STUDY GUIDE:

MULE DEER

vs

WHITE-TAILED DEER

CAN YOU TELL THE DIFFERENCE?

PART OF THE

AHEIA "O.W.L. SERIES"

OUTDOOR WILDLIFE LEARNING

MODULE #13

Photos courtesy Don Kesler Nature Photography

Comparing White-tailed Deer and Mule Deer

In the province of Alberta, there are two species of the genus Odocoileus (medium-sized deer). They are *Odocoileus virginianus* more commonly called white-tailed deer and *Odocoileus hemionus* commonly called mule deer. White-tailed deer and mule deer typically do not mingle together; however, the territories that they inhabit can and do overlap so it is important to be able to recognize their differences.

White-tailed Deer

Scientific name:

Odocoileus virginianus (meaning: Virginia deer)

Physical Description:

The white-tailed deer is the most widespread and most numerous of North America's large, big game animals, although it is the smallest of Alberta's big game ungulates (hoofed animal). The main distinguishing feature of the white-tailed deer is its large tail with a white underside that flashes/flags as it runs, thus the name "white-tailed". Generally, these are light-coloured animals fringed in white.

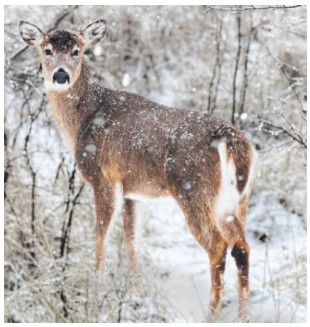
- **Colour**
  Body colour changes with the seasons, from reddish-brown in the spring and summer to grey during the fall and winter months, with a white patch on its neck and a white under-belly.

- **Head characteristics**
  The most prominent features are a white band around its nose, a white ring around each eye, and patch under its chin and on its neck.

- **Ears**
  Typically, a mature white-tailed deer's ears are about 6" (15cm) long and are noticeably shorter than the average mule deer's which are 8" - 10" (20-25cm) long. The white-tailed deer's ears are also more rounded at the tip than those of the mule deer.



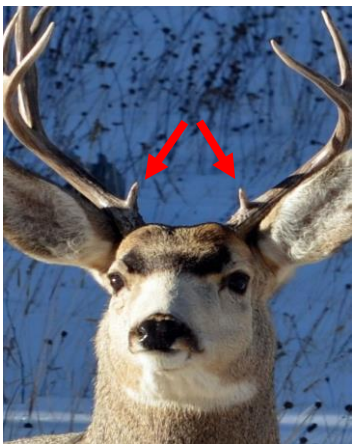
- **Tail**
  A white-tailed deer is noted/named for its large tail that is wide, flat, and brown in color with a white fringe and a bright white underside. When disturbed/alarmed the tail is raised showing the white underside that "flags" from side to side while running. The underside of the white-tailed deer's tail is fully haired.



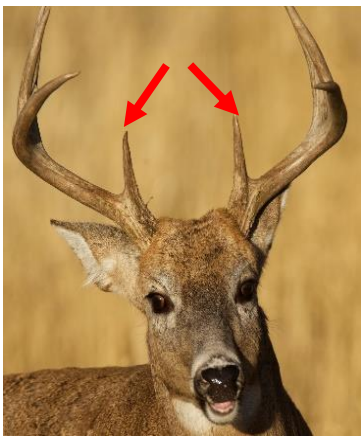

- **Body size**
  An adult male white-tailed deer (called a buck) average weight is between 150lbs to 250lbs (69-114kg) but can be upwards of 350lbs (159kg). The doe will weigh between 90lbs to 130lbs (41-59kg).

- **Antler characteristics**
  Only the male deer (buck) grow antlers which are a bony growth from pedicels on the deer's skull. Antlers are shed each winter and regrow during the spring and summer months. Antler growth and size depend on genetics, environmental factors and somewhat on age.

  White-tailed deer antlers "typically" grow up and forward with single, unbranched spikes or tines growing up from the main beam with well-developed or long brow tines. The brow tine is the first tine on each antler, closest to the skull.



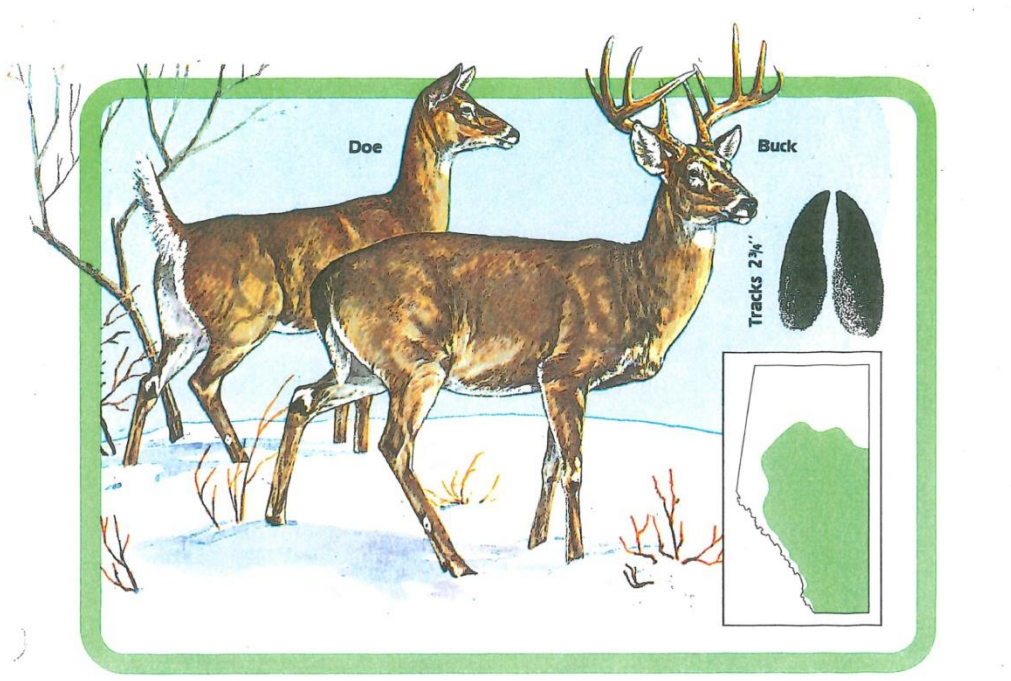
Location and size of brow tines on a Mule Deer



Location and size of brow tines on a White-tailed Deer

White-tailed deer antlers may also grow “non-typically”. These are antlers that do not fit the definition of a typical white-tailed deer antler of single tines or points growing up from a main beam. Non-typical antlers may have drop tines, split or forked tines, kicker point off of the main beam or off of other tines and may even be palmated (flattened and/or widened). There are many theories on what causes abnormalities in antler growth. These include injury to the deer, injuries to the antler while still in velvet, unusual testosterone levels, genetics and age.

Example of non-typical antler growth



- **Gait**
  White-tailed deer are usually very skittish and when alarmed, they will raise their tail and in a lopping gallop leave the area “flagging” their tail in the process. They can run up to 36 mph (58 km/hr), with a vertical jump of 8’ (2.5m) and a horizontal stride of up to 30’ (9m).

Photo of White-tailed deer “flagging”.
This is called flagging because the tail is waved like a flag,
showing the white flash as the deer escapes.

Habitat and distribution (home range)

- Most widely distributed and numerous of all North American cloven hoofed big game species.

- Land clearing practices over the last 100 years have enabled the white-tailed deer to move into areas previously occupied by mule deer, gradually moving further westward.

- The white-tailed deer has adapted to a wide variety of habitats. In Alberta, they can be found from the prairies to the boreal forest. They prefer aspen groves and fields near patches of treed cover.

- White-tailed deer will have a small home range and if browse is abundant, they usually stay within a one square mile area.

Diet

White-tailed deer are for the most part nocturnal or what is referred to as crepuscular, feeding mostly at dusk or dawn. They are opportunistic herbivores, browsing on a variety of vegetation from grasses, to buds on shrubs, and trees. In Alberta, they favour dogwood, aspen, chokecherry and Saskatoon. In harsh winter conditions with deep snow, they may feed on coniferous trees.

They are ruminants (four-compartment stomach) which allows them to eat, process and digest foods that other mammals can't.

Lifespan

White-tailed deer have an average lifespan of 3 to 6 years with very few deer living past 10 years of age.

Mule Deer

Scientific name:

Odocoileus hemionus (meaning: half mule)

Physical Description:

The mule deer is roughly one-third larger than the white-tailed deer. They are stockier, heavier, and wider in the chest than the average white-tailed deer. The main distinguishing feature of the mule deer is their large and prominent ears which are similar to those of a mule. Thus, the name “mule deer”.

- **Colour**
  The body colour is dark grey-brown (maybe somewhat lighter during the spring and summer) with a cream coloured/white rump and a white patch on its neck. Generally, this is a dark-coloured animal fringed in black as opposed to the White-tailed deer being light-coloured and fringed in white.

- **Head characteristics**
  The head of the mule deer is grey-brown, with a light grey face, a distinctive dark brown to black forehead, and a white chin and throat.


- **Ears**
  The mule deer was named for its ears which are 8” to 10” (20-25cm) long, and are noticeably larger and more pointed than a white-tailed deer’s ears. Usually, the mule deer’s ears are set approximately 30 degrees from their head whereas the White-tailed deer’s ears are more vertical.


- **Tail**
  A mule deer has a white to cream-coloured rump with a narrow short white to cream coloured, rope-like tail with a solid black tip. The white-tailed deer uses its tail as a signal by flagging whereas a mule deer will not. The underside of the mule deer's tail is not haired.


- **Body size**
  An adult mule deer buck will weigh from 150lbs to 300lbs (68-159kg) with some going as large as 450lbs (204kg). The doe will weigh between 100lbs to 130lbs (45-59kg).


- **Antler characteristics**

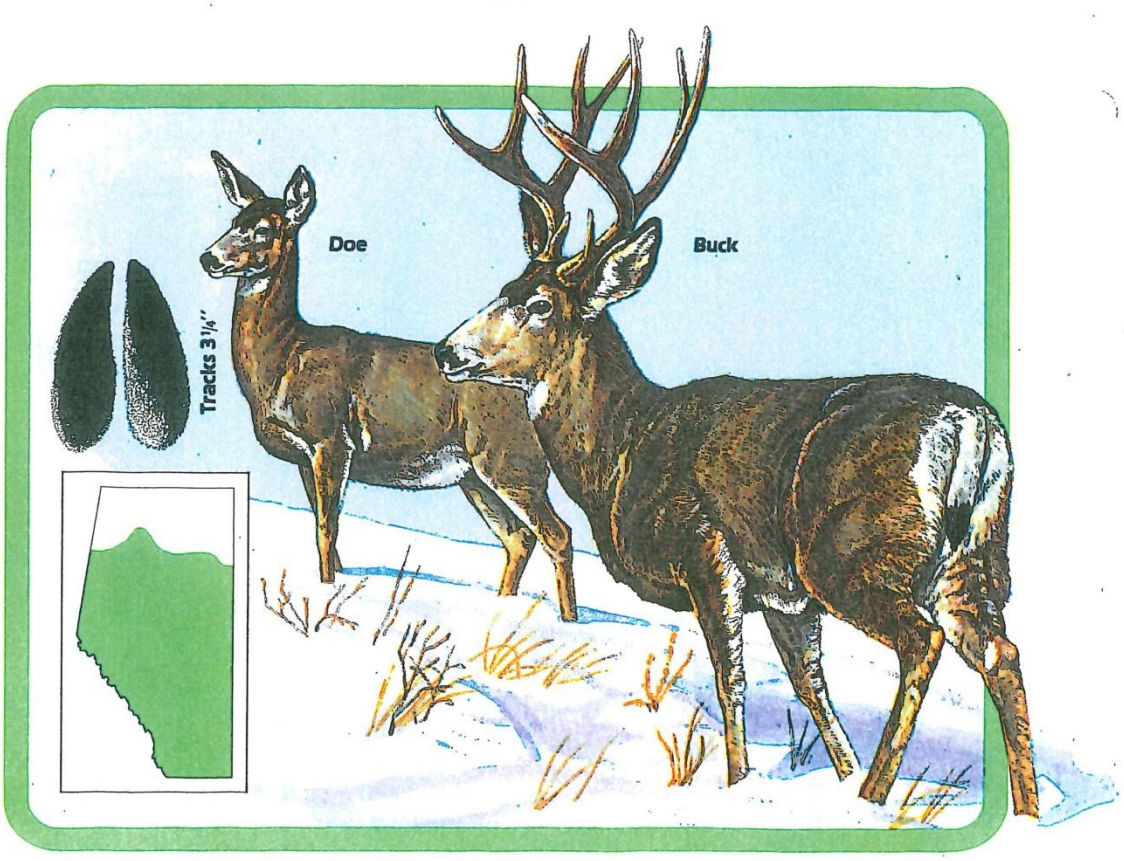
  Only the male deer (buck) grow antlers which are a bony growth from pedicels on the deer's skull. Antlers are shed each winter and regrow during the spring and summer months. Antler growth and size depend on genetics, environmental factors, and somewhat on age.

  Mule deer antlers "typically" grow up and branch like a tree and the tines are forked or Y-shaped with poorly developed, short to nonexistent brow tines. A mule deer buck will have a main beam that splits, as opposed to white-tailed deer that have a beam with individual tines rising from it.

  There are always exceptions to the rule and as with white-tailed deer antlers mule deer antlers may grow non-typically with drop tines, kicker points off the main beam and other points, or show signs of palmation. Non-typical growth may be caused by genetics, injury to the deer, injury to the antler while in velvet, and/or age.

Example of non-typical mule deer antler growth vs. typical mule deer antler growth

- **Tracks**



Typically, the tracks of a mature mule deer are larger than those of a white-tailed deer being approximately 3 ¼" (8.25cm) long.

- **Gait**

Mule deer are typically less skittish and more curious than white-tailed deer but when alarmed will tuck their tail flat and in a stiff-legged bounce, sometimes called stotting where all four feet touch the ground at the same time and will leave the area. They can cover up to 10' (3m) in a single bound. Note: due to their curiosity they may stop to look back at what has alarmed them.

Habitat and distribution (home range)

- Mule deer can be found in most parts of the province however they are most numerous in the mountains and foothills as well as brushy areas along rivers and coulees in the semi-arid southern parts of the province.

- Mule deer will range much further and travel more extensively than white-tailed deer. They may migrate from a summer grazing area to a winter grazing area and form larger grazing bands during the winter months.

Diet

- Like white-tailed deer, mule deer feed on a variety of vegetation from grasses to buds on shrubs and trees. They tend to feed mostly at dawn and dusk, making them crepuscular. They depend heavily on the early stages of forest growth in clear cut areas, and new growth after a forest fire. In the semi-arid southern portions of the province, they may feed on sage and other brush along riverbanks and coulees. In harsh winter conditions with deep snow, they will also feed on coniferous trees.

- They are ruminants (four-compartment stomach) which allows them to eat, process and digest foods other mammals can't.

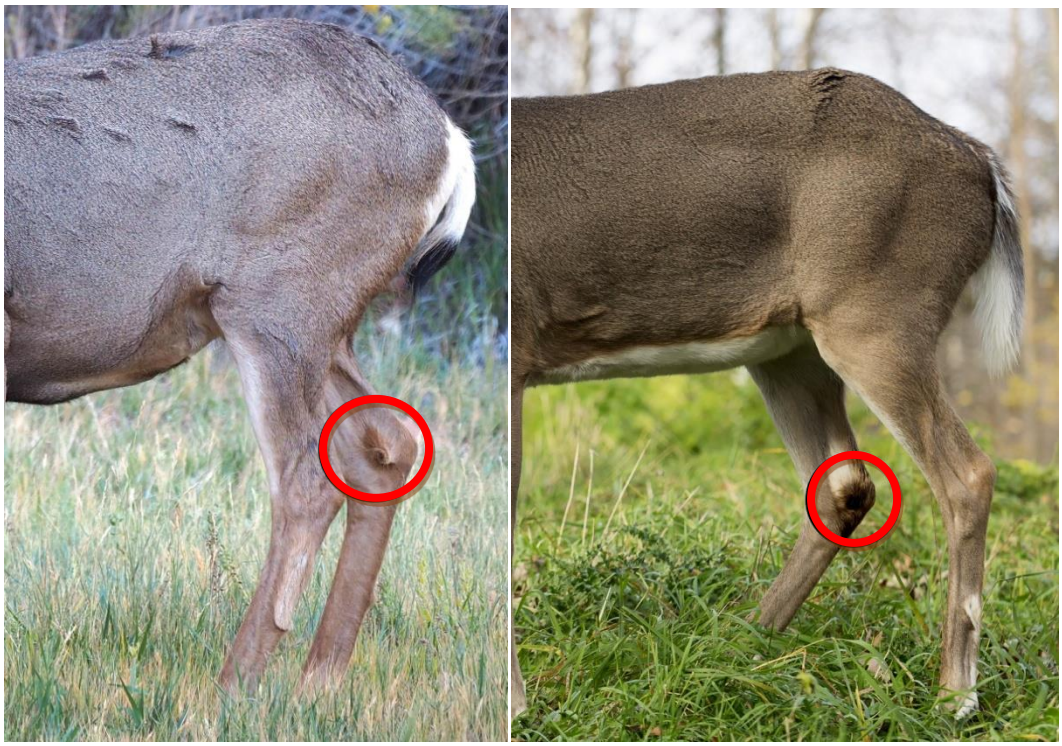
Lifespan

Mule deer live from 3 to 5 years with very few living past 10 years of age.

Scent Glands

Scent glands are common to both White-tailed deer and Mule deer.

- **Tarsal Gland**
  Located on the inner surface of the hind leg, this patch of bristly hairs has a secreted waxy/oily substance that coats the hairs. The hairs grow out of fat-based pads below the skin. The tarsal gland can be considered the deer's communication device, so to speak. Both sexes urinate on their tarsal glands with bucks intensifying the effort during the rut. The emitted scent indicates a deer's sex, dominance, and even health.

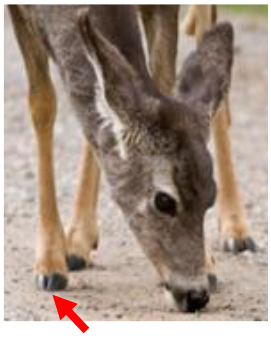


Location of tarsal gland on Mule Deer (left) and White-Tailed Deer (right)

- **Metatarsal Gland**
  Located on the outer surface of the lower hind leg.
  On white-tailed deer, the metatarsal gland appears like a tuft of white hair about 2”-3” (5-8cm) in length. On mule deer, however, the gland is a brownish colour and approximately 5”-6” (12-15cm) in length. It produces an alarm scent on mule deer but not for white-tailed deer. Some wildlife biologists theorize that the gland’s function is to assist the deer with measuring cold conditions.

Location of tarsal gland on Mule Deer (left) and White-Tailed Deer (right)

- **Interdigital Gland**
  These glands are located between the two toes or digits of their cloven hooves. They secrete fluid that acts as the deer’s calling card on the ground. The odour left helps other deer determine who is in the area, whether it is a doe or buck, a doe’s readiness to breed, the animal’s dominance, and the age of the track. Hunters frequently see bucks with their nose down frantically searching along the interdigital gland scent trail.



Location of interdigital gland

The two digits displayed are referred to as #2 & #3. The interdigital gland is between them at the base of the digits close to the hairline.

The gland is covered by the long hairs at the meaty portion of digits #2 & #3

Preorbital Gland

Located in front of the eyes - a slit ahead of each eye secretes a clear liquid that aids in cleaning and lubrication of the eye. This gland is less than 1 inch (2.5cm) long on a white-tailed deer. On mule deer the preorbital gland is wider and longer than on a white-tailed deer and can be over 1.5 inches (4cm) long.

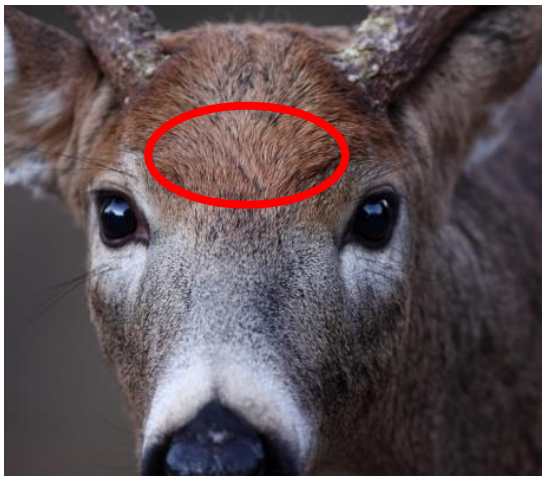
Another gland that the deer can use to leave a scent to mark their intent or their home range, bucks will rub their preorbital glands on branches that hang over their scrapes.

Mule deer preorbital gland

White-tailed deer preorbital gland

- ## Forehead Gland

Located under the skin on the deer's forehead above the eyes and between the bases of the antlers. This gland produces a very distinct musk-like aroma letting other deer know of his presence. Secretion levels increase as the rut intensifies.



Location of forehead gland

Scrapes

- Both mule deer and white-tailed deer make scrapes, however mule deer scrapes are smaller and less obvious than that of the white-tailed deer.

- During the rut, both tarsal and preorbital glands are used.
  The buck selects a spot on well-travelled trail, on the edge of a field, along a roadway, or even a random spot along his travel route that will have an overhanging branch. He begins by rubbing his forehead, preorbital, and nasal glands on the branch and sometimes chewing on the overhanging branch. He will then "scrape" away the snow, leaves, and grass to expose bare soil which acts as a sponge for when he urinates down the inside of his legs and over his tarsal gland to leave his calling card. He will make these scrapes along a route to attract receptive does and to mark his territory. The buck will freshen up these scrapes periodically throughout the rut.

- Scraping, like rubbing (see the following section), allows a buck to make his presence known by dispensing scent throughout his area.

Rubs

- A rub is created when the deer rubs his antlers on trees, saplings, and brush. Rubs may be created for many reasons.

White-tailed deer with intact velvet (left) and during velvet shedding (right)

- Rubs are created in the early fall when the bucks start to shed their velvet. When the deer's antlers are growing during the spring and summer months they are covered in a blood-rich tissue that has the appearance and feel of velvet. During this time, the deer's antlers are soft and pliable. Once it hardens to bone in early fall, the velvet is starved of blood, dries, and begins to slough off. The deer speeds up this shedding of the velvet by rubbing its antlers on trees and shrubs. This shedding of the velvet only takes a day or two.

Mule deer with intact velvet (left) and after velvet shed (right)

- Later in the fall, from the end of October to mid-November at the start of the rut, bucks will mark or rub the bark off trees to mark their territory, wear off aggression, and prove their dominance over other bucks. When a buck rubs its antlers on trees and shrubs it is also marking the area with his scent from its forehead glands.

- You will find that the antlers will take on colours produced from the trees in which they are rubbing. Lighter coloured antlers are produced in areas where the predominant trees are aspen and birch. Darker antlers are produced in areas where the deer are rubbing on coniferous trees (pine and spruce) and willows.

Deer communication

Other than scrapes and rubs, which are used during the mating season, deer also communicate through sounds, vocalizations and body movements throughout the year.

- **Vocalizations** All deer communicate with grunts, snorts and whistles. White-tailed deer are more vocal than mule deer.

- **"Blow" or "snort"**, are used to sound an alarm and distress call. This form of communication is used year-round. During a "blow", air is forcibly expelled through the deer's nostrils when they detect danger at a distance. Snorts are produced in the same way but are shorter in duration and sharper and may be

accompanied by a hoof stomp signaling immediate danger.

- **"Bleat" or "bawl"** is a distress call usually from a fawn that is in imminent danger of being cornered or captured by a predator.

- A **"mew" or "bleat"** is used by a fawn communicating with its mother. It is lower in volume than a distress bleat and is used throughout the year.

- A doe will often **"grunt"** to communicate with her fawn year-round.

- A **"Buck grunt"** is much deeper in tone than the doe grunt and is used mostly during the rut when a buck is following a doe. The buck grunt can also be used by the buck during the year as a show of dominance.

- Buck **"grunt/snort"** is used specifically during the rut and is a challenge to other bucks in the area. It may be combined with antler rubbing and thrashing on shrubs and trees.

Body movements to establish dominance

- **Ear drop:** Ears are laid back along the neck. Ear drop is the lowest form of threat from a more dominant deer and is used by all deer throughout the year.

- **Hard look:** This is where the deer lowers its head with the ears back and stares at the other deer in a threatening way. Used by all deer year round.

- **Striking:** This is when the more dominant deer will raise its front hoof and try and place it on the back of the other deer. Used by both bucks and does throughout the year.

- **Sidling:** This movement is usually used by bucks to size each other up. They will approach each other with their head up and ears back circling each other at approximately a 30-degree angle. If during the rut neither buck back down, this could lead to flailing or an antler rush.

- **Flailing:** Is used by either bucks or does throughout the year. The deer will rise on their hind legs and strike at one another with their front hooves.

- **Antler threat and sparring:** Bucks use these movements during the year and prior to the rut to establish social rank. They face each other and lower their heads so that the antlers are pointed towards each other. If neither of the bucks back down, they will engage by forcing their antlers together and begin pushing and twisting each other until one or the other gives in.

- **Antler rush:** This happens exclusively during the rut when two dominant bucks lower their antlers and rush at one another crashing their antlers together. They will continue this until a clear winner is declared. This is the most violent of the dominance rituals.

- **Flehman response or lip curl:** This is where the head is tilted back, and the upper lip is curled up so that the gums show. They inhale through the mouth, causing the air to pass across the "Jacobson's" organ. Doing so allows pheromones and other scents to transfer onto this organ located on the roof of the mouth just behind the front teeth. This form of communication may be used by a buck during the rut to find a receptive doe or by all deer throughout the year to differentiate smells.

White-Tailed deer demonstrating the Flehman response

Body movements or alarm displays to protect them from danger

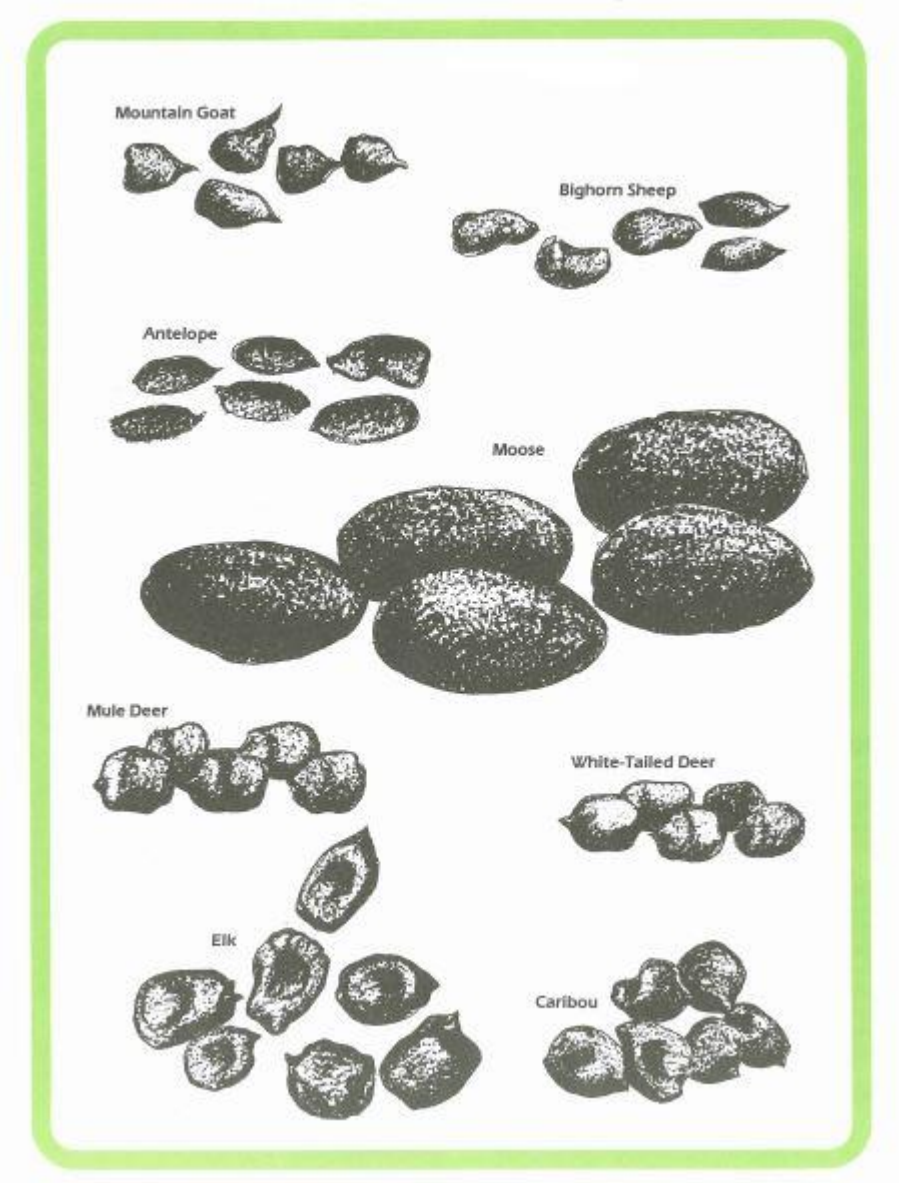
- **Alert position:** The deer's body is tensed and rigid, front legs are stiff, the head is up and erect with the ears forward. The tail may be partially or completely erect. The deer will do this when they see, hear or smell something that is out of place and is a possible threat.

- **Tail flare:** This is a response to imminent danger and an alert signal to the herd. The deer will flash its tail and the hairs on its rump will stand up.

- **Hoof stomp:** This is used when a deer cannot identify a threat. They may raise their hoof and stomp it down sharply while using their keen senses to detect any danger in the vicinity. The hoof stomp may be accompanied by a snort to warn other deer in the area.

- **Tail flag:** In the case of the white-tailed deer, when the tail is raised and flagged side to side it serves as a danger warning to other deer. Flagging by the doe helps the fawns follow their mother through tall grass and thick brush to escape the danger. Tail flagging may not happen with older more mature bucks.

Droppings


Mountain Goat
Bighorn Sheep
Antelope
Moose
Mule Deer
White-Tailed Deer
Elk
Caribou

Hybrid Deer

A possible conversation between two hunters:

"Hey! What's that over there?"

"Dunno, looks like a big whitetail buck!"

"Nope, it's a small mulie buck."

"But look at the antlers, that side looks like a whitetail."

"Yeah, but the other side looks like a mulie!"

"Must be a hybrid."

"Yep – must be. There are lots of them around here."

"Should we shoot him?"

"Ummm, I'm not sure…"

Whoa folks, hold up there a minute. First, if you can't make a positive identification of what you are shooting at, DON'T SHOOT AT IT! Your mule deer license authorizes you to shoot a mule deer, your white-tailed deer license authorizes you to shoot at a white-tailed deer. There is no such thing in Alberta as a Hybrid Deer license. So, unless you are absolutely sure that you have an animal that exactly matches your license, do not shoot it.

Each fall, hunter chat boards and other social media are inundated with "100%, for sure" sightings of hybrid deer. And although they do exist, they are much rarer than the stories would suggest, and are not easy to identify even if they are a true hybrid. Indeed, identifying deer species can be difficult for the new wildlife enthusiast and even for a more seasoned hunter, but the key to proper wildlife identification is to use a multitude of characteristics to properly determine the species and sex of the animal you have in front of you.

The mistake most hunters make when identifying deer is to look solely at the antlers. The truth is that there is no worse way to identify deer. A "typical" white-tailed deer antler will show a beam coming out from each side of the head, curl around behind the ears, and sprout individual spikes up from that beam. The

number and size of the beam and the spikes vary with the age and health of the animal. A “typical” mule deer displays what is called dichotomous branching, which means that as the antlers grow, they split into two branches and these two branches each split into two more.

However, we use the term “typical” because in nature, things like antlers, which are grown and shed each year, do not always follow the rules. It is not uncommon to see adult male deer with an antler that looks like a Mule Deer on one side and a White-Tailed Deer on the other. Look at the picture below of a male mule deer that is typical on one side and non-typical on the other. Someone identifying it strictly by using the antlers would be mistaken if they just looked at the right-side antler, as opposed to the left-side one. A correct ID would be made by first looking at the ears and the face. Further to that, other indicators would be observed including the tail to be sure.

A mule deer/white-tailed deer hybrid cross will show modified characteristics of each species. The tail may have a white underside, but a black tip on the outside. The face may have faint rings around the nose and eyes, but with a distinctly dark forehead patch. The body colour could vary from the reddish brown of a white-tailed deer to the dark grey of a mule deer, or anywhere in between. Using only one

of these characteristics is likely to lead to a misidentification. Using several of them will be more accurate, but…

There is one reliable way to determine in the field whether a deer is hybrid, and that is to look at the metatarsal gland on the outside of the hind leg. As described earlier, a white-tailed deer metatarsal is low on the leg, is shaped like a round button (loonie or toonie sized) and is white. A mule deer metatarsal is higher on the hind leg, is up to six inches (15 cm) in length, and is brown in colour with no white showing. A metatarsal gland on a hybrid will be located mid-leg, will be 2 to 3 inches (2.5 to 7.5 cm) in length and will be brown with a possibility of some white hairs in the middle of the gland.

Compare the pictures of the mule deer, the white-tailed deer, and the hybrid mule/white-tailed cross metatarsal glands below. Note the size, location, and colour differences.

Short of genetic testing in a lab, these are your most reliable indicators of hybridization. Antler development is the worst!

Metatarsal gland from a known hybrid mule deer/white-tailed deer cross.

Mule deer metatarsal gland White-tailed deer metatarsal gland

Another good indicator, and one that most people will see first is the tail. You can see in an earlier section the difference between a mule deer and a white-tailed deer tail. Below is a picture of a known hybrid's tail. Note the blending of the tails of the two individual species in this deer's tail. It is wider than a mule deer tail, and much darker than a white-tailed deer's tail. Also note that not only is the tip black, but most of the lower half of the tail is black. A hunter looking at this tail on a living deer in the field would not be able to make a positive identification of either mule deer or white-tailed deer.

Tail from a known hybrid mule deer/white-tailed deer cross

Now, let's go back to the two hunters looking at the buck through their binoculars. Their shoot/don't shoot decision was to not shoot until they could positively identify their target. Good call folks!

Parasites and Diseases

- **Abscesses**
  Puss pockets are collections of a creamy yellow or green semi-liquid material usually caused by a bacterial infection starting with some injury that allows bacteria to enter an open wound. They are most common in bucks usually the result of injuries sustained during sparing during the rut. They are not considered a significant problem for wildlife. If encountered while processing the deer, simply cut out the affected area and discard it. The remainder of the meat will be fine.

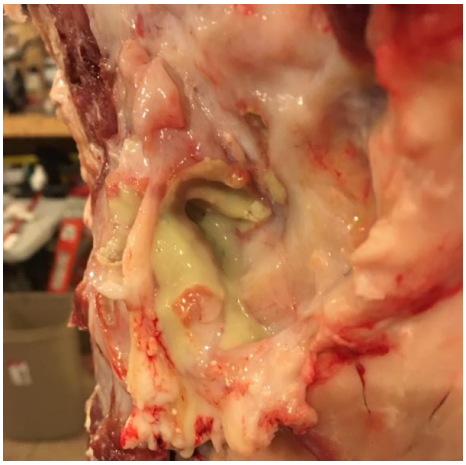


Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Haemorrhagic Disease (EHD)**
  A viral disease transmitted by midges to deer populations occasionally in Southern Alberta. The virus acts rapidly and usually results in sudden death in 1 to 3 days, although not always fatal. Sick and dead deer are usually found near water. Visible swelling of the head, neck, and tongue may occur with blood seeping from body openings. Cracked and misshapen hooves are an indicator that the deer was previously infected.
  Next to CWD (described below), EHD is one of the most significant viral diseases affecting white-tailed deer in southern Alberta. It is not known to cause infections in humans.

- **Bluetongue Disease (BT)**
  A viral disease that is closely related to EHD. The disease is transmitted by midges with similar symptoms to that of EHD. BT poses no risk to humans.

- **Botflies and Warbles (Fly Larvae)**
  Nasal Botflies: Are common in white-tailed and mule deer. Fly larvae that are short fat sausage-like maggots, live in the nasal passages and the back of the throat of deer. More irritating than harmful to the deer.

Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

Warble flies: White larvae that burrow under the animal's skin. They are not common in white-tailed or mule deer. Only one case has been documented in Alberta, however they are well established in our caribou herds.

Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Liver flukes**
  A parasitic flatworm common in white-tailed deer and less common in mule deer. Adult flukes are purple-gray in colour, flat, elongated and oval in shape, and look like leeches (leeches are not closely related to flukes). When found while cutting open or slicing liver, they resemble a blood clot and are surrounded by a thick black-grey discharge. The flukes vary in size from 15-30 mm (5/8”-1 1/8) wide by 30-100mm (1 1/8”- 4”) long by 2-5 mm (1/16’-1/8”) thick. Most times flukes are found in pairs that are encapsulated in a white cyst-like structure. Not typically fatal in deer. They do not live in humans and do not occur in the meat of infected animals.

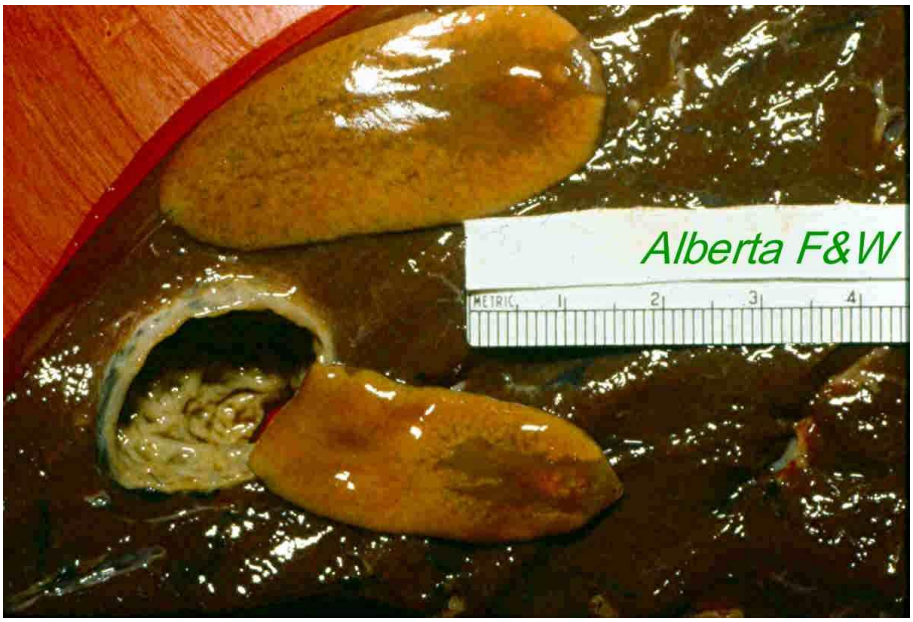


Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Lung worms**
  A parasitic nematode that looks like thin strings of spaghetti found in the lungs of the infected host and can cause many problems for the deer that they infect. They can cause a buildup of mucus in the respiratory tract making it difficult for the animal to breathe. Symptoms are coughing wheezing, and weight loss. Fawns are particularly susceptible to lung worms, a major cause of mortality. They are considered harmless to humans.

Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Hydatid tapeworm**
  A white fluid-filled cyst found in the lungs and sometimes the liver of its host but does not harm the animal. Typically found in the lungs of elk and moose and rarely found in mule deer. Larvae are harmless to humans, however people can become infected with eggs excreted from infected dogs.

Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Liver Blisters**
  Tapeworm larvae that live in the liver of the infected host. Most common in moose but also found in white-tailed deer and mule deer. Presents itself as a clear white blister on or in the host`s liver. They are not a threat to the animal and do not infect humans.

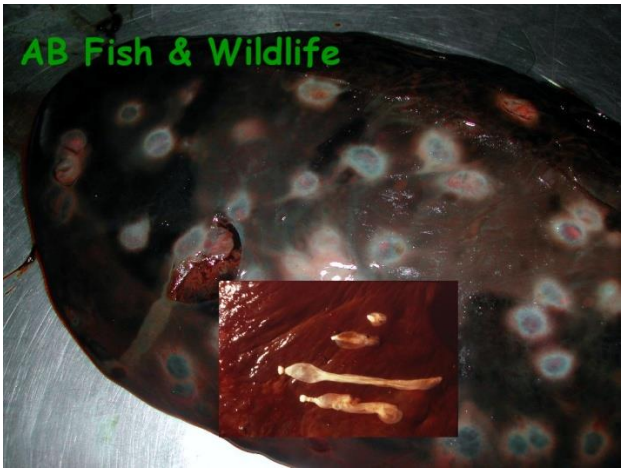


Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Ringworm**
  A fungus that may live on the skin of the host. Most common on mule deer, it causes hair loss in the infected area usually on the face and lower legs and does little or no harm to the infected animal. It does not harm the meat but care should be taken when skinning or handling an infected deer as ringworm can transfer to humans.

Photo courtesy of M.J. Pybus PhD, Provincial Wildlife Disease Specialist, Alberta Fish and Wildlife

- **Rocky Mountain Wood Ticks**
  A hard-bodied tick that individually causes little or no harm to wildlife. It is capable of transmitting rare infectious diseases to humans (Rocky mountain spotted fever, Tularemia and Colorado tick fever).

- **Deer tick (Black legged tick)**
  Another hard-bodied tick that can be found on white-tailed and mule deer. Individually they do not pose a threat to the deer, however the deer tick can carry Lyme disease which is transmittable to humans bitten by the tick. Massive infestations of ticks have been known to kill deer during particularly hard winters. Care should be taken when handling and skinning a deer that has ticks.

For more information on ticks, please see our Tick Awareness workbook at https://aheia.com/free-workbooks

Chronic Wasting Disease (CWD)

CWD is a prion disease associated with early mortality among members of the deer family. CWD is most prevalent in mule deer. It is a debilitating disease that results in the premature death of the deer and is the result of changes to proteins in the brain.

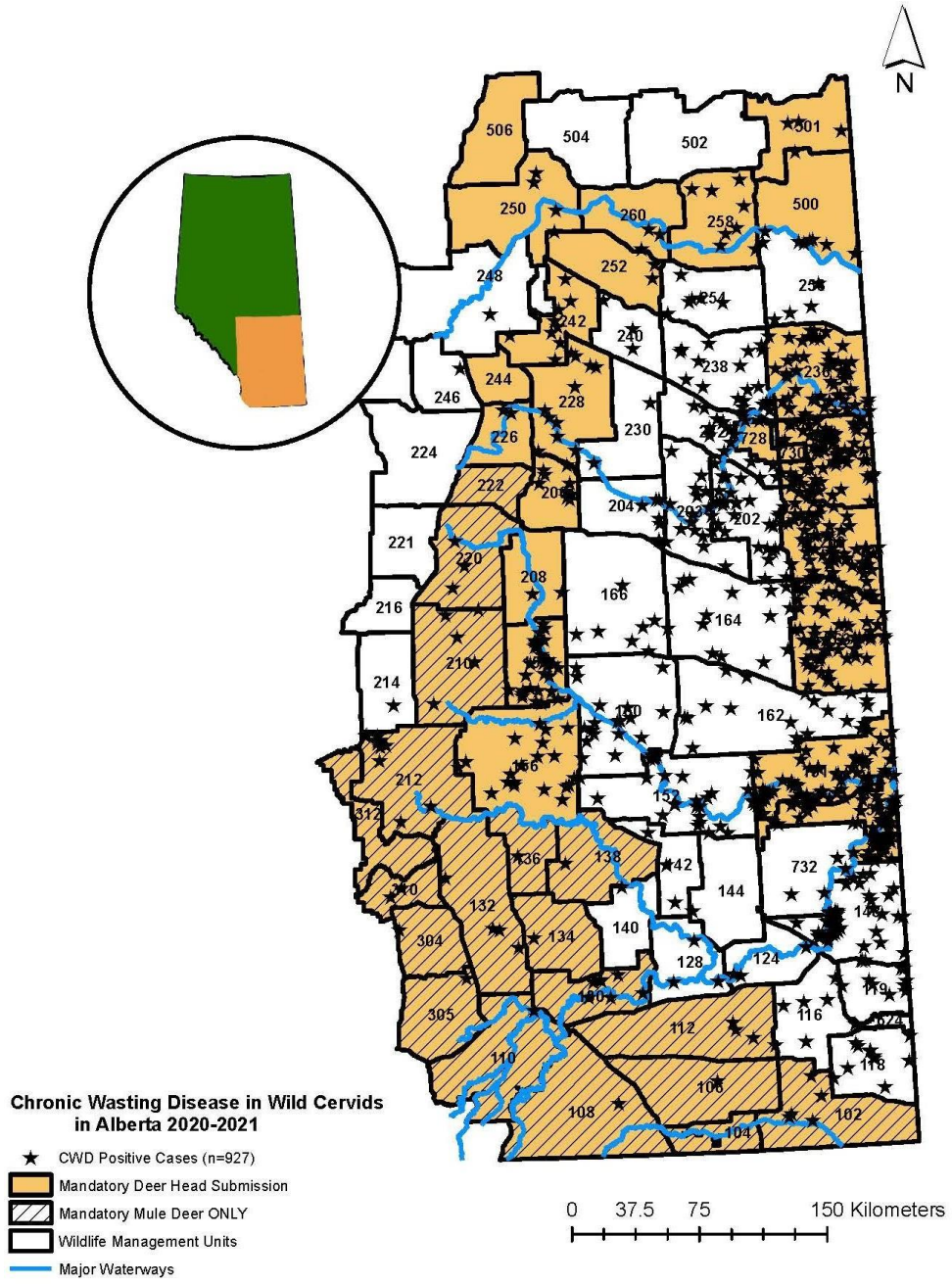
- The changing of normal proteins in the brain to abnormal proteins leads to spaces in the brain tissue until the microscopic structure of the brain resembles a sponge. This damage to the brain tissue results in changes in behaviour, attitude, and metabolism, leading to the animal wasting away and eventually dying.

- Noticeable signs that the animal is in the late stages of the disease: Emaciation, excessive salivation, lethargy, poor coordination, trembling, and drooping head and ears.

- To date there is no scientific evidence that CWD can infect humans. However, hunters are advised to not eat the meat from deer that show signs of the disease or that have tested positive for the disease. Special precautions should be taken when processing deer from wildlife management units that have a high incidence of CWD. When field dressing a deer, wear rubber gloves, bone out the meat, and avoid handling brain and spinal tissue.

Chronic Wasting Disease in Wild Cervids - Alberta

2020 Surveillance Season (FINAL)



alberta.ca/chronic-wasting-disease-updates

Chronic Wasting Disease in Alberta

Surveillance Update 2020-21

NUMBER OF CWD-INFECTED CERVIDS IN 2020/21

	Mule Deer	White-tailed Deer	Elk	Grand Total
Male	521	133	1	655
Female	234	34	4	272
Grand Total	**755**	**167**	**5**	**927**

CWD POSITIVE CASES BY WILDLIFE MANAGEMENT UNIT (WMU) IN 2020-21

	Mule Deer			White-tailed Deer			Elk			Grand Total
WMU	Male	Female	Total	Male	Female	Total	Male	Female	Total	
102	4	1	5							5
106		1	1							1
108					1	1				1
110	1		1							1
112	3		3							3
116	4	1	5		1	1				6
118	3	7	10							10
119	2	1	3	5	1	6				9
124	3		3	1		1				4
128	4		4							4
130	5	1	6							6
132	4		4							4
134	1		1							1
136	1		1							1
138	1	1	2							2
142	3		3							3
144	1		1							1
148	20	18	38	6	3	9				47

	Mule Deer			White-tailed Deer			Elk			Grand Total
WMU	Male	Female	Total	Male	Female	Total	Male	Female	Total	
150	34	20	54	16	5	21				75
151	48	21	69	12	4	16				85
152	14	9	23	7	2	9				32
156	16		16	3	2	5				21
158	26	3	29	2		2				31
160	15	2	17	2		2				19
162	12	3	15	3	1	4				19
163	48	19	67	8		8				75
164	10	3	13	1		1				14
166	6	3	9							9
200	44	22	66	10	2	12				78
202	21	7	28	3	2	5				33
203	9	4	13	3		3				16
204	3	1	4	2		2				6
206	3	3	6	3		3				9
208	1		1	1		1				2
210	3	1	4							4
212	6	7	13							13
214	1		1							1
220	2	2	4							4
226	1		1		1	1				2
228	8	2	10	2	1	3				13
230	2	1	3							3
232	9	8	17	1		1				18
234	44	26	70	13	4	17				87
236	31	19	50	9	1	10	1		1	61
238	11	6	17	6		6				23
240	1	1	2		1	1				3
242	9		9							9
246				1		1				1

	Mule Deer			White-tailed Deer			Elk			Grand Total
WMU	Male	Female	Total	Male	Female	Total	Male	Female	Total	
248	1		1							1
250	2	2	4	1		1				5
252	2		2							2
254	4	1	5		1	1				6
256	1		1	3	1	4				5
258	5		5	4		4				9
260	2		2	1		1				3
304	2		2							2
305	1		1							1
310		2	2							2
500	3	5	8							8
501				4		4				4
732								4	4	4
Total	**521**	**234**	**755**	**133**	**34**	**167**	**1**	**4**	**5**	**927**

alberta.ca/chronic-wasting-disease-updates

Classification: Public

- These maps and charts are subject to change as CWD testing and surveillance continues throughout the province. For the most up to date information refer to the data provided at www.alberta.ca/chronic-wasting-disease-updates

Characteristics That Differentiate a White-Tailed Deer from Mule Deer

COLOUR, BODY COLOUR	
	
White-tailed deer The body colour changes with the seasons, from reddish-brown in the spring and summer to grey during the fall and winter months, with a white patch on its neck. Generally, these are light coloured animals fringed in white.	**Mule deer** The body colour is dark grey-brown (maybe somewhat lighter during the spring and summer) with a cream coloured/white rump and a white patch on its neck. Generally, this is a dark coloured animal fringed in black.

HEAD AND FACIAL MARKINGS

White-tailed deer

have a white band around their nose and a white ring around each eye as well as a patch under their chin and neck.

Mule deer

A mule deer head is grey-brown, a light grey face with a distinctive dark brown to black forehead and a white chin and throat.

BODY SIZE

White-tailed deer

White-tailed deer are usually smaller than mule deer with adult bucks usually weighing between 150lbs and 250lbs (68-114kg), with does at 90lbs to 130lbs (41-59kg).

Mule deer

Generally, the mule deer is a third larger than the white-tailed deer. They are stockier, heavier, and wider in the chest than the average white-tailed deer. Mule deer bucks weigh between 150lbs to 350lbs (68-159kg) and does weigh 100lbs to 130lbs (45-59kg).

EARS

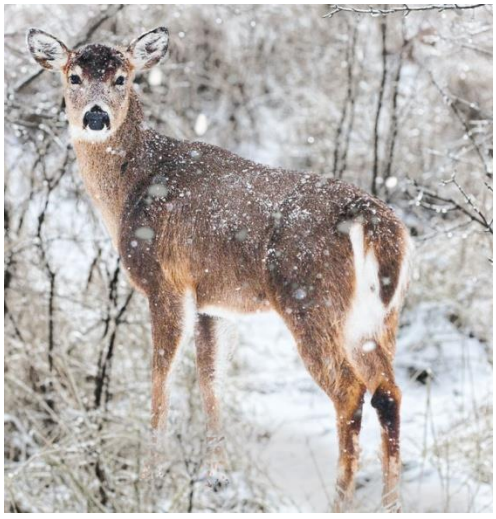
White-tailed deer

White-tailed deer ears on a mature deer are about 6” (15cm) long with rounded tips and are more vertical on the head than the mule deer.

Mule deer

Mule deer were named for their mule-like ears. They are 8” to 10” (20-25cm) long and are set approximately 30 degrees up from their head with more pointed tips than the white-tailed deer.

TAIL AND RUMP



White-tailed deer

A white-tailed deer is noted for its large tail that is wide, flat, and brown in colour with a white fringe and a bright white, fully-haired underside. When disturbed/alarmed the tail is raised showing the white underside that flags from side to side while running.

Mule deer

A mule deer has a white to cream-coloured rump patch with a narrow, short white to cream-coloured rope-like tail with a solid black tip. The underside is void of hair. The white-tailed deer uses its tail as a distinctive warning signal whereas the mule deer does not.

ANTLERS

White-tailed deer

White-tailed deer antlers “typically” grow up and forward with single, unbranched spikes or tines growing up from the main beam with well-developed or long brow tines.

Mule deer

Mule deer antlers “typically” grow up and branch like a tree and the tines are forked or Y-shaped with poorly developed, short to nonexistent brow tines.

Both white-tailed deer and mule deer may grow what is referred to as non-typical antlers with drop tines, kicker points off the main beam and other points/tines or show signs of palmation. Non-typical antlers may make it hard to differentiate White-tailed deer from mule deer so other criteria for identification should be used.

Mule Deer (left) compared to White-tailed Deer (right)


GAIT	
White-tailed deer White-tailed deer are usually very skittish and when alarmed will raise their tail and in a lopping gallop, quickly leave the area flagging their tail.	**Mule deer** Mule deer are typically less skittish and more curious than white-tailed deer. When alarmed, they will tuck their tail flat, and in a stiff-legged bounce (sometimes called *stotting*) where all four feet touch the ground at the same time, will leave the area.

METATARSAL GLAND*

(located on the outer surface of the lower hind leg)

White-tailed deer

On white-tailed deer the metatarsal gland appears like a tuft of white hair about 2”-3” (5-8cm) in diameter.

Mule deer

On mule deer the metatarsal gland is a brownish colour approximately 5”-6” (12-15cm) in length.

*Note: This is a differentiating characteristic, but should not be used for field identification

PREORBITAL GLAND*

(a slit located in front of the eyes)

White-tailed deer

On white-tailed deer this gland is less than 1” (2.5cm) long.

Mule deer

On mule deer the preorbital gland is wider and longer than on a white-tailed deer and can be over 1.5 inches (4cm) long.

*Note: This is a differentiating characteristic, but should not be used for field identification.

Deer Identification Quiz

It can be difficult to determine whether you have spotted a white-tailed deer or a mule deer, especially in low light and from a distance. Have a look at each of the following pictures and write down which you think they might be. The answers are listed following the quiz.

(a)

_____

(b)

_____

(c)

_____

(d)

_____

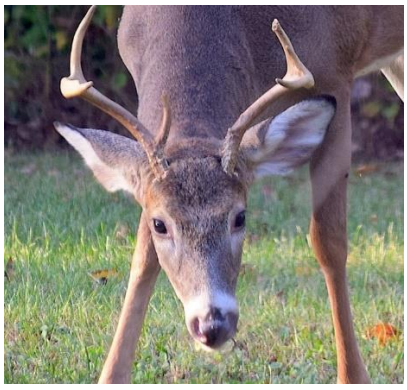
(e)

_____

(f)

_____

(g)



_____

(h)

_____

(i)

_____

(j)

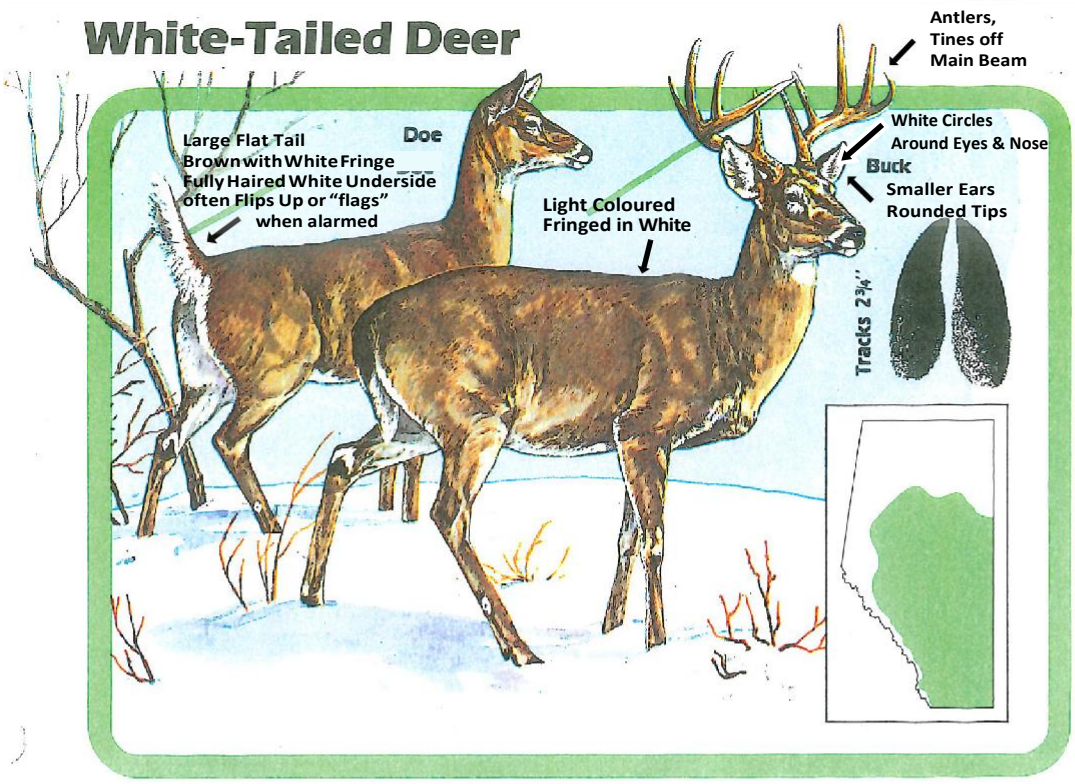
_____

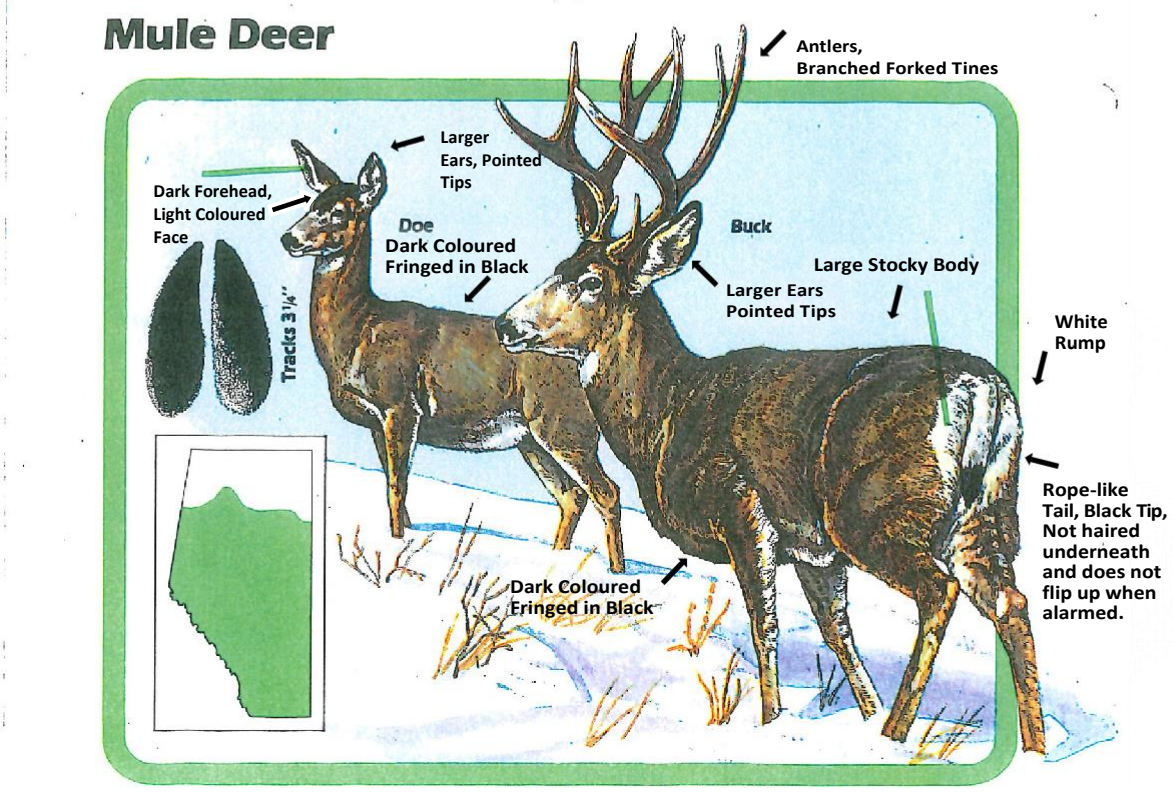
Answers to Deer Identification Quiz:

(a)	Mule deer	(b)	Mule deer
(c)	White-tailed deer	(d)	Mule deer
(e)	Mule deer	(f)	White-tailed deer
(g)	White-tailed deer	(h)	Mule deer
(i)	White-tailed deer	(j)	Mule deer

Mule Deer vs White-Tailed Deer ID Synopsis

For more detailed information, refer to the complete Mule Deer vs White-Tailed Deer ID Workbook available on AHEIA.com.





Deer Identification Pull Out

Take this out for a quick reference when in the field

This guide is for reference <u>only</u>. Always be sure of your target

Is it a White-tailed Deer or is it a Mule Deer?

White-tailed deer

Mule deer

White-tailed deer tail

Mule deer tail

White-tailed deer antlers

Mule deer antlers

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