

In Cooperation with the National Park Service

Bent's Old Fort: Amphibians and Reptiles



Bent's Old Fort National
Historic Site. Photo by
National Park Service



Bullsnake (nonvenomous).
Photo by D. Troyer.

*“A long, striped snake glided past us in the water,
and slipped in among the flowers upon the green
bank. So poison is ever creeping through the
regions of delight, watching a chance to sting.”*

—Matt Field, New York Actor, traveling west
of Bent's Old Fort near the Purgatoire River,
August 1839.

General Information Product 83

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Bullsnake. Photo by D. Troyer.



Plains leopard frog.
Photo by C. Schwalbe.

Herpetofauna at Bent's Old Fort

Bent's Old Fort National Historic Site rests along the Arkansas River in the semi-desert prairie of southeastern Colorado. The 320 hectare (800 acre) site includes generous amounts of wetland, marsh, short grass prairie, and transition habitats—where moist areas grade into drier uplands. This natural diversity of habitats supports a number of amphibians and reptiles (herpetofauna).

Bent's Old Fort features a reconstructed 1840s adobe fur trading post on the mountain branch of the Santa Fe Trail where traders, trappers, travelers, and Plains Indian tribes came together for trade. In addition to the fort, there are over 3 km (nearly 2 miles) of trails, allowing the visitor to experience a variety of habitats and the opportunity to see and hear some of the resident herpetofauna.



Employees at Bent's Old Fort safely remove a snake from the fort. Photo by National Park Service.

Collecting animals without a permit is illegal. Do not attempt to touch, capture or otherwise harass any animals. Snakes, in particular should be treated with caution and given a wide berth.

Checklist of Amphibians and Reptiles Documented at Bent's Old Fort National Historic Site

Amphibians

Salamanders

- Tiger Salamander

Ambystoma tigrinum

Frogs and toads

- Plains leopard frog
- Western chorus frog
- Bullfrog
- Woodhouse's toad
- Great Plains toad

Rana blairi
Pseudacris triseriata
Rana catesbeiana
Bufo woodhousii
Bufo cognatus

Reptiles

Lizards

- Six-lined race-runner
- Prairie and Plateau lizard
- Great Plains skink
- Texas horned lizard

Cnemidophorus sexlineatus viridis
(also known as *Aspidoscelis sexlineatus viridis*)
Sceloporus undulatus
Eumeces obsoletus
Phrynosoma cornutum

Snakes

- Bullsnake
- Plains garter snake
- Terrestrial garter snake
- Racer
- Coachwhip
- Northern water snake
- Western hognose snake
- Plains blackheaded snake
- Great Plains ratsnake
- Prairie rattlesnake

Pituophis catenifer
Thamnophis radix
Thamnophis elegans
Coluber constrictor
Masticophis flagellum
Nerodia sipedon
Heterodon nasicus
Tantilla nigriceps
Elaphe guttata
Crotalus viridis viridis

Turtles

- Spiny softshell turtle
- Snapping turtle

Apalone spinifera
(also known as *Trionyx spiniferus*)
Chelydra serpentina



Amphibians (Frogs, Toads and Salamanders)

Woodhouse's toad.
Photo by D. Troyer.



Chorus frog.
Photo by
R. Scherer.



Tiger salamander. Photo by J.D. Willson.

There are three groups of amphibians occurring worldwide. Two of these groups occur in Colorado: 1) Frogs and toads, and 2) salamanders. Four species of frogs and toads and one species of salamander are found at Bent's Old Fort.

Amphibians are ectotherms, acquiring body heat from their surrounding environment. They have moist skin with mucous glands that are often poisonous.

Amphibians in Colorado experience temperature extremes: freezing-cold winters and scorching-hot summers. They cope in a variety of ways, including seeking microenvironments (such as underground burrows) that protect against harsh outside temperatures.

Woodhouse's toads have a light stripe down their back and parallel cranial crests (little ridges) between their eyes. They are widespread and often encountered at Bent's Old Fort.

Many species of amphibians have distinctive calls. The visitor is likely to hear chorus frogs calling in the wetlands around Bent's Old Fort in the spring. The call of the chorus frog has been compared to the sound of running a finger over the teeth of a comb!

Tiger salamanders are abundant in Colorado but are generally more secretive than frogs and don't vocalize. Tiger salamanders are sometimes found in the irrigation ditches at the fort.

Turtles

Turtles carry their home on their back in the form of a shell, a bony structure made of hardened skin usually covered by horny plates. The ribs are incorporated into this shell.

There are five species of turtle in Colorado, and three have been documented at Bent's Old Fort. Turtles eat a variety of plants and animals, but in Colorado they feed primarily on invertebrates and other animal matter.

The spiny softshell turtle has a flattened shell with flexible edges. The forefoot has 3 claws. This turtle is sensitive to disturbance of nesting areas through land-use changes or the presence of humans during the nesting season.

The snapping turtle spends most of its time underwater. The rear edge of the shell is sawtoothed and, in juveniles, the shell has three ridges that smooth as the turtle ages. Snapping turtles are a small-game species (with a license) in Colorado.

The Ornate box turtle, observed but not officially documented at the fort, has a hard, domed shell with yellow spots or streaks. The shell is hinged in adults allowing the turtle to completely shut itself up in a "box". This species is locally common in portions of the Arkansas River. Ornate box turtles are listed as a CITES* Appendix II species meaning that trade in these turtles is strictly controlled.

*Convention on International Trade in Endangered Species of Flora and Fauna.

Spiny softshell turtle.



Juvenile snapping turtle.
Photos by D. Troyer.

"There are 5 different varieties of the terrapin or turtle."

—Lt. James W. Abert, U.S. Army, 4 September 1846,
at Bent's Old Fort.

Lizards

"The day was extremely windy, the road dusty, the country around sterile. The sage, greasebush, and yucca linearifolia among the plants, and the horned frog with the hare and antelope, were the only objects I noticed."

—Lt. James W. Abert, U.S. Army, 10 September 1846,
one day west of Bent's Old Fort.



Great plains skink.
Photo by C. Schwalbe.



Six-lined racerunner.
Photo by G.A. Hammerson



Texas horned lizard. Photo by C.W. Brown.

All lizards in Colorado have a long tail. In many species the tail is detachable, providing the animal with an escape mechanism when attacked. The detached tail continues to wriggle while the owner flees. All Colorado lizards depend on insects as their main food source. Four of the 19 species that occur in Colorado have been documented at Bent's Old Fort.

The Great Plains skink has smooth, shiny, tightly overlapping scales with rounded, dark edges. It is a secretive species but is fairly common throughout its historic range in Colorado, and is often found under rocks, logs, and other ground debris.

The six-lined racerunner lives up to its name, moving up to 29 km (18 miles) per hour when approached. It has three pale stripes along each side and small granular scales. The neck and shoulders of adults are often bright green. They are locally common in eastern Colorado.

Texas horned lizards (likely the subject of the quote above) are found at Bent's Old Fort but are secretive. These lizards are recognizable by their wide and flattened body and characteristic spines on the back of their head. While fairly common in their historic range in Colorado, collecting poses a threat to this species.

Snakes

Snakes are long, slender, legless reptiles. They have unblinking eyes and move forward by undulating from side to side. Snakes are carnivorous and swallow prey whole. After eating, snakes generally rest, seeking sites where they can stay warm and digest their meal. There are 26 species of snake in Colorado and 10 have been documented at Bent's Old Fort.

The plains garter snake has pale stripes on the sides of the body and a bold orange stripe along its back. This snake is generally found in the vicinity of water in eastern Colorado and its diet includes earthworms and amphibian larvae.

The prairie rattlesnake is easily identifiable by the horny rattle at the tip of its tail. Although it occupies most of its historic range in Colorado, persecution by humans is a threat to this snake.

The bullsnake (front cover) is often encountered and is widespread in Colorado. Bullsnakes eat rodents and are highly beneficial to farmers and ranchers.



Western terrestrial garter snake eating vole. Photo by E. Muths.



Plains garter snake and Prairie rattlesnake.
Photos by D. Troyer.

"One of these Indians possesses an antidote for the poison of the "she-she-note" or rattlesnake and has frequently brought them [snakes] into the Fort... Whenever anyone is bitten he spits this juice on the wound and they get well."

—Lt. James W. Abert, U.S. Army, 2 September 1846,
at Bent's Old Fort.

Amphibians, Reptiles, and Conservation

Amphibians and reptiles are two groups of animals that are experiencing unprecedented declines around the world. Serious declines have been noted in the United States (for example, Drost and Fellers, 1996) and even in Colorado (Muths and others, 2003).

Although most of the species at Bent's Old Fort National Historic Site are not threatened or endangered, their local range and abundance have likely declined since settlers arrived and began the massive conversion of native prairie to agricultural lands. The destruction of habitat is arguably the most common cause of population decline worldwide (Lannoo, 2005) and has likely affected the herpetofauna at Bent's Old Fort.

Accounts of nearly all the species occurring around this site note that human activity has had a negative impact on population sizes (Hammerson, 1999). The magnitude of the effect is unknown because there is no information on the presence or abundance of amphibians in Colorado prior to 1833.

Small parks, such as Bent's Old Fort National Historic Site, often act as important reservoirs of safe habitat and may play important roles in the conservation of amphibians and reptiles across the landscape.

Of the animals known to be present at Bent's Old Fort, Texas horned lizards may be the most vulnerable, primarily because humans often capture them and take them home as pets. This is illegal throughout Colorado without appropriate permits!

Drost, C.A., and Fellers, G.M., 1996, Collapse of a regional frog fauna in the Yosemite area of the California Sierra Nevada, USA. *Conservation Biology* v. 10 p. 414-425.

Hammerson, G.A., 1999, *Amphibians and reptiles in Colorado*, 2nd edition, University Press of Colorado and Colorado Division of Wildlife.

Lannoo, M. 2005. *Amphibian Declines, The Conservation Status of United States Species*. University of California Press, Berkeley.

Muths, E., Corn, P.S., Pessier, A., and Green, D.E., 2003, Evidence for disease-related amphibian decline in Colorado. *Biological Conservation* v. 110 p. 357-365.

For more information on:

The herpetofauna of Bent's Old Fort -

<http://www.nps.gov/beol/naturescience/animals.htm>

Amphibian decline - <http://armi.usgs.gov/>

Amphibian calls - "*Sounds of North America Frogs*"

Charles M. Bogert, 1998 Smithsonian Folkways Recordings, SFCD 45060

