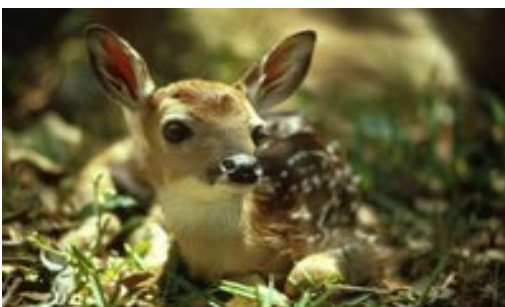


Notes:

# Grant-Kohrs Ranch National Historic Site



## A Field Guide to the Wildlife and Habitats of the Grant-Kohrs Ranch



U.S. Fish and Wildlife

**White-Tailed Deer Fawn**  
**The Most Common Large Mammal on the Ranch**

# Introduction - Animals of Grant Kohrs NHS

Con Warren, former ranch owner/operator of the now Grant-Kohrs Ranch NHS, was an avid birder and friend to wildlife. It is in keeping with the heritage of the Ranch that this booklet was produced. It is the third in a series of Nature Field Guides to the Grant-Kohrs Ranch NHS. The two others are **A Field Guide to the Common Birds by Habitat and Basic Color**, and **A Field Guide to the Common Plants by Life Form and Habitat**. This guide, **A Field Guide to the Wildlife and Habitats of the Grant-Kohrs Ranch** completes the series. These three guides will cover the more common flora and fauna the Ranch visitor will see.

The Grant-Kohrs Ranch is a unique entity within the National Park System. Not only has the history of early day ranching been preserved, but also the various habitats that comprised the ranch in the late 1800s are intact. These habitat types include short grass prairie, wet meadow, riparian/stream, ponds/marsh, and associated mud flats. The success of both the flora and fauna depends on a healthy system that includes biotic integrity, hydrologic function, and soil stability. These factors provide niches for hundreds of plant and animal species in diverse habitats on a relatively small area of 1,600 acres. The Grant-Kohrs Ranch NHS is in a unique position to allow those interested in plants and animals to see a large number of species in a relatively small area. One will quickly understand the significance of this park unit.

As with the earlier guides, this is not a complete field guide, but does cover the more common wildlife forms that you can encounter. Within the booklet wildlife is divided into six categories. These categories are Large Mammals, Small Mammals, Bats, Amphibians, Reptiles, Fish, and Aquatic Invertebrates.

## Acknowledgments:

I would like to thank Ben Bobowski of the Grant-Kohrs Ranch NHS for encouraging me to develop this guide, and providing funds to make it possible. I also want to thank my wife, Laura Lee, for her editing and suggestions. *Gary Swant* - Deer Lodge

Websites that allowed us to use their photographs for non-commercial use are listed below and the pictures noted.

<http://www.nhptv.org/NatureWorks>, New Hampshire Public Television: White-tailed Deer Fawn, Columbian Ground Squirrel, Little Brown Bat

<http://fwp.mt.gov/fieldguide>, Montana Department of Fish, Wildlife and Parks: Largescale Sucker, Longnose Sucker, Brook Trout, Mountain Whitefish, Rainbow Trout, Mottled Sculpin, Western Toad, Columbia Spotted Frog, Long-toed Salamander, Painted Turtle, Moose, Coyote, Beaver, Deer Mouse

<http://www.fishbase.org/Summary/SpeciesSummary>- Fishbase; Redside Shinner

[http://www.umass.edu/nrec/snake\\_pit/pages/cgarter.html](http://www.umass.edu/nrec/snake_pit/pages/cgarter.html) - University of Massachusetts Amherst; Common Garter snake

<http://www.bugsurvey.nsw.gov.au/index.html> - NSW Bug Survey: Stonefly, Caddisfly, Mayfly, Water Boatman, Diving Beetle, Snail, Clam, Sponge, Leech, and Freshwater Shrimp.

<http://en.wikipedia.org> - Wikipedia Free Encyclopedia; White-tailed Deer, Elk, Mule Deer, Red Fox, House Mouse

<http://www.nps.gov/archive/wica> - National Park Service; Pronghorn

<http://www.enature.com/home> - enature Field Guides; Mountain Cottontail, Yellow Pine Chipmunk, Northern Pocket Gopher, Vagrant Shrew, Masked Shrew, Western Jumping Mouse, Meadow Vole, Big Brown Bat, Hoary Bat, Fringed Myotis,

<http://www.washington.edu/burkemuseum> - Burke Museum; Montane Vole

<http://aknhp.uaa.alaska.edu/akbats> - US Forest Service; Long-legged Bat

# Bat Species on the Grant-Kohrs Ranch NHS



**Big Brown Bat** - *Eptesicus fuscus* is the bat most often seen and resides in buildings. A relatively large brown bat, but can vary from light to dark, with a pale belly. Wings and membranes black. There is no fur on the wings or membranes. Length 4 - 5 inches, weight 0.4–0.6 ounces.

**Hoary Bat** - *Lasiurus cinereus* is the most widely distributed bat in the United States. It emerges late in the evening to feed on insects, mostly moths. It is pale brown and the fur tips are frosted white. The throat is buffy yellow. Ears are short and rounded, with black edges. Wing membrane are furred on the upper side. Length is 4 – 6 inches and they weight 0.6 – 1.25 ounces.



**Little Brown Bat** - *Myotis lucifugus* is one of the most common bats in the U.S. and lives in large colonies, which can number in the thousands. Glossy brown above, with tips of hairs burnished brown; buff light below. It has hair on its toes and pointed ears that are dark. It is between 3 and 5 inches long and weighs between 0.25 - 0.5 ounces.

**Fringed Myotis** - *Myotis thysanodes* is a colonial bat that feeds on moths and other insects. It is the largest bat on the Ranch. It has reddish brown or brown fur above and paler below. Medium length dark brown or black ears. Fringe of hair covering the membrane between the legs and tail. Body length of 3.2 -3.75 inches with a wingspan of 12 inches.



**Long-legged Bat** - *Myotis volans* is common throughout western North America. However, it is superficially similar to the Little Brown Bat and often misidentified. Long-legged Bats can be distinguished by thick hair extending on the underside of the wing to a line from the elbow to the knee.

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## **Organization of the Guide:**

The map on pages 10 and 11 shows the four major habitat types of the ranch. Some wildlife species are restricted to a single habitat, others are found predominately in one, but can utilize several habitats. Still, others use all of the habitats on the ranch. Listed below are the habitat types found on the Ranch.

**Riparian/Stream:** This habitat is characterized by flowing water and the associated shrubs, and grasses along the banks. Many of the shrubs are species of willow mixed with water birch and larger cottonwood trees. This habitat includes Cottonwood and Fred Burr Creek, which flow east to west and are tributaries of the Clark Fork River. The Clark Fork River flows south to north through the ranch and is the headwaters of the Columbia River Basin. These lands have had decades of heavy metal contamination, but no new contamination in recent history.

**Marsh/Pond:** This habitat is an extension of the riparian/stream habitat and is made up of standing open water in ponds that drain into the Clark Fork River. Other areas are backwater marshes, or depressions filled with water from railroad construction and dredging operations, that took part on the ranch in the past.

**Wet Meadows:** This unique habitat is created by man's agricultural activities and is made up of areas that are flooded or sprinkler irrigated for production of hay. Many of the wet meadows are seasonally wet in the spring and dry out in late summer and fall. These lands have few native species, and have been planted to high production grass species.

**Short Grass Prairies:** These lands are native grasslands that survive in a semiarid condition without irrigation. Annual rainfall is 11.5 inches per year, but 70% of the moisture falls in the growing season, so grass production is surprisingly good for the amount of moisture. This habitat contains the most native plant species, as it has had the least impact by ranching.

## **Wildlife Forms on the Grant-Kohrs Ranch NHS:**

**Fish:** Fish are cold-blooded aquatic vertebrates which usually have scales and breathe through gills. There are eight species in three orders on the Ranch. Fish are found in the Stream/Riparian and Marsh/Pond habitats.

### **Order Cypriniformes:**

*Family Catostomidae:* Largescale Sucker, Longnose Sucker

*Family Cyprinidae:* Redside Shiner

### **Order Salmoniformes:**

*Family Salmonidae:* Brook Trout, Brown Trout, Rainbow Trout, Mountain Whitefish

### **Order Scorpaeniformes:**

*Family Cottidae:* Mottled Sculpin

A description of these species can be found beginning on **Page 5 and 6.**

**Amphibians:** Amphibians are cold-blooded, smooth-skinned animals from the Chordate Phylum. A few amphibians live on land, but most live in water. Nearly all species return to the water to mate and lay eggs. There are three species in two orders found on the Ranch. Amphibians are found mostly in the Marsh/Pond habitat, but can be found in slow moving water in the Streams/Riparian habitat.

### **Order Caudata:**

*Family Ambystomatidae:* Long-toed Salamander

Page 2



**Deer Mouse - *Peromyscus maniculatus*** occurs over a large geographic area and range of habitats, and is highly variable in appearance. More than 100 subspecies have been described. Color varies greatly with habitat and geographic area. Often grayish to reddish brown above; white below. Tail distinctly bicolored and short-haired. Woodland forms tend to be larger. Total length is 4.6 to 8.75 inches with a 1.75 to 4.8 inch tail. Weight is 0.4 - 0.8 ounce.

**House Mouse - *Mus musculus*** originated in Asia and spread throughout Europe many centuries ago. In the early 16th century, it arrived in Florida on ships of the Spanish explorers. The House Mouse makes its own nest but lives in groups, sharing escape holes and common areas for eating, urinating, and defecating. It is grayish brown above and nearly as dark below. The tail is dusky above and below; but nearly hairless. Total length is 5.2 to 7.75 inches. The tail is 2.5 to 4 inches. Weight is 0.6 to 0.75 ounces.



**Montane Vole - *Microtus montanus*** is a medium-sized vole with a tail about forty percent of the length of the head and body. The fur is grayish brown to brownish yellow. The belly is silver gray with white-tipped, black hairs. The tail is barely bicolored. Total length 5.5 to 8 inches in length. The tail is 1.4 to 2.8 inches in length. Weight is 2 ounces.

**Meadow Vole - *Microtus pennsylvanicus*** is active at night, and rarely during the day. The diet consists entirely of green vegetation and tubers, including many grasses, and clover. Fur color variable from yellowish brown, reddish brown peppered with black, to blackish brown. The belly is gray with silver-tipped hairs. Tail is dark above, paler below. Feet are also dark. The length is 5.5 to 7.6 inches. The tail is 1.25 to 2.5 inches and appears long. Weight is 2 to 2.5 ounces.



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- |  |                                      |
|--|--------------------------------------|
| <b>Order Odonta:</b> Dragonflies             | <b>Order Ephemeroptera:</b> Mayflies |
| <b>Order Plecoptera:</b> Stoneflies          | <b>Order Mollusca:</b> Clams, Snails |
| <b>Order Hydrozoa:</b> Sponges               | <b>Order Amphipods:</b> Water Shrimp |
| <b>Order Anelida:</b> Leeches and Earthworms |                                      |

A description of these Orders can be found on **Pages 8, 9, and 12**

**Mammals:** A mammal is any warm-blooded vertebrate animal characterized by a covering of hair on the skin and, in the female, milk-producing mammary glands for nourishing the young. For ease of identification mammals have been divided into large mammals, small mammals, and bats. All of these mammals can be found in the Riparian/Stream, Short Grass Prairie, and Wet Meadow Habitats. A few will also use the Marsh/Pond Habitat.

### Large Mammals:

#### Order Artiodactyla:

*Family Cervidae:* Moose, Elk, White-tailed Deer, Mule Deer

*Family Antilocapridae:* Pronghorn Antelope

#### Order Carnivora:

*Family Ursidae:* Black Bear

*Family Canidae:* Coyote, Red Fox

*Family Mustelidae:* Badger

#### Order Lagomorpha:

*Family Leporidae:* Mountain Cottontail

#### Order Rodentia:

*Family Castoridae:* Beaver

*Family Erethizontidae:* Porcupine

A description of each species can be found on **Pages 13 - 16.**

**Yellow Pine Chipmunk** - *Tamias amoenus* shows a tawny to pinkish cinnamon color with five black longitudinal dark stripes that are evenly spaced and about equal in width. The back stripes extend to rump and the two on the sides only go to the mid-body. The paler stripes are white/gray. There is also a distinct black lower eye stripe. Sides of body are gray-yellow.



**Columbian Ground Squirrel** - *Spermophilus columbianus* has the general appearance of a squirrel, but doesn't climb trees. They live in dens they have dug in the ground. They have white-speckled brown, black and gray fur on their head and back, with reddish-tan fur on the face and nose, chest, undersides and legs. It has a reddish-black tail and white around its eyes.

**Muskrat** - *Ondatra zibethicus* has relatively small front feet, with four major toes and small thumbs. Hind feet are much larger, and partially webbed. The tail is deeper than it is wide, hairless, and tapers to a blunt point at the end. They weigh 3 to 4 pounds and are 22 to 25 inches in length, including the tail. Fur color is mostly brown with lighter shades of greys. Chest and stomach areas are lighter.



**Northern Pocket Gopher** - *Thomomys talpoides* seldom appears above ground; when it does, it rarely ventures more than a few feet. Color varies greatly and is often a rich brown or yellowish brown, but can be grayish. They have white markings under the chin. Ears are rounded with large dark patch behind the ears. Length is 6 to 9 inches. Weight is 4 to 8 ounces.

**Northern Water Shrew** - *Sorex palustris* is very dark or black above with a silvery white belly. They have long tails, up to 3 inches. Hindfeet have unique fringe of stiff hairs. Overall length is 5.5 - 6.5 inches. They weigh around 0.5 ounces. This species is the largest of the long-tailed shrews in North America.



**Vagrant Shrew** - *Sorex vagrans* appears reddish in summer, darker in the winter, and the tail is bicolored. Total length is 4 to 5 inches with a 1.25 to 2 inch tail. It weighs 0.12 to 0.36 ounces. This tiny creature spends its time feeding in the runways of voles, where it finds such foods as insect larvae, slugs, snails, spiders, earthworms and other invertebrates.



**Masked Shrew** - *Sorex cinereus* is one of the most widely distributed mammals in North America. It is primarily nocturnal, secretive and rarely seen. It is a mouselike insectivore with sharply pointed muzzle. This species has minute eyes and a long tail. It has velvety fur which is gray-brown in color, and pale gray beneath. Length of head and body is 2 to 2.5 inches and weight is 0.08 to 0.25 Ounces.



**Montane Shrew** - *Sorex manticolus* is stout-bodied and brown with a relatively long tail. It is the largest of the brown shrews of mountainous areas. The tail is bicolored but only slightly. Total length is nearly five inches. The length of the tail is 1.5 to 2 inches. The weight 0.2 to 0.25 ounces. Another name for this shrew is the **Dusky Shrew**.

**Western Jumping Mouse**- *Zapus princeps* name is derived as it often makes a series of 3 to 5 foot jumps when startled from its hiding place. It can also run on all four feet. The sides are yellow with a dark band running down the middle of its back. The belly is white, and can be yellow tinged. The tail is darker above and whitish below. It has very large hindfeet. Total length is 8.5 to 10.25 inches, with a 5 to 6 inch tail. Weight is 0.5 to 1.5 ounces.



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#### **Order Anura:**

*Family Bufonidae:* Western Toad

*Family Ranidae:* Columbia Spotted Frog

A description of each species can be found on **Page 7**.

**Reptiles:** The reptiles are a group of vertebrate animals, which are tetrapods, (four legs bearing toes), *snakes are the exception*, and also are amniotes (animals whose embryos are surrounded by an amniotic membrane). There are two species in two orders on the Ranch. Reptiles are mostly found in the Marsh/Pond habitat, but can be found in slow moving water in the Streams/Riparian habitat.

#### **Order Squamata:**

*Family Colubridae:* Common Garter Snake

*Family Emydidae:* Painted Turtle

A description of these species can be found on **Pages 7 and 8**.

**Aquatic Macro-Invertebrates:** Aquatic invertebrates are those invertebrates that spend some or all of their lives in or on water and do not have a vertebral column or backbone. They mostly eat plankton, which are water-borne microorganisms that live in streams, ponds, and lakes. Others eat plants or larger animals, including other invertebrates and vertebrates. They make up the first tier of the food chain, which is eaten by fish. There are eleven orders of invertebrates with many species in each order. An example species of each order is shown. Aquatic Insects can be found in the Marsh/Pond habitat, as well as fast moving water in the Streams/Riparian habitat. They typically live in the water in larval form for two to four years then emerge as adults. Adults mate, lay eggs and complete their life cycle typically in one to two months. Larval forms are illustrated.

**Order Coleoptera:** Water Beetles    **Order Diptera:** Fly Larva

**Order Trichoptera:** Caddisflies    **Order Hemiptera:** Waterbugs



**Redside Shiner** - *Richardsonius balteatus* adults are small, laterally compressed, deep-bodied with decurved lateral line. The dorsal fin origin far behind pelvic fin origin; large, falcate anal fin. The eye is large. Occurs in schools.

**Brook Trout** - *Salvelinus fontinalis* is dark green to brown with a distinctive marbled pattern (called vermiculations) of lighter shades across the flanks and back. The belly and lower fins are reddish in color, the latter with white leading edges. Intolerant to pollution.



**Brown Trout** - *Salmo trutta* has two dorsal fins including one adipose fin, broad square tongue with 11-12 large teeth, light pectoral fins, square tail, 9-10 rays in the anal fin and no marbled pattern on the back.

**Mountain Whitefish** - *Prosopium williamsoni* has a slender body and is nearly cylindrical in cross section. They are silver with a dusky olive green shade dorsally. The short head has a small mouth underneath the snout making them efficient at vacuuming invertebrates from the substrate. The tail fin is deeply forked. Tolerant to pollution.



**Rainbow Trout** - *Oncorhynchus mykiss* have a characteristic salmon-like shape. Dark spots are clearly visible on the tail fin, which is slightly forked. The back is usually a dark olive color, shading to silvery white below. The body is heavily speckled, and there is a pink to red stripe running lengthwise along the sides. Intolerant to pollution.

**Mottled Sculpin** - *Cottus bairdii* averages three inches in length with eyes located on top of its head. It has a broad, flat head with an upper lip that protrudes past the lower lip with fine teeth on both jaws. The tail fin is slightly rounded. It has small pelvic fins and a long anal fin. The pectoral fins are large and fan-like. Intolerant to pollution.



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**Coyote**- *Canis latrans* stands less than 2 feet tall and looks superficially like a medium sized dog. Color varies from white-gray to tan often with a reddish tint to its coat. The legs, feet, and ears are rusty and the throat and belly whitish. A coyote's ears and nose appear long and pointed, especially in relation to the size of its head. It weighs between 30 and 50 pounds. The coyote can be identified by its thick, bushy tail, which it often holds between its legs when running.

**Red Fox** - *Vulpes vulpes* coat is rusty red, with white underbelly, black ear tips and legs, and a bushy tail with a distinctive white tip. The "red" tone can vary from crimson to golden. The tail is long, and bushy with a distinctive white tip. Ears are pointed and the muzzle is slender. The eyes are yellow and have distinctive vertically slit pupils giving a slanted eye look. Red Foxes weights between 10 and 15 pounds with a length of 40 inches.



**Badger** - *Taxidea taxus* is a compact, heavy-bodied animal built low to the ground, with partially webbed toes and long claws to aid in digging. They have a yellowish-gray coat with a white stripe over the top of the head. Cheeks are white, feet are dark brown to black, and a black spot is found in front of each ear. The belly and short tail are yellowish. Total length: 22 to 28 inches. Weight: 13 to 25 pounds .



**Mountain Cottontail** - *Sylvilagus nuttallii* is grayish brown with a slight yellowish appearance above and whitish below. A diagnostic characteristic is a narrow, black line along the margin of the ear. They have a fairly large tail that is dark above and white underneath. Their total length is 13.5 to 16.5 inches, and they weigh 1.4 to 1.9 pounds.

**Beaver** - *Castor canadensis* is North America's largest rodent. Adults can be up to four feet long and weigh more than 60 pounds. Their rear legs are longer than the front and webbed. The front legs are heavily clawed. The tail is large, flat, and nearly hairless. When the beaver is under water, the nose and ears close and a special membrane covers its eyes. It has dark brown fur on its back and sides and lighter brown fur on its chest and belly.



**Porcupine** - *Erethizon dorsatum* average 30 inches long and 20 pounds in weight. Round, short-legged, and slow in movement, they are protected by a coat of quills that covers all but their underside and the insides of their legs. They average 30,000 modified hairs quills, which are yellowish white and black- or brown-tipped and up to five inches in length. Quills are intermixed with coarse guard hairs that lay over thick, brownish underfur. Quills are concentrated on the rump and short tail. They also have long, heavy claws for climbing.

## [Small Mammal Species on the Grant-Kohrs Ranch NHS](#)

### **Small Mammals:**

#### **Order Insectivora:**

*Family Soricidas:* Northern Water Shrew, Montane Shrew, Vagrant shrew, Masked Shrew

#### **Order Rodentia:**

*Family Dipodidae:* Western Jumping Mouse

*Family Geomydae:* Northern Pocket Gopher

*Family Muridae:* Montane Vole, Meadow Vole, House Mouse, Muskrat, Deer Mouse

*Family Sciuridae:* Chipmunk, Columbian Ground Squirrel

A description of these species can be found on **Pages 15 - 19.**

### **Bats:**

#### **Order Chiroptera:**

*Family Vespertilionidae:* Big Brown Bat, Hoary Bat, Little Brown Bat, Fringed Myotis, Long-legged Bat

A description of each species can be found on **Page 20.**

## [Fish Species on the Grant-Kohrs Ranch NHS](#)



**Largescale Sucker** - *Catostomus macrocheilus* has dark olive gray back and sides, changing abruptly to white or yellowish on underside. Dorsal fin usually has 13 to 15 rays, base of fin is long. Scales are medium sized, 62 to 80 in lateral line. Sexually mature in 4 to 5 years. Spawns April - May. No parental care. Eggs stick to bottom and hatch in 2 weeks. Is tolerant to pollution

**Longnose Sucker** - *Castostomus catostomus* back, upper sides, and head to below the eye, dark olive to slate; underparts are white or yellow. Breeding males are nearly jet black on upper half of head and body. Nine to 12 rays in dorsal fin and more than 15 scales above lateral line. Spawns April - early July. Is moderately tolerant to pollution.







**Mule Deer** - *Odocoileus hemionus* coat is gray in winter and brownish in summer. The forehead is dark and the chin, throat, and rump patch are white. The tail is short and round with black tip. The distinctive trait and name comes from the large ears. Antlers are upright, rather than basket-like and typically has four tines on each side in mature bucks. Bucks average 250 - 275 pounds and does 160 - 180 pounds. They feed early and late in the day. When startled, a Mule Deer will move in a series of stiff-legged jumps with all four feet hitting the ground together.

**Pronghorn** - *Antilocapra americana* is found only in North America, and is often called an antelope. Pronghorns have a rich russet-tan coat with white undersides. The rump patch is large and white and there are two white bands across the throat. There are black markings on the head and the eyes are large. Adult bucks have 13 to 18 inches long prongs with curved tips. The horn is made up of two parts: a bony core covered by a black outer sheath. This sheath is made up of a stiff, hair-like substance. Pronghorns are the only animals in the world who shed their "horns" annually. Many adult does have rudimentary horns. Adult bucks weigh 125 pounds and does 110 pounds.



**Black Bear** - *Ursus americanus* has a black, brown, or blond coat. Often a white area is found on the chest. There is a slight shoulder hump, but the highest point of the body is above the hips. The muzzle is straight and long. Claws of front feet are dark and strongly curved, and short. Males can weigh from 200 to 400 pounds, females are typically under 200 pounds. Black bears are most nocturnal and usually feed alone.

## [Amphibian Species on the Grant-Kohrs Ranch NHS](#)



**Western Toad** - *Bufo boreas* have stocky bodies with short legs, and tend to walk rather than hop. Their thick skin appears dry and bumpy and can range in color from pale green to grey, dark brown, and red. They typically have pale-colored bellies mottled with black, and a pale colored stripe down the back. Their eyes have distinctive horizontal oval pupils. Behind each eye is a oblong or kidney-shaped swelling called a parotid gland.

**Columbia Spotted Frog** - *Rana luteiventris* are light to dark brown, gray, or olive green with dark spots (frequently with lighter centers) on the back, sides, and legs. The back and sides are often covered with small bumps. The undersides of the legs are bright red, salmon or orange. This bright color may extend up to the chin or be replaced by a light, mottled gray on the chin, chest, and belly.



**Long-toed Salamander** - *Ambystoma macrodactylum* is slender bodied with long toes. It is 4 to 6.5 inches in length. They are dark to black above and have a green to yellow dorsal stripe running from the head back to the tip of the tail. There is usually a white or silver flecking on the sides as well.

## [Reptile Species on the Grant-Kohrs Ranch NHS](#)



**Common Garter Snake** - *Thamnophis sirtalis* range from 16 to 42 inches in length. There are three yellow longitudinal stripes (one dorsal and two lateral) and a black stripe broken by red spots between the yellow stripes. The lateral stripes are located on the second and third scale rows above the belly scales. Some lack the red dots. The background color between stripes is black to dark olive. The belly color ranges from yellow to bluish.



**Painted Turtle** - *Chrysemys picta* has an olive to black shell with the edges of the plates of the shell bordered with yellow. The head, neck, and legs are marked with yellow lines, and a red spot appears behind the eye. The lower shell is colored with red and yellow. Females are typically two inches larger than males. Males have much longer front claws than females, and the vent is situated farther from the edge of the shell.

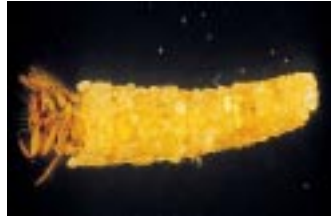
## [Aquatic Macro-Invertebrates Orders on the Grant-Kohrs Ranch NHS](#)

**Water Beetle** - *Coleoptera* Aquatic beetles have four wings. The front are thick and modified to form covers that meet along the midline. The hind wings are folded under the front covers at rest. They have six legs. There are over 2,000 species.



**Flies** - *Diptera* Larval form of flies are wormlike and many are aquatic. They have anal gills, heads are small or lacking. Larvae are without external wingpads and without segmented thoracic legs, but prolegs are common. The typical insect body segmentation distinguishes fly larvae from both unsegmented worms and segmented worms. More than 18,000 species in North America

**Caddisflies** - *Trichoptera* Caddisflies are elongated aquatic invertebrates with three pair of legs. They use their own glue to make cases out of sand grains or pieces of plants. This case goes along with them as they hunt for food. They duck inside for protection. More than 12,000 known species.



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## [Large Mammals Species on the Grant-Kohrs Ranch NHS](#)



**Moose** - *Alces alces* is the largest member of the deer family with long, dark brown hair, high, humped shoulders and long legs. They have a large overhanging snout; pendant of hair-covered skin sometimes reaching 2 feet hangs under the throat. The antlers are massive and flat and its tail is short. Bulls weigh 800 to 1,200 pounds and cows 600 to 800 pounds. Usually solitary but may congregate during rut or on winter range. Often found in or near water and can swim for miles. Cows are protective of calves.

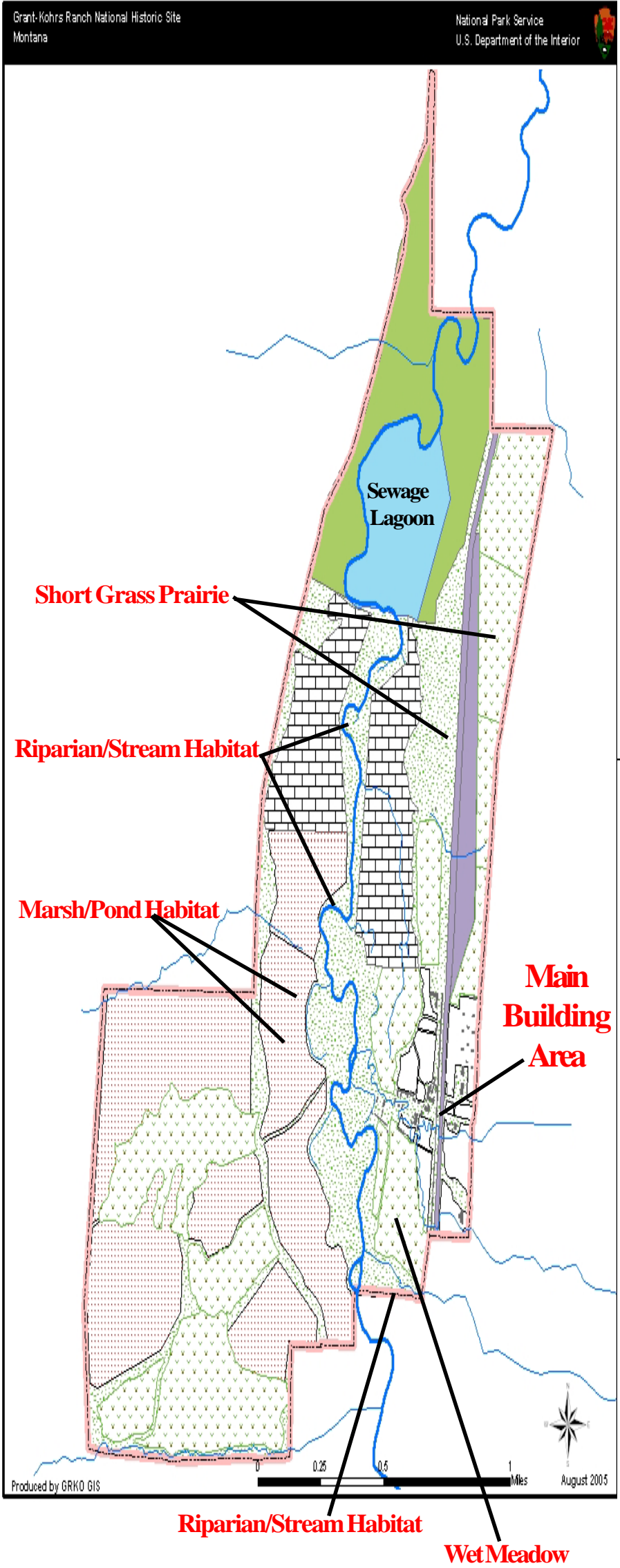
**Elk** - *Cervus elaphus* has a brown coat with the head, neck, and legs darker than the rest of body. The rump patch is yellowish. The mane is longer in bulls than in cows. Antlers of mature bulls generally have five tines projecting from the main branch for a total of six points. Bulls average 900 pounds and cows weigh 500 - 600 pounds. Elk are often found in herds and migrate to higher elevations in summer and then back to grass/shrub winter ranges in winters.



**White-tailed Deer** - *Odocoileus virginianus* has a coat that is grayish-brown in winter, and more reddish-brown in summer. The tail is a foot long and white on the underside. The antlers usually have three to five tines projecting upward in a basket. Bucks weigh 250 to 275 pounds and does 160 to 180. They occupy a small home ranges and do not migrate. They are nocturnal and secretive. When alarmed the tail is wagged and held erect. The underside, which is white, can be seen for some distance.

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# Overview of the Grant-Kohrs Ranch and Habitat Types





**Freshwater Snail** - Snails are another *Mollusca* and similar to slugs but have a spiral shell encasing their soft body. Depending on the species the shell can open to the right or left, be hard or soft, or flat spirals. There are more than 100 species.

**Freshwater Shrimp** - *Amphipods* are transparent, with a very thin and smooth outer shell that is periodically shed as they grow. They have a large spine sticking out at the front of the head and a fan tail, which can be speckled with blue or green markings. They have 10 jointed legs, well-developed fan-like structures under their tail, and a body that is flattened sideways.



**Freshwater Sponge** - *Hydrozoa* have small, cylindrical, soft bodies with tentacles around the mouth at one end. When tentacles are touched by a small animal, they are stunned by tentacle stinging cells and then pulled into the mouth. Opposite the mouth is a disk, with which they can affix themselves to a solid surface such as a rock. 150 fresh water species.

**Annelida** - *Leeches* are segmented, cylindrical worms with a sucker on each end, one being a mouth. The mouth has three small jaws with sharp teeth. Leeches can swim as well as a walk, which they do in a looping manner. Their body shape depends on whether their muscles are relaxed or taut. Another common name is bloodsuckers, as some species feed on the blood.



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**Water Bug**- *Hemiptera* have as the defining feature the possession of mouthparts where the mandibles and maxillae are a proboscis, sheathed within a modified labium to form a beak which is capable of piercing tissues and sucking out the liquids. The forewings of many hemiptera are hardened near the base, but membranous at the ends form a "X" on the back. There are over 80,000 species.

**Dragonfly & Damselflies** - *Odonta* are predators that feed on other aquatic insects. They are stout, the tail is short and spine like. Some have immense grasping lower lip. They are known to prey on mosquito larva. There are over 5,600 species world wide and 450 in North America.



**Mayflies** - *Ephemeroptera* have two or three tails, a single claw on each leg, short antennae and sometimes, wing pads. Along their abdomen are five to seven pairs of leaf-like gills. Many species have one claw on each of the six legs. They eat mostly vegetation. More than 2,500 species world wide.

**Stonefly** - *Plecoptera* nymphs have two long tails whereas Mayfly nymphs have three. The tails are sense organs but also help the insect to move. Gills are thread-like tubes on their underside, wing pads and antennae. Each leg has two claws and their bodies are flattened so they don't get swept away by the water current. More than 1,700 species known.



**Mollusca** - *Freshwater Clam or Mussel* are bivalved. This means they have two thick shells hinged together that are typically closed when you find them. Some species are oblong-shaped, and others round. They have a muscular foot that they use to burrow into the bottom of rivers. When feeding, a pair of siphons sticks out of the hind edge of the shell, filtering food from flowing water. More than 112,000 species.

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