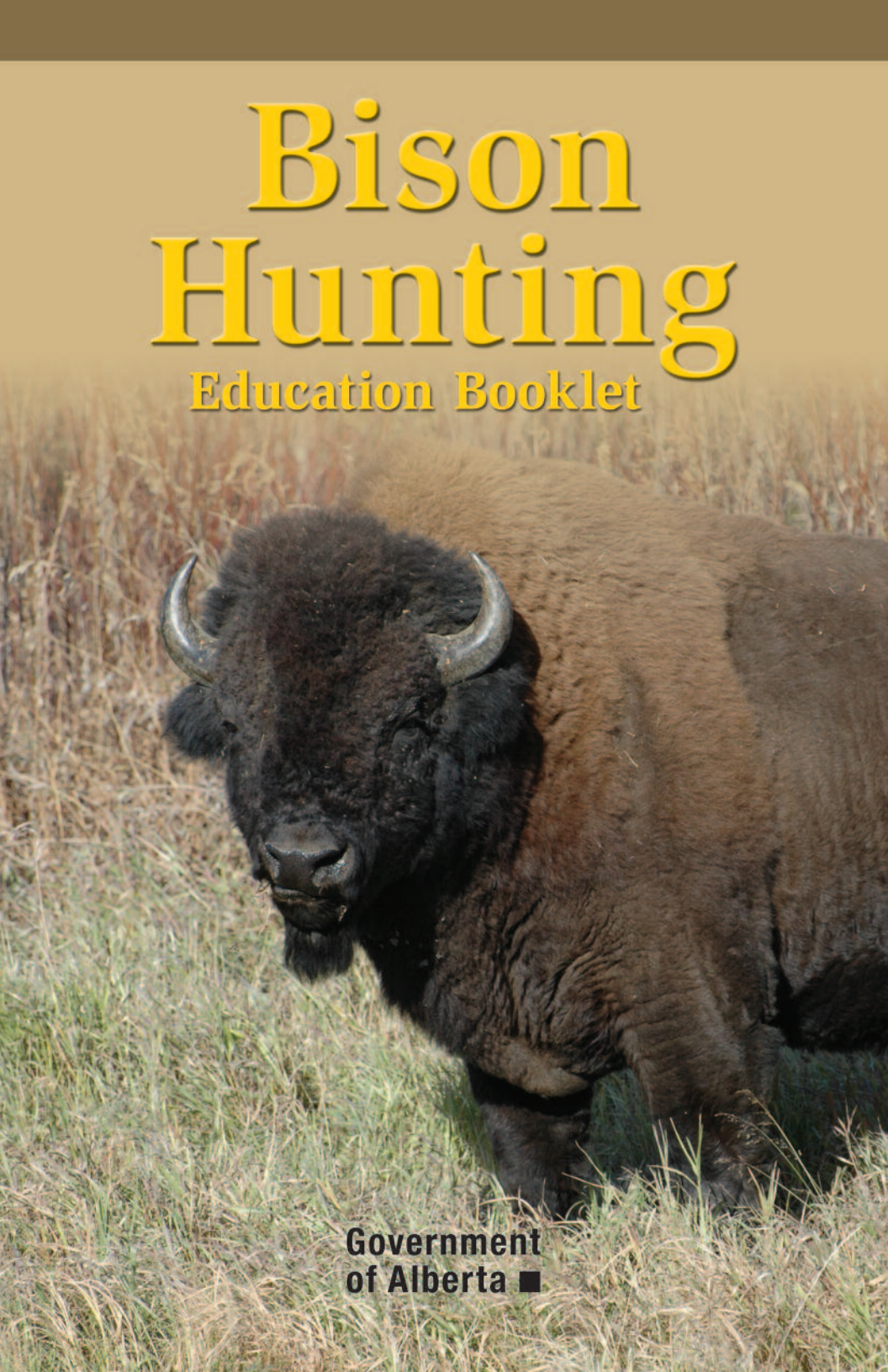
Bison Hunting

Education Booklet



Government of Alberta

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Introduction

The Hay Zama wood bison reintroduction program was started in 1983 to re-establish a healthy population of wood bison in northwest Alberta. Establishing this population was a significant part of the National Wood Bison Management Plan to have at least one self-sustaining wood bison herd in Alberta, British Columbia, Yukon and Northwest Territories and Wood Buffalo National Park. The Alberta Fish and Wildlife Division, Canadian Wildlife Service and the Dene Tha' First Nation were partners in the reintroduction program.

The original management plan called for the release of bison born in the paddock for a two-to-three year period. The proposed releases were cancelled by 1985 amid growing concerns and fears of the disease issues associated with bison in and around Wood Buffalo National Park (WBNP). In 1994, the bison escaped and moved into the vicinity of the confluence of the Hay and Chinchaga rivers. Since that time, the Hay Zama bison herd has grown in numbers and distribution. The Fish and Wildlife Division of Alberta Sustainable Resource Development (SRD), with endorsement of the National Wood Bison Recovery Team, has established a hunting season as an interim strategy to manage the Hay Zama wood bison herd. This booklet is intended to provide bison hunters with information regarding:

- the rationale and details of the bison season;
- bison hunting considerations;
- bison identification;
- tips on what to expect when handling bison; and
- disease testing protocols – samples requested from harvested bison.

Please read through the information carefully.

If you have questions please do not hesitate to contact your local Fish and Wildlife Division Offices at:

High Level - 780-926-2238
Peace River Wildlife staff - 780-624-6405
Fort Vermilion - 780-927-4488

Call toll free by first dialling 310-0000 followed by the office number.

Goals of the Wood Bison Hunt

1. **To maintain a healthy wood bison population.**

   Until diseased bison issues in and around Wood Buffalo National Park are successfully resolved, wood bison from the Hay-Zama area must be managed to reduce their numbers and distribution to prevent expansion east toward Wood Buffalo National Park. Biologists have determined that managing for a minimum population size of 400 - 600 wood bison by scheduling an annual hunt will result in a healthy self-sustaining herd.

   The hunting season for Wood Bison is in Wildlife Management Units (WMUs) 536 and 539, excluding a core protected area consisting of six townships (Townships 112 to 114, Ranges 2 and 3, West of the 6th Meridian).

2. **Assess the disease status of the Hay Zama bison herd.**

   Bison in the Hay-Zama herd are at risk of contact with diseased bison moving westward from Wood Buffalo National Park. The disease status of the Hay Zama bison herd is assumed to be negative for bovine brucellosis, bovine tuberculosis and Johne's disease because the original bison placed in the paddock were negative for all three diseases. All bison tested since the reintroduction program began have been negative for these diseases. All three diseases are known to occur in Wood Buffalo National Park.

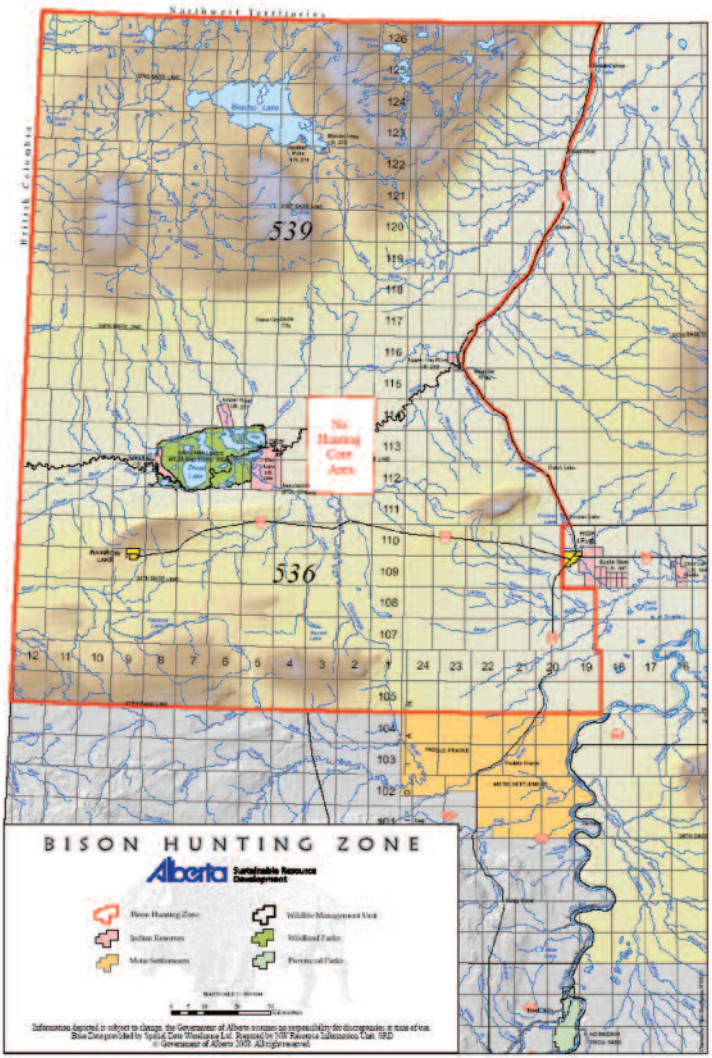
3. **Address public safety concerns.**

   Several dozen vehicles have collided with bison on area roads near Chateh and Zama, resulting in property damage. These collisions have the potential for serious injuries to people. Bison have also been seen in the communities of Chateh and Zama. Experience in other jurisdictions has shown that when bison are actively hunted, bison activity near humans is greatly reduced. In the first two years of the Hay-Zama bison hunt, collisions between vehicles and bison have been reduced.

2010 Wood Bison Season

The hunting season for Wood Bison is in Wildlife Management Units (WMUs) 536 and 539, excluding a core protected area consisting of six townships (Townships 112 to 114, Ranges 2 and 3, West of the 6th Meridian).

Anyone, including Aboriginals, who want to hunt bison, will require a Resident Bison Special Licence.



For Aboriginal Hunters

- Under this special licence, all First Nations residents of Alberta and Métis from Ft. Vermilion and Paddle Prairie who qualify under Alberta's Métis Harvesting Policy are eligible to obtain the limited number of free licences.
- The Licence is free of charge and can be obtained from the High Level or Fort Vermilion Sustainable Resource Development, Fish and Wildlife offices.

For Recreational Hunters

- Hunters must apply through the Hunting Licence Draw.
- The number of licences available is determined based on the populations of bison.

Common to Aboriginal and recreational bison hunting is the following:

- Successful hunters must register their kill(s) with Fish and Wildlife within five business days of harvesting a bison.
- The area of the hunt, WMUs 536 and 539, excluding the Core Protection Area where bison will be protected.
- Immediately after killing a bison, the hunter must securely affix the bison tag and lock it to the animal through the space between the bone and tendon of a hind leg directly above the hock and around either the bone or tendon.
- Disease diagnostic samples can be submitted to the High Level or Fort Vermilion Fish and Wildlife Office from 08:15 a.m. to 12:00 noon and 1:00 p.m. to 4:30 p.m. Monday through Friday.
- There is no requirement to have evidence of sex retained with the harvested bison.

Following each hunting season, a review is undertaken to determine the harvest results and population of the Hay Zama bison herd. The first two hunting seasons were successful in reducing the herd to desired levels. Subsequent seasons, starting in 2010/11, will be offered to maintain the herd at a sustainable level with an annual hunt. All hunters are encouraged to harvest bulls to ensure sustainability of the herd.

Aboriginal harvesters, lock metal tag around the tendon of a hind leg directly above the hock.

Recreational hunters, lock paper tag around the tendon of a hind leg directly above the hock

Additional Hunt Information

1. Non-native recreational and Métis hunters cannot hunt within the boundaries of any Indian Reserve.
2. Free-ranging bison outside of Wood Buffalo National Park and east of Hwy. 35 have no status under the *Wildlife Act* and are not protected. Hunting bison in this area does not require a licence.

The Hunt

To prevent the wounding of animal, hunters need to use sufficient calibre size, place the shots accurately and ensure minimal delay in follow-up shots. In addition, hunters need to recognize wounded bison may rejoin the herd and can be difficult to track due to the herd size.

Jurisdictions such as the Yukon and Northwest Territories have had bison hunting seasons for some time. Based on their experience, and the previous two seasons in Alberta, the following information is being provided to ensure a successful hunting experience.

Rifle Calibre

- A centre fire rifle that has a minimum size of 30 calibre and delivers 2,800 foot pounds of energy at the muzzle (30-06, 180 grain is minimum).
- A muzzle loader requires a firearm of a minimum 50 calibre, firing an elongated bullet/sabot with a minimum powder charge of 90 grains or equivalent.

Hunters considering using archery equipment must consider wounding losses and be confident in equipment and capability to humanely harvest a bison. Archery equipment is not recommended for hunting wood bison. Any hunter using a muzzle loader rifle or archery equipment should have a backup rifle meeting minimum requirements.

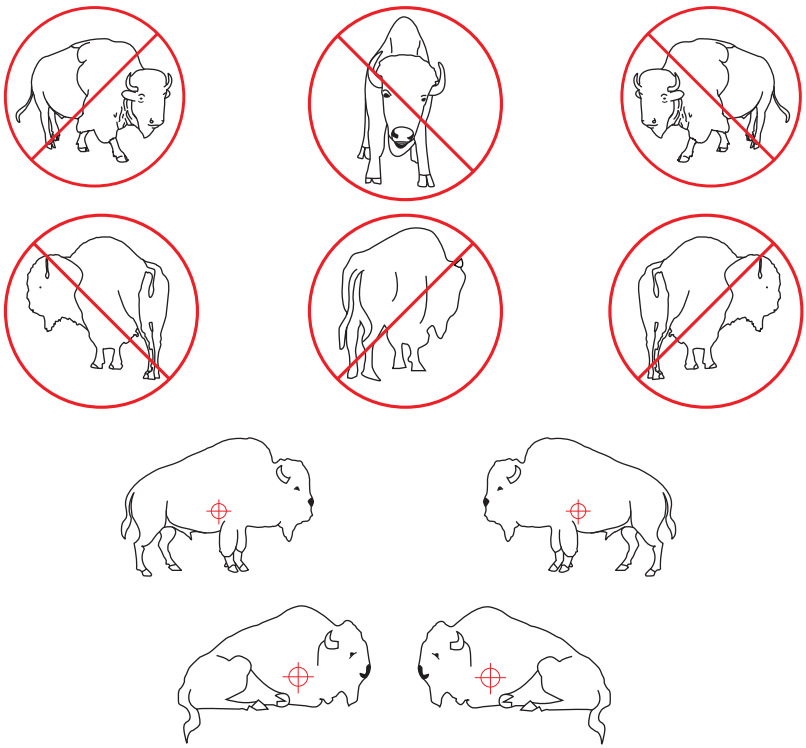
Shot Placement

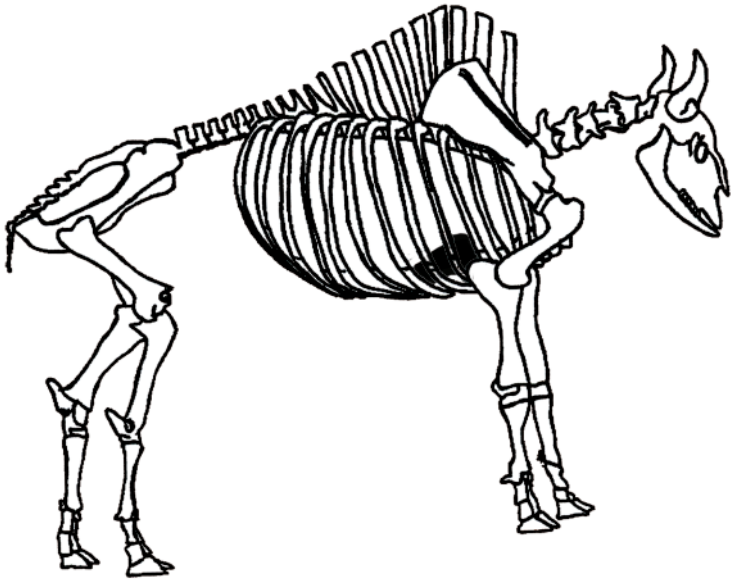
Shot placement is critical in effectively and humanely killing a wood bison. The hunter should be familiar with the weapon being used and have had sufficient practice to ensure proper placement of the bullet.

Heart/lung shots are the best. Aim right behind the knee joint of the front leg for a heart shot or above the knee joint for a lung shot.

Head and neck shots are very difficult. The long hair and thick hide on a wood bison makes placement difficult. Bison have thick skulls and bullets have been known to hit the skull and not penetrate. The neck is short with long hair and very thick skin, making it difficult to locate and penetrate to the spinal column. Going–away or head–on shots are not recommended.

As bison are a herd animal, they will try to remain with the herd even when wounded. Do not attempt a running shot unless required as a follow-up to a wounded animal; only take the shot if there is no chance of hitting another animal.





Selecting an Animal to Harvest

Harvesting adult male bison is desired to ensure the long-term sustainability of this bison hunt. Should too many cows be harvested the season will have to be regulated as "bulls only" to ensure sustainability of the herd and the hunt.

Mature bison are large animals. An adult bull from the Yukon approximately six years old and in good condition yielded the following weights:

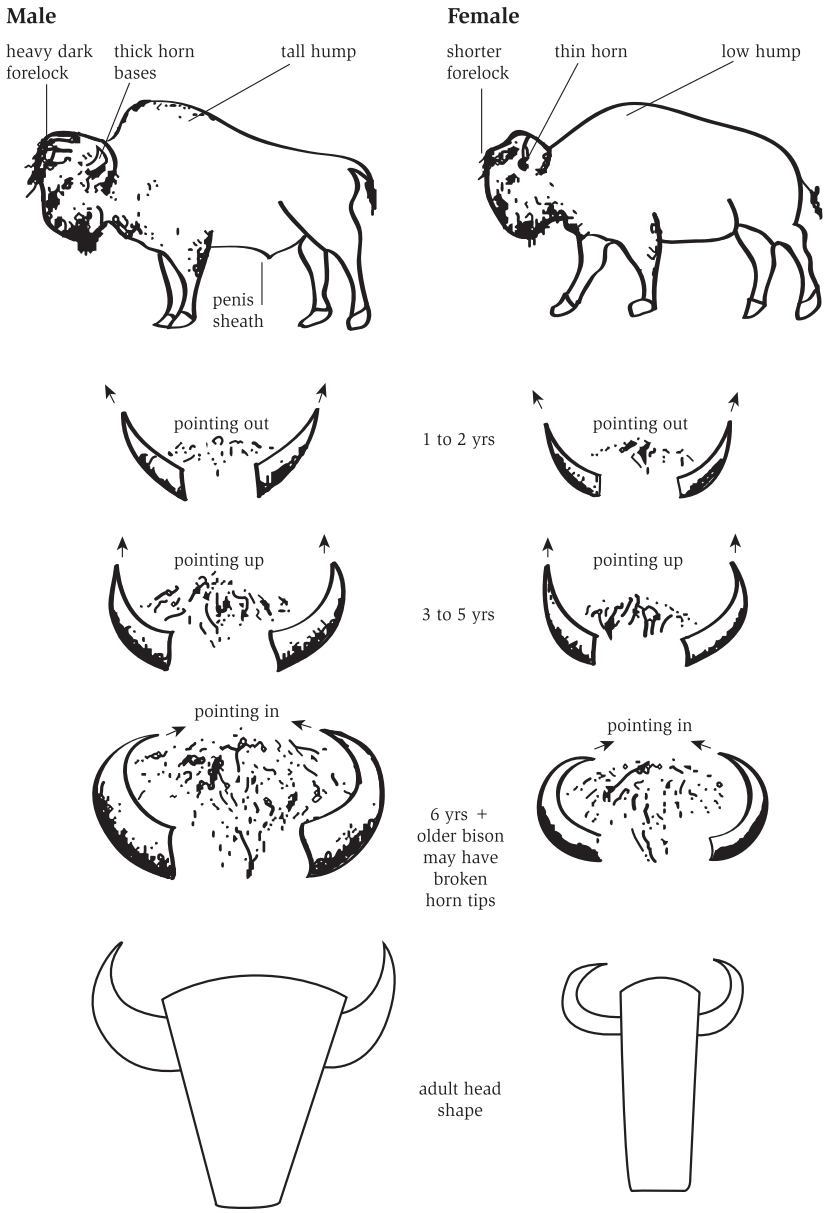
	Pounds (lbs)	Kilograms (kgs)
Hind leg (cut at hip)	154	70
Front leg (complete)	136	62
Neck, Rib Cage (front ½ of spine)	466	212
Pelvis (rear ½ of spine)	127	58
Viscera (guts) (including rumen)	638	290
Head and Hide	440	200
Total Weight (on the hoof)	2,269	1,031

Determining a bison's age and sex can be difficult, especially in forested habitat, deep snow and with no other animals for reference. The following table lists male and female characteristics. As there can be variations, look at all of the characteristics to identify accurately.

Do not simply select for the largest animal in the group. Both males and females have horns. Hunters should be able to distinguish between male and female bison using the following table.

Characteristic	Males	Females
Sex Organs	Penis sheath present but may be difficult to see in late winter.	No penis sheath but may have tufts of belly hair and appear similar.
Horn Bases	Generally larger bases than cows; range from 10-15 inches in circumference; small bulls similar to large cows.	Generally smaller bases than bulls; range from 4-10 inches in circumference; large cows similar to small bulls.
Adult Horn Shape	Adult horns point upward or curve inward on older bulls, similar to cows; appear to taper quickly from base to tip.	Adult horns generally curved but may point up, similar to bulls; appear to taper quickly from base to tip.
Yearling Horn Shape	Point at a 45° angle from head but longer and larger bases than yearling cows.	Point at a 45° angle from head but shorter and smaller bases than yearling bulls.
Head Shape	Wider, more blocky forehead than cows; smaller bulls may appear similar to larger cows.	More narrow forehead than bulls; large cows may appear similar to small bulls.
Coat	Often two-tone; light & woolly front shoulders, darker on back; may be single colour.	Often single-colour coat; can be two-tone.
Body Size	Mature bulls larger than cows; young bulls may be same size or smaller than cows.	Mature cows smaller than mature bulls; mature cows may be same size or larger than young bulls.

Head Shape of Male and Female Bison



The bison on the left is a cow; shorter forelock and thin horns. The bison on the right is a bull, heavy dark forelock and thick horn bases.

Notice the heavier forelock and the horn on the bull (right) that has larger bases and extends nearly straight upward. The cow on the left has a shorter forelock and thinner, curved horns.

Take the quiz...bull or cow? (Answer key is on page 30.)

image #1

image #2

image #3

image #4

image #5

image #6

image #7

image #8

image #9

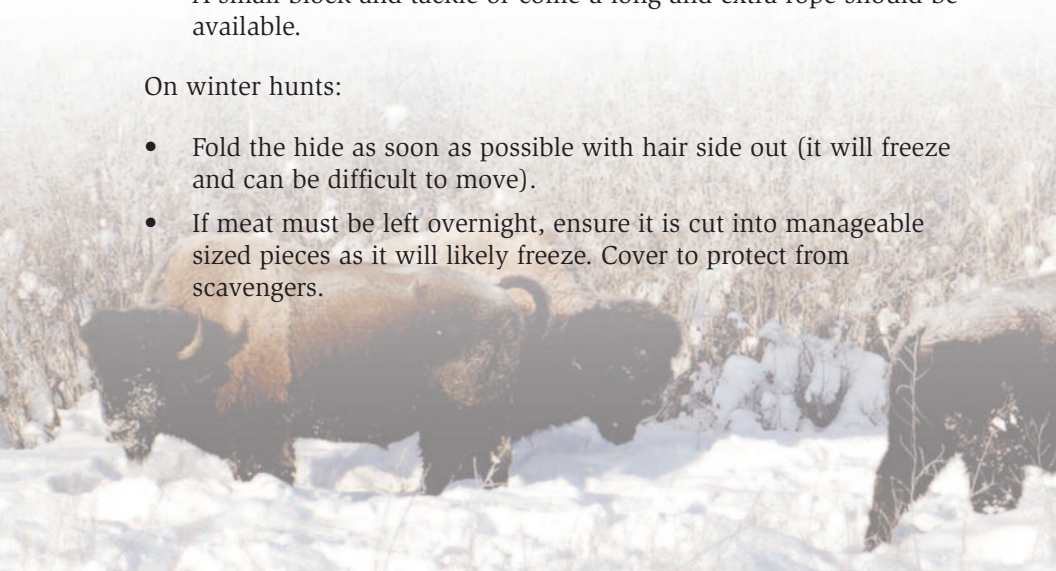
image #10

Bison Hunting Considerations

- A single hunt will likely require several days to find, kill and transport a bison.
- If hunting during the winter, there is the potential for changes in weather and extreme conditions (-40°C, snow up to one metre).
- Be aware of the need to cool the meat as soon as possible to avoid meat spoilage. Bison are large animals with large muscles that will hold heat.
- Skinning should be done as soon as possible. Leaving the hide on increases the risk of meat spoilage and hair slippage on capes or rugs.
- Processing of an animal will need to be completed as quickly as possible and multiple trips may be required to remove all of the meat.
- Having the proper equipment (winter - snow machines/ skimmers) is necessary.
- Assistance in field dressing and transporting will likely be required.
- Additional tarps may be needed to lay the meat on or to wrap the meat while transporting.
- Knives must be sharp, and it is advisable to have two or three good quality knives available with appropriate sharpening tools. A meat saw will be necessary.
- A small block and tackle or come-a-long and extra rope should be available.

On winter hunts:

- Fold the hide as soon as possible with hair side out (it will freeze and can be difficult to move).
- If meat must be left overnight, ensure it is cut into manageable sized pieces as it will likely freeze. Cover to protect from scavengers.



Weather

If hunting in the fall, be aware of wet areas, creeks and beaver dam crossings.

Winter hunting can be dangerous given the potential for extreme temperatures, wind and blizzard conditions. In all cases:

- Always let someone know where you are going and when you plan to return.
- Carry a survival kit and a cell phone (cell coverage can be variable; a satellite phone would provide the best contact).
- Ensure equipment is in good working order and carry spare parts.
- Be prepared for the worst possible conditions.

Ice Travel

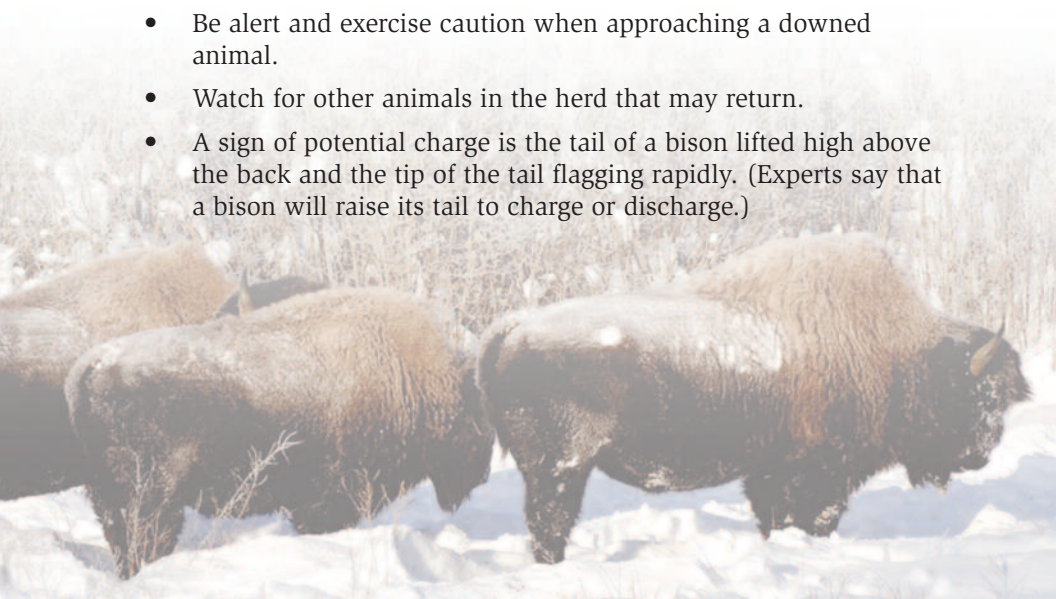
Ice conditions on rivers and creeks, near beaver dams and on some water bodies can be variable depending on the weather. Travel on ice with a vehicle, OHV or even walking can be dangerous.

- Never assume the ice is safe, always check the thickness.

Bison Behaviour

Bison, as with any wild animal, can be dangerous, especially if wounded.

- Be alert and exercise caution when approaching a downed animal.
- Watch for other animals in the herd that may return.
- A sign of potential charge is the tail of a bison lifted high above the back and the tip of the tail flagging rapidly. (Experts say that a bison will raise its tail to charge or discharge.)



Human Health Concerns

Bovine Tuberculosis

Although bovine tuberculosis does not readily transfer to humans, infected bison are a human health risk.

- Learn what the disease looks like.
- Wear plastic gloves and stay upwind when handling potentially infected wildlife.
- Wash your hands, knives and clothes in warm soapy water.
- Contact a Fish and Wildlife office if you have concerns about a specific bison.
- Cook the meat well.
- Contact a physician if you suspect you may have been infected; effective treatment in humans is readily available.

NOTE: Freezing, smoking or drying will not necessarily kill the bacteria.

Brucellosis

Brucellosis in humans is a relatively mild, repeating fever.

- Infection occurs through small cuts or scratches in the skin or through moist tissues in the eyes, nose or mouth.
- Always wear gloves when handling potentially infected bison.
- Do not handle affected parts (particularly the uterus and foetus).
- Wash your hands, clothes and knives in warm soapy water when you are done.
- Cook bison meat thoroughly.

NOTE: Limited risk does exist with the handling or eating of infected bison and freezing, smoking and drying meat will NOT kill the bacteria. **Make the meat safe: only cooking at a high temperature will kill any bacteria.**

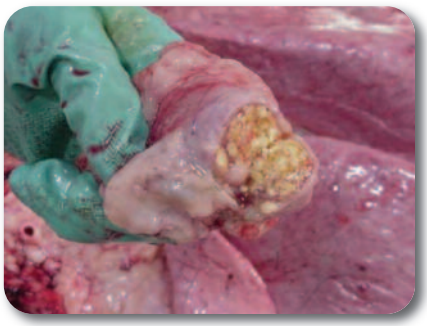
Disease Detail

Bovine Tuberculosis

Bovine tuberculosis (TB) is an infectious disease caused by the bacteria Mycobacterium bovis. Bovine tuberculosis primarily affects cattle. However, under specific conditions, the bacterium can infect other animals such as bison and maintain a population in wildlife alone.

Species of Mycobacterium occur worldwide in a variety of wild and domestic species. Bovine tuberculosis is a federal reportable disease in Canada and, as such, the federal agriculture department is committed to eradication of the disease in domestic livestock and captive wildlife. In North America, bovine tuberculosis persists in free-ranging bison in Wood Buffalo National Park (WBNP), free-ranging white-tailed deer in parts of Michigan, Minnesota and free-ranging elk and white-tailed deer in and around Riding Mountain National Park in Manitoba.

The optimal habitat for TB bacteria is in the lungs of a mammal. Additional areas of infection are the gut and lymph tissues. The specific infection in each individual depends on how the bacteria enter the body. If inhaled, the bacteria will enter the lungs. If ingested, the bacteria usually enter the lymph nodes either at the back of the throat or along the intestine. Once an animal is infected, the bacteria are detected and engulfed by cells of the immune system called macrophages. Tuberculosis bacteria then use macrophages as a place to reproduce. As the population expands, bacteria are shed in the exhaled breath or in feces. Outside the mammal, the bacteria survive best in cold and damp climate. Direct sunlight and dry conditions kill the bacteria relatively quickly.



Tubercles in the lymph node of an infected animal with bovine tuberculosis

What to Look For

A bovine tuberculosis (TB) infection typically establishes itself in the lungs and on the surrounding chest cavity of infected animals. Here, small round lumps (pus colour) or "pearls" are observed on the surface of the lungs and on the inside of the rib-cage. In animals with intense infections of bovine TB, these lumps may be found on all organs, including the kidneys and liver.

Bovine tuberculosis "pearls" on the surface of the lungs removed from an infected animal.

Disseminated bovine tuberculosis lesions seen with chronic infection.

Bovine Brucellosis

Brucellosis is a world-wide concern in domestic cattle. The disease causes significant economic losses and is a potential human health risk. In North America, infection in wildlife persists in bison and caribou populations in northern Canada, as well as in bison and elk populations in and around Yellowstone National Park.

Brucellosis is a highly contagious bacterial disease and can survive in a wide range of species, particularly cattle and bison. Infections may result in abortion, weak calves, infertility or chronic arthritis and lameness associated with nodular swelling in leg joints. Some infected animals may not show any signs of disease.

The bacteria generally are passed on to new individuals that eat contaminated tissue. Brucella species most commonly live in tissues of the gastrointestinal and reproductive tracts and, as a result, occur in the urine, feces, uterus, milk and semen of infected animals. The placenta (afterbirth), aborted fetus, and vaginal discharges from a female infected with brucellosis contain huge numbers of bacteria that contaminate the environment and may be directly or indirectly eaten. Domestic cattle and captive bison in Alberta are considered brucellosis-free. Populations of free-ranging bison in and around Wood Buffalo National Park are infected. Infection rates differ among local herds. Within the park, the infection rate is consistently in the range of 30 to 35%.

What to Look For

Epididymitis in bull infected with *Brucella abortus*

The most common signs of infection in cattle, and bison are abortion and epididymitis (inflammation and swelling in the area of the testicles). Affected animals exhibit reduced milk production, weight loss, abortion, calf weakness, retained placentas, infertility, and lameness. These signs are not readily observable by hunters and most animals may not exhibit these signs, even though they are infected. With this in mind, hunters should take precautions against brucella infection and handle all carcases accordingly.

For further information, please see the wildlife disease fact sheets for these and other wildlife diseases at the SRD website:

Main Page:
srd.alberta.ca/BioDiversityStewardship/WildlifeDiseases/default.aspx

Bovine Brucellosis:
srd.alberta.ca/BioDiversityStewardship/WildlifeDiseases/documents/Brucellosis.pdf

Bovine TB:
srd.alberta.ca/BioDiversityStewardship/WildlifeDiseases/documents/BovineTB.pdf

Disease Testing Protocol

The Hay Zama wood bison herd is believed to be disease free. Hunters wishing to have their harvested bison tested may do so by providing blood and lung samples. Ensure delivery of samples to the High Level or Ft. Vermilion Fish and Wildlife Office as soon as possible during the hours of 08:15 a.m. to 12:00 noon and 1:00 to 4:30 p.m., Monday through Friday.

Tissue Sampling For Disease Surveillance

To test for bovine tuberculosis and brucellosis, the following two samples are required:

1) full set of lungs;
2) unfrozen whole blood.

Each hunter will be provided with a collection kit which will include the following:

- rubber gloves to wear when handling samples;
- one large plastic collection bag (lungs);
- two blood collection tubes; and
- a thermal pad and envelope.

When collecting samples and handling harvested bison:

- wear plastic gloves;
- stay upwind;
- do not handle the uterus and fetus; and
- wash your hands, knives and clothes in warm soapy water as soon as possible.

Collection of Lungs

The lymph nodes required for testing are located along the trachea where the lobes of the lungs are attached.

To collect the lungs:

- Begin to field dress the bison as any other big game animal to expose the internal organs for removal.
- Open the diaphragm to expose the lungs and heart and carefully remove the heart.
- Reach as far as possible toward the head of the bison and cut the trachea (windpipe – which feels like a ribbed tube of cartilage), pull out and backward gently to remove the lungs.
- Bag the lungs and trachea and submit as the sample.

Field dress to expose internal organs for removal

Blood Collection

We are asking hunters to collect two tubes of fresh blood from each bison for testing. Blood can be collected in the specified blood collection tubes included in the sample kit provided. Blood collected must be fresh and not clotted. The best way to collect fresh blood is to open a vein from a freshly killed bison and fill the tube.

Once the tube is filled, it is CRITICAL that the blood not be frozen. Frozen blood is unable to be tested for disease. We have provided a thermal envelope and a heat pad in the sample kit. Place the closed, filled blood tube in the envelope, then activate the heat pad and place it in the bag as well. The heat provided by the heat pad will last up to eight hours and should prevent the blood from freezing. It is important that hunters submit the blood sample as soon as possible after you collect it.

Bison Quiz Answer Key

Bulls - 2, 4, 6, 7, 8 and 9
Cows - 1, 3, 5 and 10

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