

Spiny Softshell (*Apalone spinifera*)

Family Trionychidae

Subspecies: Northern Spiny Softshell (*Apalone spinifera spinifera*)

Updated 2025



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Description/Identification: The Spiny Softshell is a large, highly aquatic turtle, and one of two Softshell species in Wisconsin. Unlike most other North American turtles, Softshells lack hardened, bony keratinized shells, instead having smooth, flattened, and cartilaginous or leathery round or oval shaped carapaces hence lending to their common names of “Softshells”. The fore and hind feet are highly webbed, and Softshells also possess a long, tube-like or snorkel-like snouts, very long necks (when fully outstretched), and hardened, bony, sharp-edged jaws covered in large, fleshy lips. Several differences help to differentiate the Spiny Softshell from their look-alike species in Wisconsin, the Smooth Softshell (*Apalone mutica*).

The nasal septa possess horizontal ridges (unlike in the in the Smooth Softshell), the anterior margin of the carapace is normally prominently lined with spines or tubercles, much more so than on Smooth Softshells. Spiny Softshells are noticeably dimorphic in size between males and females, with the males being much smaller. Adult males average between about 4.3 and 7.8 inches in carapace length, rarely exceeding this size. Female Spiny Softshells, on the other hand, reach much larger sizes on average between 6.6 to 18.9 inches, also making Spiny Softshells much larger than Smooth Softshells. Males also have longer, thicker tails, with the cloacal openings closer to the tips of the tails than females, which have comparatively shorter tails and cloacas closer to their plastrons. Males also have rougher, or more sandpapery textured carapaces, while female’s carapaces are usually smooth, except for the spiny tubercles.

The carapace ranges in ground color from green, olive-green, to brown, with small dark, roundish spots and ocelli grading into larger ocelli towards the center of the carapace. Adult females lose this patterning with maturity, and instead have much larger, darker spots, blotches or ocelli towards the center of the carapace. The plastrons of both sexes are usually a shiny white or pinkish, often with darker areas of

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underlying bone being visible. The plastrons are also somewhat reduced, and are surrounded by the thick, fleshy skin around the fore and hind limbs. The head, feet, and limbs are usually a brown to olive-green in ground color, marked strongly with yellow-green streaks on the feet and limbs, and are interspersed with black speckling. Hatchlings and juvenile Spiny Softshells are similar in color and pattern to the adult males.

As with most turtles, Spiny Softshell turtles are toothless, and instead have hardened, bony, keratinized beaks and horny plates along the maxilla and premaxillae on the inside of the mouth which are covered by their thick, fleshy lips. Also as with most aquatic turtles, the reddish to pinkish tongue is triangular to somewhat rounded, and fixed to the inside of the mouth, and does not move freely or protrude outside of the mouth.



Plastron, © Kimberley Collette Micallef

Two, greenish-yellow black bordered stripes run alongside each side of the head and neck, and the neck, when outstretched, is very long, slender, and snake-like. These stripes may be obscured on older turtles. The presence of two, yellowish-green stripes on the head and neck when compared to one, peach colored stripe also distinguish the spiny from Smooth Softshells. In Wisconsin, the Northern Spiny Softshell (*A. s. spinifera*) is the one subspecies which occurs.



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Range and Distribution: Spiny Softshells have a large and broad range, from isolated, or disjunct populations in the western United States from Montana, New Mexico, Arizona, California, Nevada, and Utah, to being much more broadly distributed in the eastern U.S., through northeastern Mexico, Texas, the Great Plains States, and all the way east to the Carolinas, southern Ontario and Quebec, Canada, and eastern and northeastern U.S. in introduced, disjunct populations. In Wisconsin, Spiny Softshells are the more common and widely distributed Softshell species, being found in most of the larger lakes and

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riverways statewide throughout most of the state, except the Door County peninsula and perhaps northern-most edges of the state.

Habitat: Spiny Softshells are primarily river turtles, and can be common in most of the mid-sized to larger riverway systems throughout much of Wisconsin including the Mississippi, Wisconsin, Black, Chippewa, Yahara, Fox, and other riverways in the state. They will also inhabit large lakes, flowages, or the larger stream-fed ponds, but are rarely found in more temporary ponds, wetlands, or marshes. Spiny Softshells are most common along sandy or muddy bottoms, and less common in areas with rocky bottoms or denser aquatic vegetation. They are also much less likely to be found in polluted waters or waters with poorer oxygen levels.

Feeding and Diet: Spiny Softshells are carnivorous, and will feed on a variety of aquatic crustaceans, insects and their larvae, aquatic mollusks, and small fish and amphibians. Softshells forage for food along the bottoms, using their heads and long necks to search for prey items. Their labial glands along their upper jawlines are believed to be their primary means of locating food, or prey items. It is sometimes still erroneously believed that Softshells have negative impacts on game or other fish populations, although it is unlikely that they consume enough game fish for this to be true.

Natural History: Spiny Softshells emerge from overwintering later in the year than many other turtles, and where mating and copulation take place shortly after emerging. From early June through mid-July, females will then lay eggs on sandbars or sand-banks, usually within 100 meters of the water, and will use their powerful hind feet to dig their nests. About 15 to 30 round, brittle “ping pong” ball-like eggs are rapidly deposited, covered, and then the nesting females quickly retreat back into the water afterwards.

The hatchlings begin to emerge by late August or early September, and appear similar to the adult males, but have more upturned edges of their carapaces and more upturned snouts. In some cases, overwintering in their nests can also take place. Spiny Softshells are very wary turtles, seldom being found on land very far from water, where they will quickly run or dive back towards, or into the water when approached, making them difficult to approach closely. If captured or handled, Spiny Softshells can also be much more pugnacious than Smooth Softshells, readily using their powerful feet and claws to kick, while also using their sharply edged jaws or beaks and very long necks to attempt to bite. This makes handling large Spiny Softshells a difficult and challenging task, along with their smooth and slippery shells.

Softshells of both species are also well-known for their habits of lying buried beneath the sand in shallow water, enough for them to use their high-set eyes and long necks to surface periodically for air. Softshells can remain underwater in this state for up to 5 or more hours at a time, relying on breathing through their cloacas and/or pharynxes. Blood vessels along their inner surface of their throats and cloacas enable them to allow for dissolved oxygen exchange with the water. Both species of Softshells are still hunted and exploited for their meats through turtle trapping, and overharvesting is another

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conservation threat facing these turtles. Spiny Softshells may remain active throughout the year until October or November, where they will then bury themselves under the sandy bottoms, or within sandy riverbanks as overwintering locations.

Spiny Softshell turtle eggs and hatchlings are most susceptible to a large number of different predators. Many different species of birds, including large wading birds, large fish, snakes, sometimes other turtles, large amphibians such as North American Bullfrogs, large predatory or carnivorous aquatic invertebrates such as waterbugs, and a wide array of carnivorous mammals such as raccoons, opossums, skunks weasels, skunks, foxes, and coyotes and otters will all readily eat hatchling turtles or turtle eggs. Adult Spiny Softshell turtles have relatively few natural predators, apart from humans and some other aquatic carnivorous mammals such as otters.

Conservation Status: In Wisconsin, Spiny Softshells are listed as “Common”. They are still regulated and protected along with all other of Wisconsin’s herptiles, as well under N.R. 16 and 19.275 as well as N.R. 21 and 22.. Spiny Softshells are currently not protected or regulated federally. Spiny Softshells are currently IUCN Red-List Least Concern (LC).