

## Western Pond Turtle

**The western pond turtle** is one of two native turtle species in Oregon. From a distance the western pond turtle looks uniformly dark green or brown from head to tail. Up close the head and neck are flecked with cream and brown markings. Populations of western pond turtles and their habitats have been declining. As a result, the species is on Oregon's Sensitive Species List.

Turtles are declining because of loss of nesting habitat, loss of hatchling habitat and predation on hatchlings. In the early 20<sup>th</sup> century,



commercial trapping for food and pets reduced turtle populations. Habitat loss from wetland draining, urban development and intensive agriculture has led to reduced distribution and numbers of turtles. Spread of exotic plant species such as Himalayan blackberry and reed canary grass, and fewer floods and fires have reduced the quality and quantity of turtle habitat. Introduction of turtle-eating exotic predators such as bullfrogs, opossums and largemouth bass reduced turtle populations.

Most western pond turtle populations consist primarily of large, old turtles. Few young turtles are surviving to replace the aging adults. Many turtle populations have 20 individuals or less and are separated from each other by several miles, especially those in the Willamette Valley. Isolation of turtle populations is increased by barriers such as roads, development and drained wetlands. As a result, genetic diversity is lost as small turtle populations become inbred.

Private landowners are key to the survival of western pond turtles because most of the best turtle habitat is privately owned. If you have western pond turtles on or near your land, your habitat improvement and management efforts can play a major role in conserving turtles.

### Western Pond Turtle FACTS

#### POPULATION STATUS

- One of two native turtles species in Oregon.
- Declining because of habitat loss and introduction of non-native predators.
- Can be helped by private landowners who provide suitable habitat.

#### HABITAT NEEDS

- Use both land and water throughout the year.
- Key habitat needs to include permanent slow-moving water with both deep and shallow areas, hiding and basking sites, nearby undisturbed nesting habitat, minimal impacts from non-native predators, and travel corridors.

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## A Year in the Life of the Western Pond Turtle

Western pond turtles use both land and water during their life cycle. The turtles spend much of the year in water, living in slow-moving parts of rivers and streams or in ponds, lakes and wetlands. Pond turtles also spend a part of each year in grassy, sunny areas for nesting, and in wooded or brushy thickets for winter hibernation.

**Spring:** Turtles emerge from winter hibernation in spring, then move to wetlands and search for food. Turtles locate their food by sight and smell, and are often seen “cruising” along the bottom or banks of a wetland. They eat small aquatic insects, crustaceans or dead meat. Turtles eat underwater because they are unable to swallow in air. Pond turtles can remain under water 60 minutes or more, but usually rise to the surface every few minutes to breathe.

Turtles often “haul out” and bask in the sun on logs, rocks, banks or floating vegetation, especially in the spring when water temperatures are cool. Turtles are cold-blooded; thus the environment controls their temperature. Turtles can be seen stacking on top of each other or in a line if basking sites are limited. If there are too few basking sites, turtle will exhibit aggressive behavior that may include an open mouthed gesture, lunging or biting.

**Summer:** Pond turtles can lay eggs after they are 10-12 years old, or greater than 6 inches long. Larger turtles carry more eggs, while smaller turtles may carry only one. The average number of eggs is eight. When the female is ready to lay her eggs in June or July, she empties her bladder onto the ground, then digs a nest with her hind legs in the moistened, loose soil. The completed nest takes about 10 hours to dig and is pear-shaped, 4 inches deep and 1 inch wide. When the nest is complete, the female deposits the eggs, then kneads the vegetation and soil in to the neck of the nest to form a plug. The female returns to the water and the eggs are incubated by the summer sun. Short, sparse grass or weeds on south-facing slopes are important to nest success.

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**Fall:** The eggs hatch in September and October (about 75 days) in warm, sunny weather, or as much as 125 days in cool weather or shady conditions. If the eggs don't get enough warmth, they may not hatch at all. The fully formed turtles survive on the yolk sac which they slowly absorb as they grow. When the temperatures drop in the fall, the hatchlings enter a state of hibernation in the nest. The hatchlings emerge, then travel to water. Because the hatchlings stay in the nest for almost one year, the key to their survival is an undisturbed nest from early summer through the following spring.

Hatchlings leave the nest when they are about the size of a quarter, and will live in shallow water, hiding among vegetation, to avoid predators like bullfrogs, herons and fish. It takes two or three years for them to grow large enough (about 3 inches long) that most predators can't eat them. Adult female offspring may return to their home nest area to lay their eggs.

**Winter:** During winter, turtles hibernate in mud at the bottom of ponds, or buried on land in duff, the top layer of vegetation and soil. Some turtles travel more than a half mile to winter on land.

## Habitat Assessment

The most important habitats for western pond turtles are:

- Permanent water bodies with slow moving waters for foraging;
- Shallow, near shore waters with aquatic vegetation for hatchlings to hide from predators;
- Nearby, accessible, undisturbed upland sites with sparse vegetation and south-facing slopes for nests;
- Aquatic basking sites for temperature regulation; and
- Corridors such as streams, rivers and riparian areas that allow movement between populations.

You can help the western pond turtle by considering by considering the following five habitat elements to determine the suitability of your land as habitat:

- **Water body:** A permanent body of still or slow moving water with emergent and submergent aquatic vegetation, limited chemical application runoff. Both shallow and deep areas will provide suitable habitat for turtles. Sizes of permanent wetlands range from small ¼ - acre sites to hundreds of acres. Small ponds that dry in the summer may be used seasonally by turtles. However, ponds are most effective when located near other ponds or streams.
- **Hiding and basking sites:** Habitat quality increases as the number of basking sites, especially those with underwater cover, increase. In addition to logs and rocks, vegetation and stream banks can provide good basing habitat and underwater hiding cover improves habitat quality.
- **Hatchling Habitat:** Hatchlings need shores with gentle gradient and water less than 12 inches deep to survive. At least 25 percent of the edge of water body should contain shallow habitat for hatchlings to regulate their body temperature. Mats of vegetation and other structure are important for cover to hide.
- **Nesting Habitat:** Quality nesting habitat consists of short, grassy or weedy areas in hard, compacted, clay soil on south or southwest-facing slopes. The nests must be undisturbed almost year-round. Nesting areas must be outside winter floodplains and must not contain steep slopes or barriers to travel.
- **Nest and Hatchling predators:**

Raccoons, skunks, opossums, coyotes, red foxes and dogs are turtle nest predators. One individual predator can destroy all of the turtle nests near a water body because predators can detect turtle urine in the nests. Bullfrogs, largemouth and smallmouth bass, river otter, mink and raccoon eat turtle hatchlings in wetlands. The best defense mechanism from predators is to hide, thus extensive shallow water with aquatic vegetation and other hiding cover is critical.

- **Corridors:** Rivers, streams and irrigation canals are safer and quicker routes for turtles than land travel. Turtles may take several days to a few weeks to complete a dispersal or migration, thus food and cover provided by aquatic and riparian vegetation is critical.

## Actions Landowners Can Take to Improve Habitat

You can improve your land for western turtles by:

- Managing water bodies to provide forage, basking and hiding sites;
- Maintaining shallow wetlands for hatchlings;
- Managing uplands to provide nesting habitat; and
- Controlling non-native predators, especially bullfrogs and bass.

**Water body:** Create a water body with different types of Emergent and submergent aquatic vegetation. Restrict chemical application with 30 feet of the water. Place logs or rocks in the water if flow is rapid with few pools. Increase the number of sunny areas along the edge of the pond. Create 2 to 6 foot deep areas throughout the pond.

**Basking/Cover:** Place abundant basking structures with root wads and attached limbs throughout the water body. Establish a diversity of vegetation.

**Hatchling Habitat:** Create a diversity of vegetation and place small root wads or tree branches in shallow areas for hiding cover. Create near-shore habitat less than 12 inches deep if your water body lacks shallow areas. Plant wetland vegetation such as reeds and sedge.

**Existing Nest Areas:** Locate existing nesting areas and protect them. Search for nests within 500 feet of water bodies from May 15 through July 31.

Suitable habitat is any sunny site with short, sparse vegetation on south or southwest-facing aspects. Look for trampled vegetation the size and shape of a turtle, disturbed soil about 2-3 inches long. If you see a turtle nesting, leave immediately and observe from a distance with binoculars. Keep wood vegetation such as blackberry and Scotch broom from encroaching on the nest site. Protect the site from human and animal disturbance.

**Creating Nest Areas:** You can improve existing habitat or create new habitat a number of ways.

- Create a clear visual and travel path between the water and a large sunny spot at least 20 X 20 feet in low grass. Turtles often use existing hiking trails or roads because they are easy to negotiate.
- Mow grass and create bare soils for nesting by hand-pulling, scraping or “spot” applying herbicide in areas 1 to 2 feet across. Import soil that is primarily silt or clay and deposit in mounds 2 to 3 feet high and at least 10 feet wide. Nest mounds can be built on flat ground or on ground that has a slight north or east slope, as long as you create a south-facing slope suitable for nesting.
- Create 5 to 10 foot buffers around nest sites and protect these from grazing and agricultural practices.
- **Predators:** Eliminate or control exotic fish populations in the water body by short-term dewatering, angling and screening of water intake and outflow structures to prevent re-invasion of fish. Be careful to use chemicals aimed at controlling vegetation or animals as these may affect the food turtles need to survive.

- Control bullfrogs by allowing the pond to dry up late in the summer or by removing egg masses, tadpoles and large frogs over 3.5 inches on a yearly basis. Bullfrog eggs are laid in a broad, frothy sheet of “jelly;” they look like poppy seeds scattered on a patch of slime. The egg mass is laid on the water surface in shallow water or on vegetation. Tadpoles are up to 5 inches in length and adult bullfrogs have large eardrums with a ridge or groove. Juvenile frogs squeak when they are scared.
- Reduce predation by providing large nesting areas. Biologists have developed small cages you can place over the nests to exclude predators, maximize sun exposure and allow hatchlings to emerge. If you find a nest call ODFW for a free nest cage and instructions. You can also reduce predation by obtaining ODFW approval to trap and relocate nest predators prior to and during the turtle egg-laying period. Please contact an ODFW office you find evidence of turtle nesting on your property and if you would like to obtain a free turtle nest protection cage.

Clackamas	503-657-2000
Corvallis	541-757-4186
Roseburg	541-440-3353
Medford	541-826-8778
Charleston	541-888-5515
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**Department Region Offices**

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Southwest	4192 N Umpqua Hwy, Roseburg, OR 97470	541-440-3353
High Desert	61374 Parrell Rd, Bend, 97702	541-388-6363
Northeast	107 20 <sup>th</sup> st. La Grande, OR 97850	541-963-2138
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