

Advanced Black Bear Anatomy and Shot Placement Guide

IBEP Hunter Responsibility Series

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No. 8447

National Bowhunter Education Foundation
101½ N. Front Street
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Black Bear Shot Placement

Firearm hunters and bowhunters have a responsibility to make quick kills and recover all game. One complaint that members of the public (other hunters and non-hunters) have about hunters is “slow deaths, wounded and unrecovered animals.” Accurate shot placement is the key to a quick kill and game recovery. Necessary ingredients of good shot placement are knowledge of how a hunting arm harvests game, shooting only within one’s ability, and knowing the game animal’s internal anatomy. The future of hunting and a hunter’s self-respect depend on their ability to efficiently harvest game.



Shot placement is especially important for black bear hunters due to the potentially large size of bears (up to 600 pounds) and the fact that bears may attack a hunter if wounded. Bears are significantly different in structure than that of other animals. Also, bears have heavier bones and hides than other big game animals. The long fur and layers of fat found on bears often inhibits blood from dripping onto the ground, making trailing more difficult. The only responsible conclusion is good shot placement for a quick kill.

How an Arrow Works

Arrows tipped with **razor sharp** broadheads are designed to cut. Arrows harvest game by cutting arteries and veins resulting in blood loss. In addition to severe bleeding, arrows shot through both lungs cause the lungs to collapse, resulting in rapid death through suffocation. Arrows can cut through softer bones like ribs, but arrows shot from even a very heavy bow will rarely penetrate the heavy bones found in the shoulder, hips, head and neck. Thus, **both** razor sharp broadheads and careful shot placement are crucial to game recovery.



How a Bullet Works

Bullets harvest game by massive shock and tissue destruction. A small bullet travels at very high speed (energy) and transfers that energy to the animal upon impact. The bullet is effective in killing the animal if it is of the proper design and fired from a firearm adequate for the game being hunted. A bullet can even smash through heavy bone and enter into the vital organs.

Hunting bear with muzzleloading rifles presents special shot placement considerations. The relatively heavy projectile shot from a muzzleloader travels at slower speeds and has less energy than those from most centerfire rifles. At the same time, loading from the muzzle means that more than one shot at a bear is unlikely. Thus, muzzleloader hunters should limit their shots at bear to within their personal effective range, not to exceed 100 yards.

Internal Anatomy of Bear

Study the bear diagram. A spot in the center of the lungs or slightly lower should be a bowhunter’s target every time. An arrow or bullet in both lungs will bring down the largest game, and the advantage of this shot is that the lungs are relatively large and surrounded by other vital organs: the heart is between the lungs, the aorta artery is at the top of the heart, and the liver and kidneys are to the back of the lungs, and the spine runs along and just below the top of the back. While bowhunters should avoid the large bones of the shoulder and spine area, an arrow tipped with a sharp broadhead can penetrate the softer rib bones making the lung area the **best target**. Hunters using firearms have more choices. A bullet striking the heart, lungs, shoulder, or spine is fatal to a bear due to the massive shock and tissue destruction. Once again, the chest area offers the best lethal target for firearm hunters.

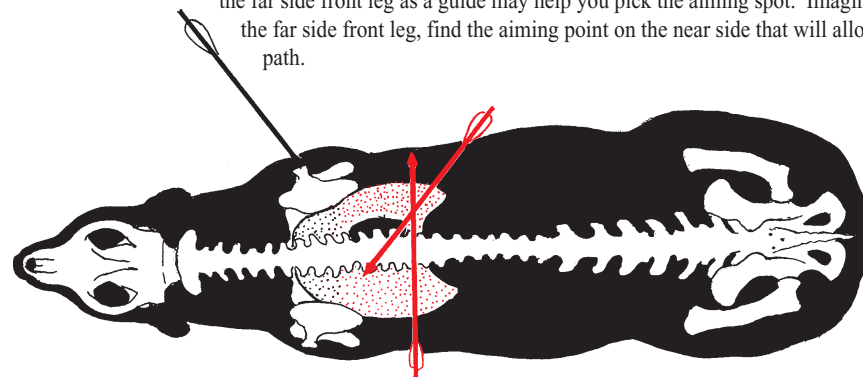
Where to Aim - Broadside

Bow: A bear standing broadside represents the best bow shot because it requires the least amount of penetration to reach the vital organs. In addition, the broadside shot is also the best angle for the arrow to penetrate both lungs. A bear’s long hair and compact body may cause a hunter to shoot further back on a bear’s body, possibly causing a poor hit in the paunch area. Find the best aiming spot on a bear by following a line up the center of the nearside front leg to a point 1/3 to 1/2 up the chest. A bear’s shoulder is farther forward than that of other deer-like animals, and the shoulder bones form a tighter angle. Thus, the aiming point is slightly farther back from the shoulder than of a deer. The front leg offers a perfect site-line to the chest area. If the legs are spread, wait for the nearside leg to move forward. This will open up the chest area. Pick a spot up the \wedge between the two front legs to a point 1/3 to 1/2 up the chest. Both methods will guide you to put the arrow in the center of the vital area by enabling you to pick a spot rather than shooting at the whole animal. Remember - an arrow will penetrate through the ribs, but be careful to avoid the shoulder bone. Wait until the near front leg is forward and concentrate on a spot behind the shoulder. Never consider head and neck shots. The brain and spine are small targets protected by heavy bone. The only artery of any size in the neck is the carotid, which is only the size of a pencil. Wait for the chest shot behind the shoulder!

Gun: The broadside position offers several excellent shots for a firearm hunter. The best target is the shoulder and chest area. A bullet of the correct weight, design and fired from an adequate firearm will break the shoulder and enter the heart or lungs. A neck shot will drop an animal instantly. However, the neck of a bear appears relatively short (especially on large bears). Also, the skull of bear is constructed of heavy bone and is sloped at sharp angles. This makes correct bullet placement for penetration of the skull difficult. Therefore, head and neck shots should be used only if you are proficient with your firearm and use of a proper firearm and bullet.

Where to Aim - Quartering Away

Bow: A quartering away animal offers a good bow shot on deer-sized animals, but is less desirable for larger big game animals. It helps one avoid the heavy bones of the shoulder area in bears, but the size of the bear, the weight of the bow and ability to gain arrow penetration through the intestines and stomach into the vital organs of the chest must be considered. When picking a spot on a quartering away animal, think 3-D dimensionally. Imagine where the lungs are and determine where to aim so that the arrow will miss heavy bones and angle forward into the vital area. The exact aiming spot will vary with the degree to which the animal is quartering away. Remember that this angle is very important. The more the animal angles away, the closer you are to making a wounding rear-end shot. The less the animal angles away, the closer you are to having a broadside shot and the better the opportunity of penetrating both lungs. Using the far side front leg as a guide may help you pick the aiming spot. Imagine the arrow needing to hit the far side front leg, find the aiming point on the near side that will allow the arrow to follow this path.



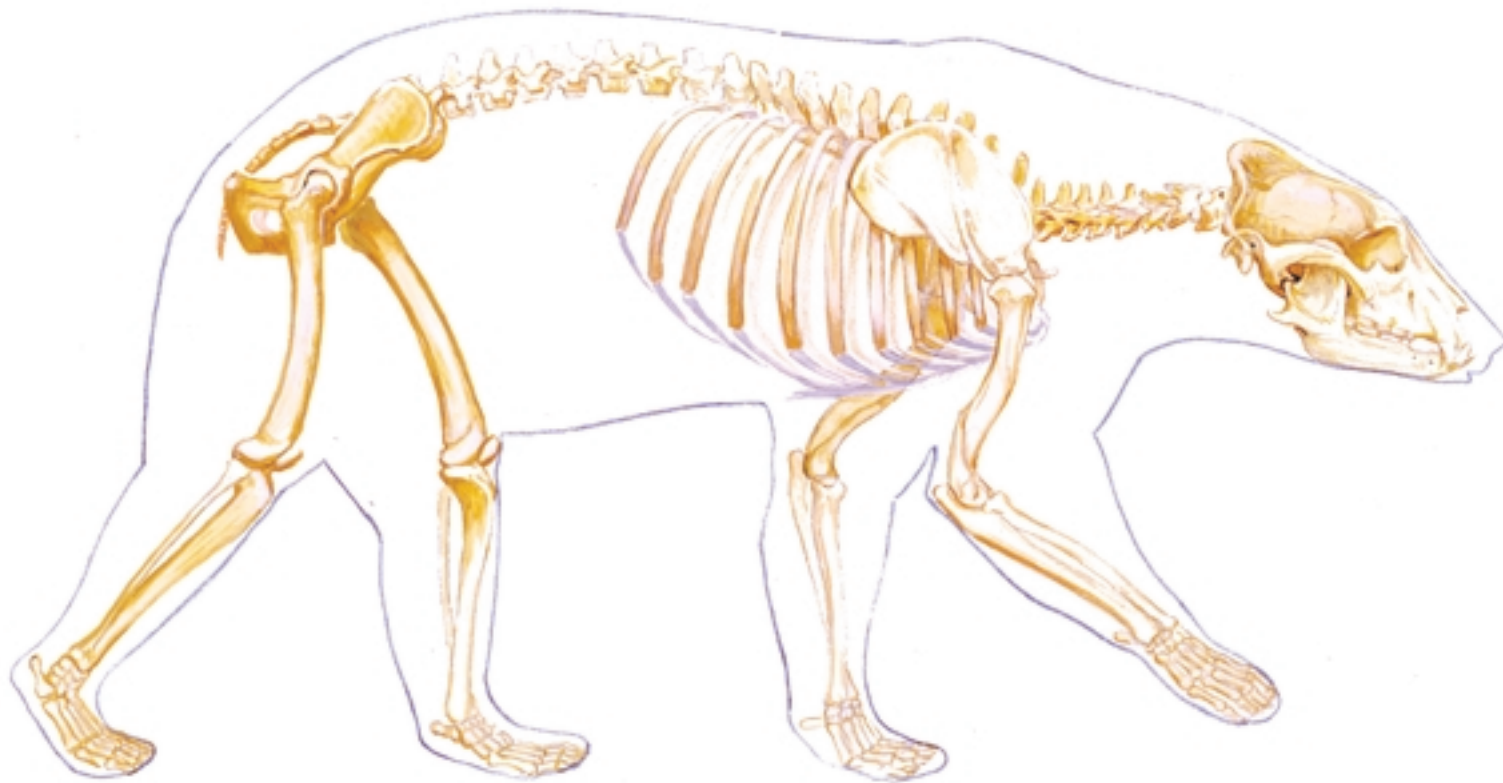
Gun: The quartering-away position offers several lethal targets for firearms. Further behind the shoulder is the best aiming spot. Avoid a shot that will hit the paunch area.



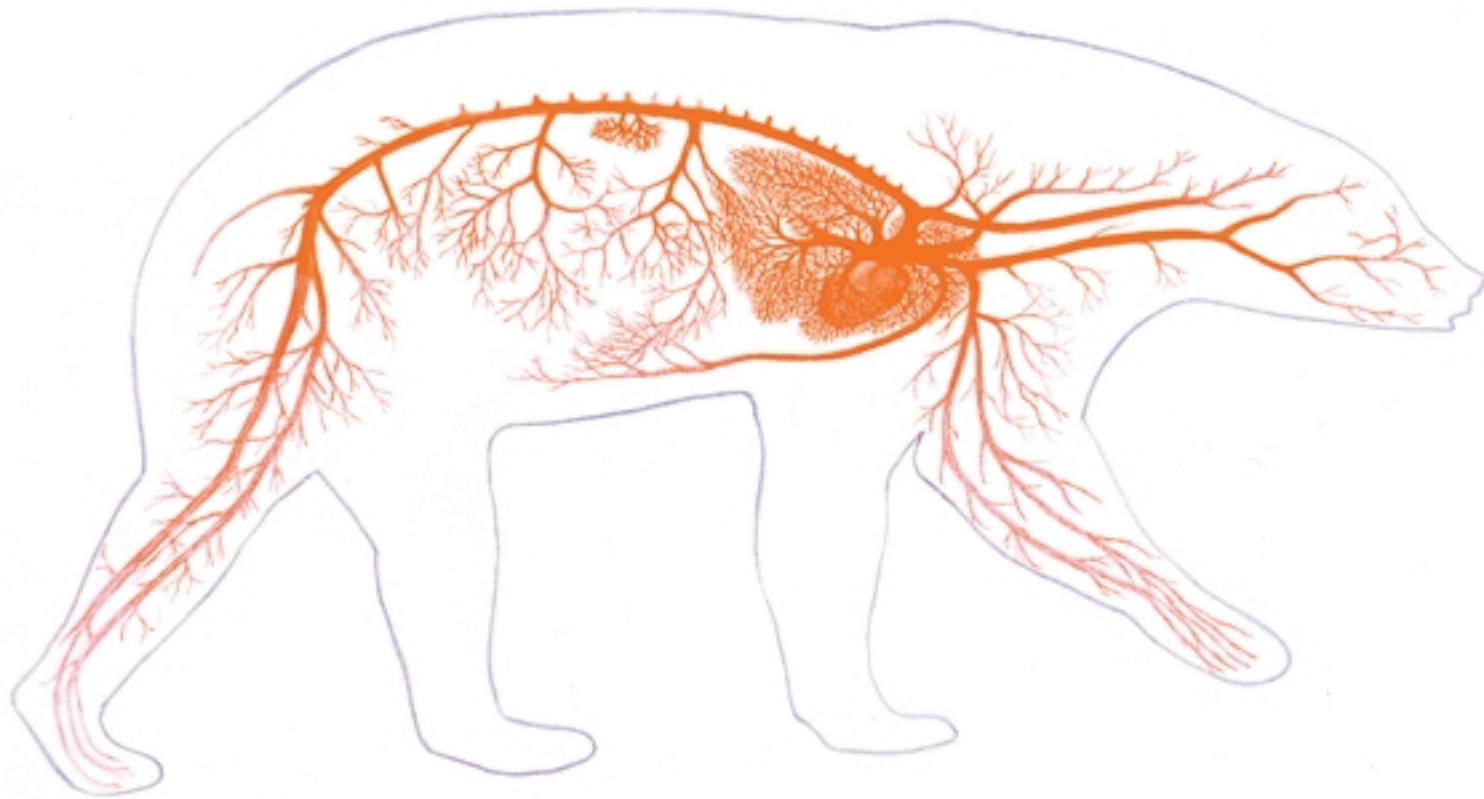
THE BEAR



Muscles



Skeleton



Circulatory System



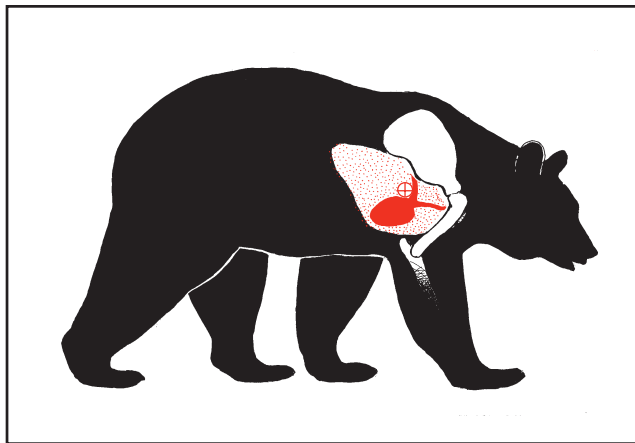
Organs

SHOT PLACEMENT

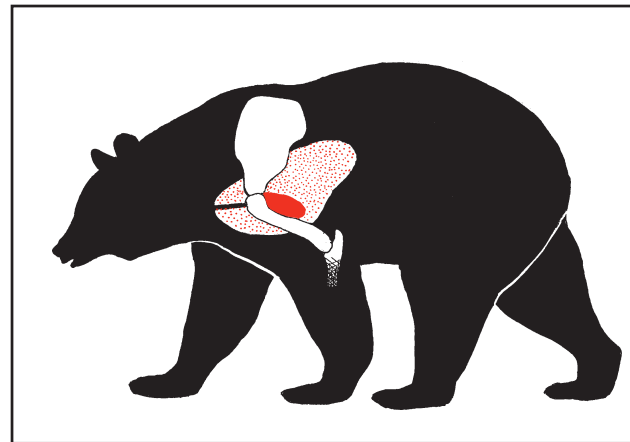
Making clean, certain kills should be the top priority once a hunter decides to shoot an animal. Consistent one-shot kills require marksmanship skills and knowledge of bear anatomy, and a true-shooting firearm or bow. A hunter shooting within their personal effective range will also improve the probability that the projectile will hit the aiming spot. An animal taken cleanly and humanely shows more character of the hunter than a lucky long shot.

The best shot for archers and firearm hunters is one that has the bear broadside where the arrow or bullet has the least amount of distance to enter into the chest cavity. This shot leaves the most room for error. The quartering away shot also offers a target, but the projectile may be slowed because of the intestinal tract.

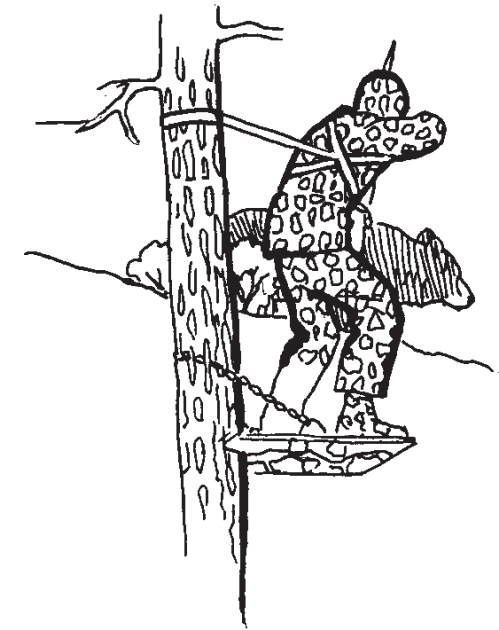
Whatever the hunting tool, bear shot through the heart or lungs drop fairly quickly. The results are a well-bled carcass and minimal amount of damaged meat.



Gun or Bow



Wait for the near front leg to move forward.

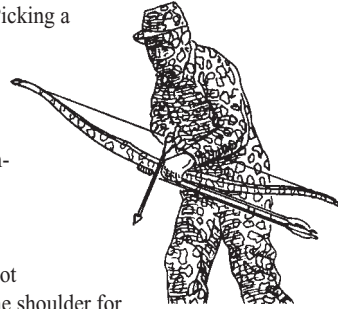


MAKING CLEAN, CERTAIN KILLS SHOULD BE THE TOP PRIORITY ONCE A HUNTER DECIDES TO SHOOT A BEAR. THE BEST SHOT FOR ARCHERS AND FIREARM HUNTERS IS ONE THAT HAS THE BEAR BROADSIDE WHERE THE ARROW OR BULLET HAS THE LEAST AMOUNT OF DISTANCE TO ENTER INTO THE CHEST CAVITY. AN ANIMAL TAKEN CLEANLY AND HUMANELY SHOWS MORE CHARACTER OF THE HUNTER THAN A LUCKY LONG SHOT.



Where to Aim - Quartering Toward

Bow: This is one of the poorest bow shots and should not be taken. Picking a spot behind the shoulder will result in the arrow missing most of the vital organs and angling back into the stomach and intestines. From this angle, heavy shoulder bones shield the majority of the vital organs from penetration by an arrow. An error of only an inch or two will result in a miss or non-fatal hit in the shoulder. Another disadvantage of this angle is the possibility that the animal will see the hunter drawing their bow. Wait for the broadside or quartering-away shot.



Gun: The quartering-toward angle is fine for centerfire rifles, but is not recommended for muzzleloading rifles. Aim at the neck or front of the shoulder for an effective hit. A light bullet may deflect off the shoulder bone of bear. Be certain you use a firearm and ammunition adequate for the game hunted and the type of shot you select.

Where to Aim - Head-On Shots

Bow: This is a very poor shot for a bowhunter. The vital organ area is at the base of the neck (throat) between the shoulders, which is an extremely small target. The animal must have its head up to expose this small target area, and it will almost surely see the archer draw the bow. An alert bear is capable of “jumping the string” avoiding the arrow, or wounding the animal. Don’t take this shot.

Gun: This is an acceptable shot with an adequate centerfire rifle. The neck and center of the chest are vital areas that the hunter can use as aiming points. However, a muzzleloader hunter should pass on this shot angle because of the possibility of bullet deflection.

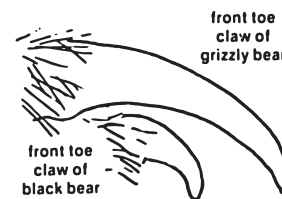
Where to Aim - Rear-end Shots

Bow: This is a shot all responsible bowhunters will pass up. The only major target in the rear quarters is the femoral artery, which is smaller than your little finger and extremely well protected by heavy leg and pelvis bones. Also, the hindquarters have very dense muscle tissue, combined with the heavy bone structure and viscera making it a long and questionable journey for an arrow to travel up to the vital organs of the chest.

Gun: The rear-end shot is a poor shot with a firearm. A shot to the body at this angle may not bring down a bear quickly and could ruin the best cuts of meat. A neck shot is possible if the animal has its head up. Waiting for a better shot opportunity is recommended.

Where to Aim - Elevated Stands

Many bear hunters use elevated stands, mountainous terrain also present similar shot angles. The change in shot angle makes little difference to a hunter using a firearm, but results in a smaller portion of the vital area being exposed to a bowhunter. The position of bones in relation to the vital organs changes more and more as the angle increases. The backbone and shoulder blade shield more and more of the chest cavity as the angle gets steeper. This decreases the available vital organ area for good shot placement. Complete penetration will result in a good blood trail; avoid the bones that could prevent the arrow from exiting low in the animal. Elevated stands also make it more difficult to hit both lungs with your arrow. Consider the angle of the shot when deciding how high your stand should be. (See the NBEF *Tree Stand Guide*). Bowhunters should be sure to practice from elevated stands before hunting. Shooting down at narrower targets is very different than shooting horizontally at targets on the ground. From the point you touch the tree to leaving the tree, always wear a fall restraint harness when practicing and hunting from elevated stands so that you can concentrate on making a good shot without the fear of falling.



Claws of adult grizzlies are rarely less than 1¾" long. Claws of black bears seldom exceed 1½".

Grizzly front foot Black

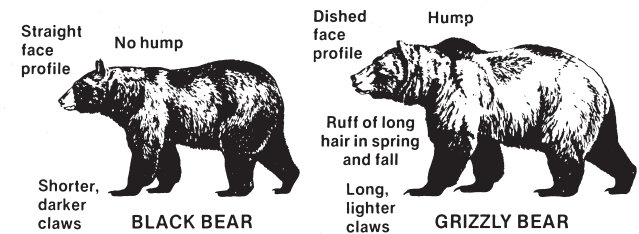


Grizzly back foot Black



BEAR HUNTERS—Know Your Target!

Look for a combination of characteristics



Color and size are sometimes misleading

Be Sure Before You Shoot!!!





REMEMBER!

Broadside standing bear offer the best shot for both firearm and bowhunters. Quartering away shots offer another good shot for firearm hunters, but is less desirable for bowhunters. The quartering away shot should also be avoided for larger big game animals like elk and moose. Smaller deer-sized animals offer an excellent quartering away target.

REMEMBER!

Firearm hunters are able to shoot from longer distances and have more target opportunities than those of a bowhunter. Quartering towards or facing head-on may be acceptable for firearm hunters, but not bowhunters. Rear-end shots should be avoided by all hunters.

REMEMBER!

Correct shot placement not only depends on a hunter's knowledge of game anatomy, but also on their ability to place the projectile in the vital area. Practice with your equipment on a regular schedule and know the distance at which you can put an arrow or bullet in the vital area every time. Practice under hunting conditions. Use full-sized animals where possible. Do not place any spot on the animal target. Make yourself pick the spot in the vital area each time you shoot. Shoot in the wind, rain, cold and hot, uphill and downhill, with your hunting clothes on, and at unknown distances. Firearm hunters should practice with and without a rest and from a sitting kneeling, prone, and standing positions. Know the distance from which you can shoot accurately, and don't shoot at an animal unless you know you can make a perfect shot.

REMEMBER!

Above all, respect the animal you are pursuing, other hunters, people who do not hunt, the environment and yourself. If you have respect and value the hunting experience, it will be reflected in your every action.

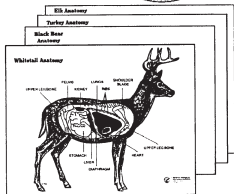
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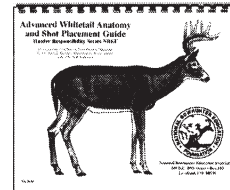
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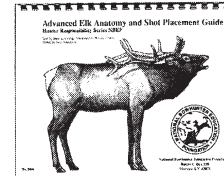


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