



Northwestern Pond Turtle

Actinemys marmorata

General Description

They may be slow. They may seem clumsy (on land). But turtles have survived the ages with unique adaptations, like wintering in the muddy bottom of a pond! These ancient reptiles evolved across the globe for over 200 million years into (largely freshwater) turtles, land-dwelling tortoises, and ocean-faring sea turtles that form the turtle order, Testudines.

One of the West Coast's three native freshwater turtles, the northwestern pond turtle (*Actinemys marmorata*) is a medium-sized turtle (up to 20 cm [8 in] long) with webbed feet for swimming. Dark flecks and streaks cover its olive to brown-black shell (carapace), and dark blotches paint its yellowish belly plate (plastron). Its dark facial skin lacks the broad red-orange stripe behind each eye of a close competitor, the nonnative, invasive red-eared slider (*Trachemys scripta elegans*). And its neck and legs lack the yellow, orange, and red markings of the West Coast's other native freshwater turtle, the western painted turtle (*Chrysemys picta bellii*). Once considered a single, widespread species, the western pond turtle was recently recognized as two distinct species—northwestern and southwestern (*Actinemys pallida*). It also goes by Pacific pond or mud turtle.

Habitat and Distribution

The northwestern pond turtle ranges from central California north into Washington, with an outlying population in Nevada. Being semi-aquatic, these turtles spend most of their lives in ponds, lakes, streams, rivers, marshes, and wetlands. Their watery homes need protruding logs or rocks on which to bask in the sun, as well as underwater shelter for protection, such as undercut banks, logs, and dense aquatic plants. For nesting, overwintering, or aestivating during the hot, dry summer, this turtle needs adjacent open, dry, and relatively undisturbed terrain within 500 m of the water's edge.

Diet and Behavior

Animals and plants are on the menu for this turtle, especially small aquatic invertebrates

(stream bugs), fish, tadpoles, and frogs. Oddly enough, like other aquatic turtles, it can only swallow food underwater. Presumably, the water substitutes for a lack of saliva in the mouth to wash the food down. This means dragging food captured on land back to the water to eat. Turtles forage by sight and smell and can hear low-frequency sounds.

Ectotherms, like turtles, can't easily warm up or cool down from within. This explains basking in the sun. As a bonus, sunshine may kill certain parasites and algae on their shells. To escape extreme heat and dryness in the summer, pond turtles may head onshore and seek cover under soil or leaves in an inactive state known as aestivation. To keep from freezing in the winter, pond turtles can settle into the muddy bottom of a pond or seek cover on land for months in an inactive state known as brumation.

So how do they survive in the mud at the bottom of a pond? First, their heart rate and breathing slow way down to use less oxygen. Then they pull a clever trick known as cutaneous respiration. That means breathing through the skin, particularly the thin tissue around the cloaca—a shared opening for expelling urine, feces, and eggs.

Survival and Reproduction

After mating in late spring, the female pond turtle heads upland to lay her 6 to 10, oval, off-white eggs. She'll urinate on the soil to soften it before digging, and then cover the eggs loosely with vegetation and wet soil to keep the nest moist. She doesn't stick around to care for the eggs, and many nests are raided by predators, like raccoons and skunks. In 3 to 4 months, the eggs hatch. Like most turtles and all crocodilians, the nest temperature during incubation determines hatchling sex. Higher temperatures for pond turtles favor females, to a limit (too hot kills the eggs). Hatchlings in warmer areas may strike for the water right away, while hatchlings in colder areas stay in the nest, living off fat reserves until spring.



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Young pond turtles are typically ready to mate at 8–12 years old. Hatchlings are very vulnerable to predators, like nonnative bullfrogs (*Lithobates catesbeianus*) and invasive fish, like large and smallmouth bass (*Micropterus* sp.). Adults do fall prey to carnivores, like river otters, bears, coyotes, or foxes, but scarred shells attest to some surviving these attacks. Pond turtles can live for decades. One breeding female was at least 55 years old!

Conservation

Turtles that travel between water and uplands are doubly vulnerable to habitat loss, as well as barriers to movement. Much of the northwestern pond turtle's upland habitat has been urbanized or converted to farm fields. Their ponds and streams are changing too, through drought, changes to water quality, and conversion to dry land. These and other factors, like predation, led to the September 2023 proposal to list this species, along with the southwestern pond turtle, as Threatened under the Endangered Species Act.

Efforts to help this species include “head-starting,” where eggs or young are collected from the wild and raised through their most vulnerable early life stage before releasing them. If you have a pet red-eared slider or bullfrog, never release it into the wild.

Where to See

In the Klamath Network, the northwestern pond turtle occurs in Lassen Volcanic NP, Whiskeytown NRA, and Redwood NSP.

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