Herpetofauna of the MNRR

Turtles

Order: Testudines

Family: Emydidae

False Map Turtle (Graptemys pseudogeographica)
The most common hard shelled turtle found inhabiting the main channel of the MNRR it can often be seen basking on large woody debris and occasionally on shoreline rip rap. There is a distinct sexual dimorphism in this species with adult males being 1.50-1.74 smaller than adult females (male carapace length up to 15 cm, females up to 27 cm). Adult males of this species have long, thick tails, with the vent posterior to the rim of the shell, and elongated front claws. The carapace is olive to brown with yellow and oval markings and dark blotches throughout. Additionally, the shell has obvious serrations along the posterior rim of the carapace and a distinct medial keel along the back bearing conspicuous low spines. Skin is olive to brown, with many yellow stripes on the legs, tail, chin, and neck. The small postorbital mark is variable and usually consists of a narrow downward extension of a neck stripe behind the eye which allows four to seven neck stripes to contact the orbit of the eye. False map turtles are primarily found in large rivers and their backwaters, but also may occupy lakes, ponds, sloughs, bayous, oxbows and smaller tributaries. In our area turtles enter into hibernation in late October and do not emerge until early to mid-April. Mating takes place in April and then again in October and November. Females lay one to two clutches of eggs from mid-May to late July. Clutch size ranges from 8-22 eggs in this species. Females dig a flask-shaped nest cavity (10-16 cm deep) in open sand areas or in areas dominated with low lying vegetation. The sex of hatchlings in temperature dependent with eggs incubated at 25°C or lower producing males and eggs incubated at 30°C or higher producing primarily females. False map turtles are generalist omnivores that will feed on mollusks, insects, carrion, and vegetation. Due to populations being limited to the Missouri River watershed this species is currently protected as a state threatened species.
Adult Female
Adult Male
South Dakota
Nebraska

Western Box Turtle (*Terrapene ornata*)

Western box turtles are primarily terrestrial. The plastron is hinged and each scute is adorned with a pattern of radiating light lines. The carapace which may reach up to 15.4 cm in length is typically oval and high domed. The carapace is dark brown to reddish brown and commonly has a yellow dorsal stripe running down the center of the shell and a pattern of conspicuous radiating light lines on each scute. The skin is dark brown with yellow spotting. Adult males have a red iris whereas in females it is yellowish brown. Additionally, in males, the first toe of the hind foot is thickened, widened, and turned in. Western box turtles are typically a prairie turtle, inhabiting treeless, sandy plains and gently rolling country with grasses and low lying vegetation. However, it may enter wooded areas particularly along rivers and streams. Typically, western box turtles are active from March to September. Courtship and mating are most common in the spring, soon after emergence from hibernation, but may also occur in the summer and fall. Nesting occurs from early May to mid-July and is most frequent in June. Clutches range from two to eight ellipsoidal eggs. Under normal conditions *Terrapene ornata* is chiefly carnivorous feeding almost exclusively on insects (beetles, grasshopper, caterpillars) but will also feed on carrion and fruit when it is available.
Western Painted Turtle (*Chrysemys pictabelli*)

There are four recognized subspecies of painted turtle. The western painted turtle is present in our area. Its carapace lacks posterior serrations and is smooth, oval, flattened and keelless. The carapace is typically black or olive in coloration with yellow or red borders along the seams and red bars or crescents on the marginals. The yellow plastron may or may not have a black or reddish brown-brown blotch of varying size and shape. The skin is black to olive and the neck, legs and tail are striped in yellow and red. Compared to females, males have elongated foreclaws and long, thick tails, with the vent opening posterior to the carapacial margin. Western painted turtles prefer slow-moving shallow water such as that found in ponds, marshes, lakes, sloughs, oxbows, and backwater habitats. Areas with a soft bottom with numerous basking sites and aquatic vegetation are preferred. Painted turtles are active from late March into October. Courtship and mating occur in March to mid-June. Nesting typically occurs from late May through mid-July. Nests are typically dug within 200 meters of water and are placed in loamy or sandy soil. Clutch size ranges from 1 to 23 eggs. Painted turtle eggs are elliptical, cream to white in color, and have smooth, slightly pitted surfaces. Painted turtles are omnivorous generalists and will feed on most species of plants and animals if the opportunity arises.
South Dakota

Nebraska

Legend:
- Red: Present
- Gray: Absent
- Black: Rivers
- Yellow: County Line

Distribution Map
Family: Chelydridae

Snapping Turtle (*Chelydra serpentina*)
The snapping turtle is a large freshwater turtle with a highly serrated posterior shell. The carapace has three rows of small keels and varies from brown, tan, or olive to black in color. Additionally, each scute often has a pattern of radiating lines. The bridge is short (10% or less of plastron length) and plastron is “X” shaped and yellow in color. The tail is long and has noticeable saw-toothed scales. Adults measure 7 to 18 inches in carapace length and weigh an average of 12.8 pounds. The head is speckled with small black streaks and large tubercles cover the neck. Snapping turtles are habitat generalists and can be found in almost every kind of freshwater habitat within its range. It prefers slow-moving water with a soft mud or sand bottom and abundant aquatic vegetation or an abundance of submerged woody debris. Snapping turtles spend most of their time buried in the mud in shallow water or lying on the bottom of deep pools of water. Mating occurs from April to November. Over most of its North American range, *Chelydra serpentina* has a three week nesting period between 15 May and 15 June. However, in South Dakota oviposition may occur slightly later and continue into late June. The total number of eggs within a clutch can be as low as 6 or as high as 104. Nests are bowl shaped and range from 7 to 18 cm in depth. Nests are typically dug in sand or loose soil but may be placed along roadsides or other areas when more favorable conditions are unavailable. Natural incubation can take 55-125 days, but on average takes 75-95 days. Hatchlings sex is temperature-dependent with higher temperatures producing males (23-24°C) and lower temperatures producing only females (20°C). Snapping turtles are omnivorous, essentially eating anything that makes its way into its jaws. It eats insects, spiders, leeches, frogs and toads, fish, salamanders, other turtles, snakes, birds, and small mammals.
South Dakota

![Map of South Dakota showing distribution areas.]

Nebraska

![Map of Nebraska with colored areas indicating presence or absence of a species.]

Legend:
- Red: Present
- Gray: Absent
- Black: Rivers
- Yellow: County Line
Family: Trionychidae

Smooth Softshell (Apalone mutica)

*Apalone mutica* is a medium-sized to large turtle (carapace length to 17.8 cm in males, 35.6 cm in females) with a round, flat, leathery shell which lacks spines or raised knobs. This species displays sexual dimorphism with adult males being much smaller than adult females. The carapace is olive to brown, with a pattern of darker dots, dashes, or blotches. The plastron is white or gray in color. The head, neck, and limbs are olive to tan above and white to gray below. A black-bordered, light line extends through the eye and onto the neck. The nostrils lack a septal ridge that is present in other North American softshell turtles (see spiny softshell). The limbs are typically patternless and the feet are equipped with large webs between each digit. Adult males retain the juvenile carapacial pattern of dark dashes whereas, upon reaching adulthood, females develop a mottled or blotched carapacial pattern. Smooth softshells occur in large rivers and streams with moderate to fast currents. Waterways with sandy bottoms and rocks are preferred. Within the Missouri National Recreation River this species can often be spotted basking along flat sandy banks. These turtles are very wary and often enter the water quickly when danger approaches. Mating occurs after emergence from hibernation in April-June, August, and possibly September. The nesting season encompasses late May through early July with nests typically being excavated on the high ridges of exposed sandbars. Nests range from 15-30 cm in depth. Eggs are ovid to spherical in shape and have thick brittle, white shells. Clutches range from 1-33 eggs in size. The incubation period is 65-77 days with emergence of hatchlings taking place in August or early September. Smooth softshells are insectivorous but will also take other small animals when the opportunity presents itself. Prey taken includes snails, crayfish, spiders, clams, isopods, aquatic insects, fish, tadpoles and adult frogs, young birds, small mammals, algae, elm and cottonwood seeds, and mulberries.
Adult male (left), Adult female (right)

Male (left) and Female (right) smooth softshell

South Dakota
Spiny Softshell (*Apalone spinifera*)

*Apalone spinifera* is a medium-sized to large (males to 21.6 cm, females to 54.0 cm carapace length) turtle with a flat, round, keeless, leathery carapace. Conical, spiny projections are present along the anterior edge of the carapace and its surface is roughened like sandpaper. The carapace is olive green in color with a pattern of black ocelli or dark blotches. Additionally, along the edge of the carapace is a marginal dark line. The plastron is white to yellow in color. The head and limbs are olive to gray, with a pattern of dark spots and streaks. Two dark-bordered, light stripes are found on each side of the head. One stripe extends backward from the eyes whereas the other extends backward from the angle of the jaw. The snout of the spiny is softshell is tubular with large nostrils each of which contains a septal ridge. Spiny softshells are primarily a riverine species, but may also inhabit marshy creeks, oxbows, lakes, and impoundments. A soft bottom with some aquatic vegetation is preferred. Mating occurs in April or May. The nesting season may begin as early as May and last to August. However, June and July are typically the primary months for oviposition. Nests are typically dug in sand or gravel bars adjacent to water. Nests are flask shaped and 10-25 cm in depth. Female clutch sizes range from 4-39 eggs, with 12-18 being common. The eggs are white, brittle, and spherical in shape. Incubation varies with temperature but commonly takes 82-84 days. Hatchlings normally emerge from late August to October. The spiny softshell is predominantly carnivorous. Prey taken include insects, fish, amphibians and crayfish.
Spiny projections along anterior edge of carapace
Septal ridges (Above and below)
Herpetofauna of the MNRR

Snakes

Order: Squamata
Family: Colubridae

Eastern Hog-nosed Snake (*Heterodon platirhinos*)

Adult eastern hog-nosed snakes average 20-33 inches in length and are typically larger than western hog-nosed snakes. Scale coloration varies and may be yellow, orange, reddish-brown, olive, or dark grey. Eastern hog-nosed snakes select open wooded areas near water, sandy plains near major rivers, old fields, and grasslands. These snakes are active from April to October with mating taking place between April and May followed by deposition of an average of 22 eggs in mid- to late summer. When threatened it will often spread and flatten its neck in attempt ot fend off predators. Due to this behavior it is often nicknamed a “spreading adder” or “puff adder”. Eastern hognose snakes are toad specialists but will also feed on frogs and occasionally lizards. They possess enlarged posterior teeth which allow them to puncture and deflate toads which typically balloon their bodies to make themselves too large to swallow. This species can be distinguished from the western hog-nosed snake using snout appearance and the coloration of the snakes tail and belly. The eastern hog-nosed snake has an indistinctly-upturned snout and a dark underside with the tail being much lighter than the belly. This species is listed as state threatened in South Dakota.
The snout is less obviously upturned than that of the Western Hog-nosed Snake.
Adult western hog-nosed snakes measure 15 to 25 inches in length from snout to tail. The snake has a pale yellowish-brown body with three rows of dark brown or olive spots extending from head to tail. Western hog-nosed snakes range throughout the central plains of the United States and southern Canada. The western hog-nosed snake inhabits short- and mixed-grass western Great Plains prairie that has at least seasonal water, gravelly or sandy soil which allows burrowing, and leaf litter or adequate ground cover for shelter and foraging. These snakes are active from May to September with breeding occurring between April and May. Eggs are laid approximately one month after copulation. The female lays an average of nine eggs which will hatch in two to three months time. The western hog-nosed snake feeds primarily on toads but will also eat other amphibians, lizards, small mammals, and ground-nesting birds. The western hog-nosed snake can be distinguished from the eastern hog-nosed snake based on the upturning of the snout and belly and tail coloration. The snout of the western hog-nosed snake is sharply upturned and shovel-like whereas this is not the case in the eastern hog-
nosed snake. Additionally, the belly and tail of the western hog-nosed snake are uniformly black.

Photo by Suzanne L. Collins

The snout is more strongly upturned than that of the Eastern Hog-nosed Snake.
Plains Garter Snake (*Thamnophis radix*)

Adult plains gartersnakes measure 15 to 28 inches in length for snout to tail. One bright yellow to orange line runs down the spine, and a single pale yellow line runs along each side. The belly ranges in color from whitish to pale green and the edges have dark markings. This species typically inhabits grassy or shrubby areas bordering wetlands and rivers but may range relatively far from water. These snakes are commonly found within habitats along the Missouri National Recreational River. Plains gartersnakes are typically active from mid-April to November. Mating usually occurs in the spring from mid-April to late May but may also occur in the fall. If mating occurs in the fall, females are actually able to delay fertilization until the following spring. Females bear on average 25 live young in late August or early September. This species often dens communally in abandoned mammal burrows, ant mounds, and building foundations. Their diet is diverse and consists of amphibians, insects, small mammals and earthworms. Plains gartersnakes can be distinguished from the common gartersnake based on this species lack of red checkered coloration and the orange tint of the central dorsal stripe.
South Dakota
Nebraska Common Gartersnake (Thamnophis sirtalis)

Adult common gartersnakes range from 16 to 26 inches in length from snout to tail. Common gartersnakes are dark olive to dark brown with a gray to green belly. This species has one bright yellow stripe down the back and one sharply-edged yellow, orange green or blue line along each of the sides. Between each line are alternating black spots over a reddish background. This characteristic reddish background helps to distinguish this species from the plains gartersnake. Common gartersnakes are abundant along all portions of the Missouri National Recreational River and can sometimes be found swimming across the main channel itself. They are found in a variety of habitats such as wetland, streams, ponds and rivers. This species is active from April to November with mating occurring in early spring and in some cases fall. Females give live birth to an average of 20 young in late summer and early fall. Overwintering takes place in animal burrows and rock crevices. The diet of common gartersnakes is varies and consists of amphibians, earthworms, insects, fish and occasionally small mammals.
Gophersnake (*Pituophis catenifer*)

South Dakota

[Map of South Dakota with distribution indicated]

Nebraska

[Map of Nebraska with presence indicated]

*Photo by Suzanne L. Collins*
Gophersnakes are also commonly referred to as bullsnakes. Adults range from 37 to 76 inches in length from snout to tail. The yellowish to white back is covered with dark brown rectangular spots that alternate with blotches laterally. Gophersnakes are common throughout much of the central and western United States. The subspecies found in are area is the bullsnake (*P. c. sayi*). Typically, this species inhabits grasslands but they also can be found in woodland areas and river bluffs. Gophersnakes are active from May to September with mating taking place in May. After two to three months the female lays an average of 13 eggs in loose sandy soil. Eggs hatch within two to three months. Gophersnakes are constrictors and feed primarily on burrowing rodents, especially pocket gophers and ground squirrels.
Nebraska

Ring-Necked Snake (Diadophis punctatus)

Adult ring-necked snakes measure 10 to 14 inches from snout to tail. They have a distinct yellow-orange ring, bordered in black, which stretches around the neck and occasionally may be interrupted. They are generally reddish brown to brownish black with a black mottled, bright orange to yellow belly. The underside of the tail is a distinctive bright red. They are primarily associated with woodlands and prairie hillsides along the Missouri River. Ring-Necked Snakes are primarily active during the evening hours. They are active between April to October with mating taking place in early spring. The female lays two to eight eggs in June or July in moist soil or rotting logs. Ring-necked snakes feed mainly on earthworms and slugs but will also take ground skinks, smaller snakes and newly metamorphosed frogs.
South Dakota

[Map of South Dakota with documented locations and distribution]

Nebraska

[Map of Nebraska with presence and absence indicated]
**Racer (Coluber constrictor)**

Adult racers generally measure between 30 to 54 inches from snout to tail. Young snakes have a pale white ground color with chestnut to black blotches on their back, sides and belly. They begin to lose this coloration during the second year of life at a length of 16-18 inches. Adult coloration is complete at the end of their third year. Adults have an unmarked blue-gray-green color above and a bright yellow belly below. Racers are active from May to October with mating occurring between May and June. Females lay 8 to 21 eggs in the soil or beneath logs. Eggs hatch within 2 to three months. Racers do not constrict their prey but instead swallow it whole. Racers feed on small mammals, insects, birds, other snakes, and amphibians.

**Adult**

*Photo by Suzzane L. Collins*

**Neonate**

*Photo by Suzzane L. Collins*
Western Foxsnake (*Elaphe vulpine*)

Adults range from 3 to 5 feet in length from snout to tail. They have a yellowish brown back mottled with dark brown blotches. The yellowish-white belly is speckled with black rectangular blotches. This species may be confused with the gophersnake but can be distinguished by the divided anal plate and a lack of strongly keeled scales. The western foxsnake is found in open woodland, prairie, hayfields and pastures. Foxsnakes are active from April to October with mating occurring in early spring. Females lay 8 to 27 eggs which hatch in 2 to 3 months. Foxsnakes kill their prey via constriction. Prey includes rodents, nestling birds, insects, lizards, frogs and salamanders.
Prairie Rattlesnake (Crotalus viridis)

The subspecies found in our area is *C. v. viridis*. Adult prairie rattlesnakes measure 35 to 54 inches in length from snout to tail. The head and body are greenish gray to brown and the belly grayish yellow to creamy white. They have 35 to 55 oval brown blotches bordered by white across the back. The triangular head has a pale white stripe extending from behind each eye and reaching to each corner of the mouth. Heat sensitive pits allow these vipers to detect and ambush prey in complete darkness at up to one foot away. Prairie rattlesnakes are venomous and have an average venom capacity of 35 to 110 mg. Overall, rattlesnake bites are rare in the United States, and fatalities due to snake bites are even rarer. Ninety-five percent of the reported snakebite deaths in the United States are caused by western and eastern diamondback rattlesnakes which can deliver 175 to 600 mg of venom. Prairie rattlesnakes inhabit rocky bluffs and buttes, open prairies and grasslands, and sloped talus. They can also be found in habitats along creeks and rivers. Prairie rattlesnakes are active from April to October with mating occurring in spring or fall. Females produce young every other year and give birth to 8 to 17 young in August or September. Prairie rattlesnakes prey primarily on rodents such as mice, ground squirrels, and prairie dogs. However, they will also eat rabbits, ground-nesting birds, and lizards.