



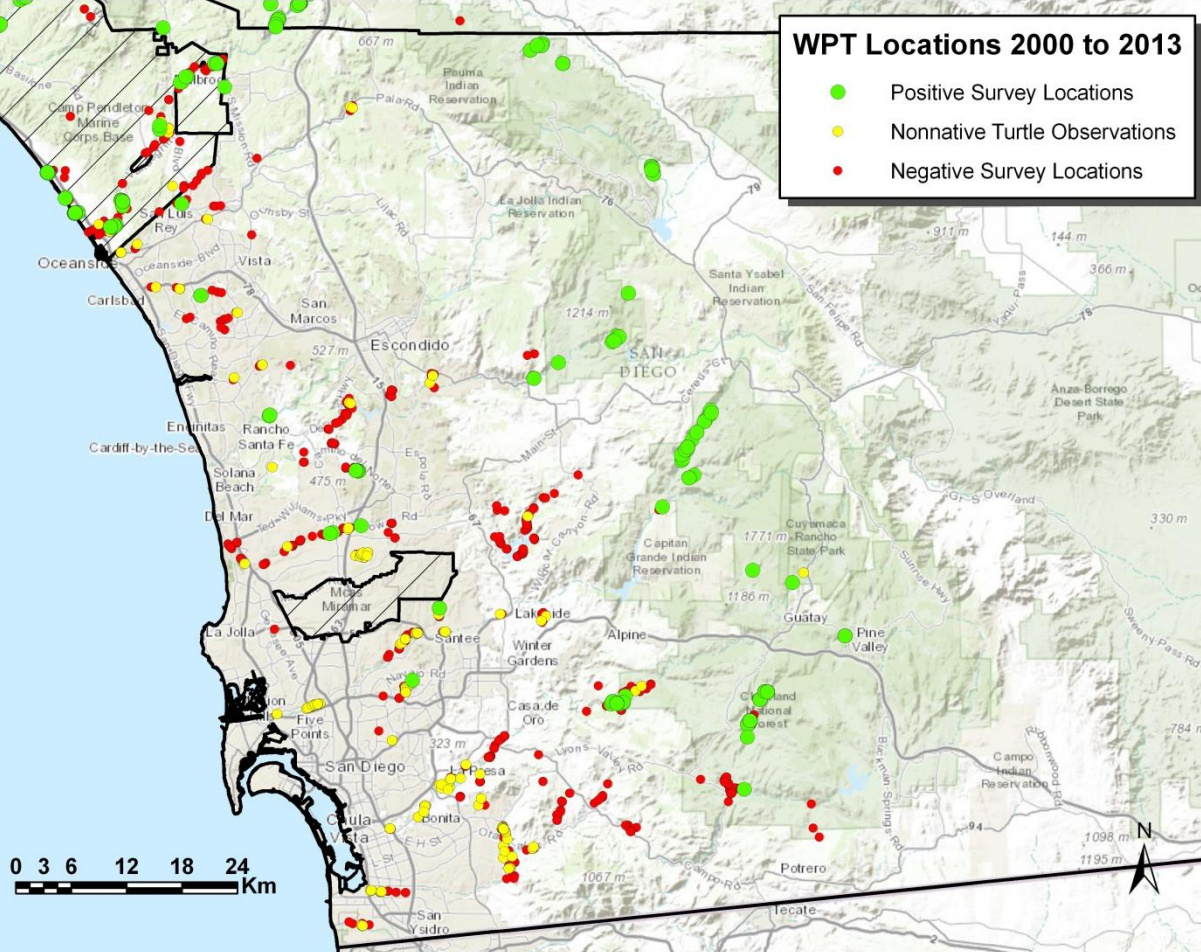
Status and Management in San Diego County



Pond turtle restoration in San Diego 2018

- I. Investigations for new populations/translocation sites
- II. Invasive species removal for future translocations
- III. Monitoring current translocations





Turtle Surveys

•MSCP

•Camp Pendleton

•Genetics

•North County Assessment

•County of San Diego

•USFS

Impacts

- Roads
- Access/recreation
- Habitat alteration
- Water availability
- Invasive species



This: OTHER - ID#A1419001

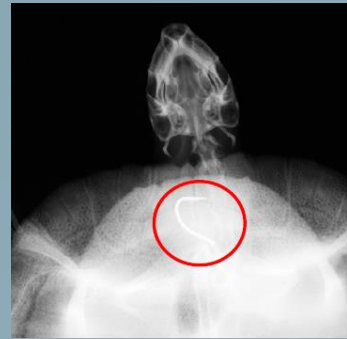
I am a brown and green Turtle.

My age is unknown.

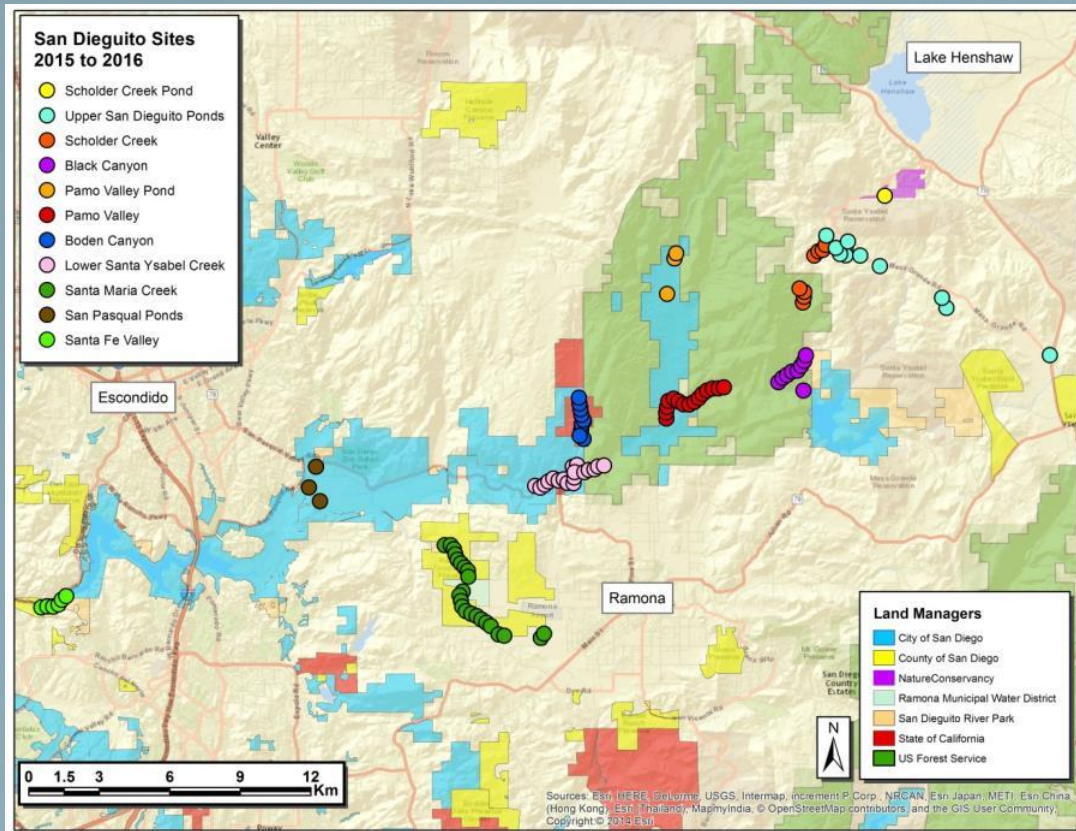
I have been at the shelter since Jun 25, 2011.

This information is 5 hours old.

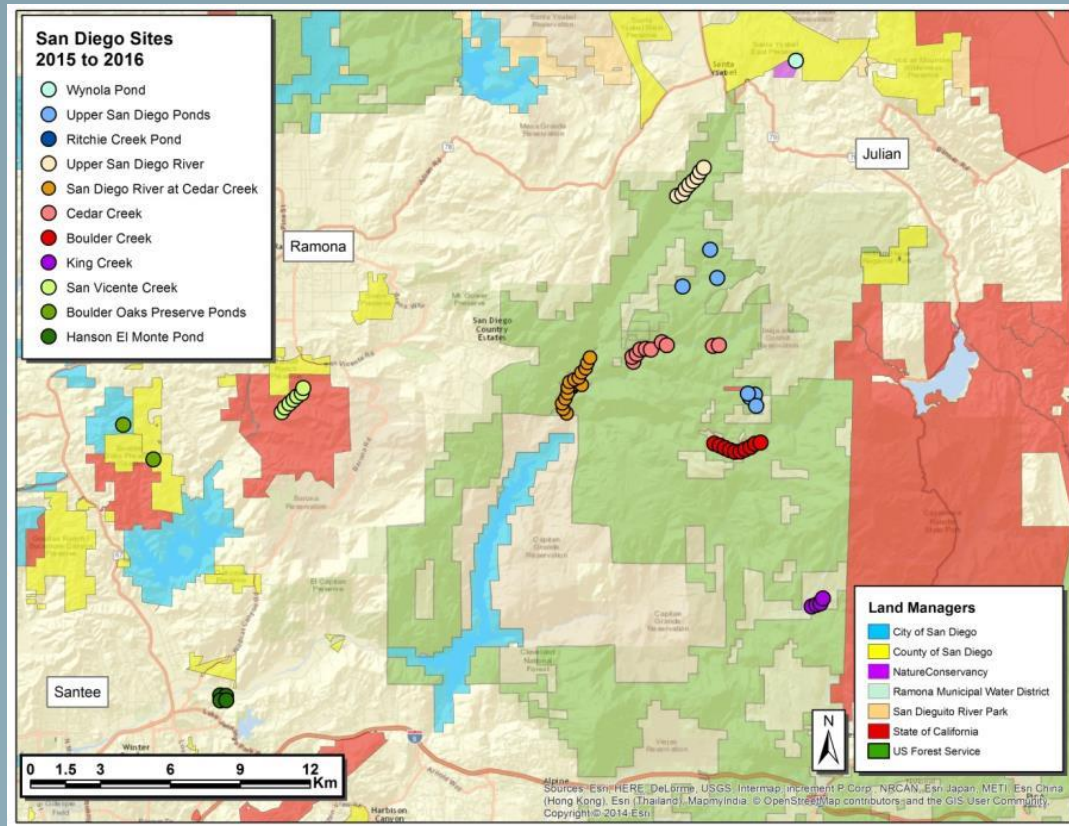
For more information about this animal, call:
[San Diego County Department of Animal Services - San Diego](#) at (619) 441-2222.



Investigations for new populations & translocation sites



Investigations for new populations & translocation sites



Investigations for new populations & translocation sites



Investigations for new populations & translocation sites



Preparing sites for translocation

San Dieguito and San Diego Restoration Efforts—

- Bullfrog removal at two sites in each watershed
- Over 3,400 bullfrogs removed



--Sycuan Peak Ecological Reserve--

•Headstarting

- 5 juveniles released in 2013
- 5 more released in 2014
- Monitoring to determine success & document recruitment



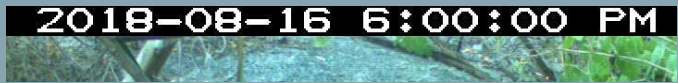
•Invasives removal

- Utilize traps, nets, airguns, visual encounter surveys to remove nonnative aquatic species
- Continue nonnative species removal as needed



SPER Turtle Monitoring

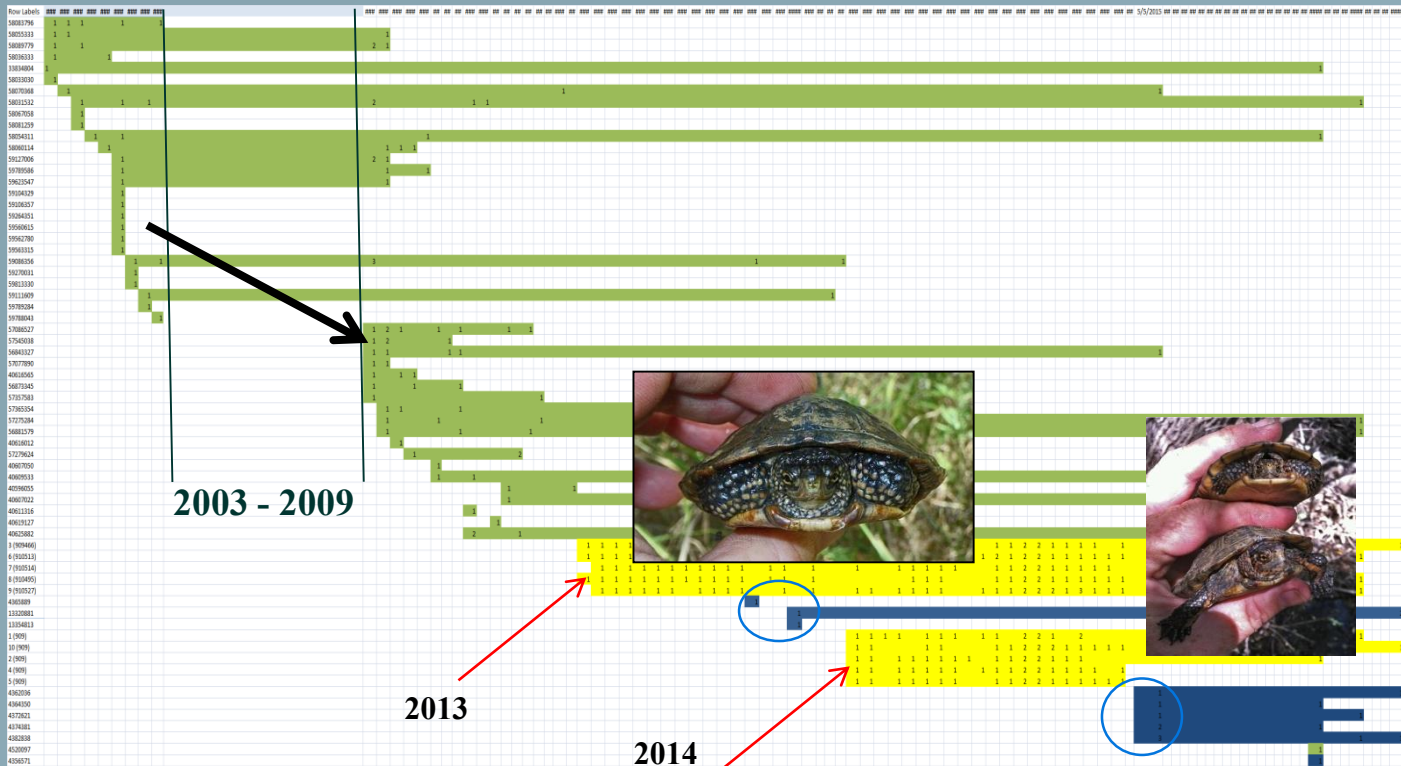
•Monitoring activity and habitat use:



•Monitoring for recruitment:



Recapture data and demography- No young turtles until 2013





SPER Invasive Species Monitoring

- Monitoring for nonnative aquatic species re-invasion:

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11°C



RECON001



--Rancho Jamul ER--

- CDFW Reserve
- Actively managed for conservation/restoration
- Ponds are > 1.75 km from nearest paved roads
- Nonnative aquatic species removal
- Hard release of translocated adults



Western Pond Turtle Translocation Project

By California Department of Fish and Wildlife · Updated on Wednesday · Taken at Rancho Jamul Ecological Reserve ·

Once plentiful throughout California, the western pond turtle (*Emys marmorata* or *Actinemys marmorata*) has been declining steadily in number throughout the state over the last few decades. The only turtle species native to California, the western pond turtle has been designated as a Species of Special Concern by the California Department of Fish and Wildlife (CDFW).

Pressures on pond turtles include degradation of habitat through introduction of non-native invasive species, water quality and quantity loss, and reduction of suitable habitat due to development. Although adult turtles are hardy and have few natural enemies, the turtle eggs and new hatchlings are subject to predation by everything from bullfrogs and fish to wild pigs. This has been particularly true in southern California, where current drought conditions are intensifying existing pressures. In some southern California watersheds, western pond turtles have been extirpated altogether.

Recently, researchers from the U.S. Geological Survey (USGS), in partnership with CDFW, the U.S. Fish and Wildlife Service, and other regional government and private entities, began an effort to help restore western pond turtles to the Otay watershed in San Diego County. Rancho Jamul Ecological Reserve, a 5700+ acre property owned and managed by CDFW, was chosen as the target area for translocation and establishment of new productive turtle populations. The Reserve is about 30 miles from downtown San Diego.

A team of USGS biologists began by conducting genetic studies to identify which existing population of turtles was the best candidate for translocation. East of the Reserve, the Pine Creek watershed still supports a fairly healthy pond turtle population, but current drought conditions are reducing and degrading available habitat for the turtles. Once the genetic

studies were complete, the Pine Creek turtles were determined to be a good fit for the project.

Meanwhile, two pools along Jamul Creek, within the Reserve, were identified as suitable habitat for the translocated turtles. Efforts began in June to reduce invasive species in the pools in preparation for the translocation project. Turtle trapping in Pine Creek began in late August. By early September, three mature males and three females had been caught. They were outfitted with radio transmitters (attached to their shells with epoxy, which can easily be removed at the end of the study effort). The turtles were then transported to their new home, where they scurried into the dark water and disappeared with surprising speed.

Over the next 10 days, six more turtles were caught, fitted with transmitters, and transported to their new home. A total of 20-30 turtles are expected to be moved to Jamul Creek over the coming months.

Using telemetry and tracking each individual's unique radio signal, the turtles are monitored every few days to ensure their acclimation to their new habitat. If successful, the first clutches should appear around April -- it's even possible that the turtles could lay eggs around the time of the first fall rains of 2014, if conditions are just right. Periodic removal of non-native invasive species, particularly bullfrogs, will continue to ensure the safety of the turtle eggs and hatchlings. Removal of non-native species is expected to lead to the return of other native species, including tree frogs, garter snakes and dragonflies. Only one non-native species will be allowed to remain in the pool, at least for now -- the Red Swamp crayfish that crawl along the muddy bottom will serve as a major source of food for the new resident turtles.



--Rancho Jamul ER--

- Seine nets, hand capture, traps, and airguns have been used to prepare the site for turtles
- Over 400 African clawed frogs, 60 bullfrogs, and 800 crayfish have been removed prior to translocation
- Turtles were translocated between September and October of 2014 and again in Sept. 2015
- Over 4,900 bullfrogs & 3,800 crayfish have been removed in 2017-2018



--Rancho Jamul ER--

•In one week-2,441 crayfish, 104 clawed frogs, 22 bullfrogs

