

Montana Fish, Wildlife & Parks

Principles of Wildlife Management in Montana

Hunting and trapping were the primary ways that humans provided food, clothing and shelter for themselves, their families and groups or tribes. This heritage and the tradition of hunting, as old as humans themselves, is still strong today. In addition, hunting and trapping are important tools in managing wildlife populations. Even though the world in which people and wildlife live has changed much over time, hunting and trapping still play a key role.

Because most wildlife species are very sensitive to changes in their surroundings, they can give us clues about changes that might affect us, too. Have some animals disappeared because of pollution? Is there enough food or the right kind of food to eat?

By studying wildlife, we can learn more about where they live, why they live there and how where they live is important to them. You'll also start to appreciate all animals more—game and nongame alike. And you'll see how important wildlife management is to making sure that you—and other people—always have wildlife to benefit from and enjoy.

Wildlife Management Concepts

If you look in a school textbook, you'll see that wildlife management is defined as "the science and art of managing wildlife and its habitat, for the benefit of the soil, vegetation and animals, including humans."

But how do wildlife managers do that? They do it by following a few basic rules:

- Good wildlife management must be based on solid biological information.
- Good wildlife management must include the management of humans, because our activities affect wildlife.
- Good wildlife management must benefit plants and other animals, not just one species of wildlife.
- Good wildlife management must put animal numbers at a level we can live with—not too many and not too few.
- Good wildlife management must balance animal numbers with the habitat (food, shelter, water, and space) available for those animals.
- Good wildlife management must balance conservation (wise use) of the resource—not total preservation (non-use) of the resource.

The Ingredients of Good Wildlife Management

What makes a good wildlife manager? Managers must understand the needs of wildlife. He or she

also needs to understand the factors at work that make for good, healthy wildlife populations.

Habitat, for example, includes all the things that wildlife and humans need for life—air, food, water, shelter and space to live. When these five habitat factors are in good supply and arranged properly, they contribute to the well being of wildlife. When any of these factors is in short supply, it may limit the kinds of animals, the number of animals and where they're found. It is then called a limiting factor.

The arrangement of food, cover, water and space in an area determines wildlife types, numbers and where you'll find them. The best arrangements are those where all of these habitat factors occur in small blocks that are close together with enough space to meet the needs of the animals. Also, animals tend to use the edge areas of food plots the most, because these areas are the closest to cover.

Carrying capacity is the number of animals an area can support throughout the year without permanently damaging the habitat or starving the animals. When there are too many animals for the habitat, the animals may eat too much of the vegetation that makes up its food and cover. Once that vegetation is gone, the habitat is damaged and the carrying capacity of the area goes down. With less habitat or poor habitat, the weaker animals will die from disease, starvation, predators or other causes. Fewer animals will be able to live there. As more food and cover return, the carrying capacity goes up again. Sometimes the vegetation is destroyed, changing the habitat and carrying capacity.

Social tolerance is the number of animals a landowner or the public will allow in an area. If wildlife numbers exceed the acceptable or tolerable levels—for example, if deer or elk are damaging a farmer's crops—the animal numbers may need to be reduced. Frequently, this tolerable level is below the carrying capacity.

The population dynamics of a wildlife population is the way its numbers go up and down over time. Two major factors affect this—the birth rate and the death rate.

Most wildlife species have a high birth rate. In general, the smaller-sized species of wildlife have higher birth rates than the larger species.

The death rate of most wildlife species is also high. The smaller sized species of wildlife have higher death rates than the larger species. Factors affecting the death rate are:

- Starvation is directly related to available food in their habitat.
- Development, like housing, malls, other buildings, and roads can cut down the cover space in their habitat.
- Climate extremes, such as cold, snowy winters or dry, hot summers, can reduce wildlife numbers.
- Predation from other animals like bears, mountain lions, coyotes, wolves, foxes, skunks, raccoons, and dogs.
- Diseases and parasites can kill animals, especially if the animals are already weak from injuries or starvation.
- Hunting in regulated seasons reduces animal numbers.

- Other human activities, such as animals being hit by vehicles, getting tangled in fences, poison, hitting power lines, being caught in fires, and poaching all take a toll on wildlife and affect the death rate.

How and why do wildlife numbers go up and down? Let's look at a situation that generally occurs each year in deer populations.

Late in the spring, the animals old enough to have bred the previous fall begin having their young. With the existing animal herd and their new fawns, the deer population reaches its peak in the early summer. The population then begins to decline because of the factors just identified as affecting the death rate. The decline continues through the rest of the summer, the fall, winter and early spring of the following year. The remaining adult and yearling animals that survived will start the cycle all over again.

This cycle of birth and death occurs every year. The cycle is the same for most species of wildlife. Sometimes, if habitat conditions are really good and the carrying capacity goes up, animal populations will boom. At other times, severe weather, disease, predators or over-harvest by hunters can cause the population to drop further than normal.

The job of the wildlife manager is to control the numbers of animals at, or just below, the carrying capacity of their habitat while keeping an eye on the overall ecosystem. That way, the animals stand the best chance of staying healthy and not harming their habitat. The wildlife manager must also keep animal numbers within social tolerance—the population level that people are willing to tolerate.

Wildlife Management Tools

Now that we know what a wildlife manager is supposed to do, how do they get it done? Like people in any job, wildlife managers have tools.

Management plans describe the tools a wildlife manager will use for keeping wildlife within the carrying capacity of its habitat. These plans must be flexible since the wildlife populations; habitat factors and social tolerances may change from year to year. It's also important to note that the best wildlife management plan often uses a combination of all the management tools available.

To develop a management plan, wildlife managers must collect good information on habitat and wildlife numbers throughout the year—every year—to determine the type of tools' needed.

Hunting and Trapping

Today, hunting and trapping are closely regulated so that some of the excess animals in a population are removed each year. In fact, hunting and trapping remain as one of the most important management tools because hunters can be controlled by laws and regulations.

Hunting and trapping seasons are longer and the harvests are greater during the years of abundant game populations. Seasons may be shortened and harvests smaller when game numbers are down. In this way, hunting and trapping can be used to keep wildlife populations

healthy; to keep wildlife within the carrying capacity of their habitat and to protect the habitat from damage. They are also used to reduce selected animal populations to within social tolerances, even if the habitat and carrying capacity are good.

Research and Harvest Surveys

In order to properly manage any wildlife species, biologists and managers must have a good understanding of all the animals. Research allows biologists and the rest of us to learn all we can about animals and management. Research objectives include:

- Identify habitat needs for individual species, and evaluate the impacts of a variety of land use practices;
- Study and explain the population dynamics of wildlife under varying habitat and environmental conditions;
- Evaluate the social and economic values of wildlife; and
- Educate other biologists, wildlife resource agencies, legislators and the public of the results of the research and the needs of the animals, habitat and the public.

Surveys are conducted annually as a vital part of wildlife management programs. The surveys are needed to evaluate:

- How many animals were harvested from certain populations or areas;
- Trends in animal population levels, habitat conditions or crop impacts;
- Hunter pressure and over harvest patterns on public and private land; and
- Basic biological information of the sex and age of the animals harvested.

Laws and Regulations

If a species of animal is too few in number, those animals can be protected by LAWS. Hunting can be reduced or stopped to help lower their death rate increasing population levels; as with threatened or endangered species. In some cases, laws may even be passed to protect the habitat. Laws are mostly used when there is a need for long-term or permanent actions.

If there are too many animals, hunting can be used to reduce their numbers to the proper level. Hunting regulations, for example, are often changed from year to year to reflect changes in animal numbers. Hunting season lengths may also be adjusted to reflect the animal populations. Daily bag limits or harvest quotas—the number of animals that hunters can take in a day or season—can also be set larger or smaller.

Wildlife Management Areas

Wildlife management areas provide another tool for wildlife managers. These are lands which are set aside for the purpose of increasing wildlife numbers by protecting wildlife and key habitat.

One of the major goals of a wildlife management areas is to protect at least a minimal number of animals so the population can increase. But this type of protection can defeat its own purpose. Deer and elk, for example, may increase in numbers to the point where there are too many for the available food supply. Damage to the habitat then occurs. If a wildlife management area is to be successful, the management plan must be flexible so wildlife managers can keep animals, even animals in a WMA, in balance with their habitat.

Waterfowl refuges are perhaps the most successful of special wildlife management areas. A waterfowl refuge may be a breeding area, a wintering area or a migration refuge between summering and wintering areas. Breeding area refuges provide nesting habitat for producing young. Wintering area refuges shelter the birds so they can survive until the next breeding season. A migration refuge provides a resting and feeding spot for birds traveling to and from breeding or wintering areas.

Wildlife Management Areas are effective only when correctly used in combination with other management tools. Even though an area may be managed for a specific animal, most wildlife species benefit from the land and management practices.

Stocking can be used as a management tool to start new wildlife populations or to help areas that have small populations. The most effective way is to trap wild animals from other established populations and transplant them into new areas because these animals already know how to survive in the wild.

Stocking was begun more than 50 years ago in Montana. Among the wildlife species that were introduced to Montana through stocking were the ring-necked pheasant, Hungarian partridge and Merriam's turkey. One of the problems of the early stocking programs, however, was that wildlife managers did not always consider the limitations of habitat and social acceptance.

Today, wildlife managers carefully study the areas before stocking, thus increasing the chances of the animal's survival, coexistence with existing species and people's desire to have them there.

Habitat Management

Habitat is the key to wildlife survival. Without habitat, no wildlife can survive. The main purpose of the habitat management tool is to prevent existing habitat, that is in good condition, from being destroyed or lost. Habitat in poor condition can be improved or new habitat can be created through proper management programs. Artificial or supplemental feeding of wildlife is a poor and often dangerous practice compared to proper habitat and population management.

Who Pays for Wildlife Management?

Regulated hunting and trapping provides another key tool for wildlife managers—money. Like everything else in this world, wildlife management programs cost money. That money is provided in several ways by hunters and trappers.

A key source of money is the sale of hunting and trapping licenses. Money from the sale of the licenses is used to manage both game and nongame species.

Another source is through a special tax the federal government collects on all gun, ammunition and archery purchases. That tax came from the Pittman-Robertson Act, which Congress passed in 1937 to help wildlife.

Finally, there are special, management-oriented organizations that have been formed by people who like wildlife and want to help it. These groups, in turn, raise money from their members and work cooperatively with wildlife management agencies to help develop management plans and implement them.

So you can see—through special taxes on hunting tools and equipment, license fees and donations -, hunters and trappers are an important tool for managing wildlife. They not only pay the bills, they are the only major source of money for management programs.

Public Education



You can't help wildlife if you don't understand wildlife. That's why public education is so important for wildlife management to succeed. When people know about wildlife and its needs, most often they will give more support and are likely to become more involved in management programs.

How can people learn more about it? Education programs provide new, inexperienced and even experienced people with information, knowledge and skills. These programs help people to be smarter about using wildlife and better at taking care of the land.

Wildlife's Future

The future of wildlife doesn't just depend on management programs. It depends mostly on people. People, whether they are hunters and trappers or not, need to learn all they can about wildlife and they need to care about whether it's managed properly. Here's what you can do to help make a brighter future for wildlife.

- Support programs to maintain or improve wildlife habitat. This includes knowing how important private lands are in providing critical habitat and recreation opportunities.
- Support your state wildlife agency in its efforts to manage wildlife and people. Also, support conservation activities locally and nationally.
- Realize that hunting and trapping are important management tools used to benefit wildlife populations and their habitat—and don't be afraid to tell your friends about these benefits. When people learn more about the role of hunting and trapping, most often they support these important roles. Observe the highest ethical standards while hunting. Being willing to encourage other hunters to do the same will help, too.
- Be willing to contribute money and your skills to help wildlife. If we all start today, there will always be wildlife for everyone to enjoy.

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Close
Menu