

History of the Martin Slough

The Martin Slough rests in the valley between the Sierra Nevada in the west and the Pinenut Mountain Range in the east. A **slough** is a place of deep mud or a side channel of a river. This slough originated historically as an irrigation water system branching off from the Carson River, flowing through Gardnerville and Minden, and returning to the East Fork of the Carson River. Originally, the water was used by local ranchers for agriculture and cattle.

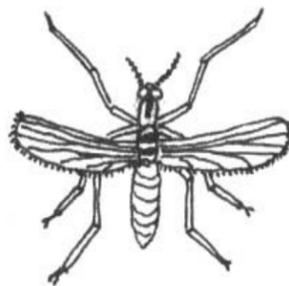
A slough is a place of deep mud or a side channel of a river.

Due to the significant growth in urban development, the Martin Slough now operates as a wetlands filter to balance nutrients in this urban habitat. In 1995, the towns of Minden and Gardnerville joined with the Douglas County School District, local agencies, and local citizens to improve the water quality of the Martin Slough.

Wetland ponds were created here at Gilman Avenue to decrease the flow of the slough and help the wetlands act as a filter for storm water, sediments, and urban runoff. This filtering process improves the surface soil and increases the water quality of the slough for aquatic life, waterfowl nesting, and urban wildlife.

The Natural Filters

Soil and plants are natural filters in the wildlife habitat. They remove excess nutrients, silt (fine particles of organic matter and sand), and minerals. Plants remove these materials by absorbing the chemicals with water, combining them with plant tissue, and locking them away inside the plants cells. The wetland soils trap fine sediment particles that may clog fish gills or choke plant roots by depriving them of oxygen. The soil and plants help maintain a healthy wildlife habitat around the slough by filtering and balancing nutrients as the water returns to the Carson River.



Sedimentation Process: As the water flow slows down, the fine silt, sand, and excess nutrients are filtered out of the water.

Animal and Habitat Match-Up

All living creatures need the four essential elements that create a habitat: food, water, shelter, and space. Within some urban areas, humans have designed spaces such as the Martin Slough that sustain habitat for wildlife survival. In the columns below, draw a line from the mammal, bird, or insect to the plant that could be used for its habitat. Remember that plants can serve as a habitat for more than one animal.



Mule Deer (*Odocoileus hemionus*): This herbivore (eats only plants) feeds on a variety of plants, berries, and nuts. It is easily recognized by its unique mule-like ears. Mule deer run by hopping on all four legs at once.



Muskrat (*Ondatra zibethicus*): This water-loving rodent nests in and feeds on aquatic plants in and around marshy areas. Shiny, dark brown fur and a long, thin tail distinguishes this three-pound mammal from its larger beaver relative.



Black-billed Magpie (*Pica nuttalli*): This black-and-white-feathered bird has a long, black tail and a black bill that distinguishes it from its yellow-billed relative. Listen for its loud *maag* call and look for its nest high in the trees.



Common Midges (*Chironomus attenuatus*): These dark and small black flies found buzzing in the springtime are commonly grouped together as midges. Midges include several species of flies that begin their lives in the water as eggs and larvae. When warmer weather approaches, they emerge as true adult flies.



California Wolf Spider (*Hogna carolinensis*): This eight-legged, eight-eyed nonpoisonous arachnid does not spin a web; it hunts insects at night by scurrying along the ground. It often hides its gray-brown body from predators in large, bushy plants.



Bullfrog (*Rana catesbeiana*): This nonnative amphibian is usually dull green or brown with a white to yellow underside. Unlike most frogs, it has little to no distinct ridges along its back.



Black Cottonwood- (*Populus trichocarpa*): Standing over eighty feet tall, this famous Nevada deciduous tree often grows in moist areas. Its heart-shaped, toothed leaves average six inches long. Birds such as American robins and red-tailed hawks nest in this tree.



Dog Fennel- (*Anthemis cotura*): This daisy-like plant has thirteen bright, white flowers petals on each blossom. It attracts many pollinators including bees, flies, and beetles. As a field plant, it provides ground cover and forage for small mammals.



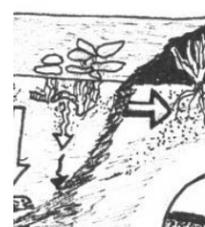
Rubber Rabbitbrush- (*Chroothamnus nauseosus*): This tall, bushy, yellow-flowered plant smells like pineapple when you crush its petals. Often, it can be found in dry areas throughout the Great Basin and is sometimes confused with sage brush from a distance.



Cattail- (*Typha latifolia*): This aquatic plant is food and shelter for many mammals and birds that live along the slough. It is characterized by its wide green leaves and fuzzy brown seed pods at the top of each stem.



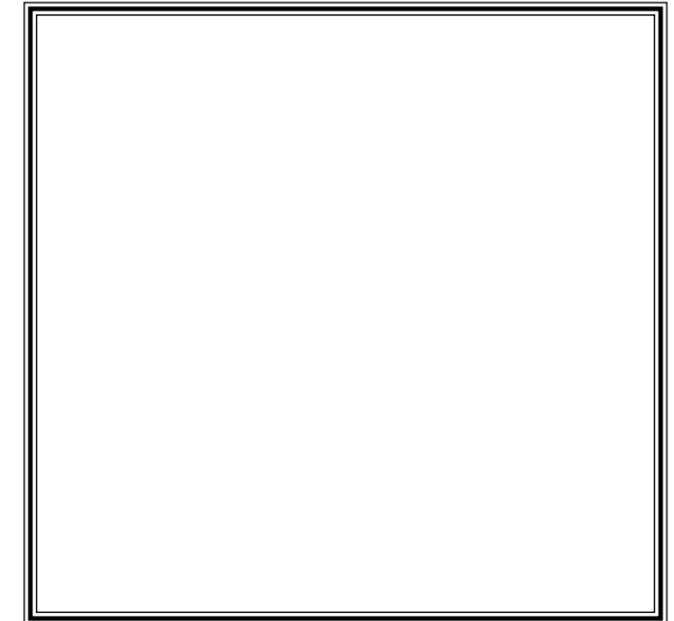
Duckweed- (*Spirodela polyrhiza*): This type of duckweed is composed of many small, bright green leaves that grow on the surface of water. Many aquatic insects and waterfowl, such as the Mallard, feed on this plant or use it as a natural hiding place.



Common Bulrush- (*Scripus atrovirens*): Many wetland plants are common to the Martin Slough, and this plant is easily recognized by its round stems, thick root system, and small white flowers in the fall. Bulrushes provide shelter for nesting birds, such as the Canada goose.

Picture a Habitat

Throughout the day, you may encounter several species of wildlife ranging from a small mosquito to a large mule deer. Other times, you may notice signs of wildlife such as tracks, nests and other homes, or even loose fur or feathers. Find a small area along the trail, and study the diversity of wildlife signs and vegetation within that area. In the space below, draw or list the signs of wildlife and vegetation you see there.



Sample of Wildlife Evidence

Circle the signs of evidence that you see on the Nature Trail.



Muskrat Den Red-winged Blackbird Nest Steller's Jay Nest Killdeer Nest

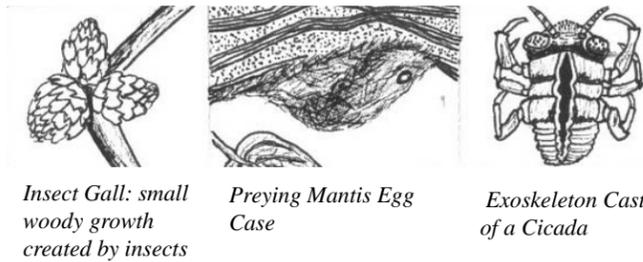
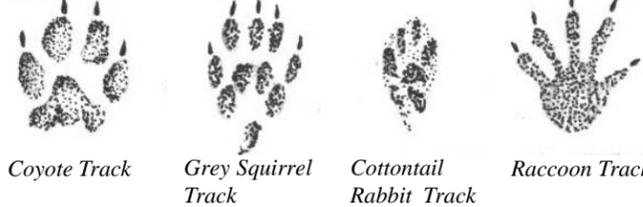
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CAUTION

For your own safety, please do not touch or eat any plants that grow along the slough.

Sample of Wildlife Evidence

Circle the signs of evidence that you see on the Nature Trail.



Webs of Nourishment

A food web is built on many complex, interdependent predator (animal that hunts) and prey (animal that is hunted) relationships. For example, coyotes are predators that prey on rabbits. When one part of the food web is broken, all wildlife are affected. In the picture below, draw lines and arrows to show the predator and prey relationships.



Coyote Willows

Coyote willows (*Salix exigua*) are one of the favorite habitats for waterfowl, songbirds, and wildlife. The small twigs of the willows provide forage for small mammals. Leaves support the larvae of many moth and butterfly species. They are a common nesting area for such birds as house finches, red-winged blackbirds, morning doves, and California quail. The willow brush also provide food and shelter for deer, muskrats, birds, and other wildlife.



Historically, Native Americans and pioneers used the leaves and bark of coyote willow to treat ailments including muscle aches, fever, and headaches. The coyote willow produces salicylic acid, the main chemical ingredient in aspirin.

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For Volunteer Opportunities, contact:

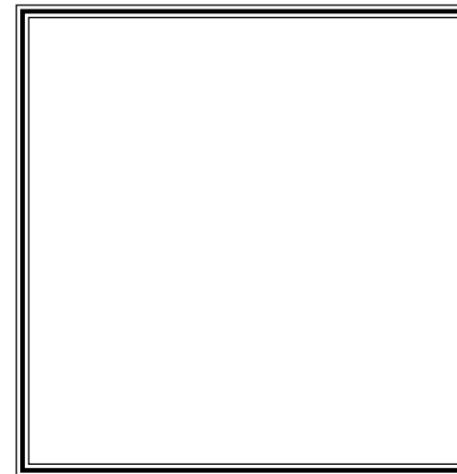
**Nevada Department of Wildlife
Regional Wildlife Education Coordinator
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An important role of the coyote willow is to stabilize the shorelines of waterways and to provide camouflage and temporary shelter for wildlife. Coyote willows are also used as natural blinds for bird-watchers and hunters.

How do the coyote willows in this urban habitat help wildlife?

Wildlife and Me

Choose a spot along the Martin Slough Nature Trail and study the surroundings. In the box below, make a sketch of the wildlife (including birds, insects, and mammals) that could live in this part of the trail.



Now, check off the components of habitat found in this area.

- | | | |
|--|------------------------------|-----------------------------|
| Food | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Water | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Shelter | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Space to Reproduce, Avoid Predators, and Search for Food | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

Will the wildlife that you sketched in the above box be able to survive in this habitat?



WILDLIFE EDUCATION FIELD GUIDE

Location:

The Martin Slough Nature Trail is located near Gilman Avenue in the town of Gardnerville.

Directions:

From Reno, follow 395 south into the town of Gardnerville. Turn left at Gilman Avenue. The trail is on the right side of the road.



**Experience Nevada's Wildlife,
It's Worth It!**

MARTIN SLOUGH NATURE TRAIL