



What Is Wildlife?

“Wildlife” is a term given to animals and plants that live on their own without taming or cultivation by people. However, in terms of traditional wildlife management, “wildlife” has been defined as mammals and birds that are hunted (game animals) or trapped (fur-bearing animals). As discussed in the following pages, this definition is being broadened by wildlife managers to include all wild animals (except fish) including those that people like to watch, those which play important roles in our ecosystems, and those at risk of extinction. Fish are excluded because fish management issues differ greatly from those of traditional wildlife management. Fisheries management will be treated in a different publication in this series.

What Is Wildlife Management?

Wildlife management is the science of studying wild animal populations and their habitats. Wildlife managers use the information gathered to manage wildlife populations and habitats for the benefit of people and wildlife.

Why Is Wildlife Important?

The variety of wild animals and the wild places in which they live contribute to the quality of life we have in Alberta. Everyone enjoys seeing wild animals, whether in wild places or backyards. Wild animals play important roles in the web of life (ecosystems). They keep some plants and animals from becoming too numerous and in turn provide food, homes and other necessities for other animals. How many there are and how well they are doing helps us assess the health of our environment.

Many people depend on wildlife for their livelihoods. Some Albertans hunt game animals as the main source of meat for their families (subsistence hunters). Many others hunt to reconnect with the land and supplement their families’ food



(recreational hunters). Others trap wild fur-bearing animals to sell their hides to the fur clothing industry.

Each year, thousands of tourists visit Alberta to see our wildlife. Others come to hunt our world-class game animals. These people, along with local hunters and tourists, use services and products provided by Albertans.

The vast majority of Albertans enjoy seeing wildlife and value its presence in our landscapes. We like to know there are wild places near us where wild plants and animals exist. This knowledge helps us realize there is more to our world than what we own and control, and that there are many reasons to conserve and protect the natural world.

Why Manage Wildlife?

“If wild animals live free and wild, why do we have to manage them? Why don’t we leave them alone?”

We manage wildlife because nearly everything we do affects wild animals. We share their landscapes and ecosystems, including the air we breathe, the water we drink, the food we eat, the places we live in and the places we visit.

The world human population is expanding rapidly, placing great demands on our environment and its resources, including wildlife and wildlife habitat. If we did not manage wildlife, and ensure they are considered when resource development and other land use changes are planned, many species of wildlife would soon disappear.

Alberta Wildlife

Alberta is blessed with a wide variety of wildlife. This is the result of the many different natural regions that come together in this province. The immense mixed-woods of the boreal forest region in our north changes into the parkland natural region and eventually the prairie region to the south and the foothill and mountain regions to the west.

In Alberta you can find such prairie species as the pronghorn antelope, burrowing owl and short-horned lizard; such forest species as the black bear, woodland caribou and great grey owl; and such mountain species as bighorn sheep, cougar and Clark’s nutcracker.

Many hundreds of species of perching birds and waterfowl migrate to Alberta every year to raise their young or pass through to breeding areas in the Arctic. Several other bird species, such as the black-capped chickadee and the blue jay, stay here all year around.

Who Manages Our Wildlife?

Alberta Sustainable Resource Development is responsible for managing wildlife in Alberta under authority of the *Wildlife Act*. Biologists, technicians and enforcement officers work in partnership with the public, conservation organizations, universities and other Alberta government departments to ensure the wildlife needs and concerns of Albertans are addressed. Some of our partners



Did you know?
In Alberta there are 10 species of amphibians, 8 reptiles, 91 mammals and 374 species of breeding birds.

include the Alberta Conservation Association, the Alberta Fish and Game Association, Ducks Unlimited Canada, the Nature Conservancy of Canada and the Rocky Mountain Elk Foundation.

Alberta Sustainable Resource Development also works with the conservation agencies of the federal government and those of other provincial and foreign governments to address wildlife concerns on a national and international scale.

What Do Wildlife Managers Do?

Wildlife managers keep track of where animals are and how many there are by periodically observing and counting them. The animals' **habitat** is also assessed to see how much there is and how it is changing over time. Goals are established for the amount of habitat and numbers of animals we would like to have in a particular area.

Managers determine how many animals can be harvested by hunters and trappers, and they set seasons and **bag limits** so these users do not exceed the sustainable harvest targets. They provide opportunities for the many people who enjoy viewing wildlife. Advice is provided to land managers to ensure impacts on wildlife and their habitats are minimized or **mitigated** when land use changes are occurring on provincial government lands. Wildlife managers participate in and often take a lead role in land use planning initiatives on provincial lands to ensure a place for wildlife in the future. They also offer advice to private landowners to help them manage their lands to support wildlife.

Wildlife managers develop and put in place strategies to reduce the negative impacts of wildlife on people and their property (for example, threats to personal safety by bears or crop damage by waterfowl and deer). They also develop strategies to protect or enhance the habitat and populations of animal species that are rare, threatened or endangered in Alberta.

Wildlife Counts

One of the most important pieces of information a wildlife biologist can obtain is the number of animals of a particular species there is in an area, as well as information about the number of males, females and young. This information is especially important when gathered over a long period of time so **population trends** can be recorded. Such trends indicate the overall health of the population and whether further management is needed to either increase or decrease numbers.

Biologists gather this information using a variety of population survey techniques. For large game animals such as moose, elk or deer, biologists fly aerial surveys. They count the number of animals they see from an airplane or helicopter flying a prescribed course and altitude. Counts can also be made from the ground if animals, like waterfowl, live in the open and are highly visible.

Other animals are more difficult to count because they are small or secretive. In these cases, biologists may live-trap, mark and release the animals and then continue trapping to get a ratio of marked to unmarked animals. Counts of the

Habitat: Food, water, shelter, space.

Bag Limits: Refers to the number of animals a hunter may legally harvest.

Mitigate: make or become less severe or harsh.

Population Trends: records or predictions of animal numbers over time. Trends can help biologists make management decisions.

number of mating calls animals make, or the number of tracks and other sign animals leave in a particular area can also be used to provide an estimate of animal numbers.

Hunter and trapper harvest information and comments provide important information to wildlife biologists about the relative numbers of particular species of game and fur-bearing animals.

Reproduction Trends

Another important factor wildlife biologists need to know is how often individuals within a population reproduce, how many young are produced and how long they survive. Some species begin to reproduce at just a few months of age, and reproduce often, having large litters at each birth (for example, mice). Others take several years to mature, and only reproduce once every one or two years, giving birth to one or two young (for example, bears). The former animals can rapidly replace the individuals that have died in the population. The latter animals take longer to replace the individuals lost. Knowing how many young are produced and how often is important information in wildlife management.

Habitat Assessment and Protection

The “habitat” of an animal is the place where it eats, sleeps, reproduces and finds cover from the weather and its enemies. Without adequate habitat a wildlife population cannot exist. Likewise, if you want to increase the number of animals in the population, you often must increase the quantity and quality of the habitat.

Wildlife biologists study the quality and quantity of wildlife habitat. They determine the **carrying capacity** of a habitat for a particular species - that is the number of individuals a habitat can support with food, water, cover and space over a year. Finding out how much habitat there is and what kind of shape it is in involves the use of aerial photographs and satellite images and observations of vegetation and landforms in the field. Much of this work is funded by Buck for Wildlife, an Alberta Conservation Association program financed through the sale of hunting licences.

Alberta Sustainable Resource Development staff participate in an extensive government land-use referral system where they protect habitat and minimize the disturbance of animals caused by development. They make recommendations on the timing, location, size, shape and intensity of land-use activities that change wildlife habitat. Such activities include oil and gas exploration and development, timber harvesting, recreation and tourism developments, mines, transportation, pipeline and power line corridors, urban and rural subdivisions for residential and industrial use, water management such as dams, diversions and drainage, and agricultural changes such as range improvement. Biologists often make recommendations that compensate for the habitat loss in one location with habitat enhancement in another.

Landowners have been encouraged to retain wildlife habitat on their land through the Landowner Habitat Retention Program. Land-use planning on both private and provincial land has protected valuable streamside (**riparian**) and upland areas

Carrying

Capacity: number of individual organisms a given area can support, usually through the harshest period of a year.

Riparian: area of land along a stream, river or wetland. The area is usually lush and important to wildlife. They are protective buffers for animals and fish.

with stream bank fencing and special management practices for livestock through ranch management plans. Burns and mechanical methods have been used to reduce encroachment of shrubs and trees into grassland areas or to return shrub, forested and grassland areas to a more productive stage. Nesting cover has been seeded to benefit a variety of species and provide forage for other species. Nest boxes and other structures have been placed in areas where nest sites are in short supply.

Alberta Sustainable Resource Development is a key participant in the North American Waterfowl Management Plan, which works to conserve and enhance wetlands for waterfowl and other species. Much of the funding for this plan comes from the U.S. government, waterfowl hunters and Alberta Environment.

Wildlife Health

In general, Alberta's wildlife are quite healthy and have very few parasites or diseases that harm them, or that are a threat to people or livestock. However, a person should never approach or handle wildlife that appears too friendly, in case it is carrying a disease. If you have a concern about a sick animal, please report it to your nearest Alberta Environment office.

Hunting and Wildlife Management

Hunting and wildlife management have a long association. Organized hunters lobbied governments to regulate hunting in the early 1900s, when many species of game had been driven nearly to extinction. It was also hunters who supplied the support and funding for the development of the science of wildlife biology. Today, hunters through their licence fees, donations and volunteer efforts still make a significant contribution to the support of wildlife conservation.

Hunting plays an important role in the management of game species. Each year, populations of game animals produce more offspring than their habitats can support. The result is an annual **surplus** of animals that will die from predation, disease or starvation. Regulated hunting helps reduce this surplus before the winter when food resources for these animals are at their lowest levels.

Regulated hunting also helps control the numbers of species that may be causing problems for farmers, ranchers and indeed, city residents. For example, each year Alberta Sustainable Resource Development receives complaints from ranchers about deer and elk feeding on stored hay. Hunting seasons and bag limits in many of our agricultural areas are set to reduce this damage without threatening the viability of the deer or elk population.

Collisions between vehicles and deer, elk and moose cause thousands of dollars worth of damage and injuries to motorists each year. Hunting helps reduce these occurrences. As well, hunted animals are wary of humans and human habitation and are less likely to cause problems.

Wildlife biologists often call upon hunters to provide biological samples (for example, teeth or specific organs) of the animals they bag. The information

Surplus: more animals than the land can support. Carrying capacity will be exceeded.



Did you know?
134 000 Albertans spent over \$156 million on hunting in 1991.

gleaned from these samples helps the biologists determine the age, health and reproductive capability of game populations.

Hunting is a traditional human activity that reconnects people with the land and the natural environment. Because of their experiences in the outdoors, hunters have strong commitments to environmental conservation.

Watchable Wildlife

Albertans enjoy seeing wildlife in wild places, in city parks, in backyards or on apartment balconies. Throughout the province, the government in cooperation with local governments and conservation groups has created many wildlife-viewing sites where people can go and see wildlife species and learn about their habitats and lifestyles.

In cooperation with Lone Pine Publishing, the *Alberta Wildlife Viewing Guide* was published to help people find these sites. This guide is available at book and outdoor stores. A version of it is available on the World Wide Web of the Internet (<http://www3.gov.ab.ca/srd/fw/watch/index.html>).

Do Wildlife and People Always Get Along?

Generally, wildlife and people live together without bothering each other very much. However, there are instances where wildlife can damage property or threaten the safety of individuals.

Large flocks of ducks and geese can trample and eat a lot of grain in a short time in the fall. The federal and provincial governments cooperate to prevent damage from happening with a bait station program to keep waterfowl away from grain fields. This is often done in conjunction with a scaring program (for example, the periodic discharge of a special scaring cannon) to encourage waterfowl to leave the fields and go to the bait stations. Hunting seasons are also designed to open early enough so hunters can scare the birds and keep them moving. Once damage has happened, there is a compensation program available to farmers that helps to pay for some of their losses.

Deer and elk (and occasionally moose and antelope) will eat swathed grain, grain piles and hay bales. Farmers and ranchers are assisted with scaring programs to move the animals off the damage area. Fencing is provided to fence haystack yards so that animals cannot get to the hay bales. Hunting seasons are designed to manage animal numbers so damage levels are not too high. During severe winters, feeding sites are set up to keep the animals away from agricultural products. There is some compensation for some types of damage but the emphasis is on controlling populations and preventing the damage from occurring.

Large carnivores (coyotes, wolves, black bears, grizzly bears and cougars) will take livestock and in some cases (particularly bears and occasionally cougars) will threaten, and in rare instances, kill people. The first level of defence is to manage livestock and encourage people to behave in ways that prevent attacks from happening. Strategies include using dogs, night pens and regular patrols for livestock; and providing information to people about how they should behave in



Did you know?
You can find more information about **Hunting in Alberta** at <http://www3.gov.ab.ca/srd/fw/hunting/index.html>



Did you know?
You can find more information about **Alberta's Watchable Wildlife** and the **Wildlife Viewing Guide** at <http://www3.gov.ab.ca/srd/fw/watch/index.html>

predator country. The second level of defence is to remove the offending animals to areas where there are no livestock or contact with people is minimized. The last line of defence and the least desirable is to destroy the offending animals. There is also a compensation program to pay for livestock killed by predators. Hunting seasons for these predators often remove the least wary (and perhaps the most likely to offend) animals and can reduce the level of damage and threats to humans.

Threatened and Endangered Wildlife

Most of our wildlife enjoy healthy populations and abundant natural habitat. For some species, however, the future is not so secure. Alberta Environment identifies these “threatened” or “endangered” species so that action can be taken to restore and maintain our wildlife diversity.

In Alberta, the term “threatened” is used by wildlife managers to describe species, which may be at risk of extinction. The term “endangered” is used to describe species at serious risk of **extirpation** or **extinction**. These terms are classified by the national Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

The loss of habitat is the greatest risk facing threatened wildlife. Human activities like harvesting forests for wood and paper can affect forest species such as woodland caribou. Draining wetlands and marshes for agriculture can limit the availability of nesting habitat for piping plovers and trumpeter swans. Similarly, changing water quality or altering lake and river levels can degrade habitat for species like the American white pelican.

Other factors beside habitat loss can threaten wildlife. The use of harmful chemicals can have damaging effects on a species, as shown by the rapid decline of the peregrine falcon after the pesticide DDT was introduced into North America in the 1940s.

Sometimes a threatened species loses a food source that people consider to be an unwanted pest. Both the burrowing owl and the swift fox rely on prey species like grasshoppers and mice for food. Poisoning these prey species can harm their predators. Likewise, the poisoning and shooting of the Richardson’s ground squirrel (“prairie gopher”) have led to a loss of burrows for burrowing owls and a loss of major food source for ferruginous hawks.

When a species is designated as threatened, wildlife managers try to identify the factors causing the decline. Habitat loss, decreased food supply, increased predation or repeated human disturbance may be examined to determine their effect on the species. Once the cause of the decline is identified, managers can take appropriate actions to restore the population to its former status.

Providing nesting platforms for ferruginous hawks and protecting gravel shorelines for piping plovers are actions that have helped to resolve problems for these species.



Did you know?
*Our web site, **The Bear Facts** <http://www3.gov.ab.ca/srd/fw/bearfacts/index.html> explains what you can do when in bear country or if you encounter a bear.*

Extirpation: a category used by COSEWIC to classify species that are no longer found in a particular area, but still occur elsewhere.

Extinct: a category used by COSEWIC to classify species that no longer exist anywhere on earth.

Some species in Alberta have declined so dramatically that only a few individuals remain or the species has disappeared completely from the province (extirpation). For example, the swift fox was extirpated from the province 70 years ago as a result of habitat change, trapping and predator-control programs. Fortunately, healthy populations of this species still existed in the Midwestern United States. These populations provided individuals for the Canadian reintroduction and after 15 years of releases, a small number of swift fox are once again sharing the Canadian prairie. Their status has improved from extirpated to endangered.

Ecosystem Management and Biodiversity

There has been a shift from managing individual species and their habitats toward managing the ecosystem in which the species reside. Although management of an individual species is often required, managing ecosystems is a more effective approach to maintaining the whole range of species that live in a geographical area or landscape. This form of management is also described as managing for **biodiversity** of the landscape.

The landscape approach for wildlife management is the only practical way to cover all the species because it is almost impossible to individually study all the animals that live in an area – there are just too many. For example, protecting prairie wetland communities will save habitats and populations of all the plants and animals that live there, including the western blue flag and leopard frog (both threatened species). Maintaining healthy ecosystems is far more effective than last-minute efforts to rescue individual species.

Alberta Sustainable Resource Development works closely with other government departments and services, university and private researchers, landowners, conservation groups, and federal government agencies such as the Canadian Wildlife Service and Parks Canada to conserve the biodiversity of our province.

A Brief History of Wildlife Conservation in Alberta

The historical records of early European explorers indicate that prior to the advance of the fur trade and later settlement by Europeans, there was an abundance of wildlife in what is now Alberta. Aboriginal Indians were the only people who occupied the region at that time and their population was widely dispersed. Although they used wildlife for food, clothing and shelter, because of their low numbers and nomadic lifestyles, these people did not have more than a local effect on wildlife numbers and habitats.

This scene changed rapidly in the late 1800s as European settlers moved into the province with the expansion of the railroad. With them came firearms and the ability to kill many game animals in a short period of time. Unregulated hunting drove many species, such as elk and pronghorn antelope, to the brink of elimination in Alberta. Indeed, the bison was eliminated from much of the province.

In 1905 Alberta became a province, and passed its first game laws in 1907 to control hunting. In 1908, the Calgary Fish and Game Protective Association was



Did you know?
You can find more information on Alberta's Threatened Wildlife and the Status of Alberta Wildlife at <http://www.gov.ab.ca/env/fw/>

Biodiversity:
variety of life on earth. Managing for this variety means that all species are considered important to the ecosystem, rather than just some species.



Did you know?
An ecosystem is an association of living things and their interactions with each other and their environment.

formed to lobby governments and educate citizens about the importance of wildlife conservation. That organization grew into the present-day Alberta Fish and Game Association, which represents many local clubs of hunters and anglers throughout the province.

The federal government established Elk Island National Park in 1904 to protect one of the remaining herds of elk in the province. From 1917 to 1920 over 300 elk were transplanted from Yellowstone National Park in Montana to Waterton Lakes, Banff and Jasper National Parks. Most of the 26 000 elk found in the province today are descendants from these transplants. The plains bison was likewise re-introduced into the province from the United States. But these herds were kept within the national parks.

Early efforts at wildlife conservation concentrated on enforcing hunting regulations and paying bounties for killing predators. Ranchers and farmers considered predators (wolf, coyote, cougar or any bird of prey) to be vermin that should be eliminated. As well, hunters thought the removal of predators from an area would increase the number of game animals. Although much money was paid in bounties, the bounty system was not very successful at eliminating predator species or increasing the numbers of game. It was abandoned in 1954.

After World War II ended (1945), oil was discovered in the province. This resulted in increased revenue for governments, allowing them to spend more money on wildlife conservation. Trained wildlife biologists were hired to do scientific studies of populations and make informed decisions about how species should be managed. Trained enforcement officers were also hired to ensure people obeyed wildlife laws. The laws were developed to protect wildlife and assist the public with problem wildlife concerns. The staff worked mainly on game animals in the early years. Although the management of game animals is still a major concern, wildlife managers have expanded their efforts to include other wildlife species with particular emphasis on our “threatened” wildlife.

Today, wildlife biologists, technicians and enforcement staff work with hunters, trappers, naturalists, farmers, ranchers and industry to maintain our wildlife heritage. Although increasing human populations and their expanding use of the landscape pose a threat to wildlife populations and habitats in the future, many species of Alberta’s wildlife are thriving in today’s world.

Get Involved!



Although Alberta Sustainable Resource Development is responsible for managing our wildlife, you also have a right to get involved and let your government know what concerns you. Here are a few things you can do:

- Join a local conservation organization that shares your values. There are many from which to choose. These groups often go on outings, hold workshops and get involved in habitat enhancement projects.

- Get involved with local and regional land-use planning issues that affect wildlife and wildlife habitat in your town or city, in the County or Municipal District where you live, on Provincial lands where you spend time.
- Become a Wildlife Steward for a local park area, a Habitat Development Area, a Natural Area or some other plot of land in which you are interested.
- Reduce your own impact on the environment. Remember that the materials you use and the waste you create every day affects the places where wildlife live. Reduce, reuse, recycle.

Further Information



Here are some suggestions for further reading on some of the topics discussed in this fact sheet:

- Alberta Environment & Sustainable Resource Development - www.ESRD.Alberta.ca

Once on the website search the following:

- Alberta's Watchable Wildlife
- Alberta's Threatened Wildlife
- Alberta's Wildlife Viewing Guide
- Amphibians of Alberta
- Hunting in Alberta
- Trapping in Alberta
- Status of Alberta Wildlife
- Alberta Fish and Game Association
- Federation of Alberta Naturalists - <http://www.connect.ab.ca/~fan/>

Books and Pamphlets

A listing of materials available is on the department's Information Centre web site www.ESRD.Alberta.ca or directly at the address below.

Focus On Wildlife Management is published by Alberta Environment & Sustainable Resource Development and is under Crown Copyright. This material may be freely copied for educational use provided the source is acknowledged.

Last update: November, 1999. For more information or to order additional copies, please contact:

Alberta ESRD - Information Centre

Main Floor, Great West
Life 9920-108 St NW
Edmonton AB T5K 2M4

Phone: 310-ESRD (3773)
Fax: (780) 427-4407
E-mail: ESRD.Info-Centre@gov.ab.ca

Pub No. I/761

ISBN 0-7785-0922-2 (Hard copy)
ISBN 0-7785-0922-0 (On Line)

Additional information on Wildlife Management is available from the Alberta Sustainable Resource Development website at <http://www3.gov.ab.ca/srd/fishwl.html>