

Who let the turtles out?

Non-native turtles detected more often than western pond turtles on surveys in San Diego MSCP

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Abstract

Rapid urbanization has led to the loss and degradation of riparian habitats in Southern California. In response to the need to protect and manage habitat for native species in the South Coast Eco-Region of Southern California, the Natural Communities Conservation Planning Program (NCCP) was initiated in 1991 as a way for California Department of Fish and Game and US Fish and Wildlife Service to jointly implement habitat conservation plans (HCP). The western pond turtle (*Clemmys marmorata*) is a covered species in the San Diego Multiple Species Conservation Program subarea (MSCP). However, the current status and distribution of the western pond turtle within the MSCP is poorly known. The western pond turtle is the only turtle native to southwestern California and was historically abundant in most major drainages in San Diego. Surveys conducted in Southern California in the late 1980's suggested that pond turtles no longer occurred in many locations from which they were known historically and that few viable populations of turtles remained. The United States Geological Survey began conducting surveys for western pond turtles in the San Diego MSCP in 2002. During these surveys, non-native turtles were detected at many more locations than were western pond turtles. Western pond turtles co-occur with non-native turtles at least one of these locations. Surveys will continue during spring and summer 2003.

Background

•The western pond turtle is the only turtle native to coastal California. It historically occurred in most major coast facing drainages from northern Baja to Washington; with a few scattered isolated populations elsewhere (Jennings and Hayes 1994).

•Work by Brattstrom and Messer (1988) suggested that only a few populations of pond turtles remained in Southern California and those that did were comprised of few individuals. A synopsis by Holland (1991) suggested that the pond turtle was in a general state of decline throughout much of its range.

•The principal cause of pond turtle decline is riparian habitat loss and alteration due to urbanization, channelization, and damming of rivers and streams. The effect of non-native turtles is unclear.

•Concerns for western pond turtle decline led to its coverage in the San Diego MSCP subarea plan of the NCCP.

•In 2002, we began conducting surveys for the western pond turtle in the San Diego MSCP area. Our primary objective was to identify areas where pond turtles occur in the MSCP.

Study Area

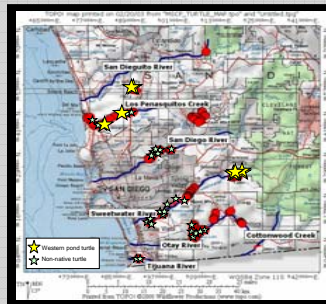


Methods

Western pond turtles occupy a wide range of habitats, from quiet, slow moving, streams with deep persistent pools to ponds, lakes, reservoirs, and drainage ditches (Ernst et al. 1994). We conducted visual encounter surveys of an area to determine whether the habitat was potentially suitable for pond turtles. While some of the areas they may reside may not be optimal, it was important for us to detect pond turtles where they occurred. Thus, the only criterion we used to define potential habitat, was whether there was water at least 0.25 meters deep (the minimum depth required to effectively use our smallest trap). If we considered a site potentially suitable, we returned at a later date and used baited traps to capture turtles. Traps were set for 3-5 days and checked daily. We marked, recorded standard measurements, and determined the sex of each pond turtle captured. Turtles observed on both, visual and trapping surveys, were all recorded and are included in our results. Thus far, most sites have only been trapped once. In 2002, we conducted 26 visual assessment surveys and 18 trapping surveys.

Preliminary Results

Inside the MSCP boundaries, our trapping effort totaled 747 trap days and 19,391 trap hours. Western pond turtles were only detected at 3 of 26 sites (11%) visited. Non-native turtles were detected at 46% of sites surveyed and co-occurred with western pond turtles at one location. Non-native turtles comprised 80% of our 135 turtle observations. The following species of non-native turtles were captured during our surveys: red-eared slider (*Trachemys scripta elegans*), yellow-bellied slider (*Trachemys scripta scripta*), painted turtle (*Chrysemys picta*), false map turtle (*Gratemys pseudogeographica*), mud turtle (*Kinostemon sp.*), and at least one other unidentified turtle that may be a *Trachemys* that is native to an area outside of the U.S. The partial shell of a river cooter (*Pseudemys concinna*) was also detected at one site. Red-eared sliders comprised over 40% of our observations and were the most common turtle encountered on our surveys thus far. See map below for turtle locations.



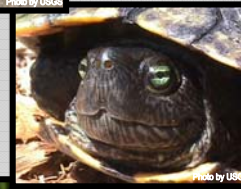
Red-eared slider

Yellow-bellied slider



Painted turtle

Taking guesses!



Mud turtle



False map turtle



Preliminary Conclusions

•Non-native turtles were detected at more locations in the MSCP than western pond turtles. Most of the locations where non-native turtles occurred were in areas easily accessed by humans or designated recreation areas.

•Many of these non-native turtles may have been sold as pets and subsequently released into the wild.

•The threats of non-native turtles to western pond turtles are unclear. Potential threats include serving as vectors for disease and parasites (Jacobson et al. 1999) and competition for resources, including basking sites (Spinks et al. In Press).

•Some species of non-native turtles, such as the red-eared slider, may be able to establish breeding populations in the wild because they appear to be fairly common.

•We may have missed western pond turtles in some areas where they occur. Failing to detect pond turtles is most likely to occur in large bodies of water, like reservoirs and in larger river systems when/if only few individuals are present.

Western pond turtle



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