REGULATIONS

- Remain at your car and on the road. If you are near bison do not get out of your vehicle.
- Hiking is permitted only on designated footpaths.
- Trailers and other towed units are not allowed on the Red Sleep Mountain Drive.
- Motorcycles and bicycles are permitted only on the paved drives below the cattle guards.
- Firearms are prohibited.
- All pets must be on a leash.
- All regulations are strictly enforced.
- Our patrol staff is friendly and willing to answer your questions about the range and its wildlife.

CAUTIONS

- Bison can be very dangerous. Keep your distance.
- All wildlife will defend their young and can hurt you.
- Rattlesnakes are not aggressive but will strike if threatened. Watch where you step and do not go out into the grasslands.
- The Red Sleep Mountain Drive is a one-way mountain road. It gains 2000 feet in elevation and averages a 10% downgrade for about 2 miles. Be sure of your braking power.
- Watch out for children on roadways especially in the picnic area and at popular viewpoints.
- Refuge staff are trained in first aid and can assist you. Contact them in an emergency.

ADMINISTRATION

The National Bison Range is administered by the U.S. Fish and Wildlife Service as a part of the National Wildlife Refuge System. Further information can be obtained from the Refuge Manager, National Bison Range, 132 Bison Range Road, Moiese, Montana 59824. (406) 644-2211.

U.S. FISH AND WILDLIFE SERVICE
Department of Interior

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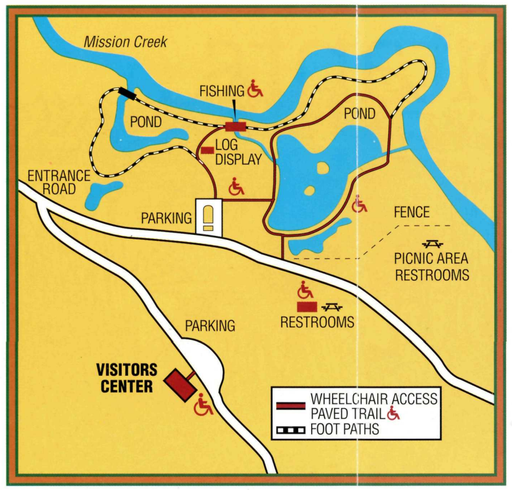
A FIELD GUIDE to the NATIONAL BISON RANGE



Where to Start?

The best place to start your visit to the Bison Range is the Visitor Center. Here you will find informative displays on the bison, its history and its habitat. Helpful staff will answer your questions, direct you to areas where you are most apt to see wildlife and assist you in emergencies.

History of the Bison Range

The history of the bison, or buffalo, in the Flathead Valley began in about 1873 when Walking Coyote, a Pend d' Oreille Indian, returned from Blackfeet Country on the plains with five orphaned calves. When he had about 13 buffalo, he sold them to two ranchers, Michael Pablo and Charles Allard. At that time, of the 30 to 70 million bison that once roamed the plains, less than 100 remained in the wild and there were fewer than 1,000 left. The Pablo/Allard herd had become the largest herd in existence. Allard's heirs sold his portion of the herd to Charles Conrad in Kalispell and animals from the Conrad herd formed the nucleus of the Bison Range stock.

As the valley became settled, Pablo realized that his large herd of free-roaming buffalo would not be very welcome, and he attempted to sell them to the United States Government. When he received little response, he sold the herd to Canada. The sale of this last, large herd out of the country produced a huge public outcry, which led to the formation of the American Bison Society. Through the efforts of William Hornaday of the Smithsonian Institution, President Theodore Roosevelt and congress were persuaded to set aside lands for the preservation of the American Bison. Three reserves were established between 1907 and 1909 to save bison from extinction.

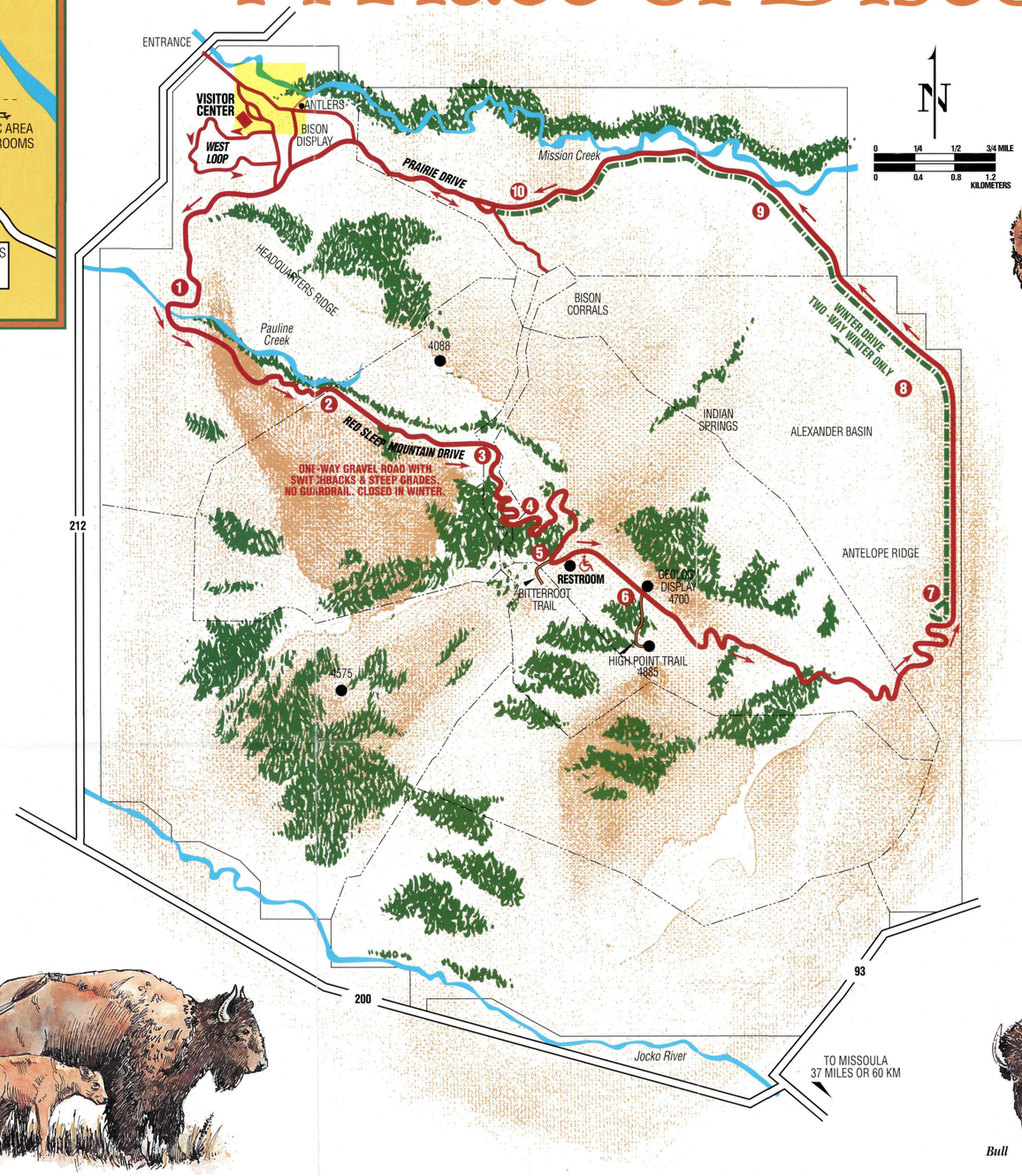
The National Bison Range was one of these, and was established in 1908. Today bison are no longer in danger of extinction and there are more than 140,000 in North America. A large percentage of these are in private herds.

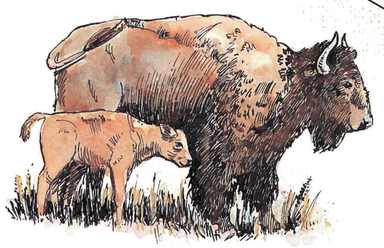
Currently, some 350 to 500 bison roam the 18,500 acres of the Bison Range, which is a part of the National Wildlife Refuge System. The Range is made up primarily of native Palouse prairie grasslands, but also includes mountain forest, wetlands and river bottom woodlands. In addition to bison, these diverse habitats provide a home for some 50 different wildlife and over 200 bird species.

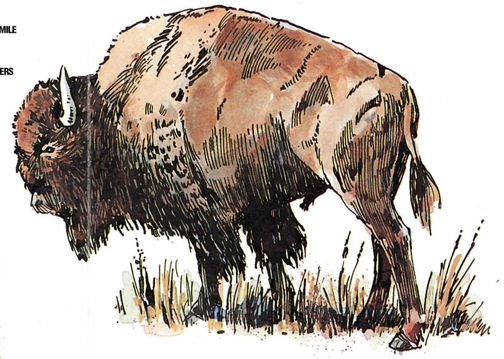
Bison Management

The Bison Range is intensively managed for species diversity. Rotational grazing and weed control programs maintain the grasslands. Where possible, biological weed control uses insects which feed only on specific noxious plants. A vaccination and testing program provides effective disease control in the Bison herd. Population control, to maintain bison and other grazers within the carrying capacity, is done through a live-sale for the bison, and transplant for other wildlife. A special program monitors waterfowl and other bird communities.

A Place of Discovery







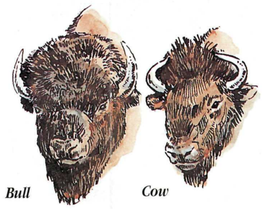
Bison and Bison Facts

While true buffalo are the Cape buffalo of Africa or the water buffalo of Asia, the American Bison has been called "buffalo" for so long that we now use the names interchangeably. The bison's only relatives are remnants of another bison species, called the wisent, which survives in small numbers on reserves in Europe.

Bison are well adapted to life on the open grasslands. Their heavy coats protect them from both summer sun and winter winds. Their thick winter coat is so well insulated that snow can lay on their backs without melting.

They are strong, hardy beasts who suffer few diseases in the wild. The brucellosis attributed to bison herds today is really a cattle disease which was transmitted to bison in some areas. The Bison Range herd is vaccinated against this and other cattle diseases, and is certified brucellosis-free.

Bison are unpredictable and can be very dangerous. They appear slow and docile but really are quite agile and can run as fast as a horse; so don't plan to outrun one. A bison's tail is often a handy warning flag. When it hangs down and is switching naturally, the animal usually is unperturbed. If it extends out straight and droops at the end, he/she is becoming mildly agitated. If the tail is sticking straight up, they are ready to charge and you should be somewhere else…but do not run!



Bison bulls weigh about 2,000 pounds and have heavy horns and a large hump of muscle which supports their enormous head and thick skull. They have a thick mass of fur on their heads and a heavy cape of fur even in summer. This enhances their size and protects them when fighting. They are especially ill-tempered and roar and battle during the breeding season from mid-July through August.

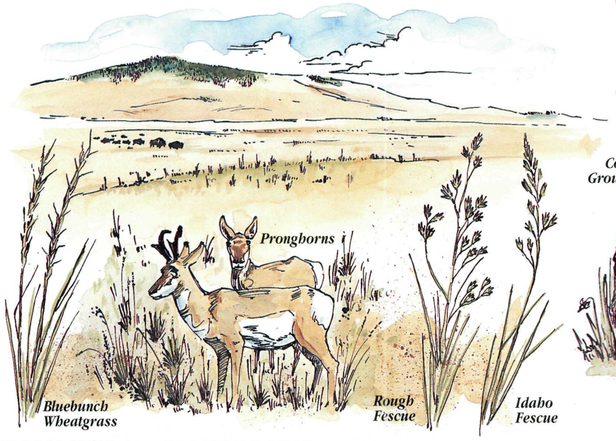
Cows weigh about half as much as bulls. Their horns are narrower and are slightly curved. Horns on older females almost meet above their heads. Cows have smaller humps and a smoother summer coat. Calves are born from mid-April through May and are a bright rust red color for the first month or so. Cows are very protective of their young and can be even more dangerous than a bull when they have a calf at their side.

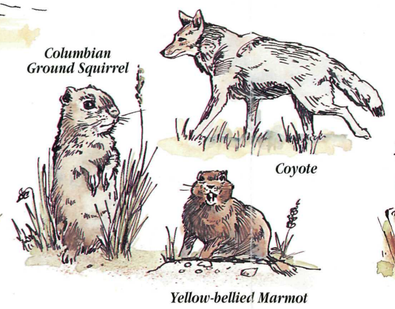
Red Sleep Mountain Drive Self-Guided Tour

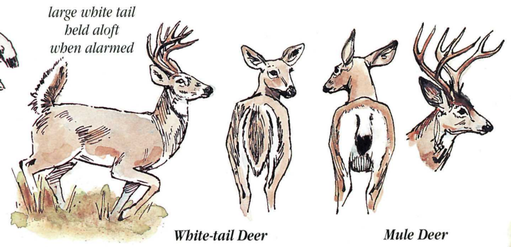
Follow the numbered signs for information on habitat and natural features.

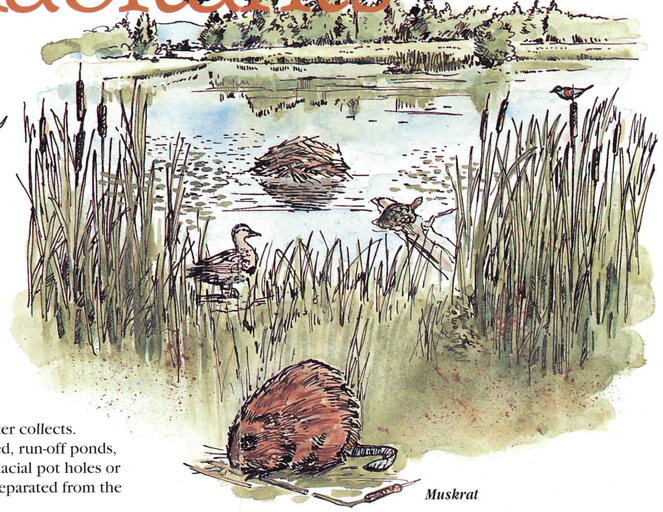
1. These grasslands are made up of a combination of native bunchgrasses and broad leaved plants called forbs. The plants are dry land adapted and can survive the Bison Range's average rainfall of only 13 inches per year. Some bird species nest only in these bunchgrasses.
2. Pauline Creek is an intermittent stream with several small impoundments that supply water for wildlife. The streamside thickets are supported by water seeping out from the creek. Watch for some of the many song birds that use this area. In fall, bears frequently search here for berries.
3. Elk Lane joins some of the eight grazing units of the Range and leads to the roundup corral. Bison are held in this lane during roundup each fall. Springs in the lane and elsewhere on the range have been improved with watering troughs for better wildlife water supply.
4. Edge habitats are excellent places to view wildlife, especially birds. Each habitat has it's own complement of wildlife species. The edge between two habitats will harbor species from both and some are just creatures of the edge. Some birds nest in forests and forage in grasslands.
5. Forest communities thrive at the higher elevations, on the cooler north sides of hills and in moist draws and depressions. Douglas fir grow on the north sides where their seedlings can get a foothold. Ponderosa Pine are found on the dryer warmer south side.
6. Highpoint of Red Sleep Drive is 4,700 feet. The highest spot on the Range at 4,800 feet is to the right. The display here describes the glaciers and historic Lake Missoula that helped to form this valley. More information is available at the Visitor Center.
7. Grasslands have evolved along with grazers. Bison, elk and pronghorn use this prairie resource. Grasses grow from the base of the stem so they may be grazed and still continue to grow. Different animals eat different kinds or parts of plants at different growth stages to minimize competition.
8. Buffalo wallows are dry dust beds, often found in clay banks. Bison roll here to rid themselves of insects and also display dominance by displacing lower ranked animals from the wallow.
9. River bottom woodlands of Cottonwood and Juniper are subirrigated from the stream and provide lush vegetation and cover. Watch for white-tail deer, elk and a variety of waterfowl and other birds.
10. The Bison Corrals provide for safe handling of the bison during our annual roundup when bison are age marked and vaccinated for brucellosis and other cattle diseases.

Habitats and Inhabitants







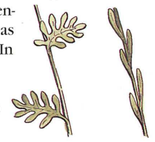


GRASSLANDS OF THE BISON RANGE

Though grasslands appear as wasteland, they form a rich ecosystem of specially adapted plants and animals. The grasslands of the National Bison Range are native Palouse Prairie. The primary grasses here are Idaho Fescue, Rough Fescue and Bluebunch Wheatgrass. These native bunch grasses grow in clumps with the crown shading their roots. They are specially adapted to dry land conditions. While most plants grow from the tips of their branches or stems, the growth area of grasses is at the base of the stem so that they can continue to grow after their tops have been grazed off.

Grasses are well adapted to the harsh, unsheltered environment of the open prairie which ranges from the driving, icy blast of winter storms to the oppressive heat and searing wind of summer. Leaves die back and the dense crowns protect the root in winter. In summer the long, slender, vertical leaves present less surface to the sun's rays and prevent overheating.

Palouse Prairie grasslands also contain other broader leaved plants called forbs, usually noted as wildflowers, which also have defenses against the weather extremes. Many are perennials and winter under the snow as tiny flat rosettes of green leaves. In summer their leaves are small, have deeply indented margins to minimize their surface, or curl to reflect the heat. Some are covered with insulating hairs.



The grassland ecosystem is completed with native grazers such as bison and pronghorn and a variety of birds, rodents and predators like the coyote. Grassland birds are usually plentiful but consist of fewer species than would be found in wetter areas. The birds too, are specially adapted to this environment of extremes. Their backs are streaked so they can nest unseen on the ground in the shade of an overhanging grass clump. They can be seen defending their own patch of turf by singing from song perches, usually tall weeds, around their territorial boundaries.

Elk or Wapiti *(Cervus elaphus)*
This large deer is brown to buff with a light rump patch. Bulls have long, swept back antlers. As with most deer, only the males have antlers and these are shed and regrown each year. Bulls round up harems for the fall breeding season. Spotted calves are born in June. Frequent grassland or forest.

White-tailed Deer *(Odocoileus virginianus)*
This deer's large, heart-shaped brown tail becomes a waving white flag when alarmed. White face markings and a browner coat help distinguish it from the mule deer. Antlers have a main beam with upward tines. Breed in November and have spotted fawns in May or June. Prefer river bottom woodlands.

Mule Deer *(Odocoileus hemious)*
Easily confused as a white-tail because of its white rump patch and black tipped white tail. Tail is not flagged when they run. Coat is grayer and it has no other white. Antlers fork and then fork again. Bucks have a dark forehead patch. Breed in November and fawns are born in June. Most often found on brushy hillsides.

Pronghorn or Antelope *(Antilocapra americana)*
Russet-tan with white markings, pronghorns are animals of the open range. Unlike other animals with horns, which are usually permanent, pronghorns shed just the outside sheath. Females also have small horns. Breed in September with twin fawns born in May and June.

Bighorn Sheep *(Ovis canadensis)*
Bighorns live in high rocky places. Their light rump patches are similar to those of mule deer from a distance. The ram's heavy curled horns show a little wrinkle for every winter they have lived. Ewes also have small horns. Breed in November and lambs are born in May and June.

Mountain Goat *(Oreamnos americanus)*
Shaggy, white coats protect the goats from chill winds and serve as camouflage on winter snows in the high crags. Both sexes have slender, knife like horns. Breed in November and December and kids are born in April or May. Are best seen on the rocky slides.

Black Bear *(Ursus americanus)*
Black bears come in colors ranging from black to brown to buff. Up to 6 or 8 bears inhabit the Range, mostly in wooded areas. Two females usually raise young here. A large brown male has been mistaken for a grizzly but we have had no confirmed grizzly sightings.

Coyote *(Canis latrans)*
This is a medium sized dog-like animal with pointed e nose and mottled gray coat. The tail is bushier than most dogs. They hunt in pairs and feed on mostly small animals. Mainly nocturnal. Both parents care for pups raised in a ground den.

Mountain Lion *(Felis Concolor)*
Bobcat *(Lynx rufus)*
These cats do live on the Range but are rarely seen because they are nocturnal and because they prefer areas with good cover to hide in.

MOUNTAIN FOREST

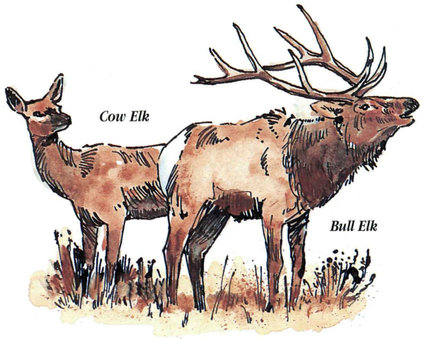
Mountain forest of Douglas fir and Ponderosa pine covers the tops of the hills of the Bison Range and surrounding area. Forests are complex ecosystems. The type of trees that make up the forest provide a special environment that affects the kinds of other plants and animals that can live there.

Most forests can develop wherever there is an average temperature greater than 50 degrees in the warmest months and where there is an annual rainfall of about 13 inches. This area is on the edge of forest survival. Moisture levels have created the natural tree patterns you see on the surrounding hills with trees taking hold at higher elevations where it is cooler and moister, on the cooler north sides, or where there are any depressions to hold the moisture.

Spend some time looking closely at trees in the forest. Leaves act as solar collectors, using the heat of the sun to process their food through photosynthesis. The conifer trees of this mountain forest are tiered with the upper branches shorter so that the sun may reach all their branches. Since these trees are evergreen and keep their leaves all year, their leaves are slender needles with a tight waxy surface to retain moisture through dry periods and long winter months when water is frozen.

Birds of the conifer forest are adapted to food sources found here. They eat the pine nuts from cones, new tree buds, seeds and berries plus insects that live in bark or burrow into the wood. Since most of these things are available all year, many forest birds such as chickadees, jays and woodpeckers do not migrate.

Other animals use the forest for shelter and food. Deer and elk browse on woodland plants for winter survival.



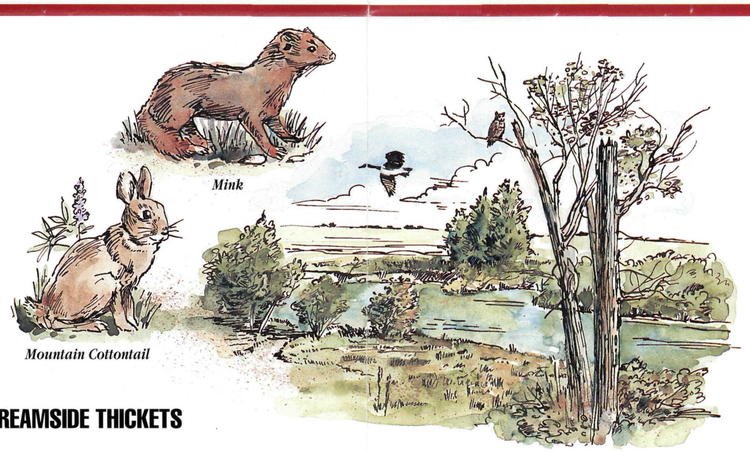
WETLANDS

Wetlands form in any depression where water collects. They may be spring fed, run-off ponds, bays or backwaters, glacial pot holes or old river bends now separated from the main stream.

Wetlands are very important for many reasons. They hold water on the land so it can seep down and recharge the aquifer. They are important in flood control and they filter out contaminants and sediment. Wetlands produce the greatest food biomass of any environment and provide habitat for waterfowl and many other kinds of wildlife.

Large numbers of insect larvae develop in water then crawl up the stems of aquatic vegetation and emerge as flying adults. These larvae provide abundant food for growing ducklings, turtles, fish and many other water creatures. Numerous species of birds, not normally considered water birds, nest near wetlands because of the wonderful supply of insect foods for their young. Watch for swallows swooping over the water catching flying insects.

Like streams, wetlands usually have lush sub-irrigated plant life along their shores. Aquatic vegetation can get a foothold directly in the still waters and includes plants with a variety of strategies. Cattails and rushes, called emergents, are rooted near shores and grow up out of the water. Water weeds are mostly under water with their roots in the silt at the bottom of the pond and their blooms on the water surface. Plants such as duck weed float on the surface with roots that hang down, drawing all their nutrients from the water alone. These tiny leaved plants are the green vegetative cover you see on the ponds.



STREAMSIDE THICKETS

The lush vegetation along watercourses is produced by the extra moisture seeping out from streams to supply sub-irrigation for plant growth along their banks. These streamside thickets, or riparian zones, have an appearance and a microclimate very different from the surrounding rangelands. In addition to much heavier vegetation, there is more shade and higher humidity and increased air movement.

To live in shade, leaves of trees and other plants are broad and flat and are spread on wide branches to maximize collection of the suns rays.

The water for this unique environment comes from rainfall draining from the surrounding hills and from the mountains to the east. These hills and mountains are called a watershed. Water follows the ravines and low spots gradually working its way to the sea. There are several streams on the Bison Range that include Mission Creek, along the north side, and the Jocko River along the south side. Some of these streams drain a large area and flow all year. Others are seasonal, draining only small open areas with little vegetation to hold the moisture.

In flat areas, streams wander and bend, creating little marshes. Stream banks erode at the outside of turns and silt in on the inside, constantly changing the course of the stream. The speed of flowing water varies with the steepness of the terrain and the main current roams from bank to bank. Currents and eddies can create deep holes in otherwise shallow streams so there can be holes and drop-offs in any stream of flowing water.

Fish and insects and other creatures that live in flowing water are rapid swimmers or they are specially adapted to cling to, or hide under rocks. Insect life in streams is more abundant, but made up of fewer different species than live in still water. Little aquatic vegetation grows in swift streams.

A wide variety of birds and other wildlife, especially deer and small mammals such as mink, live along streams because of the excellent protective cover and the wide variation of food sources to be found there.

WHAT HAPPENS IN WINTER?

Winter puts a whole new edge on survival in the wild. Many food sources have dried up or are buried under the snow blanket. Wildlife must deal with getting about in deep snow and freezing weather. Animals of the Bison Range handle this season in a variety of ways: they migrate, hibernate, adapt or endure.

Some wildlife can continue to find their usual foods such as seeds or browse. Meadow voles and their predators, live in tunnels under the snow and forage as always. Some animals adapt to different foods in winter, finding browse or berries and seeds that stay above the snow. Small animals such as rabbits find the snow raises them to new levels and new bushes to browse on. Hoofed animals paw through the snow for grasses or the succulent winter rosettes of perennial plants.

Those creatures who cannot find winter foods must migrate or hibernate. Ground squirrels are hibernators. This requires locating or digging a suitable den and concentrating on putting on a fat layer to sustain them throughout the winter. A long cold winter might severely tax their ability to survive. Migrants,

primarily birds, must also acquire fat reserves for the long trip to their wintering grounds.

Energy demands are high in winter. Even though wildlife seek cover where possible, they require a sizeable supply of heat-producing foods just to keep warm. Moving about in deep snow increases the energy demand—small animals must leap from place to place. When food sources are marginal and wildlife is already stressed, any disturbance causing them to flee, or even keep on alert because of an intrusion, can threaten their survival.

Animals' physical adaptions to winter include heavier winter coats and fat layers and in some cases, a protective change of color.

Plants, too, are stressed by winter and must adapt to deal with it. Loss of moisture is a major problem, since, much of their water source is locked in snow and ice. Many trees lose their leaves to avoid evaporative water loss. Some plants over-winter as seeds. Others are protected by an insulating blanket of snow.