

NATIVE TURTLES OF OREGON

Native Turtle Ecology & Habitat Restoration

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Oregon's Two Native Species of Turtles

- Western Painted Turtle (*Chrysemys picta bellii*)
- Western Pond Turtle (*Actinemys marmorata*)



- Both species listed in Oregon as Sensitive – Critical
- Western Pond Turtle - Endangered in WA & Federal Species of Concern
- Both Priority Species under the Oregon Conservation Strategy
- Both species face similar threats to their populations in Oregon

TURTLES ARE REPTILES

- Reptiles evolved from amphibians about 300 million years ago
- 250 species of freshwater turtles in U.S. - 2 in Oregon
- Reptiles are ectothermic, cannot internally regulate their body temperature, hence the need to bask
- Reptiles have dry skin containing horny epidermal scales
- All lay eggs on land and have an amniotic egg
- Young are born precocial with no parental care
- Turtles are important components of our ecosystems and are disappearing due to many factors

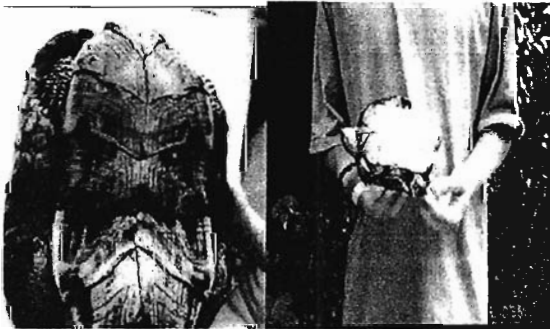
Western Pond Turtle



Head & legs have gold and dark mottling

Carapace is dark brown to black

Plastron of western pond turtle is light yellow with black markings



Western Pond Turtles were found historically throughout the Willamette Valley



• They are semi-aquatic, using wetlands & streams for feeding, resting, basking, breeding & overwintering

• Utilize upland meadows & forests during summer/fall to aestivate (rest), for migration and for hibernation during winter months

- May travel many miles in search of mates, water, etc. – movements of up to 5km have been documented in the Willamette Valley
- Nest in summer months in open, sunny sparsely vegetated meadows, fields, etc.
- Diet includes insects, crayfish, earthworms, frogs, small fish & carrion with small amounts of plant material (green algae, cattail roots)
- Must swallow under water

Western Painted Turtle

Carapace is olive, dark green with yellow & black stripes

Head & legs are green with yellow/black stripes



Plastron is red with black pattern; Each turtle has a unique pattern



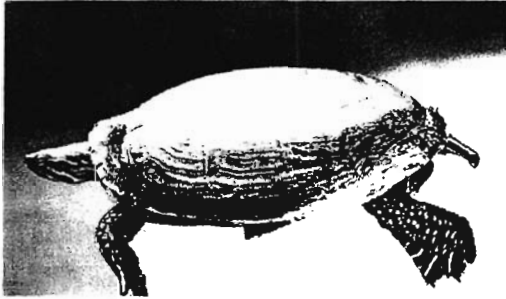
Western Painted Turtle



- Fully aquatic, utilizing permanent ponds, wetlands, and slow moving streams for feeding, basking, breeding & overwintering
- Historic range includes Columbia River & Willamette Valley south to Eugene

- Diet includes insects crayfish, small fish, earthworms, carrion, and plant material (blue-green algae, *Elodea canadensis*)
- Diets of adults may include 60-70% plant material
- Current average life span is estimated at 25-30 years
- Must swallow under water

Adult female western painted turtle



- Shell may be covered in algae due to extensive time spent in aquatic habitats
- Note damage to upper right side of carapace



Both Turtle Species:

- Adults reach an average size of 180 mm (carapace) length
- Weight of adults averages 800-1,000 grams
- Reach sexual maturity at about 6-7 years or over 120 mm in length
- Females usually higher domed than males when viewed from side



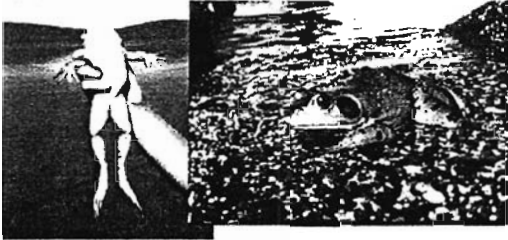
REASONS FOR DECLINES

Turtle populations are declining worldwide due to habitat loss, disease, poaching, and collection for pet trade. It is estimated that in Asia most of the turtle species will be gone in 10 years. In the U.S. and locally turtle populations are also declining due to:

- Loss of habitat, both aquatic and terrestrial
- Fragmentation of existing habitats; loss of forests next to wetlands, streams; loss of nesting habitat
- Loss of travel corridors
- Increased roads causes increased injuries, mortality, change in demographics
- Introduced plant & animal invasive species results in degraded habitats, increased competition and predation
- Introduced diseases from non-native turtle species released into wetlands, etc. from pet trade
- Sensitive to use of pesticides, herbicides and other chemicals

INTRODUCED WILDLIFE SPECIES TO OREGON

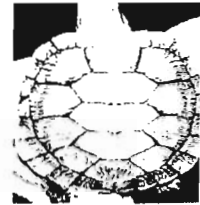
- Bullfrogs now common in most wetlands in Oregon
- Reduce/eliminate native amphibians and other species
- Pond turtle hatchlings more susceptible to bullfrog predation due to slow growth rates and less aggressive behavior



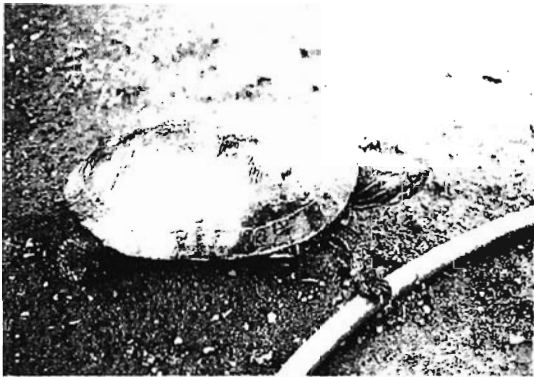
Non-native Turtle Species in the Willamette Valley

Red-eared slider

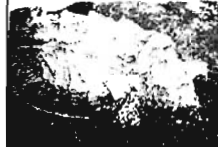
- Common in wetlands, especially urban areas in Oregon
- Compete with native turtles for habitat
- May introduce diseases that threaten native turtles



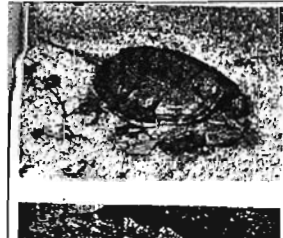
Very old female slider found near Johnson Creek, Portland



Other Non-native Turtle species found in the Willamette Valley



Alligator snapping turtle



Common snapping turtle



Box turtle

Other Factors Contributing to Turtle Mortality

- Increased development increases roads and traffic
- Results in serious turtle injuries and often death
- Reduces turtle populations and affects demographics
- Loss of females is causing shift in sex ratio in some populations



Study in Montana on a 7 miles stretch of road from May – September, 1995, found 205 road-killed western painted turtles.

TURTLES FACE NUMEROUS THREATS LOCALLY

- Introduced, exotic plant species (e.g., reed canary grass, knotweed)
- Eliminate biological diversity & create monotypic stands
- Reduce available wetland habitats for turtles and other native species
- Reduce/eliminate aquatic & upland nesting habitats



Loss of Riparian & Upland Forest Habitats

Bottomland forests reduced by 80% in Willamette Valley



Used by turtles for overwintering habitat & for migration corridors

Back water sloughs and streams reduced by 50% in valley



Used by turtles for feeding, basking, resting, migration

TURTLE HABITAT REQUIREMENTS

IF YOU BUILD IT, THEY WILL COME (MAYBE)

Native turtles require a variety of habitats:

- Aquatic – Cover, basking, feeding, breeding, travel corridors, overwintering
 - Ponds - permanent or semi-permanent
 - Streams - permanent or ephemeral
 - Emergent wetlands
- Uplands – Nesting, travel corridors, aestivating, overwintering
 - Open, sparsely vegetated areas for nesting (not prone to flooding)
 - Forested areas for aestivation (resting), overwintering, & travel corridors

Quiet, backwater wetlands provide crucial aquatic habitat for turtles

- Basking areas (fallen trees, pond lilies)
- feeding
- breeding and rearing areas
- overwintering
- migration corridors



Seasonal wetlands with emergent vegetation provide hiding cover for turtles, which is critically important for hatchlings and juveniles. A diversity of aquatic plants provides food and cover for turtles.



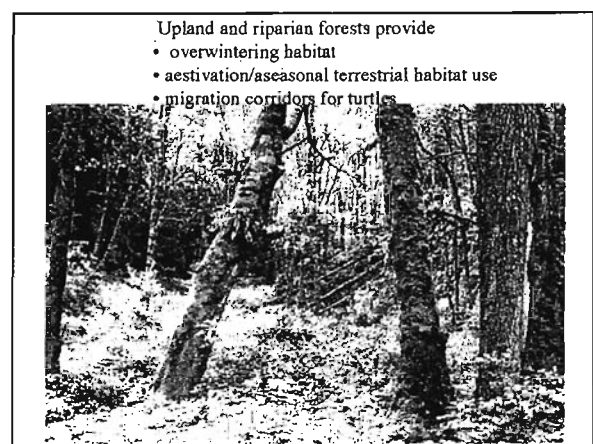
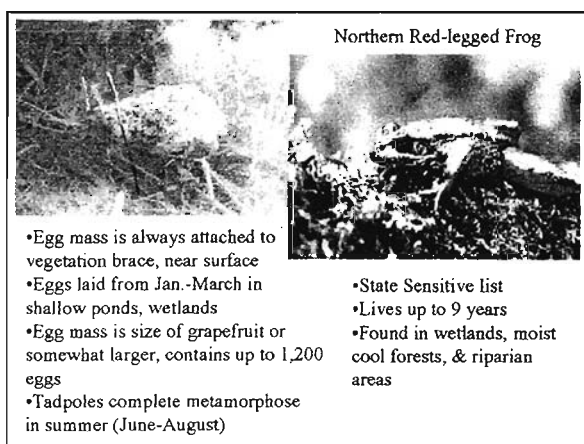
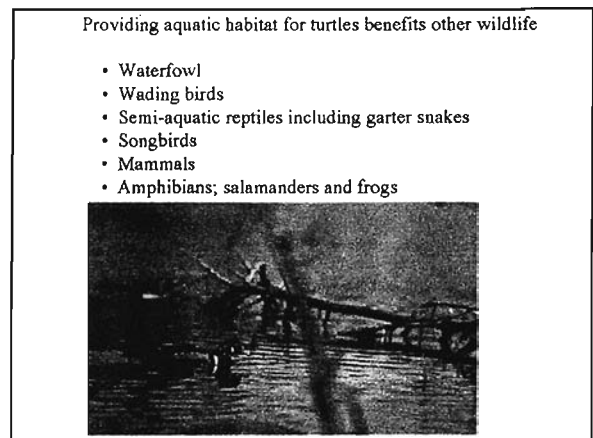
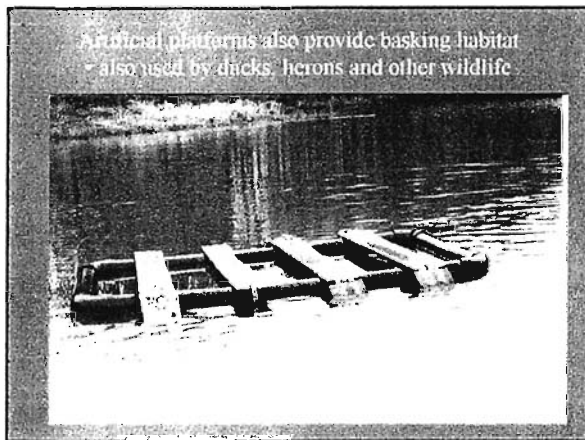
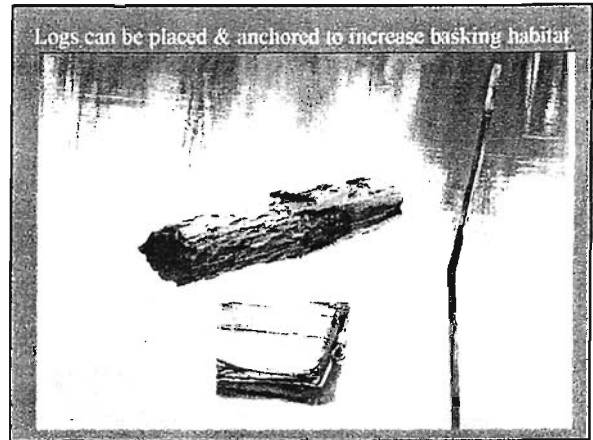
Emergent wetland with adjacent riparian forests

Floating pondweed and wapato


BASKING HABITAT

Turtles need to bask for many hours of the day in order to digest their food, control parasites, development of eggs, and many other important life requirements. High quality turtle habitat includes many basking sites distributed along the margins of a pond, stream, etc. Beavers can help!



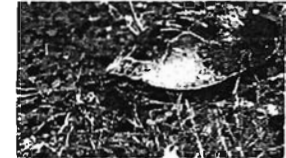


Nesting Ecology




Abandoned nest site

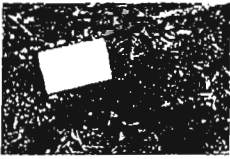
Most Painted & Pond Turtle hatchlings overwinter in the nest & emerge in spring




Females need quiet undisturbed areas to nest




Completed nest, well camouflaged

Nest destroyed by predator




Hatchling and quarter



Painted turtle hatchlings in aquatic habitat


NESTING HABITAT



Upland field dominated by invasive reed canary grass


- Grass is too dense for turtles to dig in
- Grass is too high and shades out nests

- Open, sparsely vegetated fields & meadows provide high quality nesting habitat.
- Eggs are incubated by the sun
- Gender is determined by temperature in nest during incubation
- Females need undisturbed areas to nest or will abandon site




CREATING NESTING HABITAT

- Selected areas can be scraped to remove non-native vegetation
- Disturbance can occur on an "as needed" basis
- Crucial for recruitment of turtles into any population
- Can be inexpensive

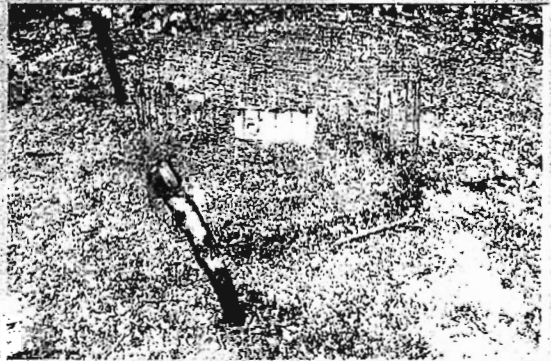


Mowed upland field near Tualatin River



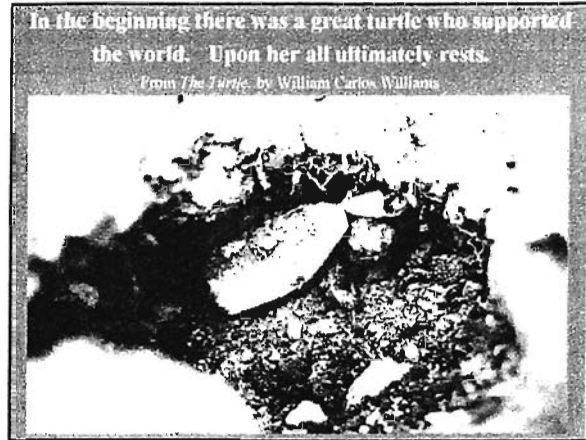
Scraped area with added gravel

Nests can be protected with wire cages to prevent excavation by predators



ACTIONS WE CAN TAKE TO HELP NATIVE TURTLES

- ODFW working with agencies, cities, landowners and citizens to protect native turtles statewide - www.willametteturtles.com
- Protect all remaining populations
- Protect & restore a diversity of habitats; forests, streams, wetlands, prairies, etc.
- Incentive programs to help landowners protect habitats for turtles & other species
- Reduce/eliminate non-native invasive plant and animal species
- Protect all nest sites with cages
- Report sightings to wildlife agencies, turtle conservation groups
- Turtles are wild animals, it is illegal to possess them for pets
- Don't move turtles
- Watch for turtles crossing roads, typically during breeding season; move turtles to side of road they were heading to



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