

**Final Project Report  
for  
Western Pond Turtle Surveys  
and Habitat Restoration Plan  
(#P0650002)**





October 2008



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(#P0650002)**

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## 1.0 Introduction

The primary objective of the Pacific pond turtle (also known as Western pond turtle) (*Actinemys marmorata*) surveys conducted in 2007-2008 by U.S. Geological Survey (USGS) was to survey the three ponds in the Boulder Oaks Preserve (located in the South County Multiple Species Conservation Program [MSCP] Plan area) to determine whether Pacific pond turtle were present and to assess the habitat suitability for the turtle. If the Boulder Oaks Preserve ponds were not found to support Pacific pond turtles, the second objective was to survey other priority San Diego County owned and/or managed sites (Lusardi Creek [4S Ranch] and Los Peñasquitos Preserve) for the presence of Pacific pond turtles and assess these sites for future enhancement or restoration.

The term of the project agreement (#P0650002) was from January 15, 2007 through October 31, 2008 with a \$40,000 grant from the California Department of Fish and Game and a match amount of \$10,000 for a sum of \$50,000. The funding source for the grant was U.S. Fish and Wildlife Service grants federal "Section 6" funds. The match amount of \$10,000 was from the San Diego County Department of Parks and Recreation Parks and Open Space General Fund.

## 2.0 Trapping Results

As discussed in the USGS Data Summary for the 2007 and 2008 Pacific Pond Turtle Surveys Conducted in the County of San Diego; Boulder Oaks, Lusardi Creek and Los Penasquitos Canyon (Appendix A), the August 2007 surveys at Boulder Oaks Preserve yielded no Pacific pond turtles. Only the main pond on the property contained water and with an intensive trapping effort, the only vertebrates captured were American bullfrogs (*Rana catesbeiana*). No turtles of any species were observed during the surveys.

One Pacific pond turtle was captured on County property within Los Penasquitos Preserve during the August 2007 surveys. This capture occurred at the largest pool at the most upstream section of County owned property. Additional species captured included common slider (*Trachemys spp.*), black bullhead (*Ictalurus melas*), green sunfish (*Lepomis cyanellus*), largemouth bass (*Micropterus salmoides*), and red swamp crawfish (*Procambarus clarkia*).

Pacific pond turtles were observed at the Lusardi Creek (4S Ranch) pond located south of Bernardo Center Drive during surveys performed in August 2007 and April 2008. Two male Pacific pond turtles were observed during the August 2007 survey. During the April 2008 survey, a female Pacific pond turtle was found dead on a small fishing platform at the pond. The surveys also documented common sliders and adult

largemouth bass at this site. Other species observed at Lusardi Creek include American bullfrogs, black bullhead, green sunfish, bluegill sunfish (*Lepomis macrochirus*), and mosquitofish (*Gambusia affinis*).

### **3.0 Survey Area Descriptions**

#### Boulder Oaks Preserve

Boulder Oaks Preserve is located approximately three miles south of the unincorporated township of Ramona, between State Route 67 and Mussey Grade Road, in central San Diego County, California. The Preserve is located in the San Diego River Watershed and includes three ponds formed by manmade earthen dams along natural drainage courses. The surface area of the three ponds total approximately two acres. Freshwater marsh occurs in patches within and along the margins of the main pond located in the approximate middle portion of the Preserve. Dominant plants associated with the pond include California bulrush (*Scirpus californicus*), red-root flatsedge (*Cyperus erythrorhizos*) and saltmarsh fleabane (*Pluchea odorata*).

Southern willow scrub is associated with the two small ponds in the western portion of the Preserve. Southern willow scrub consists of dense, broad-leafed, winter-deciduous riparian thickets dominated by several *Salix* species, including arroyo willow (*Salix lasiolepis*) and sub-dominant mule fat (*Baccharis salicifolia*).

#### Lusardi Creek (4S Ranch)

The Lusardi Creek (4S Ranch) ponds are located on the north side of Black Mountain within the San Dieguito Watershed. Lusardi Creek is dammed at two points, which forms the two large ponds (each approximately 640 feet long) separated by approximately a half mile. Rushes surround the edges of both ponds. A thin riparian strip comprised of willows, elderberry, and laurel sumac characterizes the unponded areas of the creek. Invasive nonnative plant species including fan palm, tamarisk, and fennel also occur in the immediate area. A housing development is adjacent to the northern portion of the riparian edge of the ponds and residences are located to the southwest of both ponds. At the north side of the creek, a mosaic of chaparral/coastal sage scrub is intermixed with a disturbed low-growing invasive nonnative dominated vegetative community overlaid by a small dirt road network. Downstream from 4S Ranch, just west of Lusardi Creek parcel boundary, the creek drains into the San Dieguito River. Along this stretch, willow dominates the riparian zone.

#### Los Peñasquitos Preserve

The Los Peñasquitos Preserve extends to within two miles of the Pacific Coast where it is hydrologically linked by Peñasquitos Creek. The Preserve is located within the Poway Creek Watershed and contains riparian, grassland, coastal sage scrub, and chemise chaparral habitat types. The County of San Diego owns and manages approximately 185 acres west of Black Mountain Road along the creek. The remaining 4,000 acres of the Preserve is owned by the City of San Diego. Peñasquitos Creek historically had a

seasonal hydroperiod but has become perennial as a result of the effects of urbanization. Currently, the riparian corridor, extending the length of the Preserve, is composed of large mature willow stands with oaks occupying the slightly higher slopes and coastal sage scrub primarily on the north facing canyon slopes and chemise covering the south-facing slope. Grasslands also occupy the low-lying canyon bottom.

#### **4.0 Restoration Plan for Lusardi Creek (4S Ranch) and Boulder Oaks Preserve**

The County of San Diego Department of Parks and Recreation (DPR) has determined the surveyed ponds at Lusardi Creek (4S Ranch) and Boulder Oaks Preserve are suitable for Pacific pond turtle habitat restoration. The site surveyed at Los Peñasquitos Preserve was determined not to be suitable for restoration at this time.

The County property at Los Peñasquitos Preserve makes up only a small portion of the entire Preserve with City of San Diego owning the majority. This situation makes it difficult for habitat enhancement efforts on this property as management activities up and downstream from the property and coordinating with adjacent landowner's within the Preserve would have to be considered.

##### Lusardi Creek (4S Ranch)

The pond on the Lusardi Creek (4S Ranch) property was designated as Open Space by the 4S Ranch Development and is considered Hardline Preserve under the South County MSCP (Figure 1). In addition, the County was granted an Open Space Easement on the property for habitat conservation purposes. The 4S Ranch Development provides "stewardship management" with right of entry for the County to carry out adaptive management activities following guidelines of the South County MSCP. As discussed in Appendix A, and in accordance with USGS recommendations, DPR should implement the following management and habitat enhancement activities at the pond:

1. Installation of Department of Parks and Recreation Informational Signs. DPR staff should install informational signs at the pond including: 1) Sensitive Habitat No Public Access; 2) fishing restrictions per County of San Diego Regulations Section 41.132 (Regulations for Water Bodies) and Section 41.133 (Fishing/Boating Fees and Permits); 3) protection of all plants and animals per Section 41.111 (Plants and Trees) and 41.112 (Protection of Park Animals); and 4) restrictions against abandoning a pet per Section 41.123 (g) (Pets and Other Animals). The signs should be installed in the fall of 2008 and DPR should maintain signage as necessary.
2. Perimeter Fence Maintenance. Perimeter fencing is currently present on the property. DPR should maintain this fencing as necessary.
3. Habitat Enhancement. DPR staff should remove the fishing dock located at the pond to discourage fishing from adjacent housing development residents. In addition, non-native vegetation should be removed from the pond. DPR staff should also survey the pond for aquatic refugia such as rocks, pieces of wood, or

root wads. If not found, DPR should add one or more of these types of refugia for turtles to retreat or hide. Habitat enhancement of the pond should begin in the fall of 2008.

4. Exotic Species Removal Efforts. The following exotic species were found at the pond: common sliders, largemouth bass, black bullhead, green sunfish, bluegill sunfish, mosquitofish, and American bullfrog. These exotic species have been shown to negatively impact Pacific pond turtle (Appendix A) and should be removed from the pond. The common sliders were removed during the 2007 and 2008 trapping efforts. To remove the remaining exotic species the water level of the pond would have to be reduced to facilitate easy capture and removal. Removal techniques would include seining and netting. In addition to removing exotics, trapping would have to be performed to remove any Pacific pond turtles before the water level is lowered. Trapping efforts would utilize baited commercial traps and follow established U.S. Geological Survey protocols.

Before removing water from the pond, several factors would have to be considered: 1) determine the method to remove the water (e.g., open dam at pond or pump water from the pond); 2) the amount of water needed to be removed from the pond; 3) impacts to the downstream riparian habitat and pond; 4) appropriate permitting needed from California Department of Fish and Game (CDFG) and U.S. Army Corps of Engineers (USACE); and 5) method to return water to the pond after removal efforts are completed.

Considering the effort required in implementing an effective exotic species removal program at this pond, DPR could seek grant funding (potentially 2009 grant funding through TransNet Environmental Mitigation Program).

#### Boulder Oaks Preserve

DPR is planning to request 2009 grant funding through the TransNet Environmental Mitigation Program (EMP) for restoration of the main pond at Boulder Oaks Preserve for Pacific pond turtles (Figure 2). A consultant would be retained by DPR to design an exotic species removal program for the pond. The program would include draining a portion of the pond to remove the exotic species (e.g., American bullfrogs), habitat enhancement, and re-establishment of Pacific pond turtles.

The methods of exotics removal at the pond could include seining, netting, and nighttime spotlighting of the bullfrogs. A habitat enhancement plan could potentially include removing non-native invasive vegetation, adding aquatic refugia such as rocks, pieces of wood, or root wads, and grading slopes surrounding the pond.

The exotics removal and habitat enhancement methods discussed above would make the pond more desirable for Pacific pond turtles as follows: 1) removal of exotic species from the pond will allow for an increase in population recruitment;

2) removal of non-native invasive plants would aid the turtles in reproducing more successfully; 3) adding aquatic refugia to the pond would provide areas for the turtles to retreat or hide; and 4) grading the edges of the pond so they are less steep would allow for easier access for the turtles to reach potential nesting habitat.

To re-establish Pacific pond turtles at Boulder Oaks Preserve DPR could utilize head-started juveniles from the California Department of Fish and Game Sycuan Peak Ecological Reserve (SPER) project funded by Fiscal Year 2008 TransNet EMP. This project includes establishing a reserve population of Pacific pond turtles at the San Diego Zoo to support future head-starting of juveniles for SPER and other priority restoration sites within the MSCP.