



A Picta Worth a Thousand Words: Portrait of a Painted Turtle

by Andrew L. Shiels, Nongame and Endangered Species Unit

Painted turtles (*Chrysemys picta*) are among the most common and recognizable turtles that inhabit Pennsylvania's waterways and wetlands. Yet, as common as they are, they are uncommonly attractive. Painted turtles are appropriately named because of the combination of yellow, red, green, black and tan that appears on their shells, head and limbs. Most people who spend time along our waterways have surely seen painted turtles basking on logs or rocks. Painted turtles are found throughout the Commonwealth and across much of North America.

As a species, painted turtles have the largest distribution of any North American turtle. Herpetologists have identified four subspecies of painted turtles. The southern painted turtle (*Chrysemys picta dorsalis*) ranges from the midwestern U.S. through the Mississippi River valley to Texas and Oklahoma. The western painted turtle (*Chrysemys picta bellii*) ranges from the upper midwestern U.S. through the northern portion of the western states, southern Ontario and into British Columbia. Some populations also occur in the southwestern U.S.



Two subspecies, the eastern painted turtle (*Chrysemys picta picta*) and the midland painted turtle (*Chrysemys picta marginata*), are found in Pennsylvania. The eastern painted turtle and the midland painted turtle are very closely related. As subspecies they can and do interbreed to produce offspring. Throughout their shared range, interbreeding produces what is known to biologists as an “intergrade.” Thus, this is a tale of two turtles.

Identification

Identification among species and subspecies requires a brief explanation of turtle shell structure. Turtles have two shells. The top shell is known as the carapace. The bottom shell is the plastron. Both shells consist of individual plates called scutes, which are actually modified scales. Painted turtles have four types of scutes on the carapace. The nuchal scute is a single plate at the front of the shell directly behind the head. The scutes along the top of the carapace

are called vertebrals. They are so named because directly underneath them on the inside of the shell is where the turtle’s vertebrae, or skeletal structure, are attached. Costal scutes are those that are located along the side of the carapace. Finally, the marginal scutes are those that are arranged around the edge of the carapace.



Although the plastron color patterns change as juveniles (smaller turtle) mature into adults (larger turtle), the dark splotches characteristic of midland painted turtles remain.

In identifying painted turtles we need to examine the vertebral and costal scutes. The eastern and midland subspecies can be identified by the alignment of the scutes on the carapace and the pattern or color of the plastron. In the eastern subspecies, the vertebral scutes are aligned with the costal scutes, and the plastron is yellow or tan with no apparent pattern of darker color. The midland subspecies displays a misalignment of the vertebral scutes and the costal scutes as well as a light plastron with a dark blotch in the center. Sometimes the plastron of adult midland painted turtles is a solid dark color. When the subspecies breed, the resulting intergrade usually exhibits combinations of physical characteristics that are present in each of the parents.

Subspecies typically occur as a result of geographic separation of populations. When these populations or subspecies have overlapping ranges, interbreeding tends to dilute the distinctive physical characteristics that led herpetologists to separate them into subspecies. For some time, there has been an apparent range expansion of midland turtles eastward. Especially in the eastern counties of Pennsylvania, turtles encountered in the field are typically intergrades.

Compared to the other turtle species found in Pennsylvania, painted turtles are mid-sized. Carapace lengths in adults can reach nearly 10 inches. But a typical individual five to six years old will be around six to eight inches in length. The leading edges of the vertebral and costal scutes are often bordered in white or tan. They help to separate this species from the Pennsylvania threatened red-bellied turtle (*Pseudemys rubriventris*) that attains much larger sizes at adulthood and has a uniformly dark carapace. The marginal scutes of a painted turtle have red lines or crescent-shaped markings. Bright-yellow stripes and several yellow spots are present along the sides of the head and neck. Painted turtles also have red stripes running length-wise on their legs.

Habitat, life history

Painted turtles prefer wetlands, ponds, lakes, canals and other still or slow waters. Soft or mucky bottoms are preferred to rocks or gravel. Downed trees, logs, rocks, mudflats or exposed banks are usually found where painted turtles live.

Basking in the sun is important for turtles and most reptiles to ensure proper regulation of temperature. Turtles are “poikilothermic,” a term derived from Greek words meaning “variable temperature.” It means that their body temperature is largely governed by the temperature of their surroundings. Basking elevates body temperature and results in an increased metabolic rate to assist in obtaining food and digestion. Elevated body temperatures are also needed to avoid and fight off infections. Therefore, a lack of appropriate basking locations can limit the presence or abundance of painted turtles.

Preferred foods include submergent aquatic vegetation such as pondweed, emergent vegetation in the form of cattail seeds or stalks, and floating plants like duckweed or filamentous algae. Areas of dense aquatic vegetation provide not only a smorgasbord of choices, but also secure cover where the turtles can avoid predation. Although vegetation comprises the majority of their diet, they eat a variety of foods. They are more accurately described as omnivores. True opportunists, they also consume small fish, amphibians, aquatic insects such as damselfly nymphs and dead animal matter that is typically in the form of fish.

Female painted turtles grow larger than males. Females reach sexual maturity at four to five inches and around five or six years of age. Males can reproduce at three to four years of age. As with many other turtle species, the first reproduction of a female is a function of shell length. That is, to develop and store eggs, females need to have a large enough body cavity to allow eggs to be produced, carried and deposited. Nesting occurs from May to July with peak activity in mid-June.

A female can lay between three and 14 eggs on land in a sandy area that she has excavated. The eggs incubate unattended in the soil for 65 to 80 days, depending on the air and soil temperatures. Like some other turtle species, sex of the hatchlings is determined by the temperatures the eggs were exposed to in the nest. Cooler temperatures produce males. Warmer temperatures produce females. In a typical turtle nest, some eggs will be closer to the surface and others may have been laid first and are deeper in the soil. These slight differences in position in the nest produce enough variances in temperature to ensure that both males and females can be produced from the same nest.

Turtle-watching

Unlike songbirds that can be recognized by their calls, seen at feeders or observed through binoculars, most reptiles are not easily observable. Species that have camouflaged coloring or spend much of their time underground or underwater are easily overlooked by the casual observer. However, painted turtles are a species that can dependably be seen by those who know where to look and what to look for.

As mentioned earlier, painted turtles spend significant amounts of time basking in the sun. Basking activity is greatest during the warmest part of the day in the spring and fall, and occasionally during early morning in the summer. A downed tree in a lake, pond or slow-moving river near areas of submerged aquatic vegetation is a prime location to search for painted turtles. In most lakes or ponds, shallow, soft-bottomed areas with a lot of aquatic vegetation occur where the feeder stream enters because of accumulations of soil and sediment. These are prime areas to look for turtles.

Basking turtles are easily spooked, so some stealth is required. One method to get close to basking turtles is simply to walk along the shore until you see turtles basking. Then get as close to the basking site



Side headshot of an adult midland painted turtle. The red and yellow stripes on the neck and the red “squiggles” on the edge of the shell help identify the adult midland painted turtle.



Side headshot of a juvenile midland painted turtle. Midland painted turtles are omnivores. They eat small fish, amphibians, aquatic insects and dead animal matter.



photo-Joe McDonald

as possible without disturbing the turtles. When you get too close, they will slip back into the safety of the water. This is when you will want to find a good vantage point for viewing. Sit down and remain quiet. After 15 or 20 minutes, the turtles will usually climb back onto the log or rock to bask. This works best when the air temperatures are in the 50-degree to 75-degree range. That's when turtles need to spend significant amounts of time in the sun and thus will be more easily seen. Accompanied by a field guide and a good pair of binoculars you may also be able to see and identify other turtle species. Many Commission-owned lakes contain painted turtles and would be excellent places to look for painted turtles.

Even though turtle-watching will probably never rival birdwatching in terms of human participation, it can add variety to the naturalist's outdoor excursions.

Under the fishing and boating regulations, a properly licensed person may collect two painted turtles per day and have a total of two painted turtles in possession. This is lawfully allowed, but we do not necessarily encourage people to collect these turtles. Turtles kept as pets usually soon become ill because of the lack of a proper diet, insufficient heat, or from disease or parasites. Unfortunately, when pet turtles become ill, people often return them to the wild. This is an unwise practice because unhealthy individuals may be released into a healthy wild population, which risks spreading disease. In addition, if a turtle is released into some other area than where it was initially collected, it may not be adapted to survive in its new habitat.

The best way to enjoy our native turtles is to observe them in the wild as they go about their business of being turtles. Indeed, in most cases, it would be better to take a picture than a "picta"! ☐

More Turtle Resources

Midland painted turtle patch. In 2000, the Commission continues its series of nongame species limited-edition patches with a midland painted turtle. Consistent with all patches in this series, only 7,500 midland painted turtle patches have been produced. Patches promote all aspects of nongame species, especially their biology and conservation. The patch becomes available after January 1, 2000. Each sells for \$4.71 plus 29 cents PA state sales tax for a total of \$5.00. Include \$2.00 shipping and handling for each order.



Limited quantities of the 1999 northern leopard frog patch, 1998 copperhead patch and 1997 rainbow darter patch are available. Contact: Educational Media Section, PA Fish & Boat Commission, P.O. Box 67000, Harrisburg, PA 17106-7000.

Pennsylvania Amphibians & Reptiles. Another excellent resource on turtles and Pennsylvania's other reptiles and amphibians is the Commission's book, *Pennsylvania Amphibians & Reptiles*, by Larry L. Shaffer. This 161-page full-color book details information on the characteristics, identification, range, habitat, reproduction and food of Pennsylvania's salamanders, frogs, toads, turtles, lizards and snakes.

The book sells for \$9.43 plus 57 cents PA state sales tax and \$2.00 for shipping and handling (total of \$12 for a book sent to a PA address). Contact the Commission Educational Media Section at the address above.

Turtles wall chart \$.94 plus 6 cents tax and \$2.00 postage. Send order to the PFBC address above.