
- Animal transporting requirements
- Trespassing laws
- Penalties and violations
- Education requirements

Ethics

Many times the word *ethics* is used to describe “responsible” behavior. While the two terms are related, ethics are moral codes or values that go beyond formal laws and regulations. They are referred to as “unwritten laws”—the rights and wrongs that dictate proper behavior. Bowhunter education teaches you how to be a responsible bowhunter by helping to lay the foundation for a personal code of ethics.

Ethics are what you use to make decisions about what to do when nobody is watching, or when there are no formal rules to tell you what is right or wrong. In a nutshell, ethics are what you think is right or wrong. When you’re hunting, you must make the decisions—not your instructors, or even your friends or relatives. And just as you practice to become a good shot, you must practice ethical behavior to act consistently.

Your ethical code doesn’t just happen all by itself. Thinking about what you consider right or wrong is important. Consider how you’d feel after acting on a decision—would you feel proud or ashamed? And how would it affect other people?

To make ethics work for you, there are three steps to follow:

1. Realize that there are moral decisions to make for many of your actions, such as: “Should I shoot now and risk merely wounding the game, or should I wait for a better shot?”
2. Think about the consequences of those decisions and how they might affect you and others.
3. Do the right thing.

That sounds simple; in real life, however, few answers are black and white. Your personal ethics will help you sort through the gray areas and any moral dilemmas you might encounter.

Know and Respect Your Personal Limitations

All bowhunters should be aware of their limitations under various conditions.

- **General Health:** Heart conditions and other medical problems may limit strenuous activity. (A medical checkup is recommended before undertaking an extremely demanding hunting trip. Be sure to bring your personal medications.)
- **Physical Condition:** You may not be able to handle a strenuous hunt, or drag or pack out a downed animal, unless you are in good physical shape.
- **Weather:** Extremely low or high temperatures can put you at risk and also may affect the safe operation of your equipment.
- **High Elevations:** Exceptional physical conditioning is required at higher altitudes.

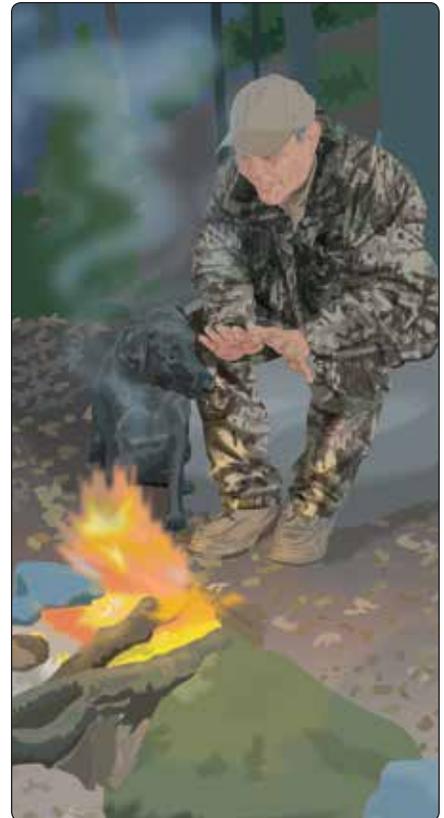
Thoughts on Ethics

“Laws are everything you must and must not do; ethics are those things you should and should not do . . .”

T. D. Carroll, former hunter
and education administrator

“A peculiar virtue in wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than by a mob of onlookers.”

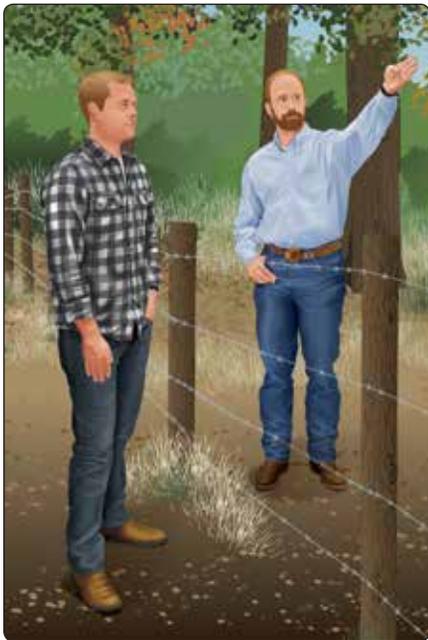
Aldo Leopold,
A Sand County Almanac



Take health and weather limitations seriously.

Remember...

Some limitations can be improved with a little effort. For instance, physical conditioning can improve strength and endurance and should begin long before the hunt. Archery practice will help you expand the range of your shooting.



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

Respect Your Equipment

It is essential to use equipment appropriate for the game you are hunting. Many problems in the field are solved easily by a knowledgeable and prepared bowhunter.

- Select a bow that is properly fitted to you and that meets the legal and ethical requirements of the game you plan to hunt.
- Ensure that the bow is in good operating condition. Make a habit of conducting a pre-hunt inspection of your equipment before each trip.
- Purchase arrows that match the draw weight and draw length (see Chapter 4) of your bow. Mismatching equipment can lead to poor accuracy, safety problems, and possible injury to you.
- Make sure that the arrows are straight and that their points are sharp and matched to the game you're pursuing.
- Tune your bow to the equipment (such as broadheads) you will be using for hunting.
- Assemble a repair and maintenance kit with spare parts and tools. Your local archery pro shop can recommend items for your kit and give instructions on basic bow maintenance.

Respect the Landowner

Most bowhunters occasionally hunt on private property. Treat the landowner's property as if it were your own. Maintaining a friendly relationship will ensure that you have a place to hunt from one season to the next.

- Ask permission before entering private land. Trespassing is usually a criminal offense—you can be arrested, prosecuted, fined, and even jailed. Getting permission to hunt on another person's land is both a law and a courtesy.
- Contact the landowner well in advance of your hunt. Obtain permission for companions who may come with you, and check with the landowner each time you plan to visit.
- Follow the landowner's restrictions on when and where you may hunt.
- Leave gates open or closed as you find them (or as requested by landowner).
- Drive only on existing roads approved for use.
- Don't walk across newly planted fields or areas with crops ready to harvest.
- Don't litter, build campfires without permission, or drive spikes or nails into trees that someday may be harvested for timber.
- Leave livestock undisturbed.
- Use portable tree stands or portable ground blinds rather than permanent structures, which are unsightly, may damage trees, and eventually become unusable because of weathering.
- Don't leave the remains of field dressing in places where it would be easy to view or smell. Bury, hide, or pack them out. Be especially diligent about this if the landowner has pets that might find a gut pile and drag parts of it home.
- Show your appreciation to the landowner by offering to share your game, helping with some chores, buying a small gift, or saying thanks in some other way.

Respect Game Animals and Resources

Respecting game involves following hunting laws, personal ethics, and the principle of **fair chase** in order to harvest wildlife humanely and maintain healthy populations. Responsible bowhunters:

- Take the animal with a well-placed shot in a vital area to avoid only wounding it.
- Ensure well-placed shots by knowing a maximum range for accurate shot placement for each animal hunted and staying within that range.
- Limit shots on big game to no more than 30 yards in cover and 40 yards in the open, which increases the likelihood of placing a shot in the animal's vital area. Most animals are shot at 15 yards, which should be your goal.
- Select the appropriate hunting tip or broadhead for the arrow, and make sure all broadheads are razor-sharp.
- Use stealth ability to enter and exit a hunting area without disturbing wildlife or the habitat.
- Learn the game's habits and habitat prior to the hunt. Observing and learning about all wildlife can be an enjoyable educational experience, as well as a way to build confidence needed for the hunt.
- Make every possible effort to recover wounded game.

Respect Your Hunting Companions

Bowhunting is a great experience to share with friends and companions. There are four key ways to maintain friendships on a hunt.

- **Shared Values:** Bowhunting companions must respect wildlife, landowner relations, the rules of the game, and other considerations. If your hunting companions do not share your respect for bowhunting, you would be wise to choose other partners.
- **Dependability:** Hunting companions must be able to depend on one another and trust each other's word. Agreements are important on such things as the time to meet for the hunt, the time to stop hunting, and what hunting areas are assigned to each hunter.
- **Courtesy:** Be considerate and thoughtful of others. Avoid wandering around the hunting areas and walking up on your companions.
- **Communication:** Thoroughly discuss all important aspects of the hunt. Maintaining good communication with companions should eliminate most problems.

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. One of the earliest models was the "Fair Chase Principle" established in the late 1800s by the Boone and Crockett Club, which was founded by Theodore Roosevelt. Those who violated club rules were expelled.

The rules were later expanded to ban shooting in fenced enclosures or using vehicles, airplanes, radios, boats, or electronic calling devices. Many states have made these rules into law.

The Unwritten Law

The "rule of first blood" establishes a fair way to determine who can claim an animal that has been shot by two hunters. Although it may not have legal grounds, its strength and enforcement lie directly with understanding and true sportsmanship by all responsible bowhunters. The first hunter to place an arrow in an animal's vital area, which draws enough blood to leave a trackable trail and thus has a good chance of bringing the animal to his or her possession, may claim the animal. Conversely, if the first hunter feels that the wound was superficial in nature and recovery of the animal was not likely, that hunter should give up claim to the game if another hunter brings it to the ground.



When transporting game, be sure to keep it covered to avoid offending non-hunters.

Remember...

When hunting away from home, keep a fresh, clean set of clothing for trips into town for gas, meals, or other supplies.

Respect Non-Hunters

Responsible bowhunters refrain from behavior that will turn people against hunting. You should not:

- Display vulgar or obnoxious bumper stickers or clothing slogans.
- Brag or try to start arguments with people who don't hunt or who oppose hunting.
- Use foul language in public places while wearing camouflage or other clothing that identifies the individual as a bowhunter.
- Go into public places wearing camouflage or similar clothing that has been doused with scent-covering odors.
- Wear bloody clothing or unnecessarily display dead animals in public.
- Be disrespectful of landowners, their livestock, or any private property.
- Purchase or drink alcoholic beverages, be intoxicated, or be impaired by drugs prior to, during, or after a hunt.

Bowhunting's Public Image

Speaking and Acting Responsibly

The way bowhunters speak and act in public makes an impression on non-hunters. Each hunter represents every hunter. Describing how "I stuck one but couldn't find it" in front of non-hunters is generally repulsive to them. Non-hunters can easily become anti-hunters based on the way bowhunters conduct themselves in public.

Bowhunters should be good ambassadors of their activity. Speaking knowledgeably will create goodwill. Be prepared with facts about the importance of bowhunting for the meat or as a valid wildlife management tool, the high recovery rate of wounded game, and the great safety record of bowhunting. When non-hunters receive the real facts about bowhunting, they are less likely to oppose it. Non-hunters' opinions or viewpoints may be changed by your conversation.

Positive Actions by Responsible Bowhunters

- Cover game animals while traveling from field to home.
- Clean up prior to going to town.
- Present a professional image when giving public presentations.
- Don't consume alcoholic beverages while bowhunting.
- Eliminate waste by properly caring for game meat from field to freezer.
- Take only tasteful photographs and videos of a hunt.
- Avoid confrontations with those who do not agree with your choice to bowhunt.
- Promote bowhunting's contributions to wildlife conservation and hunter education.
- Always make sure your actions are courteous, considerate, capable, and careful—the four C's of hunting.
- Understand why you hunt, and be able to tell others about the benefits of bowhunting.
- Support homeless shelters and soup kitchens by donating venison and other game.
- Emphasize the social values of bowhunting.
- Invite those concerned about wildlife to join you in conservation efforts.

The Bowhunter's Creed

In trying to adopt your own code of responsible behavior when bowhunting, it may be wise to consider the following statements which make up the National Bowhunter Education Foundation (NBEF) "Bowhunter's Creed."

I firmly resolve, without reservation, to uphold the following bowhunting principles.

- I will support the national, state, and provincial regulatory agencies and conservation organizations in the propagation and management of all game.
- I will, at all times, actively support and promote hunting with the bow.
- I will abide by current game regulations and at all times conduct myself as a sportsman so as not to bring discredit to the bowhunting community.
- I will respect all landowners' rights.
- I will assist all bowhunters in locating places to hunt, but I will not impose myself knowingly on another bowhunter.
- I will enjoy the challenge of the hunt and will study the habits of the game I hunt.
- I will use legal archery equipment and will search long and diligently to track down and recover any wounded game.
- I will not undertake or commit any act that could be considered as detrimental to the ancient and honorable art of bowhunting.

Some Hunting Statistics

- Total number of U.S. licensed hunters (all types of sporting arms) is over 13 million.
- 33% of all licensed U.S. hunters (all weapons) hunted with a bow at least once in the last two years.
- 57% of all bowhunting takes place on private land.
- 94% of bowhunters hunted either white-tailed deer or mule deer.
- Active bowhunters hunt with a bow an average of 19 days per year.

These were taken from the report from Responsive Management, "Bowhunting in the U.S., Results of a Recent Study."

You should be able to...

- Explain the importance of selecting the proper bow.
- Define “draw length” and “draw weight.”
- Explain how draw length and draw weight are determined for individual shooters.
- Describe common bow types, and identify basic parts using drawings or actual bows.
- Name the basic parts of an arrow.
- Name the types of materials used for arrow shafts.
- Name the different types of arrow points.
- Match arrow points to the game pursued.
- Explain the importance of matching arrows with your bow, and select an arrow that matches a given bow weight and draw length by using an arrow selection table.
- Define “spine” and “archer’s paradox.”
- Name essential accessories designed to prevent injury to the archer or bowhunter.
- Name optional bowhunting accessories, and state the purpose of each one.

Matching Your Bow with Your Physical Capabilities

Draw Length and Draw Weight

First-time bowhunters should be measured for their “draw length” and “draw weight” to help with selecting a bow. The staff at a professional archery shop will help you take these measurements.

- **Draw length** is how far an archer draws the bowstring. While a short person may pull the bowstring back 23 inches, a taller person may pull it 30 inches. For optimum performance, the bow must be fitted to the proper draw length.
- **Draw weight** is determined by the ability of the archer to pull a certain amount of weight on the bowstring. Younger shooters may draw 25 to 35 pounds; adults may pull 50 pounds or more. The bow you select must match your strength.
 - Don’t choose a draw weight that’s too heavy. You should be able to fully draw the bow comfortably while holding your bow arm parallel to the ground and pulling straight back. If you have to raise your bow arm, you’re trying to pull too much weight.
 - In general, use the heaviest draw weight you can shoot comfortably and accurately in all weather conditions, shooting positions, and hunting situations (blinds, tree stands, still-hunting, and stalking).

The Bow

A bow’s general function is to store energy in a limb system and transfer the energy to an arrow when the string is released. While modern bows can shoot arrows up to 400 yards at speeds exceeding 200 miles per hour, the bow is a short-range hunting tool. Depending on the circumstances, the maximum distance is 30 to 40 yards; at that range, it’s common for an arrow to pass completely through an animal. To ensure accuracy, most shots are taken at 15 yards.



First-time bowhunters should be measured for their “draw length.”

Bow Selection

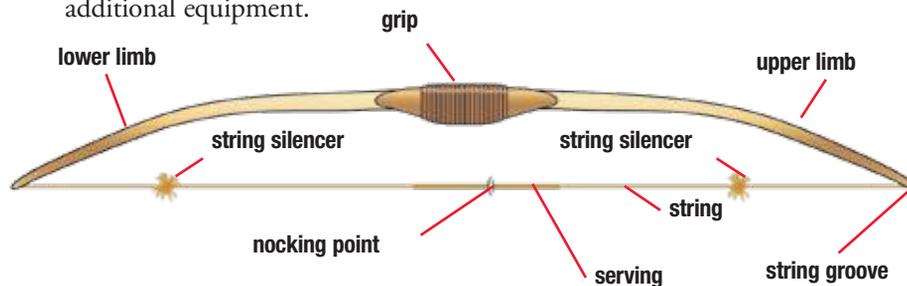
Proper bow selection and fit are essential for maximum accuracy and performance when bowhunting.

When purchasing a bow, it’s best to consult a reputable retailer in the business of selling archery and bowhunting products. The first decision you need to make is whether you need a left- or right-handed bow. This decision is based primarily on your dominant eye (see “Dominant or Master Eye” sidebar). For example, if your right eye is dominant, you would be best served by a right-handed bow, which allows you to pull the string with your right hand. Before buying, it’s best to test the equipment and experiment with various bows and other tackle.

Three Common Bow Types

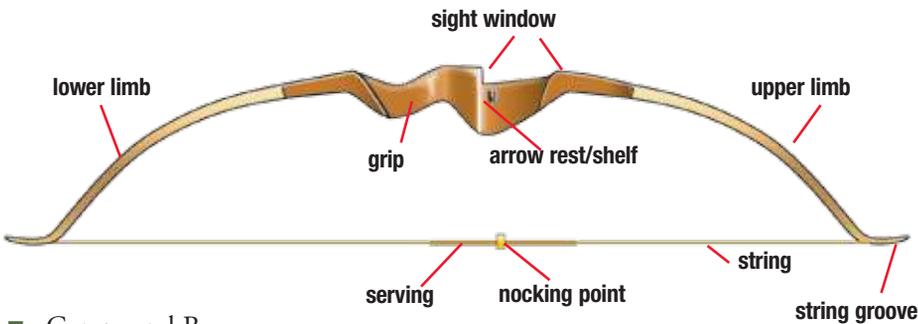
■ Longbow

- Considered the “traditional” bow, the longbow has long, nearly straight limbs that form an arc when strung.
- This is the bow used by those interested in traditional shooting with minimal additional equipment.



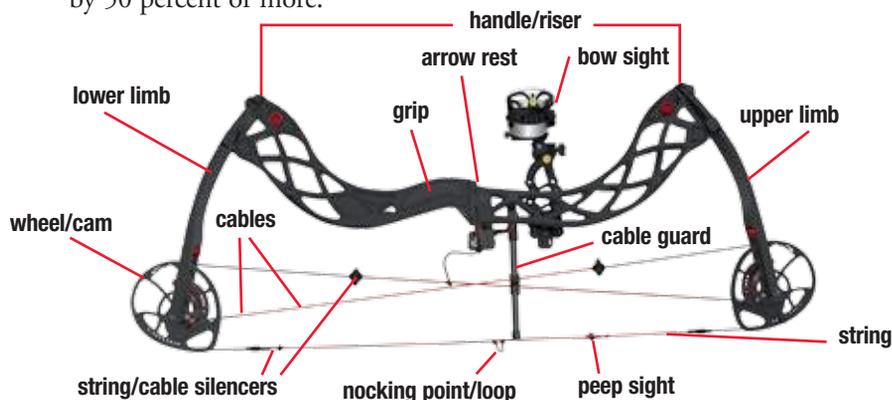
■ Recurve Bow

- Also considered a “traditional” bow, the limbs are shorter than a longbow and curve back away from the belly of the bow, which can provide more power in a shorter bow than the longbow.
- The recurve also features a “pistol-style” grip that adapts well for use with a bowsight or other accessories.
- This bow is a popular choice because it’s smooth, quiet, and fast-shooting.



■ Compound Bow

- By far, the compound bow is the most popular bow for hunting and target shooting.
- Many styles are available, but they all work basically in the same manner.
 - Wheels and cams attached to the limbs and bowstring efficiently store energy as the bow is drawn to reduce the holding weight and make it easier to hold at full draw.
 - The resulting benefit of the bow’s design is that it can reduce draw weight by 50 percent or more.



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.
4. Bring your hands slowly to your face, keeping sight of the object through the opening; the opening will naturally come to your dominant eye.
5. If you're not sure which eye is dominant, close one eye at a time. The weak eye will see the back of your hand; the dominant one will be focused on the object in the triangle.

Remember...

There are minimum draw weights that are typically required to hunt big game. Consult your local hunting regulations.

Choosing a Compound Bow

Many compound bows are adjustable for both draw length and draw weight. A proper choice would be a bow that could be adjusted for more draw weight as you become stronger through practice. Younger shooters benefit from a bow that allows them to adjust the draw length and draw weight as their arms grow longer and stronger.

Arrow Parts



The Arrow

A modern arrow can be described as the delivery system for the arrow's point. Arrows have four parts: the shaft, fletching, the nock, and the arrow points.

The Shaft

The body of an arrow is called the shaft. Arrow shafts are made from wood, aluminum, carbon-fiber, fiberglass, or a combination of aluminum and carbon-fiber.

■ Wood

- These arrow shafts often are made from cedar, pine, or spruce.
- Finished arrows are fletched with feathers and are sometimes brightly painted (referred to as “dipped and crested”) in matched dozens.
- The shafts are usually tipped with glue-on target or hunting points. However, they may have a glue-on adaptor that accepts a screw-on practice tip or broadhead.
- Wooden arrows are still used by many archers who shoot a traditional recurve bow or longbow.

■ Tubular Aluminum

- Made from specially formulated alloys, these shafts are shaped into a wide variety of sizes, colors, and spines for virtually every need.
- The hollow shafts are lightweight and can be manufactured to precise specifications.
- Most aluminum shafts are equipped with internal bushings, called inserts, that can accept screw-in points.
- These shafts may be fletched with feathers or plastic vanes, depending on the archer's personal preference.

■ Tubular Carbon-Fiber

- The three types of carbon-fiber shafts are 100% carbon, carbon composite, and carbon/aluminum.
- Fast and accurate, this design represents the leading edge of modern arrow shaft technology.
- This shaft is extremely strong and lightweight.
- Carbon-fiber shafts are available in a variety of diameters, each with specific options for inserts and points.
- Carbon-fiber shafts may be fletched with feathers or plastic vanes, depending on the archer's personal preference.

■ Tubular Fiberglass

- Inexpensive and durable, these shafts possess adequate straightness for non-hunting archery shooting fun.
- They are good for beginning archers, clubs, schools, and low-poundage equipment.

■ Solid Fiberglass

- Commonly used in bowfishing, these shafts are extremely durable, heavy, and deep-penetrating for shooting carp, gar, and other rough fish.
- Attached to a bowfishing reel by high-strength line, the bowfishing reel is mounted on the bow near the sight window.
- These shafts may be fletched with a “slip-on” style of plastic fletching because of their exposure to water. Many times, however, these arrows are not fletched because they fly such a short distance.

Fletching

Fletching is made up of three or more vanes or feathers. One of the fletches will be a different color and is called the “cock” or “index” fletch. The remaining fletches are referred to as the “hen” fletching.

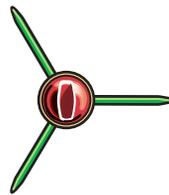
Fletching on an arrow shaft stabilizes the shaft during flight by causing it to spin as it leaves the bow, just as a quarterback puts a spiral spin on the football as he passes. Spinning keeps the arrow on its flight path and preserves speed, accuracy, and ultimately, impact power.

Generally speaking, the fletching profile needs to be wider than the cutting diameter of the broadhead being shot, or arrow flight could be affected. It is recommended also that 4- to 5-inch fletching be used to compensate for broadhead size and weight.

There are several types of fletching.

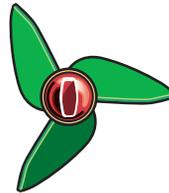
■ Offset

- This type of fletching may be used for both hunting or archery target shooting.
- Three fletches are glued symmetrically onto the shaft 120 degrees apart.
- Some archers prefer four fletches per arrow attached 90 degrees apart.
- The ends of the fletches are offset by a 1.5- to 2.5-degree angle.



■ Helical

- This is another popular type of fletching for both hunting or archery target shooting.
- Fletches are glued onto the shaft in a slight spiral (3-degree) fashion to provide more spin and greater in-flight stability.
- Fletches also may be glued on at a slight diagonal to the long axis of the arrow shaft.



■ Flu-Flu

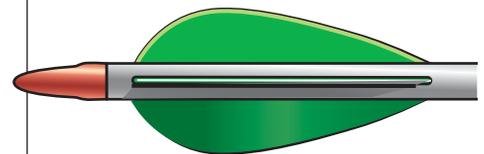
- There are two methods for attaching turkey wing feathers for this type of fletching.
 - A single, uncut turkey wing feather is wrapped around the arrow shaft, glued in place, and picked apart to form a bristle appearance.
 - Three to six large, uncut feathers are glued onto the arrow shaft in an offset or helical manner.
- Flu-flu arrows do not fly very far because of the increased resistance of the oversized fletchings.

■ Fletching Material

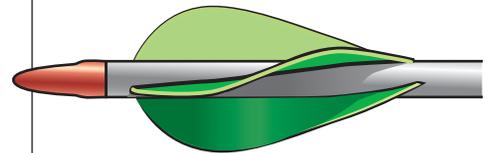
- **Plastic Fletching:** This fletching is made from the soft plastic or vinyl and is often called vanes. Vanes are available in many sizes, flexibilities, and colors; are perfectly matched; and are easily glued onto wood, aluminum, or carbon-fiber shafts using a fletching tool called a fletcher or fletching jig.
- **Feather Fletching:** This fletching is made from the wing pointer feathers of a turkey. The pointer feathers have a natural curvature distinct to the right and left wings of the turkey.
 - You may use all left-wing or all right-wing feathers on your arrows, no matter which one of your eyes is dominant.
 - You must use the proper left-wing or right-wing clamp to match your left-wing or right-wing feathers.
 - A feather-fletched arrow will use either all right-wing or all left-wing feathers, never a mixture.

Types of Fletching

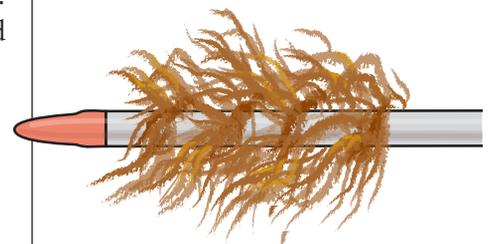
Straight Fletching



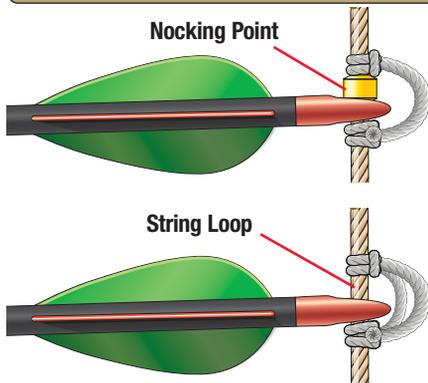
Helical Fletching



Flu-Flu Fletching



The Nocking Point



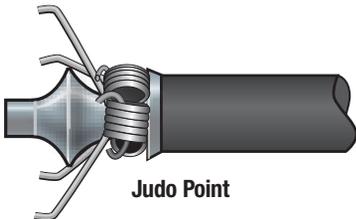
Types of Arrow Points



Bullet Target Point



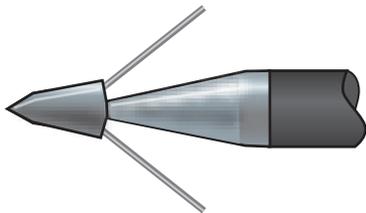
Field Target Point



Judo Point



Blunt Point



Bowfishing Point

Remember...

While it is important to have the right equipment, technology does not replace good hunting skills.

The Nock and the String Loop

- The nock of an arrow is made of plastic and serves as the attachment point to place an arrow on a bowstring. Snap-on nocks lightly snap onto or grasp the bowstring to prevent unintentional separation of the arrow from the bowstring.
- Prior to shooting, check nocks for cracks, nicks, or any other damage. A damaged nock may not absorb the energy from your bow properly, causing it to “dry fire.”
- A nocking point (nock locating device) is most popular on recurve bows, longbows, or bows that are not using a release aid for shooting. It can be as simple as a small wrap of string or as elaborate as a rubber and brass band pinched onto the string at the appropriate spot.
- A string loop is often used as the nocking point when archers are using a release aid and are shooting short axle-to-axle compound bows.
- In order to shoot consistently, the location where the arrow joins the bowstring must be the same with each shot and with all shafts. Proper placement of the nocking point or string loop is an important part of tuning a bow for the best arrow flight and accuracy.

The Arrow Points

The type of arrow point defines its function. An arrow can be fitted with a variety of points designed for specific tasks, from target practice to big game hunting. The same dozen arrows, when properly matched to your bow, can be tipped with practice points before hunting season and later tipped with big game hunting broadheads that shoot similarly to the practice points.

Arrow points are available in numerous styles, shapes, and weights; and each is designed for a specific purpose.

- Bullet and Field Target Points
 - Are designed to be shot into bag targets, foam targets, or grass-type targets.
 - Can be matched to the weight of big game broadheads that a hunter plans to use during hunting season. Practicing with weight-matched target points minimizes bow sight adjustments before hunting.
- Judo (Grabbing) Points
 - Are designed for field practice, and used while roving under simulated hunting conditions and selecting targets such as leaves, stumps, or sticks.
 - Have small, protruding wire springs (grabbing hooks) on the arrow point to prevent the arrow from disappearing when shot into ground cover.
 - Weigh the same as most popular big game broadheads.
- Blunt Points
 - May be used for small game animals such as rabbits and squirrels.
 - Are flat instead of pointed and made from rubber, plastic, or steel.
 - Kill by shock.
 - Many blunt points are made from rubber or plastic. They flair out at the tip to form a much wider striking surface, which delivers more shock to the target.
 - Used with flu-flu fletched shafts for squirrel hunting.

■ Bowfishing Points

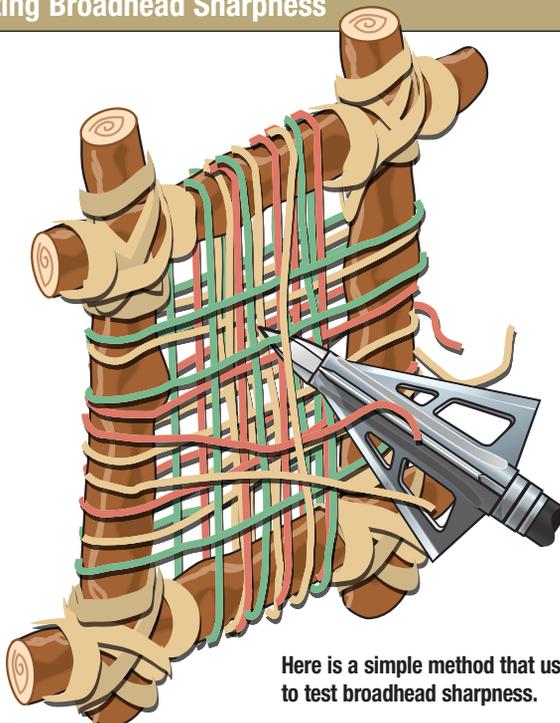
- Made of steel and designed to penetrate the hard scales of carp, gar, and other rough fish.
- Equipped with a strong barb to allow retrieval of the fish.
- Usually feature screw-off or retractable barbs for easy removal from the fish.

Broadheads

Broadheads are primarily used for hunting big game. There are three basic types of broadheads: fixed blades, removable blades, and mechanical (expandable) blades. All broadheads, regardless of type, must be sharp, durable, and matched to your equipment and the size of game being hunted. Blades must be sharpened after each practice and prior to going into the field to hunt. A “cut-on-contact” broadhead (such as those shown in the first and third illustrations at the right) is recommended for lower poundage bows.

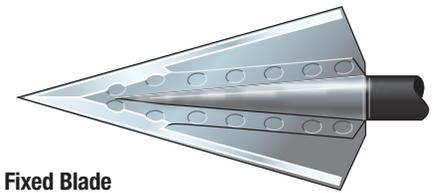
- **Fixed Blades:** Used by many traditional-style bowhunters and by bowhunters who are shooting bows with lower draw weights, these broadheads:
 - Are designed to glue directly onto the arrow shaft *or...*
 - Have screw-in design to fit most screw-in type **ferrules** that can be used with adaptors placed on the outside or inside of the arrow shafts.
- **Removable Blades:** This broadhead is designed so that the blades can be replaced on the ferrule. There is no need to discard the entire broadhead if only the blades are damaged.
- **Mechanical or Expandable Blades:** Blades are retracted close to the ferrule before the shot. Upon impact, the blades expand to expose the cutting edges. These blades are recommended for use only with bows rated 50 pounds or more because most mechanical heads require additional energy to open upon penetration.

Testing Broadhead Sharpness

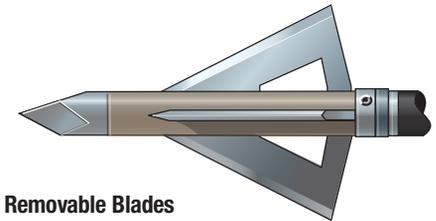


Here is a simple method that uses rubber bands to test broadhead sharpness.

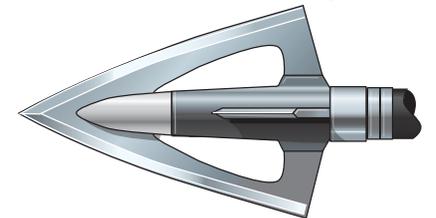
Types of Broadheads



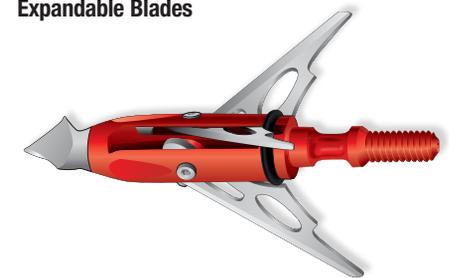
Fixed Blade



Removable Blades

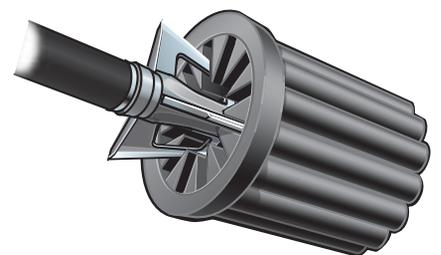


Expandable Blades



ferrule

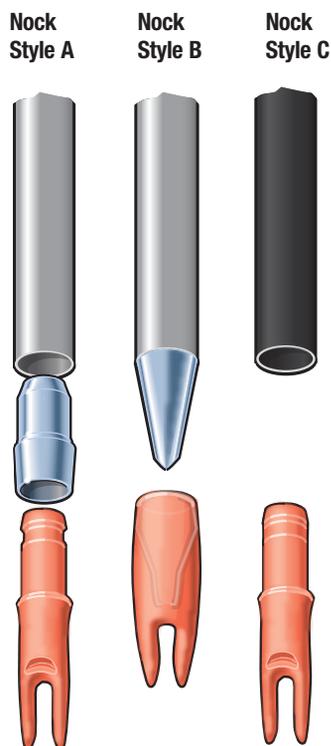
The center portion of a broadhead where the blades attach



Broadhead Wrench

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.

Styles of Arrow Shaft Nocks



Style A: Two-piece arrow shaft nocking systems include a shaft insert (bushing) and nock that are made specifically for several types of arrow shaft materials (such as carbon-fiber, aluminum, or aluminum/carbon-fiber combination).

Style B: This one-piece arrow shaft nock is made to fit directly over the swaged shaft.

Style C: Called a push-in or insert nock, this popular type of one-piece nock is inserted into the end of the arrow shaft and fits tightly inside the shaft so that glue is not needed.

Remember...

Some manufacturers label the shaft size using bow weight, such as 30-50 pounds, while others use their own code system. Always check with the specific manufacturer to select arrows that are the correct size.

Matching Arrows With Your Bow

Arrows must be matched with your bow. Mismatched arrows may not fly correctly or accurately. Good arrow flight can be obtained if the balance point on a completed arrow (a fletched arrow with the point attached) is located 10-16% of the distance forward from the center of the arrow toward the point. Arrows that are too lightweight for your bow may cause you to essentially “dry fire” your bow.

Spine and “Archer’s Paradox”

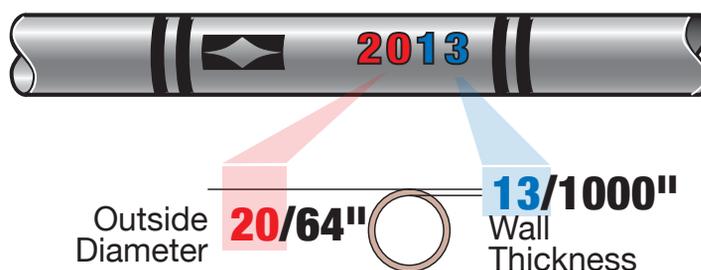
Every arrow shaft has a degree of stiffness called spine, which is its resistance to bending. Bending, known as “archer’s paradox,” occurs when an arrow is released from the bow. The forward thrust of the string causes the shaft to bend in one direction and then react in the opposite direction as it speeds downrange.

Spine strength must be matched to bow draw weight. If your arrows are too lightly or heavily spined for your bow, the “archer’s paradox” movements will be extreme, resulting in poor arrow flight and loss of accuracy. (It’s better to err on the stiff—too heavily spined—side.) Arrow manufacturers publish selection charts that match bow weights to proper arrow spine. Your local archery shop will help you match your gear.

Arrow Shaft Length and Labeling

Arrow shaft length also must be matched to your bow. Drawing an arrow that’s too short is dangerous because it may slip off the bow, while an arrow that’s too long adds unnecessary weight and weakens the spine of the arrow. Arrow tables can help you make the right selection.

Aluminum arrows are labeled by their outside diameter and the wall thickness of the shaft. For example, if an arrow is labeled 2013, the arrow has a 20/64-inch outside diameter and a 13/1000-inch-thick shaft wall. A thicker shaft provides greater stiffness.



Aluminum and carbon-fiber combination arrows are measured by spine deflection. The smaller the number, the stiffer the spine. For example, 3-60/340 means three wraps of carbon-fiber, with an aluminum core tube diameter of 60, and a spine stiffness rating of 340.

Carbon arrows also are labeled to indicate their spine deflection. The most common spine sizing values are 340, 400, and 500. As with combination arrows, a smaller number means the arrow has a stiffer spine. Therefore, a value of 340 indicates a stiffer and heavier spine while a value of 500 indicates the lightest and most flexible spine.



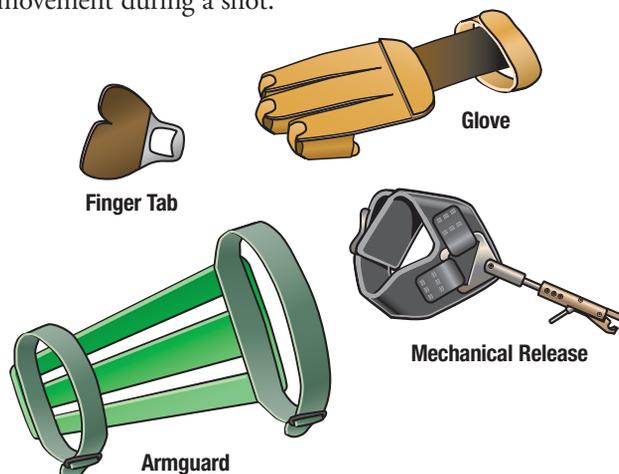
Checking Alignment

For the greatest accuracy, make sure arrow points are aligned properly with the arrow shaft. This is critical with all styles of broadheads. Check all broadheads for alignment before shooting at an animal.

Arrows shaft inserts also must be properly aligned. Arrow shafts with a broadhead attached can be “spun” and observed from the point end for “wobble.” Simply place an arrow on a desk or counter with the broadhead extended over the edge and roll it across the surface. If the shaft appears to wobble rather than spin freely, check the alignment of the shaft’s aluminum or carbon-fiber insert. It must be aligned exactly in the center of the shaft, or the arrow will not spin smoothly.

Accessories

- **Armguard:** A covering that keeps clothing clear of the bowstring and protects the arm holding the bow.
- **Arrow Rest Assembly:** Supports the arrow to assist bow tuning and improve arrow flight.
- **Bow Sights:** Increase accuracy by assisting the shooter with a specific point of aim on an animal’s vital area.
- **Cable/String Silencer:** Decreases noise of the bowstring upon release of the shot.
- **Finger Protection:** A string guard, tab, glove, or mechanical release that allows the hunter to pull, hold, and release the string without chaffing fingers.
- **Kisser Button:** Attaches to the bowstring to improve accuracy by giving a consistent anchor point each time the bowstring is drawn.
- **Limb/Accessory Silencer:** Decreases noise of the bow upon release of the shot.
- **Peep Sight:** Attaches to the bowstring and acts as a rear sight at full draw to improve accuracy.
- **Quiver:** A shatter-resistant cover or hood that protects the shooter and others from accidental contact with arrow points and provides safe transport of arrows in the field. There are two basic types of quivers.
 - **Back Quiver:** Worn on the back; it may be separate or worn as part of a backpack.
 - **Bow Quiver:** Attaches to the bow; many types are detachable while hunting.
- **Stabilizer:** Reduces bow recoil and increases the mass weight of the bow to lessen movement during a shot.



Remember...

If the bowstring hits your arm regularly when you release, check your wrist and elbow position in relation to the bowstring. In addition, the bow’s draw length may be too long, or you may be gripping the bow incorrectly.



Bow Quiver

You should be able to...

- Describe the importance of proper clothing, including camouflage.
- List the six basic steps for shooting with a bow and arrow, and demonstrate them.
- Explain the importance of a consistent anchor point and proper sight picture.
- Describe how to sight-in a bow.
- Describe how to tune a bow.
- Name some common bowshooting errors.
- Describe ways to practice for bowhunting.
- Name types of distance judging methods, and estimate distances to several life-size animal targets with and without a range finder.
- Name the four senses used to read game sign.

Staying Dry in Wet Weather

For wet weather conditions, several types of waterproof or water-repellent garments are available.

- Coated nylon or plastic is certainly waterproof, but it will not let perspiration escape. It won't be long before the inside of your rain gear is wet from condensed perspiration.
- Although it's more expensive, rain gear with a breathable membrane, such as Gore-Tex, is a better choice. It prevents rain from entering the garment but allows perspiration vapor to pass through to the outside. Another advantage is that the fabrics are available in camouflage with soft-nap finishes that reduce noise. Hats and gloves are also available.
- A traditional poncho is a poor choice for a bowhunter. It's nearly impossible to shoot while wearing this type of garment.
- Quality rain gear may be expensive, but it's money well spent if it keeps you comfortable during long hours of waiting on a stand.

Preparing for the Hunt

To help you prepare for the hunt, this chapter covers:

- Assembling the right clothing and equipment
- Perfecting your archery skills
- Learning about your quarry and the hunting area

The Well-Dressed Bowhunter

Besides your bow and arrows, clothing is your most important consideration. Your clothing not only must protect you from the elements and rough terrain, but it also should meet these special requirements of bowhunting. Bowhunters who are comfortable and remain motionless will see more game than those who are restless because they are wearing uncomfortable clothing.

- **Low Noise:** Clothing must make as little noise as possible because bowhunting is done in closer proximity to game than firearm hunting. Wool, brushed cotton, or new soft-nap synthetic clothing minimizes fabric rustling.
- **Proper Fit:** Clothing that's too tight will restrict movement when drawing a bow. Clothing that fits too loosely may catch a bowstring as you release.

The Invisible Bowhunter

One of the challenges of bowhunting is getting close to the game. Ideally, you should be undetectable to your quarry. Camouflage can help. Wearing head-to-toe camouflage clothing will break up your human shape and make movement less noticeable. Select patterns that have a good contrast between light and dark colors.

(Be sure to check your local regulations for the mandatory use of daylight fluorescent orange during hunting season.)



Staying Warm in Cold Weather

Because bowhunting is often done in cold weather, special consideration must be given to staying warm.

- Dress in several layers of clothing to provide insulation. Also, layers can be added or removed to regulate body temperature.
- Start with a layer of synthetic underwear designed to wick moisture away from the skin, which will keep you drier and warmer.
- Select outerwear that is suitable for the weather.
 - Many types of cold weather synthetic fabrics, such as fleece, are available. Synthetics are quiet, are water-resistant, and add warmth without weight.
 - Wool clothing also is an excellent insulator, even when wet. Wear it over synthetic undergarments to eliminate the itchy feeling of wool.
 - Goose-down insulation is very lightweight and an excellent insulator. However, unless treated, down garments lose their insulation qualities when they are wet.
- Be sure to cover your neck and head since a large amount of body heat is lost through these parts of the body. A neck gaiter or turtleneck pullover will reduce heat loss. Insulated hats will reduce heat loss from the head. Avoid hats with long bills that will get in the way when you draw your bow. Water-repellent hats are a wise choice if wet weather is expected. In extremely cold weather, insulated hoods on hunting coats or pullover-type caps will provide the best protection.
- Choose footwear that is sturdy and suitable for your hunting conditions.
 - Many bowhunters prefer rubber boots that will help eliminate human scent from footwear. When purchasing boots, be sure to try them on with the type of socks you plan to wear when hunting. While you may have to purchase boots a size larger to accommodate more layers, keep in mind that loose boots can cause blisters.
 - For extremely cold weather, insulated boots are available. Find a size that fits snugly but allows you to wiggle your toes, which will help keep your feet warm. Waterproof boots, such as those with Gore-Tex liners, are ideal in wet conditions.
 - Wise bowhunters always carry one or two extra pairs of socks. Wet socks in cold weather make a hunter very uncomfortable.



Boots: Consider Comfort and Safety

Boots that fit poorly or that have improper soles or treads can cause problems. Soft-crepe boot soles with little or no tread are exceptionally quiet if you decide to still hunt. However, while these soles will allow rocks to bite into their soft surface and give you good traction on rough terrain, they can be slippery in dry leaves or on moss, thereby causing a fall. Make sure your boots—and all of your equipment—are well-suited for the weather and terrain you'll encounter.

Camouflage Gear

- Camouflage garments include shirts, jackets, pants, hats, gloves, boots, belts, head nets, and rain gear.
- Most bows, arrows, quivers, and other equipment are available with camouflage finishes.
- If you prefer not to wear camouflage head nets or gloves, camouflage face "makeup" can be applied directly to the skin.
- Pay close attention to any shiny items on your clothing, such as a belt buckle. They usually can be dulled by a permanent black marker. Also check for any bright, reflective surfaces on your equipment, including the shiny broadheads on your arrows. This attention to detail will help you have a successful hunt.



Sighting-In

Sighting-in is the process of adjusting your sights to hit the bull's-eye on a sight-in target consistently.

- Begin by shooting a minimum of five arrows at a standard target from 10 yards away. Even though you're aiming for the bull's-eye, hitting it isn't the key. The goal is to place a grouping of arrows anywhere on the target. A grouping indicates that your stance, anchor point, aim, sight picture, release, and follow-through are consistent. Tight groups also show that you are consistent in your attempts to hit your aiming spot.
- "Follow the arrow" when adjusting your front sight. That is, if your arrows are grouping below and to the right of the bull's-eye on the target, move your front sight down and to the right.



Adjust bow sight down and right to bring point of impact to center of target.

Correctly sighted-in for this particular range



- If you have difficulty placing a grouping, return to your archery pro shop for further assistance or seek the advice of a more experienced archer.

Basic Steps for Shooting a Bow

- **Assume the Shooting Position:** Stand at a right angle to the target with your back foot slightly forward and your feet shoulder-width apart. The stance should feel comfortable and balanced.
- **Nock the Arrow:** Nock an arrow while pointing and holding the bow in a safe direction—toward the target. The nock of the arrow is placed at the nocking point, which is a crimped brass or rubber ring or a marked area, on the bow string. The nocking point seats the nock in the same location on the string every time you shoot.
- **Draw and Anchor the Bow:** Follow these steps.
 - Grip the bow handle or riser, but don't squeeze it.
 - Present the bow to the target.
 - 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 is the position where your shooting hand consistently comes to a normal rest on or near your face. To ensure accuracy, make sure your bowstring hand comes to the same point each time you shoot.
- **Aim:** Instinctively "shoot where you look" or use bow sights to help you align your arrow with the target. If you use sights, you must have the proper sight picture—the correct alignment of target, front sight, and rear sight—prior to releasing an arrow.
- **Release the String:** Once you have the proper sight picture, quickly relax your fingers or trigger the mechanical release in a smooth, confident manner.
- **Follow Through:** After releasing the arrow, follow through by focusing on the sight picture you saw immediately prior to the shot.



Preparation Means Practice

There are no instant bowhunters. Learning to hit your target accurately with a bow and arrow requires practice. The more you practice, the better you'll shoot.

Basic Target Practice

- **Safety:** Make safety your first consideration when practicing with your bow. Always make sure your target is in a safe practice area, which includes a safe background. Don't practice in a location if there is even a remote possibility that your arrow could escape the area and endanger people, pets, buildings, or property. For a nominal fee, many archery shops offer indoor shooting, which is a great way to practice year-round.
- **Proper Form:** All the practice in the world won't help if you shoot with poor form. Seek professional assistance at your local archery pro shop. It's not too difficult to find an instructor to teach you the correct shooting form.
- **Shooting Distance:** Start your practice sessions with close-up bull's-eye targets. As your skill improves with closer targets, you can work farther away. Over time, you'll determine your maximum range for accurate shooting.
- **Frequency:** The quickest way to build accuracy and confidence is with regular target practice. It's only after you become a competent archer that you can make the transition to bowhunter.

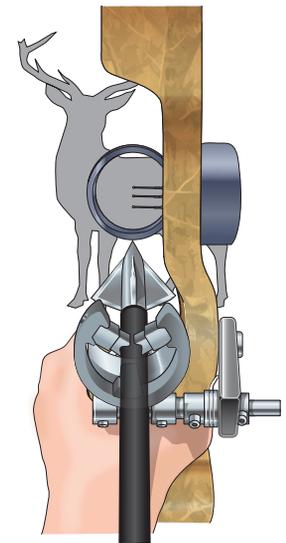


Tuning Your Bow

Tuning your bow is the process of adjusting the nocking point up or down and adjusting the arrow rest assembly from side to side to get stable flight from the arrow. If a bow isn't properly tuned, an arrow may fishtail (move from side to side) or porpoise (move up and down).

Bow-Shooting Errors

- Poor follow-through
- Inconsistent anchor point
- Poor release, such as jerking on the string, flinching, or twitching, often caused by "target panic" or "buck fever"
- Tight finger grip on the string
- Muscle fatigue from holding and drawing, or tension from nervousness
- Over-gripping, squeezing, or jerking the bow grip
- Bending the arm of the bow hand
- Seeing the wrong sight picture
- Lack of focus on the sight picture



Use bow sights to help you align your arrow with the target.

Remember...

The key to shooting accurately is to perform the same action each time a shot is taken, with the same result.

Stump Shooting

Select random objects, such as dead stumps or clumps of dirt, for practice shots. To gauge the yardage, pace off the distance to each target.

Yukon Roving

With a group of hunting companions, place 3-D animal targets in a variety of locations in a hunting area. Each person takes one shot at each target—you and your friends take turns selecting the location and distance. You score five points for a hit in the vital area and lose 15 points for a hit anywhere else on the animal. There is no penalty if a shot misses or is not taken. Long shots and shots through heavy brush or vegetation should not be taken because you are trying to simulate responsible bowhunting scenarios.

Advanced Archery Practice for the Hunt

- Begin practicing months before bowhunting season. Top bowhunters practice year-round. The length of the practice session should increase as the hunting season approaches.
- Locate a safe place to sight-in and practice with target points that match the size and style of broadheads you expect to use for hunting.
- Work with your equipment. Tune the bow until each arrow flies straight and true.
- Resolve all equipment problems before you hunt. If your target arrows don't shoot well at the practice range, your broadheads won't shoot any better in the field.
- Double your benefits by practicing on full-size 3-D animal targets. Not only can you practice hitting what you're aiming at, but you also can visualize the primary aiming zone and the vital organs that lie inside. This process helps you "tune up" before the hunting season. (As an alternative, you can use full-size paper animal targets that are available at most archery shops.)
- Practice from unknown distances. One of the difficulties many bowhunters encounter is estimating distances to a target. Practice sessions tend to take place at known yardages with sight pins set to those distances. Practicing without marked yardages will help you learn how to estimate distances in the field.
- Try practice shots from a sitting or kneeling position, and especially from the elevated position you'll use in a tree stand.
- Using blunt- or Judo-type points, practice in the field on dead tree stumps or other objects. This important field practice is also good for improving your ability to estimate distances to targets.



- Practice until you consistently hit where you're aiming.
- Establish your "zone of confidence"—the range at which you are assured of making vital and trackable hits on big game animals.
- Practice in the clothing you plan to wear when you hunt. Loose or bulky clothing may cause you to shoot differently.
- Continue practicing until you become confident in your shooting ability. Then you're ready for the hunt.

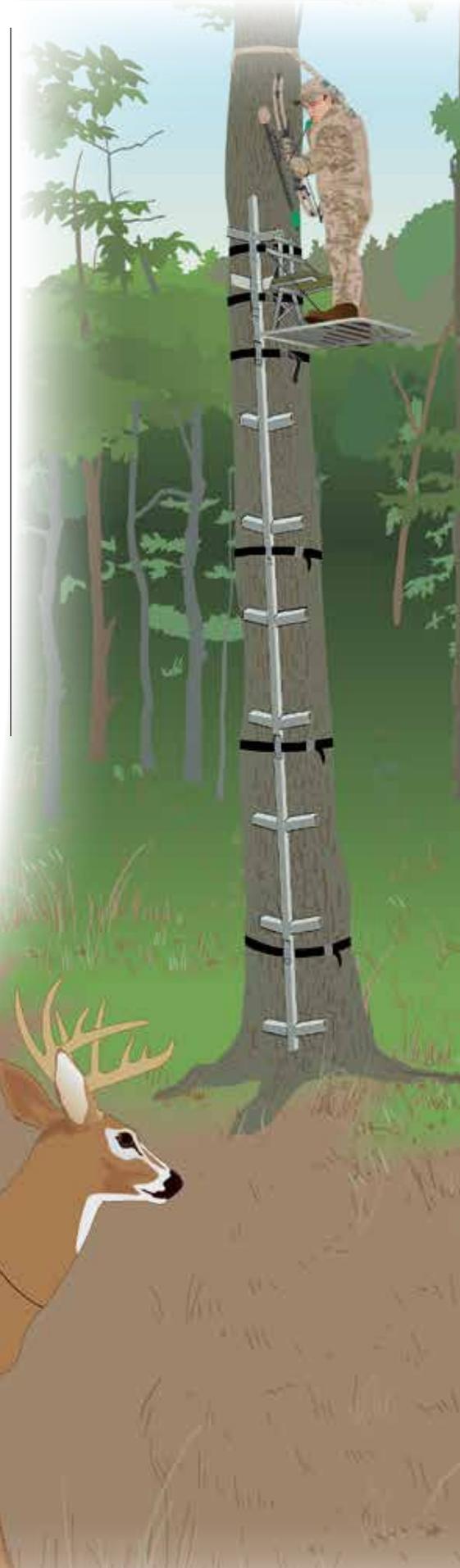
Judging Distances

Judging distances is critical for correct shot placement in bowhunting because arrows have a short trajectory.

- Judging distances is an acquired skill that you must practice continually. Optical illusions, perceptual expectations, "buck fever," and weather conditions can affect your ability to judge distances correctly.
- Judging distance without using accessories, such as range finders, is a matter of vision, preference, and practice.
 - An Oregon study showed that adult hunters, especially men, suffered from a high percentage of vision problems, ranging from color blindness to visual acuity. These conditions affect a hunter's ability to judge distances and can hamper the performance of other hunting techniques, such as following a blood trail.
 - Be sure to have your vision checked and corrected to prevent problems in the field.
- A responsible bowhunter learns to judge distances to a variety of game animals correctly to within 90 to 95 percent of the actual distance.

Distance Judging Methods

- **Actual Distance Judging:** Follow this procedure.
 - Ask a companion to set out life-size, 3-D models of game animals in 5 to 10 spots between 5 and 50 yards from a single observation point and to measure the actual distance to each model.
 - Stand at the observation point, and estimate the distances to the models; then compare your answers to the actual distances. The difference between your estimate and the actual distance is your score for that target. Total your score for all targets.
 - Add up the total actual yardage to the targets, and divide your total score by the total actual yardage.
 - Subtract the result from 100% to find the percentage you estimated correctly. Most beginners do not score above 75%. Your goal is to practice this method or use other estimation methods to increase your accuracy to more than 90%.
- **Markers:** When hunting from an elevated stand or ground blind, you can pace off the distance to permanent markers, such as stumps and trees, to get an accurate measure to spots that offer potential shots.



Distance Judging Exercise

Results of estimating distance to life-size, 3-D animals at seven different distances:

Your Estimate	Actual Measure	Score
8	10	2
23	28	5
45	37	8
30	24	6
15	19	4
50	42	8
23	20	3
Total	180	36

$$36/180 = 0.20 \text{ or } 20\%$$

$$100\% - 20\% = 80\%$$

Ratings	
Poor	Under 70%
Fair	70-80%
Good	80-90%
Excellent	90-100%



- **Subtending:** Subtending is determining yardage by comparing the relationship between a distant animal and your fingers or a part of your bow. For example, a normal-size deer in your location may be two-thirds as big as your bow's sight window at 10 yards, half as big as the window at 20 yards, and one-third as big at 30 yards.
- **Range Finders:** A range finder is an accurate distance measuring tool used by many bowhunters. The devices vary in design and cost. Generally, the better the quality, the greater the accuracy when used correctly. However, most bowhunters predetermine distances in an area where they anticipate spotting game, which allows them to concentrate on taking a shot when game arrives, rather than making calculations. Usually there isn't enough time to range an animal when it appears, and most bowhunters choose to avoid extra movement in the presence of game.

Preparing To Hunt Your Quarry

One of the most critical steps in preparation is educating yourself about the game you're hunting. Understanding your quarry will increase your success and add to the enjoyment of the experience.

Study Your Quarry

A prepared bowhunter will study the quarry and learn about the animal's habits, food preferences, habitat, and other characteristics. Knowledge of the animal's anatomy will provide an aiming point in the vital area.

Knowing game sign is also critical. Game sign provides clues that help you locate game. Sight, hearing, smell, and touch all come into play when reading game sign.

Visual Signs

- Tracks
- Scrapes or rubs made by head, antlers, or hooves
- Scat (droppings)
- Terrain that may shelter or attract animals
- Trampled vegetation
- Hair or feathers
- Trails
- Browse (roughly torn twigs, buds, or leaf endings)

Auditory Signs

- Bleating or calling signs
- Calls from other animals, such as deer snorts

Scent Signs

- Musk or rut odors
- Urine

Feel Signs

- Checking the freshness of tracks or other visual signs

Scout the Hunting Area

Scouting an area prior to the hunting season is another important part of pre-hunt preparation.

- Topographic maps indicate features such as water, fields, and wooded areas.
- Careful, slow travel in the area may identify game trails, bedding areas, water-holes, and other game sign that will be extremely valuable when hunting season opens.
- "Stump-sitting" is a great way to observe the area quietly without disturbing the wildlife. Early morning and late afternoon are prime times for spotting game.
- The best time to scout is after the hunting season and before leaf-out.

You should be able to...

- Identify various methods of bowhunting, and give two advantages for each.
- List types of manufactured portable tree stands.
- Explain why accidents involving elevated stands are a major concern for bowhunters.
- Explain and demonstrate how to enter and exit an elevated stand safely. (This may be done with an actual stand or a mock stand set no more than three feet high for demonstration purposes.)
- Explain and demonstrate the proper use of a fall-arrest system. (A demonstration should be done under supervision. If you are practicing or demonstrating suspension, be sure to strap the device to the tree so that you hang no more than six inches off the ground.)
- Demonstrate the proper use of a haul or hoist line.
- Name the two categories of scents.
- Describe scent-limiting hunting techniques.
- Identify artificial calls that can attract game.
- Explain how to rig your bow for bowfishing.

Still Hunting, Stalking, and Glassing

Still hunting, stalking, and **glassing** are various methods of moving slowly through woods and pastures or along trails, hillsides, and mountain slopes. All of these methods require patience and are usually most effective from the downwind side.

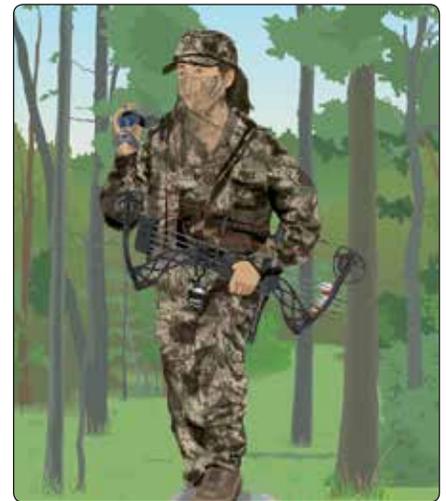
- In still hunting, you move slowly and deliberately until you spot game—before it spots you. Generally, the hunter will take a few slow, deliberate steps and then stand or squat motionless for several minutes while scanning all surrounding areas for game. Still hunting requires exact attention to details such as wind, sunlight, and weather conditions.
- In stalking, the game has been spotted and the hunter slowly and deliberately maneuvers into shooting range and position for an effective shot.
- Glassing is sitting for a long time at vantage points and spotting game from afar with binoculars or spotting scopes. After the game is spotted, you stalk it.

Advantages

- Usually provide the most effective methods for hunting big game animals, especially in the Western United States, Canada, and Alaska, where a good deal of walking and spotting are required.
- Allow bowhunters to find more active wallows, scrapes, rubs, tracks, and other signs of game.
- Offer an opportunity to enjoy the scenic beauty of wild landscapes and animal habitats.

Disadvantages

- Take a high degree of skill and even some luck to get into bowhunting range for an effective shot without being spotted. Movements alert animals.
- Require caution to avoid being mistaken for game by other hunters.



still hunting

A method of moving slowly through the woods and pastures or along trails, hillsides, and mountain slopes from cover to cover

stalking

The process of spotting and then carefully approaching game

glassing

Spotting game at a distance from a vantage point or position

Remember...

When stalking an animal for a shot, try to establish your movement direction on a diagonal line, rather than directly toward the animal. This is a less threatening movement pattern in the event the animal has spotted you.

Remember...

If you don't want to be seen, be still. Wildlife reacts more to movement than shape or color.

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.

- They should be used instead of a tree stand when you should not be climbing, such as during inclement weather.
- They provide an element of surprise that is lacking with hunting from a tree stand.

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
- Where the foreground and background are safest

Hunting White-Tailed Deer from a Ground Blind

When hunting white-tailed deer from a ground blind, you need to set the blind up early and add brush for better camouflage.

Blinds**Ground Blinds**

One of the most popular methods of bowhunting is using ground blinds. They can be as simple as a natural blind built behind a tree, bush, log, or rock or as sophisticated as a portable, enclosed camouflage-cloth blind.

- Blinds usually are located close to game food sources, game trails, or watering holes.
- Ground blinds should always be located downwind or crosswind of the spot where you expect to see your quarry because your scent will be carried at ground level and downwind of your blind.
- Blinds can be fashioned out of native vegetation or rigged from a roll of camouflage cloth or netting, which stores easily in a pack.
- Always clear away all ground cover on your blind's floor to prevent noise from your foot movements, but remember to replace the ground cover before you leave the site.
- A small, portable stool or plastic bucket makes the wait more comfortable.
- When hunting from a ground blind, it is especially important to use camouflage face "makeup" or camouflage head nets and gloves.

Advantages

- Can be set up ahead of time along trails or set up quickly at advantageous spots during a hunt.
- Provide effective camouflage or may conceal the bowhunter totally, allowing more time to prepare for the shot.
- Can purchase commercially manufactured ground blinds, which are readily available.



Disadvantages

- Make human scent and movement at ground level easier for game to detect.
- Offer limited visibility and shooting lanes.

Pit Blinds

The pit blind is a specialized version of the ground blind that's popular for hunting western antelope and mule deer at watering holes.

- The pit blind is a shallow hole dug about knee-deep into the ground and surrounded by natural vegetation or a combination of vegetation and camouflage cloth.
- Check state and local regulations to determine if pit blinds are legal in your area.
- Special permission from landowners will be required before constructing pit blinds.
- It's the bowhunter's responsibility to return the blind site to its natural state after the hunt is over.

Advantages

- Present a much lower silhouette than a ground blind.
- Provide a comfortable ledge seat.
- Can be made large enough to accommodate rain gear, lunch, spotting scope, and any other comforts the hunter may require during a long wait for action.

Disadvantages

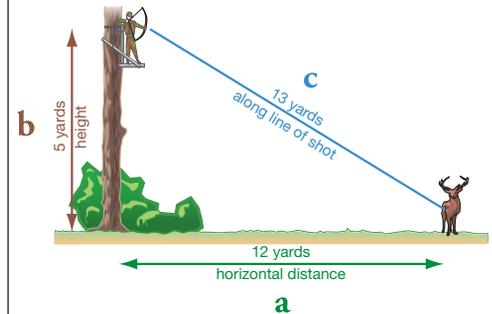
- Are prohibited in most state-owned hunting areas.
- Are not portable.
- Make it easier for game to detect human scent and movement.

Elevated Stands

By far the most popular way to hunt white-tailed deer and black bear with a bow and arrow is from an elevated stand. The most common type of elevated stand is the tree stand—a temporary stand placed in or against a tree. Tree stands have become increasingly popular in recent years with both bowhunters and firearm hunters. While they offer certain advantages, they also have some drawbacks, including a degree of risk.

Advantages

- Due to wider field of view, let you spot game sooner than at ground level, which allows time to plan for the best shot.
- Position a hunter above the animal's normal field of vision.
- Make a hunter's scent harder to detect and movement less noticeable, allowing a hunter to move more easily into a shooting position.
- Give the bowhunter a shot angle where the arrow exits lower on the animal, potentially creating a better blood trail to aid in recovery.
- Reduce the possibility of a hunter interfering with another hunter's experience.
- Provide a better vantage point for viewing wildlife and enjoying the total hunting experience.



When judging distance from a tree stand, use the horizontal distance, not the greater diagonal distance. In this diagram you should aim for 12 yards, not 13 yards.

To calculate the horizontal distance “a” from a tree stand to a target, with “b” being the height of your tree stand and “c” being the diagonal distance to a target (you can establish this number using a range finder), use this simple formula:

$$a = \sqrt{c^2 - b^2}$$

For the example shown in the diagram above:

$$b = 5$$

$$\text{and } c = 13$$

To calculate the horizontal distance **a**:

$$a = \sqrt{13^2 - 5^2}$$

$$= \sqrt{169 - 25}$$

$$= \sqrt{144}$$

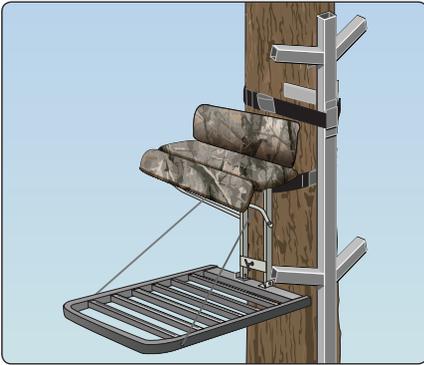
$$= 12$$

Remember...

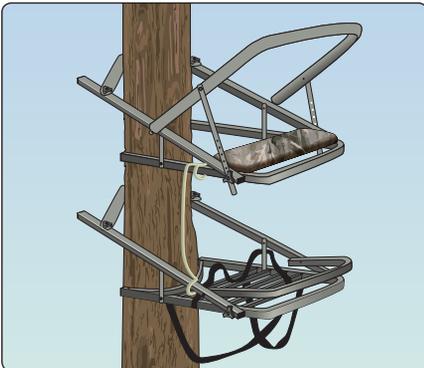
Avoid using permanent stands made of boards nailed or screwed onto trees. Permanent tree stands are eyesores that upset people who enjoy the woods but don't hunt. They also cause significant damage to trees and become unsafe after a short period of time because of weathering, rotting, and tree growth. In addition, big game animals recognize permanent stands as unsafe areas and regularly avoid them. Big game hunters prefer less conspicuous, portable models that they can move easily.

Tree Stand Height and Location

A tree stand is usually placed 8 to 16 feet above the ground. Many considerations dictate stand location, including terrain, tree cover, background cover, and the game being hunted.



Hang-On Stand



Climbing Stand



Ladder Stand

Disadvantages

- Increase risk of injury from falling.
- Can be difficult to carry, especially large, portable stands.
- Provide no protection from cold or wind.
- Give little room for movement, which adds to fatigue and increases the risk of falling.
- Make estimating distances and shooting accurately more challenging because of the downward angle.
- Cannot move toward game while hunting.

Types of Elevated Stands

■ Portable Tree Stands

Most tree stands are commercially manufactured portable models that are designed to be attached to a tree near a game trail or game sign. The primary advantage of portable tree stands is that they can be positioned on a tree with a minimum of noise and in a short amount of time. 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 platforms 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 before attaching the climbing equipment to a tree.
 - Attach the aid to the tree so that it extends above the stand's platform and you can step down onto the platform. This will help you test the stability of the stand before placing all your weight on it. Stepping laterally onto a stand could cause it to tilt sideways or become unstable.
- **Climbing Stands:** These platform stands are designed for trees with straight, uniform 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 attached to one another with a tether.
 - This type of stand is not suited for trees with shaggy bark, such as some pines or hickories, or for trees 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 than other portable tree stands. 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.
- Lean the stand against the tree and chain or strap it into place.
- Use all parts of the stand.

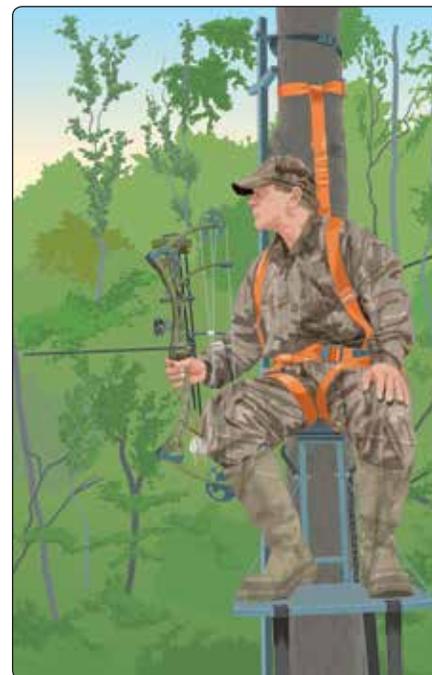
■ Tripods, Quadpods, or Tower Stands (Free-Standing)

These stands are similar to a ladder tree stand but are free-standing and can be placed anywhere that has a firm base. They may be used in brushland habitats or treeless areas. Some resemble one or two chairs atop stilts. Others are enclosed, box-like platforms, and should be used by bowhunters only if the windows are large enough for bow clearance and shooting.

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.
- Always use a fall-arrest system (FAS) that is manufactured to industry standards and includes a full-body harness. **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. Practice shooting from your stand while wearing your FAS.
- Get enough sleep to ensure that you are well rested before using a tree stand.
- Carry a signaling device, such as a whistle, cell phone, two-way radio, or personal locator beacon (PLB), 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.



Tree Stand Safety Study

A study of Vermont and North Carolina bowhunters revealed the following.

- 74% of the accidents occurred when climbing up or down or when installing or removing a stand.
- 7% of tree stand hunters surveyed had an accident in the last 10 years.
- 73% said poor judgment and carelessness caused their fall.
- 80% said safety was a concern but actually believed that a fall “wouldn’t happen to me.”
- Type of stand used:
 - 43% self-climbing
 - 34% fixed-position
 - 18% ladder
- 58% of the hunters who fell were not wearing a fall-arrest system.
- 34% of the hunters surveyed now wear a fall-arrest system because of an accident.
- 39% of the accidents occurred at less than 10 feet.
- 21% of the accidents were related to structural failure.

Remember...

As the height of the tree stand increases, the size of the kill zone decreases because of the steeper shot angle.

Inspecting and Preparing Stands

- If you have a tree stand which was manufactured by a company which is no longer in business, destroy it.
- Each season, before use, thoroughly inspect tree stands for defects, missing parts, weaknesses, or excessive wear.
 - Be sure to read and re-read all instructions and warnings provided by the manufacturer.
 - Be sure all bolts are tightened.
 - If you discover frayed ropes, straps, or worn chains, contact the tree stand manufacturer for replacement parts.
- When needed, paint a stand with rust-proof paint and apply it well before the season starts to allow time for the new paint smell to diminish.
- Test stands for squeaks or noises, and lubricate them with graphite powder, vegetable oil, or other odorless oils.
- Use coarse grid strips to improve traction on stand surfaces.
- If you leave a stand for any length of time, especially on public lands, use a padlock and chain to prevent theft.
- Never loan your tree stand or allow anyone to use your tree stand unless they read all warnings and instructions and you can teach them how to use it properly with a FAS.

Selecting a Stand Location

- Place a stand in an area where game sign indicates food, travel, water, wallows, breeding sites, or other places where animals appear to congregate.
- Consider multiple stand locations, taking into consideration elevation, topography, and prevailing winds.
- Use a tree stand only in daylight hours, positioning the stand to avoid sunlight that could highlight the profile of your body.
- Use a tree large enough to cover your body outline.
- Place a stand no higher than necessary.
- Select only trees that are straight. A trunk leaning toward you can “push” you out of a stand when you stand up.
- Never place a stand in a dead tree, in a tree with large overhanging dead limbs, or on or near utility poles.
- Place a stand on the back side of a tree if the terrain rises in front of the stand, if there is little cover, or if the prevailing wind often switches direction.
- Place a stand to the side of a trail or travel route but within your effective shooting range.
- Locate the stand downwind from the animals’ expected route.
- Never place stands on fence lines or near another landowner’s property.
- Clear shooting lanes for unobstructed shooting opportunities. Use a small pruning saw or clippers, and nip off only what is necessary. It’s best to have someone guide you from the stand as you do this. If cutting isn’t permitted, tie back the branches and brush with dark-colored cord.
- Select more than one hunting spot to avoid over-hunting one location.

Fall-Arrest Systems (FAS)

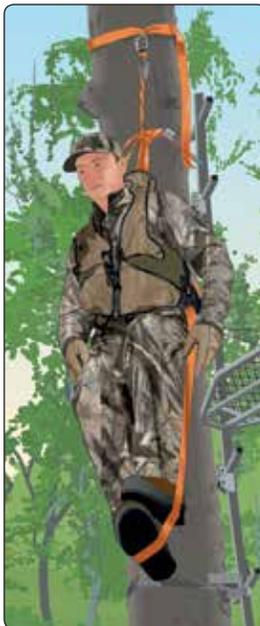
The National Bowhunter Education Foundation recommends using a fall-arrest system (FAS) that is manufactured to industry standards. Carefully read and follow the manufacturer's instructions for proper use of your FAS.

- Also follow these safety guidelines.
 - With an adult present, practice adjusting and using your FAS, including the suspension relief strap, 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 bow and arrows up or down the tree with you as you climb.
- Always use a haul line of heavy cord attached to your stand to bring up your bow, arrows, and pack or to lower them prior to climbing down from your stand.
- Before attaching the haul line, put the arrows in a covered quiver and secure the quiver to your bow.
- Tie a loop on the end of your haul line. Pass the loop between the bow's limb and the bowstring. Hook the loop over the limb tip—or the cam or wheel of a compound bow. Make sure the arrow fletching points down as you pull your equipment up and points up as you lower your equipment.
- After you have tied the line to your bow, place the bow away from your climbing route so that you won't fall on sharp arrows if you lose your footing.
- 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.

Full-Body Harness With Suspension Relief



FAS Components

Always use a properly fitting FAS that includes a full-body harness while climbing a tree, installing a tree stand that uses climbing aids, and hunting from a tree stand. (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—can be the vest 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.



Minimizing Your Scent

- Wear rubber-soled boots that are less likely to absorb odors.
- Store hunting clothes in plastic bags with boughs of cedar, pine, or other natural materials from your hunting area.

Scents and Lures

Certain species of game have a highly developed sense of smell. Because bowhunting is done at close range, it's essential to learn which species are sensitive to human odor.

- Big game animals are very sensitive to scent and quickly leave any area that contains the wind-borne or residual ground scent of humans.
- White-tailed deer, foxes, and coyotes can detect the scent of hidden hunters.
- Squirrels, rabbits, turkeys, and waterfowl are not sensitive to scent and rarely spook when they pick up human odor.

Cover Scents

Cover scents are designed to reduce human odor by helping to neutralize it or by hiding it with a natural competitive scent.

- The scents can be applied to skin, footwear, or clothing.
- Many bowhunters hang scent-soaked pieces of cloth around their stand or blind.

Attractants

Attractants work by offering animals a tempting odor that mimics food sources; scents that sexually arouse males; and scents, such as licorice or vanilla, that pique "curiosity."

- A successful technique for stopping a deer at your pre-selected, pick-off spot is to sprinkle a few drops of scent on a leaf or twig at that site.
- Do not apply attractants to your skin or clothing because the deer will follow the scent and detect your position.



White-Tailed Deer Tips

Because white-tailed deer are very sensitive to human scent, it is recommended that you:

- Stay clean and as free of human scent as possible while hunting.
- Avoid using fragrant soaps and perfumes.
- Consider wearing hunting clothing manufactured with special carbon-treated fabric that absorbs human scent.
- Consider using one of the many commercially manufactured products available for scent and odor elimination that can be sprayed onto clothing prior to going into the field.
- Avoid washing hunting clothes with highly fragrant laundry detergents. Numerous brands of “scent-free” detergents are available for washing hunting clothing. Also avoid clothing detergents that contain UV brighteners because many animals can detect UV light that makes clothing brighter.
- Hunt from a tree stand to keep human scent above a deer’s nose. However, be mindful of wind currents that may carry your scent down to your quarry.

Game Calls

- Game calls have been popular for many years. Some of the most commonly used calls are made for attracting ducks, geese, and turkeys. Many other species of wildlife can be attracted with the use of calls.
- Bowhunters can select from a wide variety of calls targeting most game species. There are four basic types of game calls.
 - **Position calls**, like spring turkey calls, indicate the location of another member of the clan. While these calls indicate position, many also will put the game at ease.
 - **Distress calls**, like squealing rabbit calls, indicate to a fox, coyote, or bobcat that dinner may be trapped nearby.
 - **Aggression calls** are commonly used by elk hunters during the rutting season to challenge other mating bulls. White-tailed deer hunters rattle antlers, which imitates two rutting bucks fighting.
 - **Mating calls** duplicate mating activity such as spring gobbler calls, white-tailed deer grunt calls, and antler rattling. Bowhunters commonly use grunt tubes to attract rutting white-tailed bucks to their stand. Grunt calls mimic the low, guttural grunt of a white-tailed buck looking for does. Calls also can be effective when used in conjunction with attractants or lures.

Game Calls



Bowfishing Equipment



refraction

The bending of a light ray when it passes at an angle from the air into the water

Bowfishing

Late spring and all summer are the best times for bowfishing. As spring waters warm, “rough fish,” such as carp, gar, buffalo, and suckers, begin to move into the shallows of lakes and river backwaters to spawn. Check your state or provincial regulations for shooting hours, equipment restrictions, license requirements, and legal game.

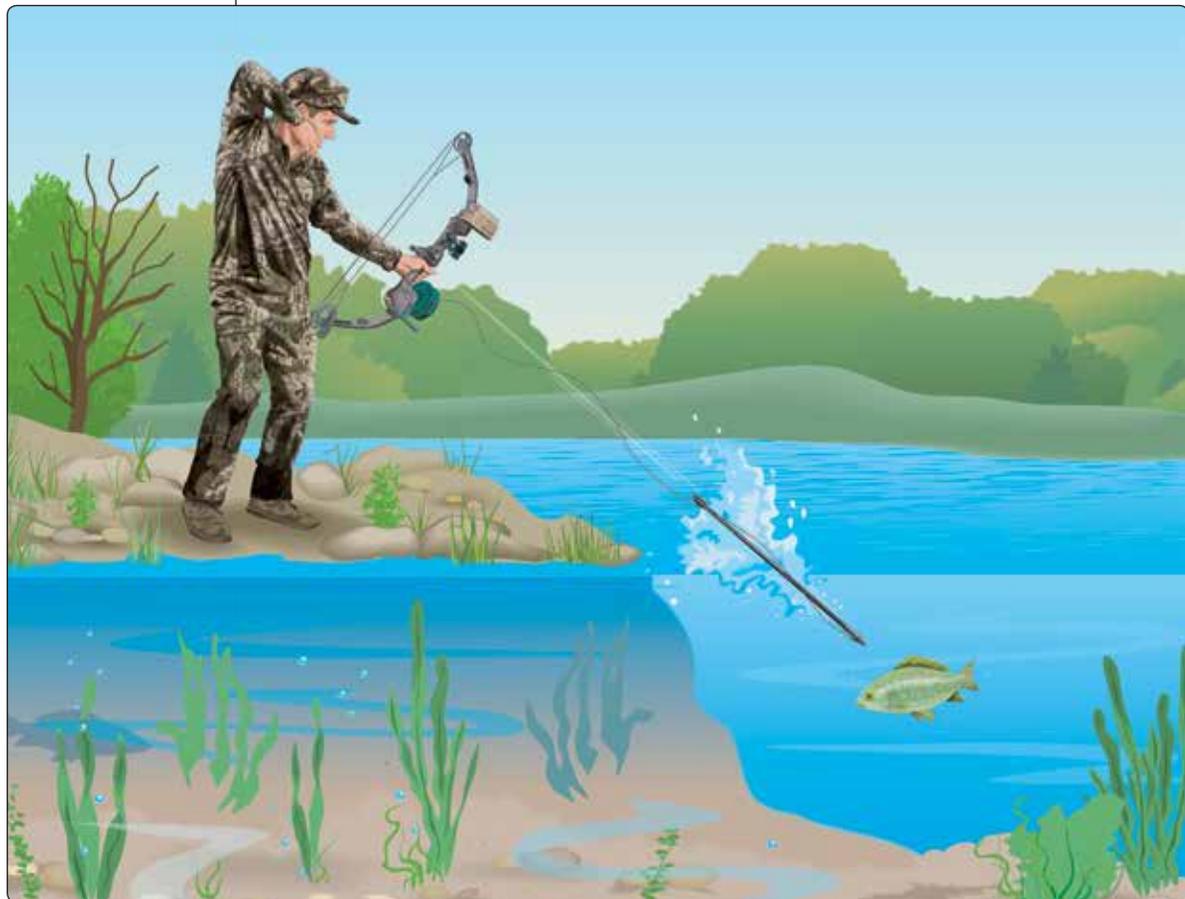
Bowfishing Equipment

Bowfishing equipment is simple, inexpensive, and available from most sport shops. It consists of:

- A solid fiberglass arrow which has a specialized fish point and a slide device to which your line is attached. The slide attachment helps prevent the fish arrow from coming back toward the archer if the line gets snagged on part of the bow or if the line does not feed smoothly from its receptacle.
- Either a large spool or container that screws or tapes right onto your bow and feeds out the line like a standard spinning reel, or a closed-face spin cast reel made especially for bowfishing.

Special Challenge

The primary challenge of hunting fish underwater is compensating for a phenomenon called **refraction**. Light rays bend as they enter water, making fish appear to be where they aren't. You must aim lower than a normal sight picture to hit your quarry. Practicing on underwater targets will help you find the correct aiming point.



You should be able to...

- Describe how an arrow kills.
- Explain the importance of proper shot selection and shot placement.
- Describe the main vital area on big game and the shot that offers the best opportunity for success.
- Identify the main vital area and primary aiming zone on different game species.
- List reasons why long shots increase the risk of merely wounding game.
- Explain how the shot angle affects a bowhunter's ability to make a clean kill.
- Give examples of poor shot selection.
- Correctly choose the right action to take in "shoot/don't shoot" scenarios presented in illustrations.
- Define "jumping the string."
- Explain a bowhunter's basic responsibilities after shooting game.
- Describe the basic steps of big game recovery.
- List the steps to follow when the animal being tracked is found.
- Describe how to field dress a big game animal properly.
- Explain why it's important to transport harvested animals in a vehicle properly.

Shot Impact: How Arrows and Bullets Differ

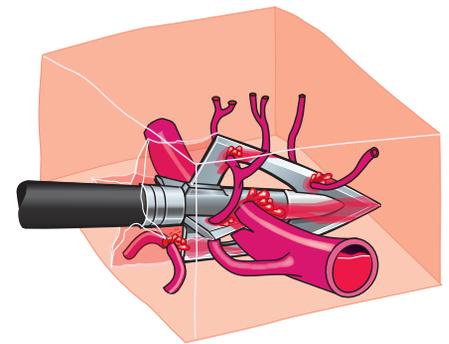
To understand the importance of proper shot placement and recovery techniques in bowhunting, it's helpful to know how arrows and bullets differ in the way they impact and kill an animal. Bullets kill by high-energy impact that crushes tissue and bone. Bullets may knock down an animal or incapacitate it by breaking major bones, which reduces its chance of running away.

Broadhead-tipped arrows deliver a low-energy impact that kills by cutting vital tissues. Because impact alone won't knock down an animal, the arrow must be placed properly for a quick kill and easy recovery. A poorly placed arrow will have little immediate impact, making it difficult, and perhaps impossible, to recover the animal.

In addition, arrow wounds are generally less painful and generate less fear and panic than a comparable bullet wound. This is important to remember because patience in the recovery process often means that an animal—if mortally wounded—will die relatively close to where it was hit if it isn't spooked.

How a Broadhead Causes Death

- Typically, an arrow kills by cutting blood vessels (arteries and veins), producing massive blood loss. Blood pressure drops, cutting off oxygen to the brain and causing death. This is called hemorrhagic shock.
- An animal must lose about 1/3 of its blood to die of hemorrhagic shock, but that can vary depending on how fast the blood is lost. There is approximately one ounce of blood per pound of body weight in the circulatory system of animals like deer.
- The time it takes for an animal to die from bleeding can vary from a matter of seconds to several hours, depending on the animal's size, how many vessels are cut, and whether they are arteries or veins.
- Arrows also can kill by puncturing the lungs. If both lungs collapse, the flow of oxygenated blood to the brain is halted, the animal becomes unconscious within seconds, and it dies before it can bleed to death.
- Arrows can kill by disrupting the heart muscle, which instantly stops the flow of blood to the brain.



Remember...

Sharp broadheads are essential because they:

- Cut through skin, muscle, and even some bone better than dull ones, providing deeper penetration.
- Cut the tough elastic walls of blood vessels better and cause more bleeding than dull broadheads.
- Are more likely to penetrate an animal completely, which leaves both an entrance and an exit wound, making trailing and recovery easier.

Body Chambers of Big Game Animals

Big game animals like the white-tailed deer, elk, bear, moose, and others have anatomical features that are similar.

Big game animals have two distinct body cavities: the abdominal cavity and the chest cavity. The two cavities are separated by the diaphragm muscle, the sheet-like muscle that forms the rear of the chest cavity and helps with the breathing process.

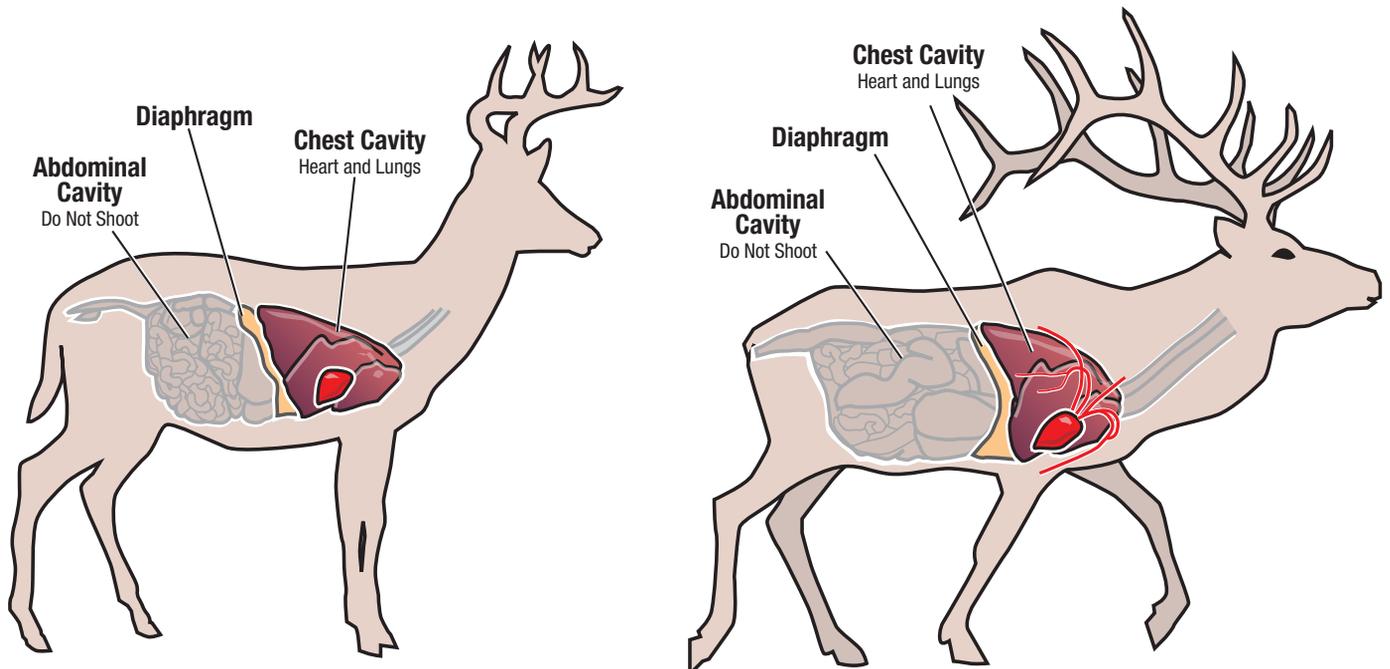
Shot Placement

Proper shot placement is critical in bowhunting because an arrow must be placed precisely for a quick, clean kill. The responsible bowhunter only takes a shot that can strike the vital area of the animal reliably and passes up anything less. Merely wounding an animal is a serious error that can be avoided if the bowhunter knows the vital area of the game being pursued.

Chest Cavity—The Main Vital Area

In big game animals, the bowhunter's primary target area lies within the animal's chest cavity. The chest cavity holds the heart, lungs, and major arteries and veins of the body, all of which are crucial to sustain life.

- A razor-sharp broadhead shot through the chest will immediately depressurize the cavity, sever lung tissue, and cause massive bleeding. It may cut lung vessels to add to the blood loss and cut heart tissue or heart vessels that will cause even more blood loss.



Know the Primary Aiming Zone of Your Game Animal

Bowhunters need to learn the primary aiming zone of each big game animal they hunt. For example, the area just behind the front leg of a white-tailed deer—approximately the size of a paper plate—is the primary aiming zone. When shooting, the bowhunter focuses on an aiming spot—about the size of a quarter—in the center of the aiming zone. This provides a bull's-eye over the vital organs.

- The circulatory system of a big game animal is under pressure. All cuts in the major blood vessels, lung tissue, and muscle tissue will result in an immediate and sustained blood loss.
- The most effective shot for bowhunters on black bear and deer-sized or smaller animals is a diagonal shot (45 degrees) that angles forward and hits the liver, diaphragm, lungs, and heart.
- The second most effective shot is the double-lung, broadside shot because it collapses both lungs. The animal leaves a good-to-excellent blood trail and typically goes a shorter distance before lying down.

Abdominal Cavity

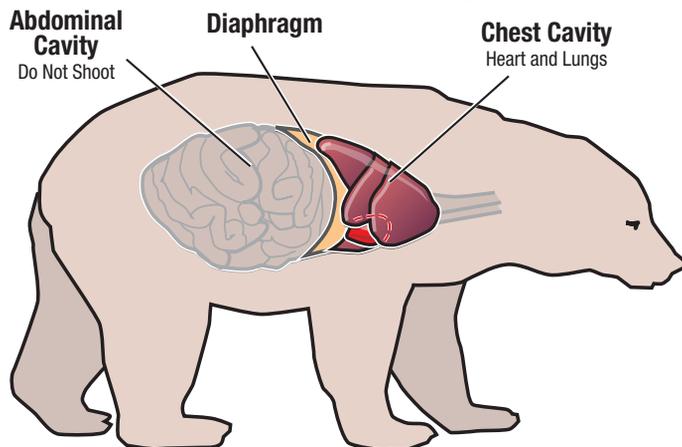
The abdominal cavity, on the other hand, is not an aiming zone for bowhunters.

- The abdominal cavity holds the stomach, kidneys, liver, and small and large intestines. If the arrow strikes one of these vital organs or blood vessels, the animal may bleed to death in an hour.

- More often, a slow death begins when an arrow cuts open the stomach or intestines, spilling the contents into the abdominal cavity. The bacteria and acids in the contents cause peritonitis, a severe inflammation of the cavity. The animal becomes sick and usually dies within 8 to 12 hours.
- There may be very little external blood loss, so tracking is very difficult. However, most animals that are gut shot don't appear badly frightened or hurt. If undisturbed, they tend to travel a short distance and then lie down, where they die peacefully.
- Even though the liver is located in the abdominal cavity, it is often hit in a quartering-away shot because of its size and location just behind the diaphragm. The arrow may pass through the front portion of the abdominal cavity and liver on its way to the chest cavity.

Shots Outside the Main Body Cavities

Broadhead-tipped arrows that do not strike the chest cavity or the abdominal cavity may still cause immediate, massive blood loss and death. For example, shots that strike the neck (carotid arteries or jugular veins) or hind legs (femoral artery) will cause death. However, these shots should never be attempted because the size of the vital area is smaller. Big game animals are likely to survive arrow strikes in the shoulders, back muscles, neck, brisket, hams, or legs.



Spine Shots

No hunter should ever attempt a spine shot because it's too difficult to execute; however, if a spine shot should happen accidentally, quick action is required.

- When hit in the spine, the animal will drop on the spot. It won't die immediately, so a second shot is necessary to dispatch the animal humanely.
- If an arrow hits the backbone but does not cut the spinal cord, the animal may drop from "spinal shock," which is similar to hitting the "funny bone" in your elbow. The paralysis is temporary, and within a minute or so, the animal may get up and run away. This is a serious problem because the arrow is frequently still stuck in the backbone. Because the animal is not incapacitated or even significantly slowed, it's likely to escape. This type of injury is not only unfortunate for the animal, but it also creates a public relations nightmare for bowhunters.
- If an animal drops instantly when hit with an arrow, you *must* shoot it again immediately. Don't climb down out of your tree stand first. If you hit it the first time from where you were, you should be able to hit it with a second shot to ensure that it won't escape or suffer needlessly if it is paralyzed temporarily.

The Ethical Hunter

- Passes up the "iffy" shot, even after spending weeks preparing—and hours waiting patiently—for the opportunity
- Takes satisfaction in the thrill of being up close to any game animal, even when no shot is taken

Special Situation: Large Bears

Large bears present more of a challenge because of their bulk.

The bear's shoulder is farther forward, the shoulder bones form a tighter angle, and its hair is several inches longer than other game.

Long, heavy hair makes a bear appear deeper in the chest than it actually is. As a result, many hunters aim too low or too far forward and hit the large shoulder bone.

A spot in the center of the lungs or slightly lower should be a bowhunter's target every time.

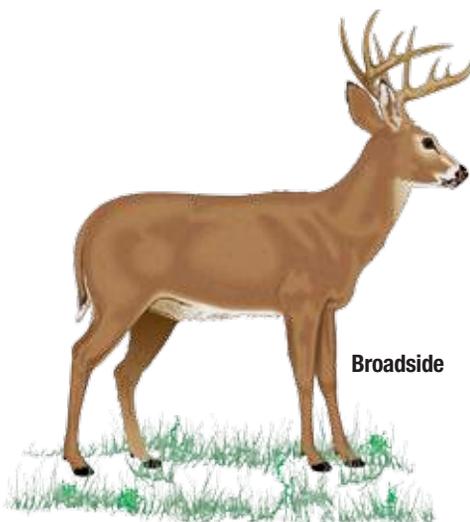
The Risks of Long Shots

Although the average hunter has a maximum effective range of 30 yards, most bowhunters shoot game from a much closer range. They know that the chance of wounding game increases as distance increases because:

- It becomes more difficult to hit the vital areas
- The arrow may be deflected by unnoticed brush
- The longer the arrow is in the air, the greater the chance the animal will move

Remember...

When bowhunting, you should never take a shot when a deer or other big game is looking at you because it is difficult to remain undetected when drawing your bow.



Broadside



Quartering-Away

Shot Strategy

One of the most common reasons bowhunters miss opportunities to take an animal is because of the excitement of being close to their quarry. “Target Panic” or “Buck Fever” may cause them to forget completely the fundamentals of shooting and miss the shot. Planning a shot strategy before the animal arrives increases the chance of taking game. Shot strategy, which involves determining possible pick-off points and shot angles in a given hunting area, can be accomplished best through visualization and simulated practice.

Visualize and Practice Your Strategy

Mentally run through all the likely routes the game animal may take and identify exactly where and when you’ll take your shot if the animal comes from the left, from the right, from behind, or in front of you. Take a few practice shots, and log the distance to each spot. Your shot strategy will help you concentrate on making a good hit when the moment actually arrives.

Choose the Proper Shot Angle

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

Broadside

- This angle gives the best shot for the largest big game animals: elk, moose, caribou, buffalo, musk ox, grizzly bear, polar bear, brown bear, and Kodiak bear.
 - The heavy hair and thick hide of these animals tend to absorb blood and close wounds. As a result, both an entry and an exit wound are necessary to cause sufficient blood loss for trailing and death.
 - Given the thickness of their chests, a broadside shot offers the shortest distance through the animal’s chest cavity.
- This is the best angle for a double-lung hit.
- 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.
- To avoid hitting the shoulder blade, wait until the front leg is forward.
- For the best opportunity, wait until the animal looks the other way or is feeding.

Quartering-Away

- This angle offers a good opportunity for a killing shot on antelope, white-tailed deer, mule deer, black bear, and other big game of similar size or smaller.
- The animal is usually looking away from the hunter.
- The aiming spot will be farther back than with the broadside shot; the exact spot varies depending on the degree to which the animal is quartering away. The opposite front leg is a good reference point for the aiming point.
- If the angle is too narrow, it may not be a good shot for larger game such as elk and moose because their massive stomachs and intestines will get in the way of a clean shot through the lungs or heart.

Quartering-Toward

- This angle offers a poor shot opportunity and **should not be taken**.
- Heavy shoulder bones shield the majority of vital organs from penetration.
- The animal is typically looking toward the hunter and will likely spot the hunter's movements.

Head-On and Rear-End

- These angles offer very poor shot selection and **should not be taken**.
- Heavy bones in front and muscle mass and non-vital organs in back block penetration of the main vital areas.

Consider Your Location

The bowhunter's location above or below the target presents additional considerations.

Above the Target

- A tree stand or elevated platform offers good shot opportunities, especially for the broadside and quartering-away shot angles.
- As a bowhunter climbs higher, the vital area becomes a smaller target area because the animal's shoulder bone and spine shield more of the vital organs.
- The shooter needs to "bend at the waist" and not drop the bow arm while at full draw. Often the reason a hunter misses when shooting from above is because the point of aim and impact has changed.

Below the Target

- It's possible to shoot from below the target, but it's not a high-percentage shot.
- The aiming spot is lower on the body, and the sternum (chest bone) may shield part of the heart at this angle.
- Broadside—particularly a double-lung shot—and quartering away offer the best shots.

Setting Up the Perfect Shot

Every aspect of your bowhunting plan should center on getting a "perfect" shot. While absolute perfection is rare, you can come close by striving for perfection, which involves:

- Properly placing the elevated stand or ground blind
- Staying downwind when possible
- Using good camouflage and concealment techniques
- Using covering, attractant scent, and game calls effectively
- Limiting your movements
- Shooting within your effective range
- Applying everything you've learned in previous hunting experiences



Quartering-Toward



Rear-End



Above

Shot Selection Is Key

Good shot selection helps the bowhunter place an arrow in the vital organs. Shot selection includes choosing the proper shot angle, shooting within an effective range, and properly timing the shot.

Remember...

Experienced bowhunters agree that it's wise to stand "at the ready" during the first few hours of daylight and during the last hour before darkness.

Jumping the String

Animals have an extraordinary ability to dodge arrows. This attribute wasn't understood until the behavior of white-tailed deer was captured on videotape and studied carefully. Deer can take flight with uncanny speed at the slightest hint of danger, particularly unnatural sound, including the sound of a bow twanging. This phenomenon is called "jumping the string."

Prior to discovering this behavior, bowhunters assumed that every shot that sailed over the deer's back had simply been aimed too high. What they couldn't see without the benefit of slow-motion replay was that the deer had reacted instinctively to the sound of the bow. The deer collapsed its front legs and dropped its chest to the ground preparing to spring, unconsciously ducking below the arrow.

The problems with jumping the string can be minimized if you will:

- Limit shots to well within your effective range.
- Shoot only a quiet, well-tuned bow.
- Shoot only at unalarmed deer.

Remember...

A good recovery begins with a well-placed shot. An arrow striking an animal in a vital area will mean a quick death and a short trek to recover the animal.

Picking the Right Moment To Shoot

A game animal rarely offers the ideal target: poised broadside, within range, in the clear, and looking the other way. Therefore, you'll need to practice to make more challenging shots. You also must learn to seize just the right moment to shoot. To take your best shot when an animal approaches:

- Control your desire to move immediately into shooting position.
- Wait for the right moment.
- Compare the eyes of the approaching deer to sweeping beams of light, such as the headlights of a car. Don't move until those "headlight beams" are pointed well away from you or until they pass behind screening brush or trees.
- Make your move to full draw, and then wait until the animal stops near your pre-selected "pick-off" spot. (If you can't move to full draw without exposing yourself to the deer, wait motionless until the deer has passed by before making your move into the shooting position.)
- Focus on the aiming spot over the animal's vital area.
- Relax and take the shot.
- Continue to aim after the shot until you see the arrow hit the target. "Peaking" or dropping your bow arm will cause erratic arrow flight and affect the point of impact.

Why Shots Go Wrong

A number of factors contribute to unsuccessful shots:

- Shooting at animals beyond the hunter's effective range
- Shooting at an animal that is looking at the hunter or is alarmed
- Poor shot angle
- Little or no knowledge of the game's vital areas
- Muscle fatigue, which can be caused by holding the draw position too long
- Poor shooting technique or release, typically due to the hunter's increased excitement level
- Shooting when brush or limbs are in the path between the hunter and animal
- Shooting when the animal is running or moving
- Not continuing to aim and focus on the aiming spot long enough after the shot
- Poor mental or physical condition that affects the hunter's shooting ability
- Poor light conditions

Big Game Recovery

NEVER ASSUME THAT A SHOT MISSED THE ANIMAL. Bowhunters also must understand the importance of honoring their responsibility to recover the game they have shot. A successful recovery requires:

- Proper shot placement
- Attention to visual and auditory clues immediately after the shot
- The proper decision on when and how to begin the tracking and recovery process
- Knowledge of tracking and reading game sign
- Attention to trailing details, including signs such as blood drops, partial tracks, and bent twigs

- A stick-to-it, never-give-up attitude
- Multiple recovery strategies, especially if the trail is lost temporarily
- Patience

The “Second Hunt”

Bowhunters often refer to game recovery as their “second hunt.” Some people get just as much satisfaction out of trailing as they do from hunting. The process requires patience, attention to the smallest details, and an understanding of the game’s habits. Proficiency comes mainly with experience. The best way to learn is to watch a veteran hunter. If you haven’t experienced actual trailing, a simulated trail devised by a group of veteran hunters may be the next best option.

Attention to Clues

Like a detective collecting clues to pursue a suspect, a bowhunter must gather a variety of “hit data” to help track the animal after it’s shot.

- The first important piece of information for a successful recovery is noticing where your arrow strikes the animal. Knowing where your arrow hit is a rough indicator of:
 - How long it will take your animal to die
 - How long to wait before beginning the recovery process
- To track your arrow after release, remain perfectly still—don’t even lower your bow down the tree if you are hunting from a tree stand. In addition to noting where the arrow strikes, notice:
 - How far the arrow penetrates—in some cases, it may pass through.
 - Where the arrow hits the ground if it passes through the animal.
 - How the arrow strike sounds—a “crack” may indicate a broken bone, a “thud” may signal a solid chest hit, and a “plop” may indicate a gut shot. Or you may hear the arrow slapping branches.
 - How the deer reacts after the strike. Does the deer collapse instantly, run away, or hump up and walk away? If the deer humps up, there’s a high likelihood of a gut shot.
 - If the animal instantly collapses (spine shot), immediately shoot it again.
 - If the animal remains upright and leaves the area:
 - Watch it as long as possible to determine the direction of travel.
 - Listen as the animal flees—you may hear it fall to the ground. Also listen for a death moan, breaking brush, or rolling rocks.
 - Note the time, landmarks around the shooting area, and where the animal was standing or last seen.
 - Take a compass bearing.





Be sure to check local and state game laws. It may be legal to use dogs to help you track shot game.

White-Tailed Deer Hair Can Give Clues About a Hit

Knowing the different colors, lengths, and textures of hair on a white-tailed deer can help you determine where you hit the animal when you examine your arrow or when you find hair at the hit site.

- Back hair is long, dark (often black-tipped), and coarse.
- Neck hair is like short back hair except it is light-colored on the front of the neck.
- Brisket hair is very dark and is twisted near the junction of the neck and the body.
- Side hair is short and brown with dark tips.
- At the bottom of the rib cage is a mixture of white and dark brown hair that is straight, moderately long, and thick.
- Belly hair tends to be white, long, fine, and sometimes twisted.
- Tail hair is very long.
- Hair on top of the tail is dark brown tipped with black.

When To Begin Recovery

A mortally struck animal may die in only 10 to 30 seconds. A white-tailed deer, however, can cover a lot of ground in those few seconds and could disappear from view. An animal struck with less than ideal arrow placement may travel an even longer distance before collapsing. With the exception of a spine shot, a wise bowhunter gives the animal time to expire. Bowhunters should be patient and allow the broadhead to do its work before approaching or trailing the animal. Approaching a downed animal or starting the tracking process too soon may cause it to run even farther away, making the recovery more difficult. Usually you will find a well-hit animal within 200 yards. A poorly hit animal may travel considerably farther, but never give up while there is sign to follow.

- If it appears that the arrow penetrated deep into the chest, wait 20 to 30 minutes to give the animal a chance to calm down and die. Then follow the trail carefully.
- If you find the arrow with signs of a gut hit (see “Trailing Game” below) and the trail is skimpy, back off and wait six to eight hours. If you shoot and believe that you hit the animal in the gut, don’t even follow the trail far enough to retrieve the arrow. Wait at least six hours before following the trail, even if rain, snow, or darkness threatens to obliterate the trail. It’s easier to find a dead deer under six inches of snow within 200 yards of where you shot it than to find one under three inches of snow two miles from where you shot it.
- On a poor hit outside the chest or body cavity (neck, leg, rump, or back), the animal may run away quickly and then stop, calm down, and stop bleeding. Often the animal will survive. If you can follow the animal rapidly and aggressively, it will continue to bleed, even from a relatively minor wound. It may lose enough blood to get careless and give you another shot. It may even die from a wound that normally would not be considered fatal. If you’re certain you have this type of hit and the conditions are right—open terrain, tracking snow, or a good initial blood trail—it’s best to take up the trail immediately and push the animal.
- When in doubt about where you hit the animal, it’s better to wait 30 to 60 minutes and then carefully start trailing the animal. If you’re new to trailing and recovery, it’s best to have a more experienced hunter with you.

Trailing Game

After you have waited a sufficient amount of time, move slowly and quietly from your shooting position to the area of your shot. Approach carefully to avoid destroying any important game sign. Look carefully for blood, hair, or your arrow if you think it passed through the animal, realizing that the arrow can be buried under leaves, grass, or dirt. Inspecting your arrow can help you confirm the type of hit (see “Blood Sign,” next page).

- Move in the direction the animal headed. Be careful to walk on the side of the escape route. Look closely for blood on leaves, weeds, rocks, and logs. Be aware that some drops may be very tiny so that you may need to get on your hands and knees for close inspection. Blood spots confirm that you are following the correct route.
- Most bowhunters mark the location of blood sign. Reflector ties, toilet paper, or orange or chartreuse surveyor’s tape may be used. Permanent marking materials must be removed after trailing is completed.

- Blood on both sides of the trail indicates complete penetration by the arrow. A small blood trail may indicate an entrance wound high on the animal. Very little blood may reach the ground because the exit hole may be plugged with hair, fat, or organs.
- Getting assistance from a hunting companion is invaluable at this point. An extra pair of eyes will increase the likelihood of spotting signs. Mark every sign, and don't forget to scan ahead to see if the animal can be spotted. A deer lying down with its head upright may jump when trackers get close. If this is the situation, back off and wait another hour or two.

Blood Sign

Blood sign can offer important tracking clues, such as blood splashes in the direction the animal is traveling.

- Dried blood usually has a brown color and can be difficult to spot on brown grass or leaves. Using hydrogen peroxide may help you determine if spots you see are actually blood. Hydrogen peroxide will bubble on contact with blood.
- The color, appearance, and location of fresh blood can indicate the type of hit.
 - Bright red blood indicates bleeding from arteries; darker blood indicates bleeding from veins.
 - Blood that has bubbles or looks frothy could indicate a lung hit.
 - Fluid that is greenish, has tallow, or is clear, can indicate an intestinal shot.

Lost Sign

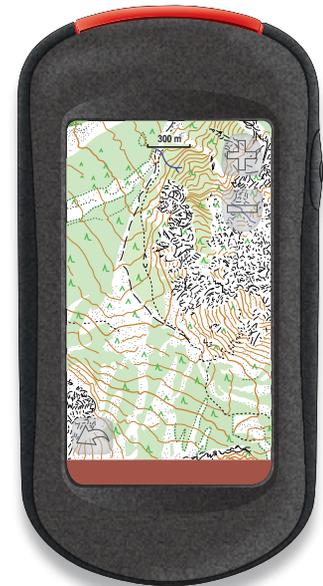
If all sign is lost, don't give up.

- Go back to your last marker, and begin a methodical search of the surrounding area. Some bowhunters will search in ever-widening circles. Another method is to grid off the surrounding area in squares and to search each one. You may need to get down on your hands and knees to inspect every detail in the area closely. Look for obvious escape routes such as trails, especially those heading downhill or toward water.
- Be aware of any wildlife activities in your area. Crows calling, squirrels barking, or vultures circling may indicate the presence of a downed animal. Look around the surrounding area for game trails, openings in fences, thick cover—anything that could attract a running animal.
- If necessary, you may need to go back and start your search from the beginning. Don't give up until all possibilities have been exhausted. A responsible bowhunter will make every legal effort to recover the animal.

Nighttime Tracking

Tracking at night requires a different technique.

- Take careful note of your surroundings, and use your compass or GPS for marking bearings before you start your recovery effort. You don't want to add getting lost to the challenge of game recovery in the dark.
- Depending on the type of flashlight or lamp you use, blood will actually glow because of its phosphorus content.
- In some locations, predators may be a problem if game is not recovered quickly. Game that's left overnight can attract coyotes, bears, or domestic dogs.
- Be sure to check local and state game laws regarding recovery of game after dark. It may not be legal to have your bow in your possession when night tracking with artificial light. It may be legal to use dogs to help you track wounded game.



Before you start nighttime recovery efforts, use a Global Positioning System (GPS) to mark your bearings to avoid becoming lost.

Approaching Downed Game

When approaching downed game, use extreme caution. The animal may appear to be dead but actually is not.

- Approach the animal from its rear. If the animal is still alive and jumps as you approach, you don't want to be in front of it.
- Stop at a reasonable distance from the animal.
 - Observe its rib cage. If the chest is heaving, the animal is still alive.
 - If you can't detect rib cage movement, check the animal's eyes—the eyes of a dead animal are usually open.
 - Some hunters use a stick or bow tip to prod the rear of the animal to see if there is a response.
- If the animal is still alive, back off and take a careful finishing shot.
- Don't pose or handle your animal for photographs or begin field dressing until you are positive it's dead.
- Once you have determined that the animal is dead, immediately attach the proper tag or identification according to state or provincial regulations.



Approach downed game from behind. It can be dangerous to be in front of animals if they are startled.

Field Dressing

The way you handle game after it's harvested can have a significant impact on the quality of the meat. Three factors contribute to spoiled meat: heat, dirt, and moisture.

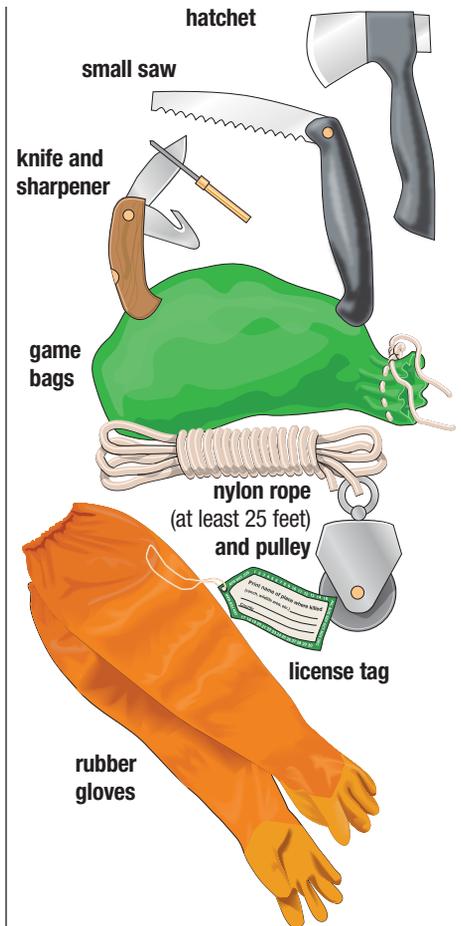
Heat is the number one concern. Bacteria grows rapidly in a carcass, especially if it's allowed to stay warm. Meat begins to spoil above 40° Fahrenheit. The higher the temperature—and the longer the meat is exposed—the greater the chance of spoilage. This is particularly true with large game.

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.

Field dressing a game animal isn't a complicated process, but it's a technique that's best learned by observing someone with experience. The basic procedure involves cutting open the animal from the sternum to the anus, cutting the connective tissue that anchors the internal organs inside the body cavity next, and then removing the organs.

As you proceed, there are several things to keep in mind.

- A small- or medium-sized knife is appropriate for field dressing most deer or smaller animals.
- Wear rubber gloves, which prevent the spread of certain diseases from animal to human and protect you from various parasites such as ticks and fleas. Properly dispose of the gloves at home, not in the field.
- There is no need to slit the animal's throat to make it bleed—your arrow did that. Also, there is no need to remove the glands found on a white-tailed deer's rear legs. They will not taint the meat.
- Any trophy animal that you intend to have mounted must not be slit up the neck. Stop your cut well behind the front legs to avoid ruining the cape.
- As you work on the animal, avoid cutting or puncturing the internal organs, especially the intestines, stomach, and bladder, which can unleash fluids that require additional cleanup and may taint the meat.
- When working inside the animal, be aware that your broadhead (or someone else's) may still be inside the animal.
- Once the animal is slit open, it's easier to empty the contents if the carcass is on a slight incline. The body cavity can be tilted downhill to allow the contents to drain.
- Wash out the body cavity with a solution of water and vinegar (mix 1 tablespoon of white vinegar in 1 gallon of water), and then wipe it dry with paper towels.
- Prop the body cavity open with a stick to help it cool.
- If insects are a problem, many hunters place the carcass in a commercially available game bag. Flies and yellow jackets can be repelled with a liberal application of black pepper.



Typical Field Dressing Items Include:

- 1 gallon of water with 1 tablespoon of white vinegar added
- Aluminum foil
- Black pepper
- Cooler and ice
- Fluorescent orange flagging
- Gambrel and/or pulley system
- Game bags or cheesecloth
- Hand towels or wet wipes
- Hatchet or small saw
- Large bag for caped or trophy head
- License tag and pen
- Plastic bags for cleanup
- Plastic bags for heart and liver
- Rubber gloves
- Salt (non-iodized) for hide care
- Strong, sturdy knife
- Sturdy nylon rope—at least 25 feet
- Whetstone or other sharpening tool



Chronic Wasting Disease

Chronic Wasting Disease (CWD) is a neurological disease found only in elk and deer. The disease is similar to bovine spongiform encephalopathy, commonly known as “mad cow” disease.

Although there is no scientific evidence that CWD can be contracted by eating animals infected with the disease, health officials recommend that hunters take precautions with game harvested in areas known to be infected with CWD.

- Avoid eating body parts where CWD accumulates: brain, eyes, spinal cord, lymph nodes, tonsils, and spleen.
- When butchering, bone out the meat—cuts that leave meat on the bone have a higher likelihood of contamination.

For the latest information on CWD, go to www.cwd-info.org and www.aphis.usda.gov

Remember...

A responsible hunter will avoid displaying big game when transporting it through populated areas.

Donating Game Meat

“Hunters for the Hungry” and many local donation programs are available to bowhunters who want to donate their animal to a worthy cause.

Knuckling

Because the hide acts as an insulator, warm weather will require the hide to be removed from the animal as soon as possible. An effective technique for prepping the hide for removal is called “knuckling.”

Starting in the chest area, insert your fingers between the hide and meat and work your hand under the hide to break it free from the connective tissue. Continue around the entire carcass going as far as you can reach.

Moving a Big Game Animal

Moving a big game animal from the field to your vehicle is strenuous work. If possible, get your hunting companions to help. You may want to use a drag rope or wrap the carcass in a slick tarp. Rest often, and don't overtax yourself. This is hard work, even for hunters in excellent physical condition.

Be sure to cover your animal when placing it in your vehicle. By covering your animal, you'll keep it free of contaminating dirt and also avoid offending non-hunters who would be upset at the sight of an animal carcass.

Once an animal is in the vehicle, properly cooled, and hidden from sight, proceed immediately to your final destination or a licensed meat processing facility. Your responsibility for taking care of your animal ends only after the meat is preserved for personal use or is donated.



Cover game when placing it in a vehicle.

You should be able to...

- State the primary reason why a bowhunter needs to develop a hunting plan for every hunt and be able to complete a sample plan.
- List hazards bowhunters could face when hunting.
- List common types of bowhunting injuries.
- Describe the treatment to stop serious bleeding.
- Describe the treatment for an arrow wound in the chest or abdominal area.
- Describe the treatment for broken bones.
- Explain what to do when injured from a fall.
- List some basic necessities to carry in a survival kit.
- Identify the basic features of a topographic map.
- Name five basic parts of an orienteering compass.
- Describe how to compensate for declination when using a compass.
- Using the acronym STOP, describe what to do when lost.
- Describe how to prepare a shelter if you get lost.
- Describe how to build a fire.
- Describe how to signal for help.
- Describe different ways to purify water.
- Describe the cause of hypothermia, its prevention, and its treatment.
- Describe the cause of heat exhaustion, its prevention, and its treatment.

Importance of Planning and Preparation

Bowhunting is a safe outdoor pursuit when compared to other types of outdoor recreation and is significantly safer than many sports played indoors or outdoors.

However, bowhunting does involve a certain amount of risk. The equipment bowhunters use and the places they go provide opportunities for unplanned events that can result in physical harm or even death. The rougher the terrain—particularly in an unfamiliar area—the greater the chance of accidents. Climate extremes also increase the risk factor, and there's always the prospect of getting lost.

To avoid or minimize problems, it's essential that you plan carefully for the hunt. Responsible hunters anticipate potential problems and make plans to deal with them. Try to assess risks by visualizing every step of the hunt:

- Driving to the hunting area
- Hiking to a hunting spot
- Erecting a stand or blind
- Climbing into and out of your tree stand
- Shooting and recovering game
- Dressing the game
- Packing out your game

Ask yourself what could go wrong at each step, and determine how to avoid those problems. At the same time, you must prepare for the worst. That means being mentally prepared and equipped to cope with emergency situations.

Prepare a Hunting Plan

A hunting plan tells where and with whom you are hunting and when you expect to return. Give specific directions on your route to your destination and any alternate destinations you may have if bad weather alters your plan. Leave the plan with a family member or friend. Do not deviate from your hunting plan without notification. When hunting with a group, each person should discuss their route plan.

HUNTING PLAN

Complete this form before departing on a hunt, and leave it with a reliable person who can be depended upon to notify the authorities in case you do not return as scheduled. A word of caution: In case you are delayed and it is not an emergency, inform those with your hunting plan of your delay in order to avoid an unnecessary search!

1 Name of person filing this plan: _____
Telephone #: () _____

2 Names of others on hunt: _____ Age: _____ Address: _____
Telephone #: () _____

3 Radio Yes No Type: _____ Telephone #: () _____

4 Trip plus _____ Call sign: _____
Leaving from: _____
Route details: _____
Going to: _____

Departing: date / / time _____ am / pm
And, in no event, returning later than: date / / time _____ am / pm

5 Alternate route if bad weather is encountered: _____

6 Description of automobile
Make: _____ Color: _____ License #: _____
Where parked: _____

7 If not returned by: date / / time _____ am / pm
Call: _____
Local authority: _____ Telephone #: () _____



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 or rubber gloves
- Moleskin
- Needles
- One-half percent hydrocortisone cream
- One-sided razor blades
- Petroleum jelly
- Roll of 1-inch adhesive tape
- Roll of 2-inch adhesive tape
- Safety pins
- Scissors
- Sterile eyewash
- Thermometer
- Tweezers

Planning a Bowhunting Trip Far Away

After a few years in the sport, many bowhunters consider taking a special trip far away from their usual hunting places. Such trips are often set up to pursue game species that normally cannot be hunted around home.

- Whether such an adventure is planned as a “do-it-yourself” hunt or as a fully or partially guided/outfitted trip, you need to decide where to go, when to go, and what to take. The following suggestions will help you get the information you need.
 - Contact the wildlife agency of the state or province you are considering.
 - Get a topographic map of the planned hunting area.
 - Contact the area’s bureau of tourism, particularly if the economy is tied strongly to outdoor recreation.
 - Get names, addresses, and phone numbers of the wildlife agency personnel working in the areas recommended to you. Contact them about game locations.
 - Check bowhunting magazines for information about guided or outfitted hunts. Since many of the best outfitters are known only through word of mouth, talk to other bowhunters about hunts with which they’ve been happy. Archery and bowhunting clubs are a great source for this type of information.
- Any trip of this type must be planned well in advance if it is to be enjoyable. Consider a minimum of one year ahead of departure as adequate planning time.

Primary Hazards

Bowhunters typically face three primary hazards that may result in serious injuries:

- Falls, especially from tree stands
- Cuts or lacerations from broadheads or knives
- Long-term exposure from being lost or in the outdoors for too long

Most of the accidental deaths in bowhunting are caused by falls from tree stands. Bowhunters must take every precaution to prevent falls (see “Elevated Stands” in Chapter 6). Manufacturers and other groups have improved equipment and standards to address problems with stands. As with any equipment, it’s still the user’s responsibility to follow the safety guidelines shipped with manufactured stands as well as the principles promoted in this manual.

Gearing Up for Safety

In addition to having clothing that is appropriate for the weather and terrain you’ll encounter, it’s essential that you carry a well-equipped first-aid kit and a survival kit. Knowing how to use these kits is equally important.

Every hunter should take courses in first aid and CPR (cardiopulmonary resuscitation). Familiarize yourself with the contents of your first-aid kit, and look through the emergency procedures booklet supplied with most kits.

- Make sure the kit is stocked to deal with serious accidents such as major bleeding caused by a cut from a broadhead or hunting knife. You can be ready for these situations by adding a couple of items such as a large dressing pad, sanitary napkin, and triangular bandage.
- The kit should be personalized for your specific needs by including emergency doses of prescription drugs and over-the-counter medications you use regularly. Be aware of any side effects from these drugs that could impair your vision or other senses.

Discuss Safety Issues With Hunting Companions

In a pre-hunt meeting with your hunting companions, discuss first aid, CPR, and other emergency plans to make sure everyone knows what is expected. This pre-hunt discussion accomplishes three things.

- It mentally prepares everyone for accidents, which hopefully will never occur.
- Each individual will know what the group will do if he or she is injured.
- It determines who has been trained recently in first aid or CPR.

Basic First Aid

Transporting an injured hunter to professional medical care as quickly as possible is imperative. However, what happens before the victim is treated by medical professionals can be critical to his or her survival and future quality of life. The NBEF strongly recommends taking a certified first-aid course.

Bleeding

Pressure, applied firmly and directly, is the best control of serious bleeding anywhere on the body. Pressure closes blood vessels and forms a barrier, allowing blood to clot around the wound.

- Use a thick, soft, clean pad to apply firm pressure directly on the bleeding wound.
- Covering the wound and applying pressure is most important, even if you have to use your hand. Try to avoid contaminating the wound with dirt, grass, or other foreign matter.
- Once applied, try not to remove the pressure bandage. Removal will reopen the wound and cause bleeding to start again.
- If the bandage becomes soaked with blood, put another layer over the top rather than peeling off the existing layer.

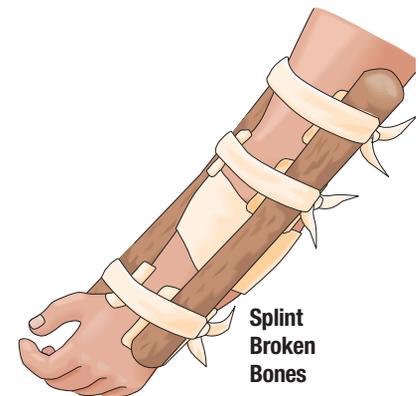
Arrow Wound

A deep wound in the chest or abdomen calls for quick action, especially if an artery or vein has been cut by a razor-sharp broadhead.

- If possible, apply a pressure bandage to the damaged vessel or the wound.
- If the arrow remains in the victim, leave it there. The broadhead itself may provide the pressure needed to stop the bleeding from the wound and allow clotting to occur around it.
 - Try to stabilize the arrow with adhesive tape or other material. Minimize movement of the shaft to avoid further injury from the broadhead.
 - Give medical professionals a duplicate of the arrow imbedded in the victim so that they see the size and shape to avoid injuring themselves as they treat the victim. A duplicate arrow also helps them determine if they have retrieved all of the broadhead from the victim's body.

Remember...

The most valuable tool in an emergency situation is your brain, but you need to stay calm to use it effectively. Getting overly excited or panicky will defeat any preplanning. Instead, focus on what has to be done and the best way to do it. Think. Forcing yourself to analyze the situation and formulate solutions invariably reduces the tendency to panic.



Falls

You're always at risk of falling when you hunt from a tree stand. Make plans for a worst-case scenario. Establish a signal that will let your companions know if you fall. Three blasts on a whistle carry farther than a human voice, and it's a recognized call for help.

If you are hunting alone, what you do depends on your injuries.

- If your injuries are immobilizing, you'll be forced to wait and use your signal until you're found. This is a time when a hunting plan may literally save your life.
- If you can move, consider your location and how close you are to assistance. Are you mobile enough to make it to help?
- If you have broken bones, sprains, or cuts, use what you have available for first aid.
 - Clothing and large handkerchiefs can be used to stop bleeding and provide padding.
 - Use belts, shoelaces, bowstrings, or haul lines to secure splints.
 - Your bow, arrows (without points), branches, or poles can provide rigid support of broken bones or sprained limbs.
- Know how to use a rope or strap to relieve suspension trauma when hanging from a fall-arrest system.
- Take a first-aid course to learn how to effectively treat a victim of suspension trauma.

Topographic Maps

Topographic maps are available at many outdoor stores, or may be ordered from:

U.S. Geological Survey
Branch of Distribution
P.O. Box 25286
Federal Center
Denver, CO 80225

National Forest Service Travel Maps show forest road networks and restrictions. They are available from the U.S. Forest Service.

Aerial photos and topographic maps are also available at: www.terraserver.com

Broken Bones

Don't move someone with a back or neck injury. That should be left to paramedics or other professionals because permanent damage could result from improper handling. When a hunter has a broken leg, foot, arm, or hand, you can perform basic first aid that will allow the individual to be transported to a medical facility.

- Keep broken bones stable by immobilizing them with splints. Any stiff material can be used—a bow; sticks; boards; tree limbs; arrows with the points removed; or even books, newspapers, or thick magazines.
- Use a belt, rope, or strips of torn clothing to bind the splints and broken bones together; but don't tie them so tightly that you cut off circulation.
- Move the victim carefully and only as much as necessary to reach professional medical help.

Survival Kit

In addition to a first-aid kit, carry a light-weight survival kit that will help sustain you for a day or two. The kit should contain the following, all of which can fit in a small packet:

- Waterproof fire-starting materials
- A signaling device (usually a whistle and possibly a mirror) and a large square of fluorescent orange fabric
- A few high-energy food bars or packs of trail mix (nuts and dried fruit)
- Means to purify water (see "Drink Water To Prevent Dehydration" in this chapter)
- A large square of plastic or a space blanket
- Flashlight and extra batteries
- Dental floss for tying a shelter together

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

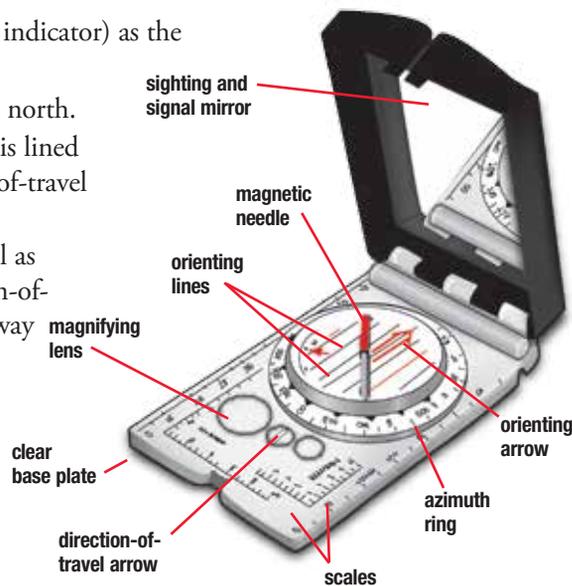
- The orienteering compass is a critical piece of equipment for outdoor travel.
- A good orienteering compass has these features:
 - Clear base plate that allows you to see the map underneath
 - Straight sides for aligning two points or for drawing lines
 - Liquid-filled needle housing that keeps the magnetic needle relatively steady when taking readings
 - Two arrows: a direction arrow painted on the base plate (or you may use the edge of the compass) is used to point the compass from your starting point to your destination; an orienting arrow, located in the needle housing, is used to orient your compass to your map

“Red Fred in the Shed”: Using a Compass

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

- To face north, move your body—*not* the compass.
- Think of the *red* magnetic needle as “red Fred.”
- Think of “N” (the north indicator) as the “shed.”

- Follow these steps to face north.
 - Twist the dial until N 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 aligns with the N (think of it as putting “red Fred in the shed”). You now face north.



Remember...

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



The 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 Earth twice a day and transmit information to 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).

Declination

Topographic maps are drawn to true north (North Pole), which is indicated by the grid lines on the map. However, a compass will always point 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, you're at 0° declination. Your compass needle will point to true north. However, if you're east or west of 0° declination, your compass will not be in line with true north.

Remember...

Take a compass bearing of your current position as soon as you step out of your vehicle, and use the reverse reading for your return trip.

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.

**How To Avoid Becoming Lost**

- Carry a good map—preferably one that shows the topography.
- Invest in a good compass and a Global Positioning System (GPS) unit, especially if you are hunting in a wilderness area or even a place new to you. Take extra batteries for the GPS unit.
- Make it part of your pre-hunt planning to learn how to use a map, compass, and GPS unit.
- When you get to your hunting area, use your map to get oriented before you leave your camp or vehicle.
- If practical, use a two-way radio to communicate with your partner or a group of hunters.

Remember...

Regardless of where you hunt, always take food and water with you.

To compensate for declination:

- Align the north arrow (the “N”) of the azimuth ring along a north/south line on the map.
- Check the diagram at the bottom of the map that shows whether magnetic north is to the left or right of true north.
- Turn the azimuth ring the correct number of degrees left or right as indicated on the map. The “N” is now pointing at magnetic north.
- Hold the compass level in front of you, and rotate your body until the tip of the magnetic needle aligns with the “N” on the azimuth ring. The direction-of-travel arrow on the base plate now points in the direction you want to go.

Plot Your Progress

As you hike into unfamiliar terrain, you can keep your bearings by taking frequent compass readings and plotting your progress on a map.

- Note key points, such as stream crossings, to help you find your way back.
- Pay particular attention when you reach a high point at the top of a ridge; use the elevation to locate landmarks visible from there.

Learning to set a course and take bearings takes study and practice. The best way to become proficient with a compass is under the guidance of an experienced individual.

If You Get Lost

Most of the time getting “lost” is a matter of becoming temporarily disoriented. Some people become so disoriented that they need to be rescued or have to spend the night in the woods. Getting lost can be a very serious situation—something every hunter should think about before venturing out.

Stay Calm

Hunters who calmly help themselves or others cope with injuries and emergencies sometimes panic when they discover they don’t know where they are or how to get back to their camp or vehicle. This creates a dangerous situation. Hunters with many years of experience have injured themselves, lost their equipment, and torn their clothing to shreds as they aimlessly floundered through unfamiliar woods in a panic.

- Stay calm. Sit down, and drink some water. Then decide what to do. 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, spend the night where you are. If you remain in one spot, it’s likely that you will be found in a few days, especially if you left a hunting plan with someone or you have become separated from hunting companions who may be relatively close by.
- Remind yourself that most lost hunters are located or find their way back to camp within 48 to 72 hours. You will shorten the time if you follow the guidelines in this manual and remember three priorities: shelter, fire, and signal.

Prepare 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 offer protection 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 position the opening away from the wind. Cover the frame with evergreen branches to block out wind or precipitation. If you brought a haul line with you, use it to bind the branches in place. Leaves and twigs may be heaped on top of the branches. If you need additional protection, add side walls. If you are in a snowy area, you might consider building a snow cave.



A lean-to can be built using tools from a field-dressing kit.

Build a Fire

Build your fire where heat will radiate into the shelter. Your sleeping area should be located between the shelter wall and the fire.

- If there is snow on the ground, build a 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 a 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.
- Find green or damp leaves to make the fire smoke a great deal during the day. Don't smother the fire, but make it smoke. At night, skip the smudge (smoke) but build the fire up brightly and keep it going. A large fire will keep you warmer and possibly signal rescuers.

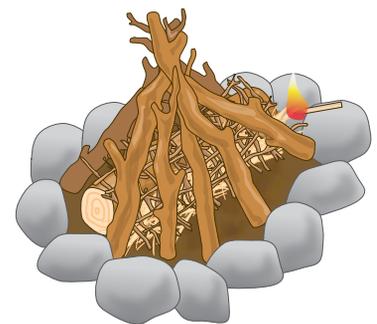
When You Think You Are Lost



These simple steps are easy to remember and may save your life!

Lifesaving Rainwear

Most bowhunters carry a set of lightweight, soft rainwear in their packs at all times. This extra set of clothing can be a true lifesaver if you become lost. It serves as an outer layer to insulate and protect your body from wind. In addition, if your regular clothing becomes wet, you have something to protect your body while you dry your clothes. You can survive for a long time in a wilderness situation—even without food—if you can make a shelter, build a fire, and dry your clothing.



Physical Fitness

Hunting often demands more physical exertion than you're accustomed to doing. Conditions that hamper your physical ability to perform safely and responsibly while hunting include:

- Allergies
- Asthma
- A heart condition
- Excess weight
- Poor physical conditioning

If you're planning a hunt that involves fairly strenuous activity, start getting in shape at least two months ahead of time.



Skills of the Survivor

Hosted by Peter Kummerfeldt, one of the world's leading authorities on survival, this DVD acquaints you with the skills necessary to survive an outdoor emergency.

It is available at www.nbef.org or by calling 605-716-0596.

Altitude Sickness

Altitude sickness usually occurs when a person travels to a high elevation in the mountains too quickly or is too active when first reaching a high altitude. In less severe cases, the symptoms include headache, nausea and/or vomiting, fatigue, and shortness of breath during exertion.

To prevent altitude sickness:

- Ascend slowly and take breaks so that your body has time to adjust to the changes.
- Drink plenty of water or other liquids.

To treat altitude sickness:

- In mild cases, your body may adjust if you stay at the current altitude, rest, and drink plenty of liquids to avoid dehydration.
- In severe cases or if the symptoms get worse, return to a lower altitude immediately and seek medical attention. Severe cases of altitude sickness can be fatal.

Signal for Help

- When you decide to stay put and wait to be rescued, prepare help signals as soon as possible.
 - The international emergency sign for distress is three repetitions of any signal, including three blasts on a whistle. Pause between repetitions to listen.
 - 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.
- Once you have a shelter, fire, and your signal prepared, you can focus on water and food.

Drink Water To Prevent Dehydration

Even in cool weather, you need two to four quarts of water a day. Under most conditions, people can last only about three days without water.

Most bowhunters usually carry a water bottle or canteen. Don't panic because panicking tends to make you thirstier.

- Pure drinking water is rare, even in the most remote regions. Clear mountain streams, as well as most surface water, is often contaminated by *Giardia lamblia*, a parasite that causes serious intestinal illness in humans.
 - Boiling is an effective way to disinfect water.
 - Chemical purifiers, such as dioxide tablets or chlorine, can be used; but some may not be satisfactory.
 - Filtration systems are also a means of disinfecting water.
- In northern climates, don't eat snow because it can drop your core body temperature. Pack the snow into your canteen or water bottle, and then melt it by setting it close to the fire. Be careful not to melt your water bottle.

Eat Some 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. You may be able to harvest the bulk of your food with your hunting equipment.
- It is always a good idea to carry extra food, such as energy bars, with you.

Hypothermia

- Hypothermia occurs when your body loses heat faster than it can produce it, causing your core body temperature to fall. When the core temperature drops below 78° Fahrenheit, the body dies. Hypothermia is often induced by cold, wet conditions, such as rain, snow, sleet, or immersion in water. The outdoor temperature does not have to be below freezing. A person may develop hypothermia when the temperature is around 50° Fahrenheit and it's damp or windy.
- 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. 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, including chocolate or dried fruits such as raisins, provide quick energy that helps your body produce heat.

Symptoms of Hypothermia

Hypothermia attacks quietly and with only a few warning signs, which usually go unnoticed by the unsuspecting victim. In the early stages, a victim will shiver as the body attempts to generate heat to keep the core warm. Then the victim becomes slightly disoriented and speech may become slurred. Finally, the victim becomes sleepy and then loses consciousness. At this point, the victim usually dies.

Treatment of Hypothermia

Once hypothermia starts, exercise will not help. You need outside sources of heat to rewarm the body.

- Find shelter.
- Use fire, blankets, or body heat to warm up.
- Drink warm liquids and eat quick-energy foods to produce inner-body heat.
- Replace wet clothing. If there is no dry clothing, use a fire to dry one layer at a time.



If you begin to shiver—a first sign of hypothermia—stop and get warm.

Wind Chill Chart

		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		

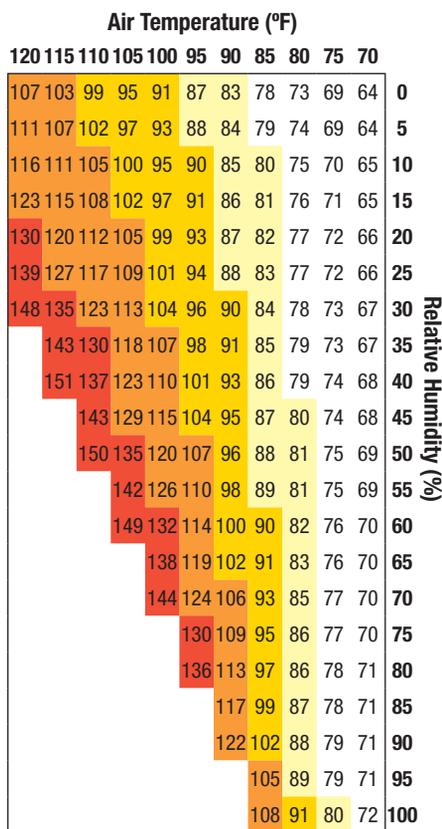
Frostbite occurs in 15 minutes or less

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 is issued when wind chills are expected to be -20° F or less.

Remember...

Once a person's body temperatures changes 3 or 4 degrees on either side of 98.6° Fahrenheit, that person is no longer capable of helping himself.

Heat Index Chart



Heat Index	General Effect of Heat Index
Light Yellow	Fatigue possible with prolonged exposure and/or physical activity
Yellow	Sunstroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Orange	Sunstroke, heat cramps, or heat exhaustion likely and heat stroke possible with prolonged exposure and/or physical activity
Red	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 and/or sports drinks.
- 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 to a cooler place and drink water.
- Fan yourself to lower body temperature, but don't over-chill.

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

- Wrap in a sheet and soak with cool—not cold—water.
- Fan, but don't over-chill.
- Get to a hospital immediately.

Think Safety

- Prior to each use, check your bow and arrows for signs of damage or wear.
- Only point your bow and arrow in a safe direction.
- Only nock an arrow when it's safe to shoot.
- Be sure of your target and what's in front of it, immediately behind it, and beyond it.
- Never shoot over a ridge.
- Only shoot when you have a safe range or shooting area, as well as a safe backstop or background.
- Do not shoot at an animal standing on a ridge top (a "skyline" shot) where you can't identify a safe background.
- Keep your emotions under control, and think about safety first.
- Do not drink alcohol or take mood-altering drugs before or during bowhunting.
- Hunt and shoot within your own physical limitations.
- Exercise regularly and stay in good shape, especially before strenuous hunts.
- Let family or friends know exactly where you will be hunting.
- Always carry broadheads in a sturdy quiver that fully covers razor-sharp blades.
- Dress properly for the worst weather conditions you might encounter.
- Carry basic survival gear every time you go afield, even for short hikes.
- Clearly identify the specific game animal you intend to shoot before releasing an arrow.
- Carefully cross barriers or obstacles with arrows secured in a quiver.
- When climbing into an elevated stand, always attach yourself to the tree from the time you start climbing until you are back on the ground.
- Use a full-body harness, attached so that you drop less than a foot if you fall.
- Always use a haul line to bring your gear into your elevated stand and to lower your gear when you're through hunting—don't climb or descend with a bow in your hand.

Chapter Review Exercises

Chapter 1

- Name two individuals who played an important role in the development of modern bowhunting.
 - _____
 - _____
- Define "bowhunting." _____

- List two benefits of bowhunting.
 - _____
 - _____
- List two special challenges that set bowhunting apart from hunting with modern firearms.
 - _____
 - _____
- Name two funding sources for bowhunter education.
 - _____
 - _____
- Does your state or province require bowhunter education?
 - Yes
 - No
- Give two reasons why you want to bowhunt.
 - _____
 - _____

Chapter 2

- Wildlife conservation ensures that _____.
 - hunting seasons established by Kublai Khan will continue.
 - no animals are ever harvested.
 - natural resources can be drawn on despite unwise use.
 - renewable resources can replenish themselves indefinitely.
- Wildlife preservation _____.
 - allows for the consumptive use of natural resources.
 - is a Biblical rule for saving natural resources.
 - saves natural resources with no consumptive use of them.
 - allows hunting of endangered species.
- A habitat for wildlife must include _____.
 - space, arrangement, food, cover, and water.
 - brush and rocks, predators, food, water, and space.
 - space, vegetation, food, and resting and breeding places.
 - cover, predators, large area, arrangement, and food.
- The "carrying capacity" of a wildlife area is the _____
_____.
- List four factors that can limit the population production of wildlife.
 - _____
 - _____
 - _____
 - _____
- Hunting is an effective wildlife conservation tool because _____.
 - funding from hunting licenses helps many game and non-game species recover from dwindling populations.
 - bowhunters play an important role by supplying wildlife managers with needed information from the field.
 - hunting contributes to threatened or endangered wildlife.
 - both a. and b.

- By continuously monitoring the birth rate and death rate of various species and the condition of their habitat, wildlife managers _____.
 - know how to set hunting regulations and determine if other management practices are needed to conserve wildlife species.
 - know when to ignore hunting regulations they set earlier.
 - can obtain data to eliminate wildlife species.
 - both b. and c.
- Trapping and relocating animals is an example of the _____ wildlife management practice.
 - hunting
 - artificial stocking
 - setting bag limits and legal methods for taking wildlife
 - habitat improvement
- It is critical that hunters are able to identify wildlife correctly so that they don't mistakenly _____.
 - harvest illegal game animals or non-game animals.
 - confuse horns with antlers.
 - confuse cloven hooves with cud chewers.
 - confuse meat-eating animals with those that eat meat as well as plants.

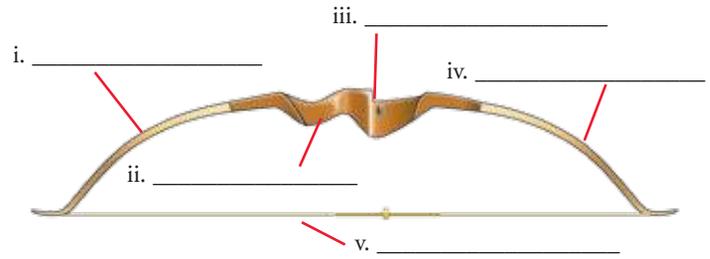
Chapter 3

- List two archery safety rules.
 - _____
 - _____
- List two bowhunting safety rules.
 - _____
 - _____
- Bowhunter responsibility means _____.
 - personal accountability.
 - ethical behavior.
 - adhering to unwritten law.
 - being a good ambassador for bowhunting.
- List three words that describe a responsible bowhunter.
 - _____
 - _____
 - _____
- Give three reasons for bowhunting laws and regulations.
 - _____
 - _____
 - _____
- Where can you typically obtain a copy of your state or provincial bowhunting regulations? _____
_____.
- The "unwritten laws" of hunting also are known as _____.
 - rules.
 - regulations.
 - ethics.
 - statutes.

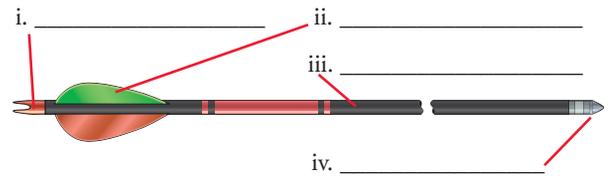
8. Give two ways to show respect for each of the following.
- Personal limitations
- _____
 - _____
- Equipment
- _____
 - _____
- Landowners
- _____
 - _____
- Game animals and resources
- _____
 - _____
- Hunting companions
- _____
 - _____
- Non-hunters
- _____
 - _____
9. The “rule of first blood” states that if two hunters each fire an arrow into an animal, the one who can claim the animal is the first to _____.
10. List three bowhunter actions that present a positive public image.
- _____
 - _____
 - _____
11. Decide if the following are unsafe, illegal, unethical, or irresponsible.
- _____ Shooting over a ridge
 - _____ Shooting beyond your effective range
 - _____ Entering private property without the landowner’s permission to recover game that has crossed a fence
 - _____ Searching half an hour for an animal you thought you hit and then saying, “Oh well!”
 - _____ Shooting at a chipmunk or ground squirrel to practice your shots
 - _____ Carrying arrows with broadheads outside of a covered quiver
 - _____ Bragging about hitting a deer but losing it
 - _____ Carrying a trophy deer atop a vehicle so that everyone can see what you shot
 - _____ Practicing only a week before the bowhunt

5. The three styles of bows used by today’s bowhunters are the _____, _____, and _____.

6. Label the basic parts of a bow.



7. Label the basic parts of an arrow.



8. Arrows shafts are made of _____, _____, and _____.

9. The best bowfishing arrow is made of _____.
- aluminum.
 - carbon-fiber.
 - solid fiberglass.
 - wood.

10. _____ makes the arrow spin in flight and gives it stability.

- Flu-flu
- A hunting point
- Fletching
- Balance

11. The choice of arrow point is determined by _____.

12. If you are bowhunting deer, use a _____ arrow point.

- field
- Judo
- blunt
- broadhead

13. An arrow must be matched to your bow because mismatched arrows may not fly _____ or _____.

14. An arrow’s resistance to bending when shot from a bow is known as _____.

- stability.
- fletching.
- spine.
- rigidity.

15. Bending, known as “archer’s _____,” occurs when an arrow is released from the bow.

16. List three accessories that can be used when shooting bows and arrows.

- _____
- _____
- _____

Chapter 4

- Proper bow selection and fit are essential for maximum _____ and _____ when bowhunting.
- Draw length is _____.
- Draw weight is _____.
- The staff at a _____ shop will help you measure your draw length and draw weight.

Chapter 5

- Your clothing must not only protect you from the elements and rough terrain, but it also should meet the special requirements of bowhunting, which include _____ and _____.
- The use of wicking underwear allows the bowhunter to stay _____ and _____.
- The purpose of camouflage clothing is to break up the _____ of the hunter.

4. List the six basic steps for shooting with a bow and arrow.
 - i. _____
 - ii. _____
 - iii. _____
 - iv. _____
 - v. _____
 - vi. _____
5. The anchor point is the position where your shooting hand _____.
6. To ensure _____, make sure your bowstring hand comes to the anchor point each time you shoot.
 - a. maximum power
 - b. accuracy
 - c. proper spin
 - d. safety
7. When aiming with a bow sight, you must have the proper _____, which is the correct alignment of target, front sight, and rear sight.
8. The most important thing a bowhunter can do to become a proficient shot is _____.
9. _____ is the process of adjusting your sights to hit a target consistently.
10. Most bows can be “tuned” by adjusting the _____ (up or down) and the _____ (side to side).
11. List two common bowshooting errors.
 - i. _____
 - ii. _____
12. List three things you should do to prepare for a hunt effectively during advanced archery practice.
 - i. _____
 - ii. _____
 - iii. _____
13. What type of target is used when practicing actual distance judging? _____
14. _____ is determining yardage by comparing the relationship between a distant animal and your fingers or a part of your bow.
 - a. Actual distance judging
 - b. Subtending
 - c. Markers
 - d. Range finders
15. List the four senses used to read game sign.
 - i. _____
 - ii. _____
 - iii. _____
 - iv. _____
5. The most popular way to hunt white-tailed deer with a bow and arrow is from _____.
 - a. ground blinds.
 - b. pit blinds.
 - c. an elevated stand.
 - d. stalking.
6. List three types of manufactured portable tree stands.
 - i. _____
 - ii. _____
 - iii. _____
7. According to a study of Vermont and North Carolina hunters, which type of typical bowhunting accident has the highest potential for fatalities? _____
8. Check any of the following that make hunting from tree stands safer.
 - ___ a. inspecting the tree stand frequently
 - ___ b. using a fall-arrest system
 - ___ c. using a haul line to raise and lower gear
 - ___ d. wearing quiet clothing
9. As you enter and exit an elevated tree stand, keep a firm hold on the _____ and don't let go until you're certain that the stand and steps are _____.
10. The National Bowhunter Education Foundation recommends wearing a fall-arrest system that includes a _____.
11. Always use a _____ of heavy cord attached to your stand to bring up your bow, arrows, and pack.
12. Apply cover scents to skin, _____, or _____ to reduce human odor by neutralizing or hiding it with a natural competitive scent.
13. _____ work by offering animals a tempting odor.
14. List two ways you can limit human scent when hunting white-tailed deer.
 - i. _____
 - ii. _____
15. List four basic types of game calls that will attract wildlife.
 - i. _____
 - ii. _____
 - iii. _____
 - iv. _____
16. Name two special items that you need for bowfishing.
 - i. _____
 - ii. _____
17. Successful bow fisherman learn to deal with refraction (a phenomenon that bends light rays as they enter the water) by _____.
 - a. aiming lower than normal.
 - b. using a laser rangefinder.
 - c. aiming higher than normal.
 - d. using polarized glasses.

Chapter 6

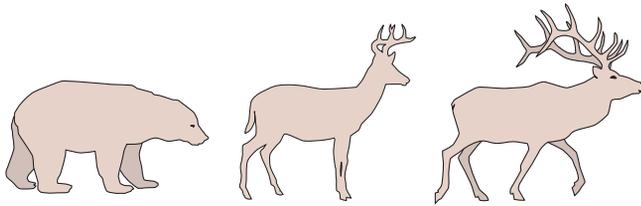
1. Identify two methods of bowhunting.
 - i. _____
 - ii. _____
2. What is an advantage of still hunting?

3. List two advantages of hunting from pit blinds.
 - i. _____
 - ii. _____
4. List two advantages of hunting from elevated stands.
 - i. _____
 - ii. _____

Chapter 7

1. Broadhead-tipped arrows deliver a _____ impact that kills by cutting vital _____.
2. Proper shot placement is critical in bowhunting because an arrow must be precisely placed for a _____, _____ kill.

3. In big game animals, the primary target area lies within the animal's _____.
4. Put an "X" over the correct aiming spot on the animals below.



5. The shot angle is the angle at which the animal is standing in relation to the _____.
6. When bowhunting, you should never take a shot when a deer or other big game is looking _____.
7. The best shot angle for the largest game, such as elk, moose, and bear, is typically _____.
 - a. head-on.
 - b. quartering-toward.
 - c. broadside.
 - d. rear-end.
8. The best shot angle for deer-sized animals is _____.
 - a. head-on.
 - b. quartering-away.
 - c. quartering-toward.
 - d. rear-end.
9. Give two reasons why the quartering-toward angle is not a good shot.
 - i. _____
 - ii. _____

10. Proper shot selection involves _____.
 - a. timing the shot properly.
 - b. shooting within effective range.
 - c. choosing the proper shot angle.
 - d. all of the above.
11. "Jumping the string" refers to _____.
 - a. premature release of the string.
 - b. jerking the string before the shot.
 - c. an animal's reaction to the sound of the bow upon release of the arrow.
 - d. the string coming loose from the limb of the bow.

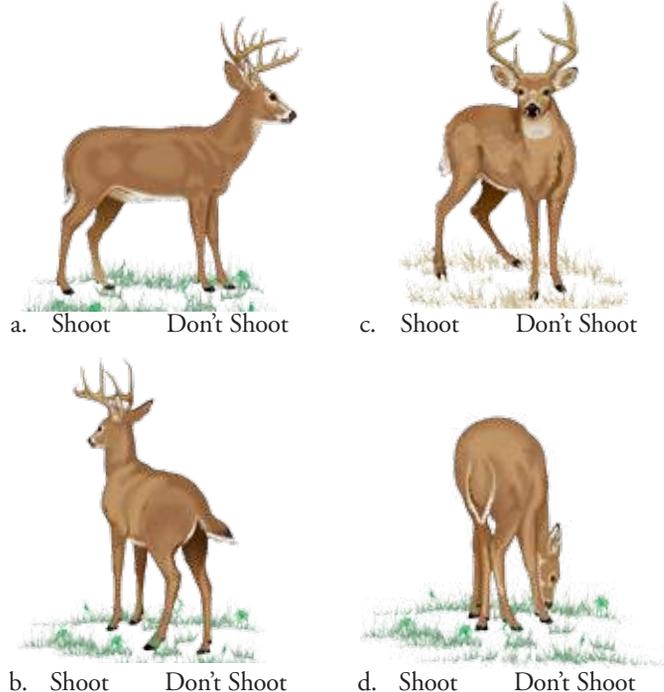
12. Once you shoot an animal, you have a responsibility to _____ it.
13. If you are sure you have a solid chest hit, wait ____-____ minutes before following; if it's a gut hit, wait ____-____ hours.

14. The color and character of blood and bodily fluids found on the trail of wounded game tell you where the arrow hit. Match the following.

___ a. bright red blood	1. veins
___ b. dark blood	2. intestines
___ c. frothy, bubbly blood	3. arteries
___ d. greenish fluid	4. lungs

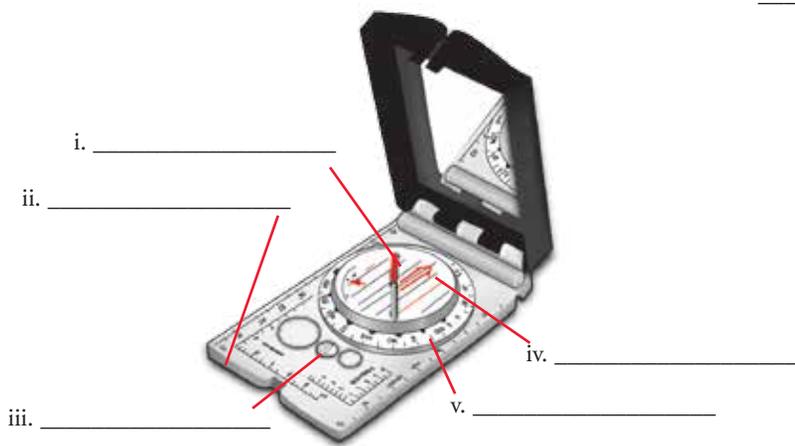
15. Describe what to do if you are following a wounded animal and you lose all tracking sign.

16. The best way to approach downed game is _____.
 - a. from the front.
 - b. poke it with your bow.
 - c. shoot again to make sure it's dead.
 - d. from the rear.
17. Name the three factors that contribute to spoiled meat.
 - i. _____
 - ii. _____
 - iii. _____
18. List three items that should be included in your fanny pack or backpack to field dress game properly if you are far from camp or home.
 - i. _____
 - ii. _____
 - iii. _____
19. When field dressing an animal, it's important not to cut open any _____.
20. Give two reasons for covering harvested animals when transporting them in a vehicle.
 - i. _____
 - ii. _____
21. Circle the correct action to take in the situations below.



Chapter 8

- The primary reason a bowhunter needs a hunting plan is to _____.
 - deal with unplanned events.
 - provide directions to your destination.
 - list the time you expect to return.
 - comply with hunting laws.
- Bowhunters face three primary hazards that may result in serious injuries: _____, _____, and _____.
- The best control of serious bleeding is _____.
 - a tourniquet.
 - an ace bandage.
 - direct pressure.
 - water.
- The best thing to do if an arrow remains in the victim's body is to _____.
 - try to remove it.
 - cut it off.
 - clean the wound.
 - leave it there.
- Keep broken bones stable by immobilizing them with _____.
- To let your companions know you have fallen, you should _____.
 - yell for help.
 - signal them with three blasts on a whistle.
 - make an "X" in the snow, grass, or sand.
 - call them on your cell phone.
- List four basic necessities to carry in a survival kit.
 - _____
 - _____
 - _____
 - _____
- On a topographic map, contour lines show the _____ of the ground.
- An orienteering compass has these five basic features:



- The difference between true north and magnetic north is called _____.
- When you think you are lost, remember the four STOP steps that stand for _____, _____, _____, and _____.

- If you are lost, _____ will help the most.
 - high-energy food bars and trail mix
 - a map and a GPS unit
 - matches and plenty of wood
 - a signaling device and a space blanket
- If you get lost, look for a natural shelter, such as a _____ or a thick stand of evergreens.
- Before starting a fire, you should _____.
 - gather everything you need.
 - pile fine twigs, grass, or bark shavings loosely as a base.
 - shave dry wood from the inside of tree bark.
 - all the above.
- The international emergency sign for distress is _____.
 - four repetitions of any signal.
 - a long blast on a whistle.
 - an SOS signal.
 - three repetitions of any signal.
- _____, _____, and _____ are three ways to disinfect water.
- The lowering of the body's core temperature is called _____.
 - hypothermia.
 - hyperthermia.
 - hypoglycemia.
 - hyperactivity.
- Heat exhaustion occurs when the core body temperature increases, usually as a result of _____ and _____ conditions plus a lack of water.
- One of the best ways to prevent heat exhaustion is to _____.
 - stay out of the sun from 10 a.m. to 2 p.m.
 - drink plenty of water.
 - wear a hat.
 - eat cold food.
- The most important tool in an emergency situation is your _____.

Bowhunter's Resource Directory

Books:

A Sand County Almanac
By Aldo Leopold

*Inherit the Hunt: A Journey into the
Heart of American Hunting*
By Jim Posewitz

Know Hunting: Truths, Lies & Myths
By David Samuel

The Deer Pasture
By Rick Bass

Organizations:

Archery Hall of Fame and Museum, Inc.
58 North Main
Union City, PA 16438
814-392-8901
www.archeryhalloffame.org

Archery Shooters Association (ASA)
P.O. Box 399
Kennesaw, GA 30156
770-795-0232
www.asaarchery.com

**Archery Trade Association Foundations:
Bowhunting Preservation
Alliance (BPA) & Arrow Sport**
P.O. Box 70
New Ulm, MN 56073-0070
1-866-266-2776
www.archerytrade.org

Becoming an Outdoors Woman
1900 Franklin St.
CNR, UWSP
Stevens Point, WI 54481
1-877-BOWOMAN (1-877-269-6626)
www.uwsp.edu/cnr/bow

Boone and Crockett Club
250 Station Dr.
Missoula, MT 59801
406-542-1888
www.boone-crockett.org

**Bowfishing Association of America
(BAA)**
5 Eldon Starr Ln.
Conway, AR 72032
501-730-3169
www.bowfishingassociation.com

**Christian Bowhunters of America
(CBA)**
2205 State Route 571 West
Greenville, OH 45331
937-548-0623
www.christianbowhunters.org

**Farmers and Hunters Feeding the
Hungry (FHFH)**
216 N. Cleveland Ave.
Hagerstown, MD 21740
1-866-GET-FHFH
www.fhfh.org

**International Bowhunting
Organization (IBO)**
P.O. Box 398
5425 Liberty Ave.
Vermilion, OH 44089
440-967-2137
www.ibo.net

**International Hunter Education
Association**
800 East 73rd Ave., Unit 2
Denver, CO 80229
303-430-7233
www.ihea.com

National Field Archery Association
800 Archery Ln.
Yankton, SD 57078
605-260-9279
www.nfaa-archery.org

**National Wild Turkey Federation
(NWTF)**
P.O. Box 530
Edgefield, SC 29824
1-800-THE-NWTF (1-800-843-6983)
www.nwtf.org

**Physically Challenged Bowhunters of
America, Inc. (PCBA, Inc.)**
2152 Route 981
New Alexandria, PA 15670
724-668-7439
www.pcba-inc.org

Pope and Young Club
P.O. Box 548
Chatfield, MN 55923
507-867-4144
www.pope-young.org

**Quality Deer Management Association
(QDMA)**
P.O. Box 160
Bogart, GA 30622
1-800-209-DEER (1-800-209-3337)
www.qdma.com

Rocky Mountain Elk Foundation
5705 Grant Creek Rd.
Missoula, MT 59808-8249
1-800-CALL ELK (1-800-225-5355)
www.rmef.org

Safari Club International (SCI)
4800 West Gates Pass Rd.
Tucson, AZ 85745
1-888-SCI-HUNT (1-888-724-4868)
www.safariclub.org

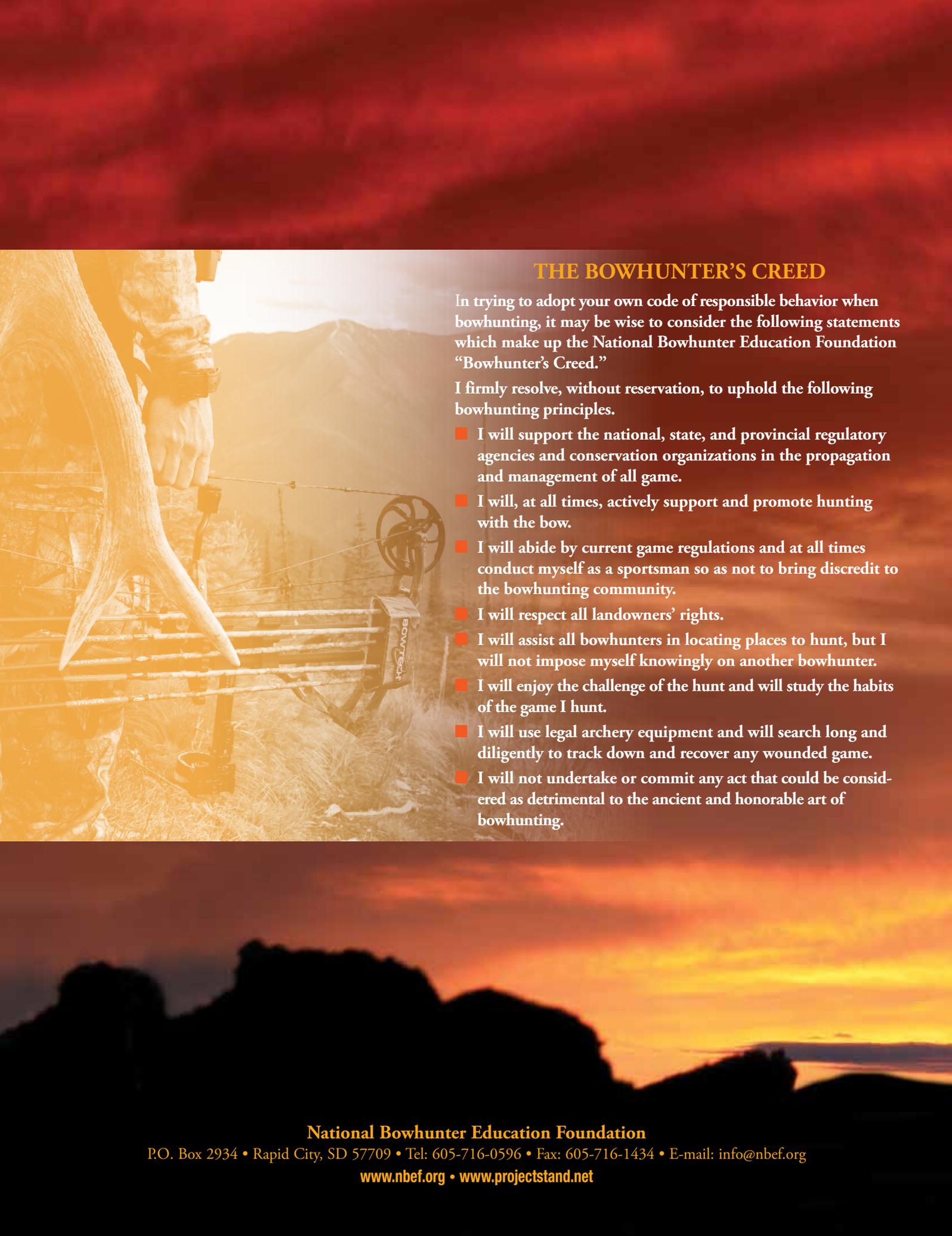
**Treestand Manufacturer's Association
(TMA)**
P.O. Box 15214
Hattiesburg, MS 39404
601-584-7983
www.tmastands.com

USA Archery
4065 Sinton Rd., Suite 110
Colorado Springs, CO 80907
719-866-4576
www.usarchery.org

U.S. Fish & Wildlife Service
4401 North Fairfax Dr.
Arlington, VA 22203
703-358-2066
www.fws.gov

Wheelin' Sportsmen
National Wild Turkey Federation
P.O. Box 530
Edgefield, SC 29824
1-800-THE-NWTF (1-800-843-6983)
www.wheelinsportsmen.org/wheelin

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



THE BOWHUNTER'S CREED

In trying to adopt your own code of responsible behavior when bowhunting, it may be wise to consider the following statements which make up the National Bowhunter Education Foundation "Bowhunter's Creed."

I firmly resolve, without reservation, to uphold the following bowhunting principles.

- I will support the national, state, and provincial regulatory agencies and conservation organizations in the propagation and management of all game.
- I will, at all times, actively support and promote hunting with the bow.
- I will abide by current game regulations and at all times conduct myself as a sportsman so as not to bring discredit to the bowhunting community.
- I will respect all landowners' rights.
- I will assist all bowhunters in locating places to hunt, but I will not impose myself knowingly on another bowhunter.
- I will enjoy the challenge of the hunt and will study the habits of the game I hunt.
- I will use legal archery equipment and will search long and diligently to track down and recover any wounded game.
- I will not undertake or commit any act that could be considered as detrimental to the ancient and honorable art of bowhunting.

National Bowhunter Education Foundation

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www.nbef.org • www.projectstand.net