WLD1020

Wildlife Diversity

This module introduces the student to Canadian wildlife with a focus on Alberta’s wildlife.

This book has been written as a resource for the WLD1020 student workbook. Assignments are indicated in highlighted boxes with the details of the assignments located in the student workbook.

***Do not make any marks in this book.***

Alberta is home to thousands of different species of organisms. They range from the smallest bacteria, to some of the largest mammals on the continent. These organisms can be divided into six basic groups:

Micro-organisms

Invertebrates

Plants

Insects

Fish, Amphibians and Reptiles

Birds and Mammals

The University of Alberta has created a list of plants and vertebrate animals that occur in Alberta. (<http://sunsite.ualberta.ca/Projects/Alberta-Lakes/species.php>) Although this list is about 16 pages long, it does not include microorganisms, invertebrates or insects. The species are listed by their common name with their scientific names indicated as well.

Your textbooks for this module contains sections called Identification, or Game Fish Identification. The Alberta Conservation and Hunter Education book divides wildlife into ungulates, large carnivores, upland game birds, and waterfowl. The Alberta Fishing Education book doesn’t divide the fish into categories, but simple research will often divide them into salmonids (trout family) and perchids (perch family), or cool water (lakes and ponds) fish and cold water (mountain fed streams) fish. Every species has identifying characteristics, habits, and habitat requirements that differentiate one from another.

These two books deal with “game” animals and fish, which means they are generally considered species desirable to the sport fisher or hunter, or fall under management through seasons and bag limits. There are other animals common to Alberta that fall under the classification of fur bearing animals (those that are routinely trapped for their furs), pests or nuisance species (animals which have no sport or commercial value), or simply aren’t classified at all. There are songbirds, minnows, bugs, snails, reptiles, amphibians – all of which have a place in Alberta, but are not always regulated in a clear manner.

***Big Game***

The big game animals in Alberta are divided into two categories: ungulates and large carnivores. The ungulates are the cloven hoofed animals which are also ruminants – or cud chewers. These are divided again into horned and antlered animals. Horned animals do not lose their horns while antlered animals shed their antlers every year. The horned animals in Alberta include the bighorn sheep, mountain goat and pronghorn antelope, but pronghorns shed the outer fibrous sheath of their horn and grow a new horn over the remaining bony core. Antlered animals are the members of the deer family, such as moose, elk, white tailed and mule deer and caribou. Only the males of the species grow antlers, except in caribou where females may also grow antlers. Large carnivores in Alberta can basically be divided into three sub groups: bears, dogs and cats. The two species of bears are black and grizzly, the dogs are wolves and coyotes, and the cats are mountain lions. There is another classification of mammals called furbearers. These animals are managed and utilized through trapping. Watch the power point called “fur bearing animals of Alberta”.

***Upland Birds***

The upland birds found in Alberta can be divided several ways. One division is native and introduced. Some birds, such as the Chinese ring necked pheasant and Hungarian partridge were introduced. They can be identified by the absence of any feathers or hairy growths on their feet. Native birds will have feathers down their legs and as far as their toes, in the case of the ptarmigan. Another categorization could be grouse and non-grouse. The grouse family includes sage, sharp tail, ruffed, spruce, and blue, whereas the remainders are ptarmigan, pheasants and partridge. In any event, these game birds differ from other feathered game birds by their diet of seeds and insects, and non reliance on available water sources.

***Waterfowl***

Ducks and geese make up the waterfowl category of game birds. Both ducks and geese need water to survive – both for food and for raising their young. Some birds, such as the pintail duck, can nest up to 500 m from water and lead their young on a long hike before they can have their first swim. Other ducks, like the golden eye and bufflehead are cavity nesters and will make their nests in hollow trees. Regardless, they all need water in the end. Geese are different from ducks by their generally larger size, the fact they have no eclipse plumage, and the plumage on the males and females are generally very similar. Ducks have a difference among themselves in that some of them feed by tipping over in shallow ponds and pulling up edible plants. These are called puddle or dabbling ducks. They can also be recognized by their ability to take off by springing straight up off the water and by their ability to walk very well on land, due to having their legs near the center of their body. Ducks that dive under the surface of the water to obtain their food are called divers. They don’t walk very well on land because their legs are set way back on their body, and they take off by running along the surface of the water to gain speed. In both cases, however, the female is much less colorful than the male, a characteristic which allows for better camouflage when nesting. ***Watch the power point called “waterfowl ID”.***

(P1) Read the chapters in your books on identification. Complete the count sheet assignment and add any missing species (there are at least two common ones).

(P2)Complete the species recording sheet assignment.

As you read the list, you will recognize many species, you will have heard of some, but there are certainly many you will never have heard of. If you include the whole of Canada, the number of species will be in the thousands and most people will recognize only a small percentage of them. This module encourages you to explore the wildlife found in Alberta and Canada, and compare it to other wildlife around the world.

Some of the major groups of wildlife are more difficult to explore. There isn’t a whole lot available about microorganisms which makes sense to anyone not able to understand scientific lingo. Likewise, there aren’t many straight forward items of information available on plants, invertebrates and insects, but there are more studies about them than microorganisms.

It is important to understand how the further division of organisms into urban and rural can affect the numbers and species. Living in rural Alberta makes it tough to imagine wildlife in urban environments. We often hear about problem wildlife, such as coyotes, wayward moose, and the occasional bear, but it is hard to picture what else there may be. If you think about it, ditches, ponds, vacant lots, creek and river systems, steep ravines, fenced off areas and undeveloped land are prime locations for wildlife.

(P3)Complete the chart in your workbook which asks for examples of wildlife for urban and rural areas.

Issues arise when wildlife move into human environments. The following video is an American look at some of the problems and solutions encountered while dealing with wildlife/human conflicts in urban areas.

(P4) Watch the video clip “The Concrete Jungle and complete the conflict assignment in your workbook.

The wildlife in Alberta’s six natural regions have different characteristics which help them survive. The map below outlines the natural regions of Alberta. As you can expect, the type of animal which survives in the Rocky Mountains will likely have some specific adaptations to living in the mountains which would not be beneficial to living in the grasslands, and vice versa.

An example of one species which has adapted to living in a specific region of Alberta is the ptarmigan. Ptarmigan are a game bird which lives in the frozen, rocky part of Alberta known as the Canadian Shield. It is the only game bird which changes plumage over the course of the year, going from a pure white plumage in winter to a mottled brown in summer. It is also the only game bird in the province which has fully feathered feet. This adaptation has allowed the ptarmigan to remain in the ice and snow of the northern winter without fear of freezing off its toes. If this bird were to try living in southern Alberta where the summers get very hot, the heavy feathered body and feet would not allow the bird to cool properly in the hot summers and mortality would likely be high. The diet of the ptarmigan is also different from southern birds because of the types of seeds, plants and insect life that they feed on. The ptarmigan’s digestive tract would likely have problems digesting this foreign diet.

(P5) Compare one species from each of Alberta’s six regions.

***Wildlife Around the World***

There are many things can cause wildlife to change. The white tailed deer is an excellent example. White tailed deer are found from northern Canada into Mexico. They are all related, they all have white tails, but there are differences which have come about due to a variety of reasons.

About 16 subspecies of white tailed deer are found in north America. The largest are those found in Saskatchewan and Alberta where they have relatively light hunting pressure, few natural predators, excellent food sources and access to excellent cover. Smaller species have evolved in areas where there is very little hunting pressure or extremely thick cover which has allowed for high populations. The high numbers have created smaller animals because of the limited food sources available. White tailed deer which have adapted to living in the desert are more commonly referred to as Coues deer. They do very well obtaining their water from the plants they eat and have adapted well to the high heat of the deserts of the southern U.S. and northern Mexico.

There are other parts of the world with climates and landscapes similar to Canada, so it only stands to reason that there would be similar forms of wildlife in those areas.

(P6) Find an animal which lives at a similar latitude to Alberta and compare it to an Albertan animal.

Be An Expert

(P7)The major assignment for this module is to become an expert on one species of Alberta wildlife. Select either a mammal or bird and create a comprehensive project which includes the following:

Drawing or photo of the creature

Place in predator/prey relationships (food chain)

How it is adapted for the environment it lives in

Habitat

Life cycle

Social organization

Diet

How it interrelates with humans/human changes to their habitat

***(P8) Occupational Connection Worksheet***

Complete an Occupational Connection Sheet for this module. The purpose of the worksheet is to develop an understanding of how the activities undertaken in this module may be connected to an occupation. Your research may come from several sources. A speaker may come to your class to talk about the role of wildlife in their occupation. You may chose to research the Alberta Learning Information Service ([www.alis.alberta.ca](http://www.alis.alberta.ca)) or any other Canadian information service. The role wildlife takes in the occupation may be direct and obvious, or it may be indirect or just a small component of. When you finish your Occupational Connection Worksheet, go over it with your instructor and have them initial your activity sheet.