



UNDERSTANDING UNGULATES

Sometimes we forget about certain parts of our natural world or we just get used to things. We spend a lot of time learning about and loving exotic species such as tigers, panda bears and kangaroos, often forgetting equally important species such as insects, mice, squirrels, and frogs. One family of mammals that is often overlooked in British Columbia is the Ungulate family. You may be thinking what is an ungulate, but you are surely familiar with ungulates. Here are some examples: Horses, Deer, Moose, Pigs, Bison, Mountain Goats and even some of those enchanting exotic species such as giraffes, zebras, hippopotamuses, rhinoceroses and camels. How are all these animals from the same family? What do they all have in common? They all have hooves. The word **Ungulate** refers to mammals with hooves. **Hooves** are specialized claws or toe nails that are found on the tips of some mammals toes. Most of the animals weight is supported by their hooves, but unlike humans, ungulates soles and heels rarely touch the ground, if ever. The hoof is made of **keratin**, the same material as our finger and toe nails, and our hair.

There are two different types of ungulates. Currently, there are 18 species of ungulates in the world that have an odd number of toes, 1 or 3. Odd-toed hoofed mammals are called **Perissodactyla**, which include horses, rhinoceroses and tapirs. The odd-toed hoofed mammals are not native to North America. These animals are able to maintain their balance by pressing the majority of their weight through their middle toe; humans use their big toes! The other type of Ungulate is called **Artiodactyla**, which means even-toed hoofed animals.



which vary in size dramatically. The tallest is the giraffe at 5.8 metres. The heaviest is the hippopotamus at 3,200 Kilograms, and the smallest is the mouse deer at 2.6 Ki-

lograms.

Ungulates can also be characterized by their eating habits. All are **herbivores** (plant eaters), with the exception of pigs and peccaries. Pigs and peccaries eat insects and small animals, such as mice. Diets consist of leaves, flowers, fruits, seeds, herbs and grasses depending on the species and their habitat. Some ungulates are **grazers**, which means they specialize in eating only grasses. Some are **browsers** which means they will eat leaves, woody shrubs, fruit, and vines. Ungulates have special stomachs with chambers to digest all of these types of food. Animals with chambered stomachs are called **ruminants**. Ungulates differ from other mammals because they cannot use their limbs to assist them while eating. They can only use their lips, tongue and teeth. Ever try eating this way? It's pretty tricky!

Ungulates can also be identified because they have horns, antlers or tusks. You might ask what is the difference between the three? Well, true **horns** are made of bones and keratin. Some horns are bone covered in fur or just keratin. Horns are permanent and can grow in all sorts of shapes even spirals but they never branch. Most female ungulates have horns, too. **Antlers** are made of bone without keratin, and they are not permanent. Antlers will begin growing in the spring and will continue to grow until mating season, which is when they reach their full size. After



antlers are branched and are only found on males (and female caribou). If an ungulate does not have horns or antlers, it will most likely have enlarged teeth called **tusks** (think elephants)! Tusks are made of the same substances as our teeth.

So why are these animals so important? What is their ecological role? Of course, they are part of the web of life, providing food for predators (including humans). They also play a part in helping our ecosystem through seed dispersal. If an ungulate eats a seed, it will be passed through its digestive system and eventually be eliminated in the animal's droppings. That's when a tree gets planted! Ungulates help dig up or plow the soil with their sharp hooves. This aids in the planting of seeds. Ungulates play an important role in maintaining grasslands too. Their droppings provide excellent fertilizer and they will trample and eat weeds, shrubs and small trees. Grasses grow differently than other plants, which allows them to keep on growing even if they are trampled on.

Ungulates are well adapted to every **habitat**-mountains, plains, deserts and wetlands. In British Columbia, our landscape is very diverse and provides habitat for 19 types of native ungulates including several different species of elk, deer, moose, caribou, bison, mountain goats and sheep. Although these animals seem healthy and abundant, 8 are listed on British Columbia's **endangered species** list. The reason for this is the loss of their habitat and increasing human



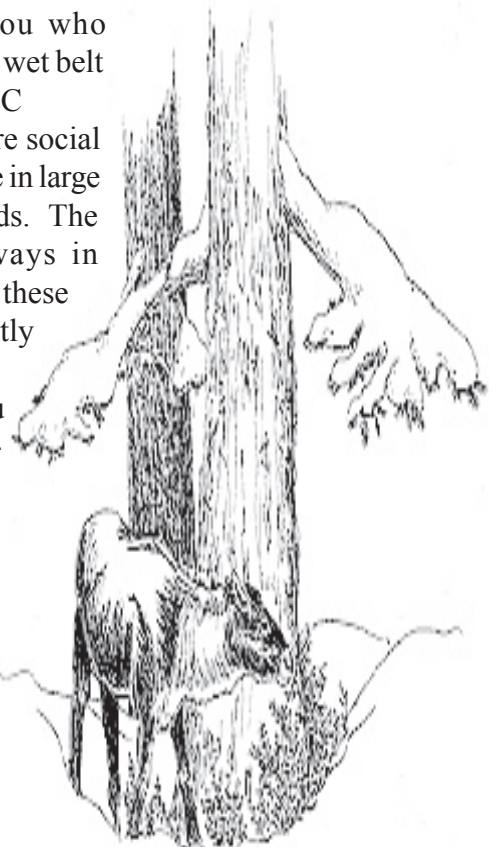
Caribou

Caribou are a member of the deer family and one of British Columbia's ungulates. If you are not familiar with the name Caribou you probably know these animals by their other name, Reindeer! A Reindeer is a tame or domesticated Caribou. Caribou are even-toed ungulates. Their hooves are very wide and can spread out while walking. This is very useful for walking on soft ground or snow, and for digging through winter snow to reach their food. These animals grow quite big. They are about 4 feet high at the shoulder and males weigh around 400 to 500 pounds. Unlike the rest of the deer family, both female and male Caribou grow antlers. Caribou are easy to identify by their antlers because when you look at the animal's profile (side view) their antlers look like the letter C.

Caribou live throughout the Northern regions of Eurasia, Greenland and North America on tundra or in the forests. British Columbia had four different kinds of Caribou in the past, but the Dawson's Caribou is now extinct. The 3 remaining types are all woodland Caribou: the Boreal Caribou who live in the boreal forests of Northern BC; the Northern caribou who live in the mountains of Northern BC, and the Mountain Caribou who live in the Interior wet belt of Southeastern BC

Caribou are social animals. They live in large groups called herds. The Caribou are always in search of food, so these herds are constantly on the move.

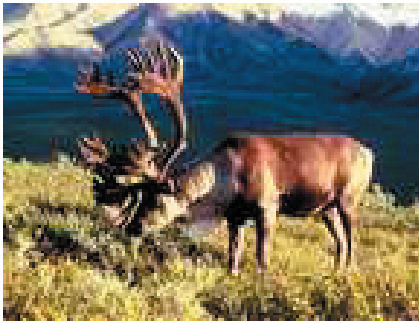
Caribou breed in October. In late May or early June, a female Caribou will give birth to 1 calf (baby). There have been times when twins are born, but this is unusual.



Adapting Animals

For Caribou that live on the tundra, giving birth is hard work. These Caribou have to migrate (walk) for 1000s of km in very large herds to their calving grounds, or birthing place. For Caribou that live in the mountains, giving birth is quite different. Females will seek out a quiet area in a sub alpine forest and give birth alone.

During the summer, there is an abundance of food for the caribou. They eat flowers, herbs, mushrooms, shrubs, grasses and sedges. In the winter when the snow covers the ground, the caribou's food sources disappear under the snow. Luckily for the Caribou who live on the mountains, their hooves act like snowshoes so they can move around easily. The Caribou's long legs and neck are perfect for reaching high up so they are able to eat the lichen (algae and fungus growing together) that grows on large trees. On the tundra, the Caribou use their hooves to dig up lichen, which grows on rocks deep beneath the snow. It's a lot of hard work to find food in both these habitats and winter is always on the bou.



The Mountain Caribou are an endangered species in BC. There are a number of reasons why their population is decreasing such as disease, predators, hunting, weather conditions, and accidents, but the biggest factor is the change in their winter habitat due to logging. Logging removes the older trees and the Caribou lose their main food source for the winter making them weak and vulnerable to predators and

Ungulates are the most abundant, large land mammals on earth. Their success may be based on their ability to adapt. Here is a list of some characteristics that ungulates have adapted:

Long legs- enables them to escape from predators, by running fast. Walking on their toes also creates longer legs.

Eyes- are set high on their heads giving them the ability to look out for predators.

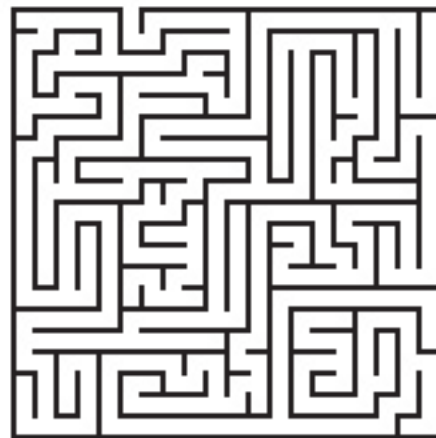
Sensitive ears- gives them the ability to hear predators from large distances.

Chambered stomach- ferments food, allowing more nutrients to be absorbed and makes the digestion of tough vegetation easier.

Special teeth- grind and mash up all the vegetation they eat.

Coats- acts as camouflage, and helps protect the animals against extreme weather.

Ability to go without water for long periods (example: camel)- allows some ungulates to feed further away



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Fun Facts About BC's Ungulates

~Mountain goats can live on icy faces of sheer cliffs. They are able to walk there because their hooves have hard, sharp edges and rubbery soles that allow for traction.

~Male Mountain goats are called billies and females mountain goats are called nannies. A baby mountain goat is called a kid.

~Moose can be irritable. They have charged people, horses, cars and even trains in the past.



~Black-tailed deer are very vocal and very loud. You can often hear them bleating, baaing and grunting in the forests.

~Bison seem very lazy and clumsy, but they are very fast. They can run at about 55 km per hour and are able to swim across wide, fast flowing rivers. They can also scramble over fences that are quite high.

~Mule deer run with their tails down, while white-tailed deer run with theirs up.

~It is possible to hear the clashing of the horns of a Dall's sheep ram 1.5 km

~Bull elks make a bellowing sound during rut, or mating season, this is called bugling

~A bull moose may have antlers that grow to be 5 feet across and weigh up to 85 pounds.

~A female deer is called a doe. If there is an abundance of food, a doe can give birth to twins or even triplets. A baby deer is called a fawn.

~Moose protect themselves from mosquitoes and other insects in the summer by submerging their bodies in ponds.



~Caribou have special fur that traps air, which provides excellent insulation in the cold, northern winters.

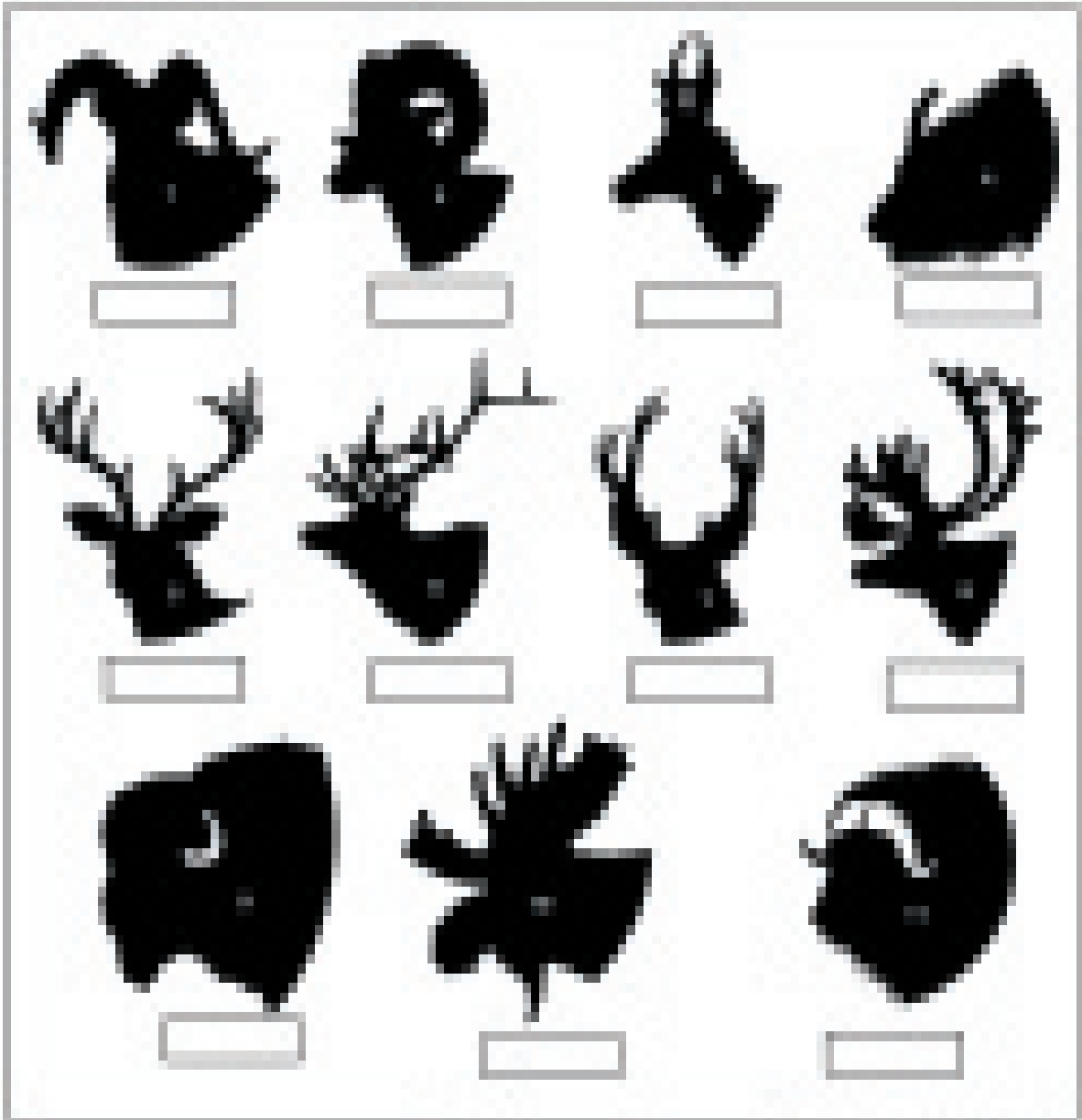
~Bighorn sheep rely on their climbing and hiding ability to escape from their predators instead of running.

~Elk have been very useful to North American natives. This animals muscle, blood, fat and organs provide food. Their bones and antlers have been used as digging sticks, needles and arrow heads. Their hide has provided clothing, blankets, sandals, boats, ropes and tipi covers. Jewelry and other ornamentation have been created out of elk's teeth, tail hair and dew claws.



Hooves Who?

Can you name these ungulates from North America?



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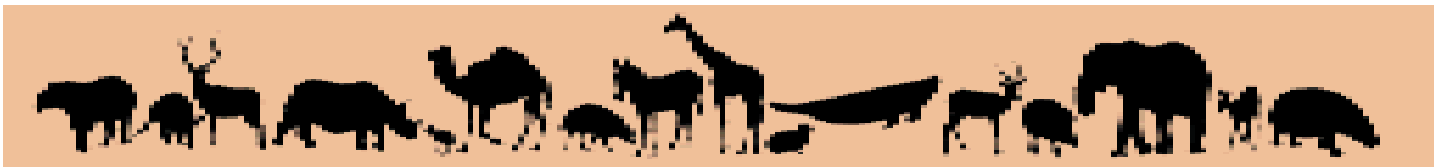
Know your toes!

Search for the words that relate to Ungulates

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ANTLER EVENTOED GIRAFFES
 BISON HABITAT HERBIVORES
 BROWSER HERDS HOOF
 CARIBOU LICHEN MOUNTAIN
 DEER TUSKS RHINOCEROS
 UNGULATE ENDANGERED

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Gnu Words

ungulate(un' gyoo-Lit): A mammal having hooves.

perissodactyla (pai'ris-oh dak ti'lah): ungulate with an odd number of toes or digits.

artiodactyla (ar'tee-oh dak ti'la): ungulate with an even number of toes or digits.

herbivore: an animal that mainly eats plants or parts of plants.

browser: an animals which feeds on grass, fruits, leaves, shoots bushes and other ground vegetation.

grazer: an animal which feeds mainly on grass.

Horn: pair of hard permanent structures on the head of an ungulate, consisting of a bony core covered with keratin.

Antler: pair of non- permanent bony structures on the head of an ungulate, they are almost always branched.

Tusks: a long, enlarged protruding tooth.

Keratin: a protein used by various groups of animals as structural elements such as hair, claws, baleen, nails, etc.

Ruminant: any of the hoofed animals that chew their cud, having chambered stomachs.

Habitat: the area where an animal lives (composed of five things: food, water, air, shelter and space).



How you can help ungulates

Protect Habitat

Protecting the ungulates habitat will ensure these animals have the five things critical for survival: food, water, air, shelter and space. Recycle, use less water, ride your bike to school, these small things add up.

Get involved

There are lots of organizations to volunteer with. Join a restoration crew or a clean up crew, or help out in the office. These projects will help conserve and protect habitat and the future of our animals.

Learn and get excited!

One of the best things you can do is learn about animals, how unique each one is, and share your excitement and enthusiasm with your friends and family. Appreciation and interest in an animal will lead an individual to take the steps necessary to help protect it and preserve its habitat.

Adopt an animal or natural space.

There are several programs that will allow you to adopt an animal, a tree or some land. This will help protect habitats and allow organizations to do research and help conserve your favourite animal. Get your class together to adopt a class animal!



FOR EDUCATORS



Wanted

NWPS is looking for salmon slides to develop a *Salmon of the Pacific* presentation. If you have some slides to donate, please give us a call (604)713-

6686.

Volunteers – we are looking for volunteers to help out with the Green Ribbon Campaign and the Beach Clean ups in the spring. Contact us through email or

Exciting Wildlife Presentations:

Northwest Wildlife Preservation Society (NWPS) offers a variety of programs for audiences of all ages. These programs allow students to get involved in either interactive classroom presentations or hands-on stewardship programs. Our programs can easily fit into your curriculum, either as part of an existing lesson or as a separate lesson about the environment we all share.

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Want to Get Involved with Wildlife Preservation?

Interested in preserving wildlife and wildlife habitat? Wondering what you can do? Join the Northwest Wildlife Preservation Society's "Volunteer Team"! To find out more about possible volunteer opportunities with us, please call (604) 713-6686. There are lots of ways to get involved!

Do you want to learn more about Ungulates?

Visit these great Websites!

Enchanted Learning- www.enchantedlearning.com

Whozoo- <http://whozoo.org>

The Ultimate Ungulate Page- www.ultimateungulate.com

Docent- www.szgdocent.org/ung/ung-main.htm



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