APPENDIX B-6

WESTERN POND TURTLE SURVEY LETTER REPORT

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January 4, 2012

Mr. Philip Siongco
Water Resources Division
Department of Public Works
County of Los Angeles
900 South Fremont Avenue
Alhambra, California 91802-1460

VIA EMAIL AND U.S. MAIL
PSIONGCO@dpw.lacounty.gov

Subject: Results of Focused Presence/Absence Surveys for Western Pond Turtle for the Big Tujunga Reservoir Sediment Removal Project, Los Angeles County, California

Dear Mr. Siongco:

This Letter Report presents the results of focused surveys to determine the presence or absence of the western pond turtle (*Emys marmorata*) in the Big Tujunga Reservoir and Big Tujunga Creek. The focused surveys were conducted in support of project approvals for the Big Tujunga Reservoir Sediment Removal Project. A qualified Biologist with the necessary experience and a California Department of Fish and Game (CDFG) scientific collecting permit conducted the surveys.

Survey Area

The survey area for the Big Tujunga Reservoir Sediment Removal Project includes Big Tujunga Reservoir, immediately upstream of the Big Tujunga Dam, in the Angeles National Forest and Big Tujunga Creek, approximately one mile upstream of the reservoir in Los Angeles County, California (Exhibit 1). The survey area is located on the U.S. Geological Survey's (USGS') Condor Peak 7.5-minute quadrangle at Township 3 North, Range 12 West, within Sections 29, 31, and 32 (Exhibit 1). Elevations within the survey area range from approximately 2,150 to 3,400 feet above mean sea level. The survey area and surrounding vicinity consist of natural open space within the Angeles National Forest.

Big Tujunga Canyon is characterized by very steep slopes, shallow soils, and watercourses contained within bedrock channels. Erosion has deposited alluvium (including boulders, cobbles, gravel, and coarse to fine sandy soils) within the stream course. Topography is irregular and stream grade, width, and flow velocity vary but are generally moderate. The creek channel morphology within the survey area includes portions with narrow, incised, fast-moving water; portions with wider, slow-moving water; deep pools; and relatively broad alluvial wash with multiple meanders. In the survey area, Big Tujunga Creek is perennial.

Upstream of the reservoir, vegetation along Big Tujunga Creek consists mainly of willow riparian scrub dominated by arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*); however, in some areas it is co-dominated by white alder (*Alnus rhombifolia*) and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*). Other common species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica ssp. holosericea*),

and mugwort (*Artemisia douglasiana*). In upland areas, coast live oaks (*Quercus agrifolia*) and western sycamores (*Platanus racemosa*) are also present. Big Tujunga Canyon burned during the 2009 Station Fire; thus, the riparian canopy is sparse through much of the creek in this area.

In alluvial terraces and slopes above the main stream course, alluvial scrub is present, dominated by scale-broom (*Lepidospartum squamatum*); other common species include thick-leaf yerba santa (*Eriodictyon crassifolium*), California buckwheat (*Eriogonum fasciculatum*), our Lord's candle (*Yucca whipplei*), black sage (*Salvia mellifera*), deerweed (*Acmispon glaber* [*Lotus scoparius*]), and laurel sumac (*Malosma laurina*). Many of the burned trees and shrubs are resprouting from the base. Poodledog bush (*Turricula parryi*), a fire-following species, is widespread throughout the survey area.

Species Background

The western pond turtle is a CDFG Species of Special Concern and a U.S. Forest Service sensitive species in the Angeles National Forest (CDFG 2011a). The western pond turtle is the only remaining native species of freshwater turtle in California. The current range of the western pond turtle in Southern California extends south from the San Francisco Bay area (excluding Inyo, Mono and Imperial Counties), with a broad range of intergradations from the American River south through the San Joaquin Valley (Bury and Germano 2008). Isolated, extant populations are found in the interior draining Mojave River of California at least as far into the Mojave Desert as Afton Canyon and in the Amargosa River in the vicinity of Lake Elizabeth in northern Los Angeles County (Holland 1994). The closest records of the western pond turtle relative to the survey area include two occurrences downstream of the study area in Big Tujunga Wash (approximately two miles and eight miles downstream) (CDFG 2011b, BonTerra Consulting 2010) and one occurrence approximately six miles upstream at the confluence of Upper Big Tujunga Creek and Lynx Gulch (ICF and BonTerra Consulting 2011).

The western pond turtle has a low carapace (upper shell), 3.5 to 8.5 inches in length, and may be brown, olive or blackish in color, usually with black or brown spots or lines that radiate out from the center of the carapace shields (Stebbins 2003). The limbs of this species have prominent scales that contain black lines or flecks, and the head may also contain black spots or markings (Stebbins 2003). Males tend to have a lighter throat without black markings with a shell that is flatter and more of a solid color than females (Stebbins 2003).

The western pond turtle lays a clutch of 3 to 14 eggs from April to August (Stebbins 2003). Nest sites are usually found in upland habitats beyond the floodplain, typically on south-facing slopes of less than a 60-degree angle (Jennings and Hayes 1994). In Southern California, most hatchlings emerge in the early fall, while some may overwinter in the nest (Holland 1994). Adults in Southern California may be active year round; however, during the coldest months (i.e., between October and April), this species will often seek upland refugia and enter a period of brumation (i.e., reptilian inactivity and decreased metabolic rate in response to seasonal temperature changes [similar to hibernation]), particularly in more temperate, high elevation areas of the species' range (Holland and Goodman 1996). Winter refugia are often found in the same upland habitats as nesting sites.

Agricultural development, flood-control projects, water diversion, and urbanization have resulted in elimination of over 90 percent of the wetland habitats within the historic range of the western pond turtle throughout California (USFWS 1992). These anthropogenic threats have also fragmented the remaining suitable habitat and isolated remaining populations, resulting in a lack of genetic variability.

Invasion of exotic pest species into habitats occupied by western pond turtles is another threat to the continued survival of the species. Invasive, non-native plant species such as tamarisk (*Tamarix ramosissima*) and giant reed (*Arundo donax*) have become established throughout Southern California, reducing plant diversity, altering stream morphology, and eliminating suitable basking sites (Lovich et al. 1994). The invasive bullfrog (*Rana catesbeiana*) is native to eastern North America but is widely established in California. Bullfrogs are voracious predators that will eat any live animal they can swallow, and bullfrog predation of hatchling and young western pond turtles has been recorded (Holland 1994). The intensity of bullfrog predation is severe enough to eliminate recruitment in some western pond turtle populations in Southern California (Overtree and Collings 1997). As a result of the threats listed above, the western pond turtle is believed to be in decline throughout 75 to 80 percent of its range (Stebbins 2003).

Survey Methodology

The survey methodology was based on pond turtle survey and census recommendations made by Holland (1991) and survey protocols developed by Reese and Welsh (1988) and Goodman (1999). Surveys incorporated both visual encounter and live trapping. BonTerra Consulting Senior Herpetologist Samuel Stewart (CDFG Scientific Collecting Permit SC-004421) conducted the surveys from August 2–5, 2011 and from August 8–10, 2011. Mr. Stewart is familiar with the western pond turtle and has the appropriate CDFG authorization to trap and handle the species.

Mr. Stewart conducted live trapping, which consisted of placing live-catch turtle traps at six trapping stations throughout the reservoir. All traps were fitted with tags listing the CDFG Scientific Collecting Permit number under which live trapping was being conducted. Trap station locations were recorded with a Garmin Etrex Vista H Geographic Positioning System (GPS) unit. Trap station locations are presented on Exhibit 2.

The first trapping session consisted of 3 trapping periods lasting approximately 24 hours each (traps were set on August 2, 3, and 4 and checked 24 hours later). The second trapping session consisted of 2 trapping periods lasting approximately 24 hours each (traps were set on August 8 and 9 and checked 24 hours later). Traps were planted and were checked and/or relocated using a kayak. Mr. Stewart conducted visual encounter surveys for turtles during setting and checking of traps and while walking along Big Tujunga Creek upstream of the reservoir to the eastern survey area limit.

Live-catch floating net mesh box traps were used for the survey effort. Net mesh box traps consist of a 24-inch by 18-inch by 8-inch framed box with $^{5}/_{16}$-inch mesh and two 1-way funnel entrances. Floats were placed inside the trap to allow submergence of one trap entrance and flotation of approximately four inches of trap enclosure. Six net mesh box traps were firmly secured to booms, emergent trees, or other immovable objects in the reservoir using nylon rope and baited with fresh fish trimmings. Thread herring and mackerel were placed in the traps as bait. Turtles attracted by the scent of the bait would enter the submerged entrance and surface within the enclosure to breathe.

Survey Results

One western pond turtle was detected in Big Tujunga Reservoir during trapping. It was a single juvenile male western pond turtle (carapace length of 5 inches), that was recovered from Trap Station 3 on August 4, 2011. GPS location, photographic evidence, and carapace measurements were recorded prior to immediate release at the point of capture. No other western pond turtles were detected within the reservoir or within Big Tujunga Creek upstream of the reservoir.

One adult red-eared slider (*Trachemys scripta elegans*), an introduced pond turtle species in the family Emydidae, was recovered from Trap Station 4 during the August 4 trapping session. The red-eared slider was removed from the reservoir and taken into captivity. Additionally, 190 black bullhead (*Ameiurus melas*), an introduced species of catfish, were recovered from multiple trap stations during the trapping sessions and were removed from the reservoir.

A summary of trapping results is provided in Table 1. Photographs of the survey area and notable species observed during surveys are provided in Attachment A. A list of all wildlife species observed during surveys is included in Attachment B. A California Native Diversity Database form for the western pond turtle observed will be submitted to the CDFG and is included in Attachment C.

TABLE 1
SUMMARY OF TRAPPING RESULTS

Start				End					
Trap Set Date	Time	Air Temp (°F)	Wind Speed mph	Trap Check Date	Time	Air Temp (°F)	Wind Speed mph	Trap Results	Trap Location[1]
8/2/2011	10:50AM–4:10PM	84	0–2	8/3/2011	11:00AM–5:05 PM	93	2–8	Trap 1 – Empty	390874, 3795292
								Trap 2 – Empty	390876, 3795338
								Trap 3 – Empty	390802, 3795762
								Trap 4 – Empty	391155, 3796077
								Trap 5 – Empty	390993, 3795615
								Trap 6 – Empty	390876, 3795250
8/3/2011	11:00AM–5:05PM	93	2–8	8/4/2011	1:15PM–7:05 PM	90	2–5	Trap 1 – 1 bullhead	390876, 3795250
								Trap 2 – Empty	391073, 3796181
								Trap 3 – 8 bullhead, 1 western pond turtle	391048, 3796189
								Trap 4 – 44 bullhead, 1 red-eared slider	391094, 3796050
								Trap 5 – Empty	391137, 3796029
								Trap 6 – Empty	391137, 3796064
8/4/2011	1:15AM–7:05 PM	90	2–5	8/5/2011	10:46 AM–2:52 PM	88	0–2	Trap 1 – Empty	390876, 3795250
								Trap 2 – Empty	391073, 3796181
								Trap 3 – 36 bullhead	391048, 3796189
								Trap 4 – 1 juvenile bullhead	391094, 3796050
								Trap 5 – None	391137, 3796029
								Trap 6 – None	391137, 3796064
8/8/2011	10:20 AM–2:15 PM	85	2–5	8/9/2011	11:42 PM–4:44 PM	86	3–8	Trap 1 – 3 bullhead	390876, 3795250
								Trap 2 – None	391073, 3796181
								Trap 3 – None	391048, 3796189
								Trap 4 – 18 bullhead	391094, 3796050
								Trap 5 – 19 bullhead	391137, 3796029
								Trap 6 – 21 bullhead	391137, 3796064

TABLE 1 (Continued)
SUMMARY OF TRAPPING RESULTS

Start				End					
Trap Set Date	Time	Air Temp (°F)	Wind Speed mph	Trap Check Date	Time	Air Temp (°F)	Wind Speed mph	Trap Results	Trap Location[1]
8/9/2011	11:42 PM–4:44 PM	86	3–8	8/10/2011	1:20 PM–6:40 PM	81	1–3	Trap 1 – 10 bullhead	390876, 3795250
								Trap 2 – 18 bullhead	391073, 3796181
								Trap 3 – 5 bullhead	391048, 3796189
								Trap 4 – None	391094, 3796050
								Trap 5 – 4 bullhead	391137, 3796029
								Trap 6 – 1 juvenile bullhead	391137, 3796064

°F: degrees Fahrenheit; mph: miles per hour
[1] GPS points presented in Universal Transverse Mercator (UTM) Coordinates, North American Datum 83, Zone 11S

BonTerra Consulting appreciates the opportunity to assist with this project. Please contact David Hughes or Sam Stewart at (626) 351-2000 with any questions or comments.

Sincerely,

BONTERRA CONSULTING

David T. Hughes
Senior Project Manager

for Samuel C. Stewart IV
Senior Herpetologist

Attachments: Exhibit 1 – Survey Area Location
Exhibit 2 – Survey Results
A – Photographic Documentation
B – Wildlife Compendium
C – CNDDB Form

cc: Ryan Butler, Los Angeles County Department of Public Works

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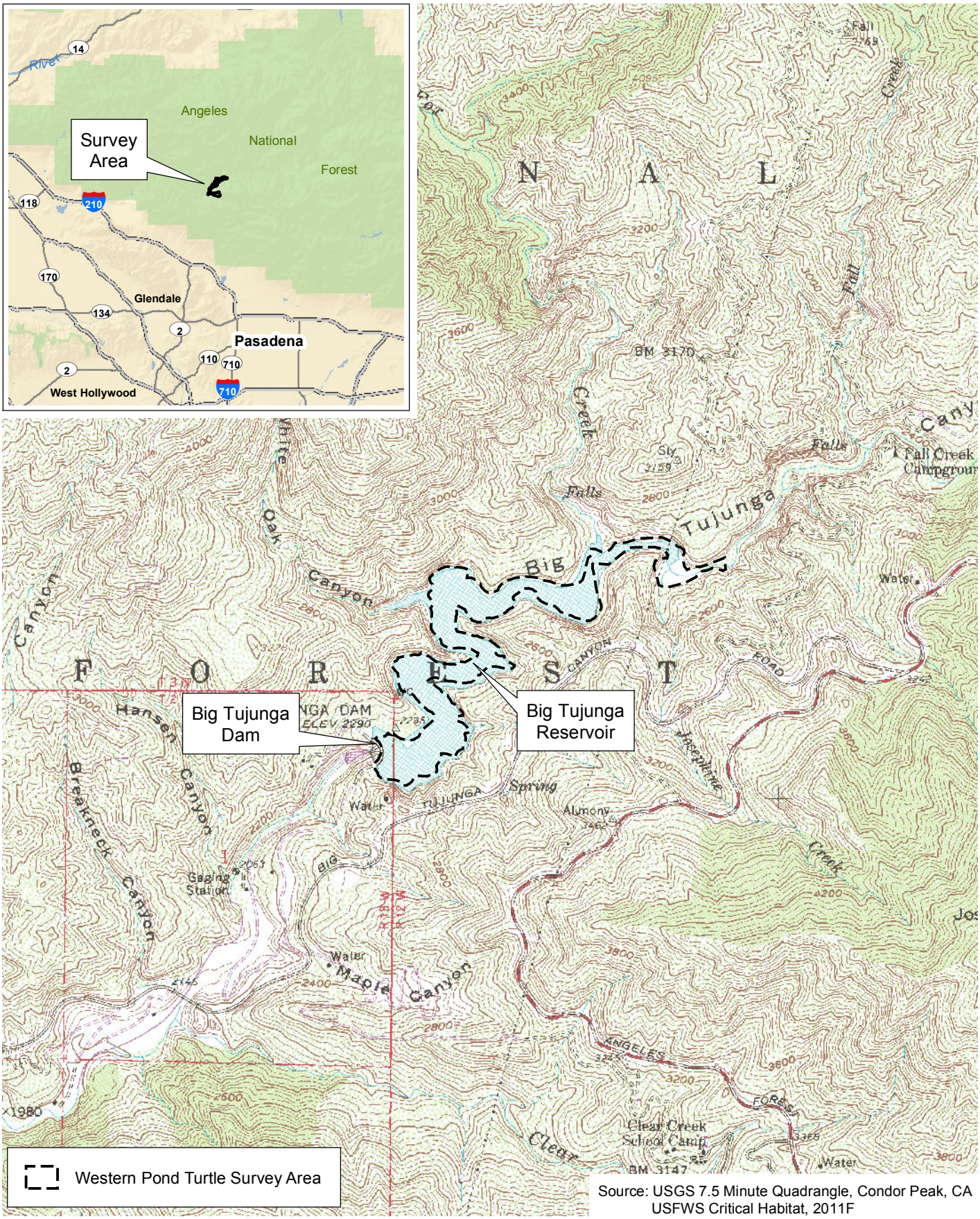

Source: USGS 7.5 Minute Quadrangle, Condor Peak, CA
USFWS Critical Habitat, 2011F

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Survey Area Location

Exhibit 1

Western Pond Turtle Focused Survey for the Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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Survey Results

Exhibit 2

Western Pond Turtle Focused Survey for the Big Tujunga Reservoir Sediment Removal Project

N W E S

700 350 0 700 Feet

BonTerra CONSULTING

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ATTACHMENT A

PHOTOGRAPHIC DOCUMENTATION

Big Tujunga Reservoir photographed from the dam.

Big Tujunga Creek facing upstream from the confluence with Big Tujunga Reservoir.

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Western pond turtle recovered from Trap Station 3 (August 4, 2011).

Black bullhead schooling in Big Tujunga Reservoir.

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ATTACHMENT B

WILDLIFE COMPENDIUM

WILDLIFE SPECIES OBSERVED DURING TURTLE TRAPPING

Species
Fish
ICTALURIDAE – CATFISH
*Ameiurus melas**   black bullhead
Reptiles
EMYDIDAE – WATER & BOX TURTLES
Emys marmorata   western pond turtle
*Trachemys scripta elegans**   red-eared slider
PHRYNOSOMATIDAE – ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, & HORNED LIZARDS
Sceloporus occidentalis   western fence lizard
Uta stansburiana   side-blotched lizard
TEIIDAE – WHIPTAIL LIZARDS
Aspidoscelis [Cnemidophorus] tigris stejnegeri   coastal western whiptail
Birds
ANATIDAE – WATERFOWL
Anas platyrhynchos   mallard
PHALACROCORACIDAE – CORMORANTS
Phalacrocorax auritus   double-crested cormorant
ARDEIDAE – HERONS, BITTERNS, & ALLIES
Ardea herodias   great blue heron
ACCIPITRIDAE – HAWKS, KITES, EAGLES, & ALLIES
Buteo jamaicensis   red-tailed hawk
COLUMBIDAE - PIGEONS & DOVES
*Streptopelia chinensis **   spotted dove
TROCHILIDAE - HUMMINGBIRDS
Calypte anna   Anna's hummingbird
PICIDAE - WOODPECKERS
Colaptes auratus   northern flicker
TYRANNIDAE - TYRANT FLYCATCHERS
Sayornis nigricans   black phoebe
LANIIDAE - SHRIKES
Lanius ludovicianus   loggerhead shrike

WILDLIFE SPECIES OBSERVED DURING TURTLE TRAPPING (Continued)

Species
CORVIDAE - CROWS & JAYS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
HIRUNDINIDAE - SWALLOWS
Petrochelidon pyrrhonota cliff swallow
TROGLODYTIDAE - WRENS
Salpinctes obsoletus rock wren
Catherpes mexicanus canyon wren
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
CARDINALIDAE - CARDINALS & ALLIES
Pheucticus melanocephalus black-headed grosbeak
FRINGILLIDAE - FINCHES
Spinus [Carduelis] psaltria lesser goldfinch
* introduced species

ATTACHMENT C

CNDDB FORM

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 08/04/2011

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Emys marmorata*

Common Name: western pond turtle

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☑ no ☐ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Sam Stewart
Address: 225 S. Lake Ave. Suite 1000
Pasadena, CA. 91101
E-mail Address: sstewart@bonterraconsulting.com
Phone: (626) 351-2000

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
	1			

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☑ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Los Angeles Landowner / Mgr.: US Forest Service
Quad Name: Condor Peak Elevation: 2,230ft.
T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): GPS
T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model Garmin Etrex Vista H
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐ Horizontal Accuracy 10 feet meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: 391048, 3796189

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Western pond turtle caught in floating nylon funnel-trap set in Big Tujunga Reservoir. Juvenile turtle with carapace length of 13 cm. No other individuals observed during focused surveys at this location, within the reservoir, or for at least 1 km upstream during 5 trapping sessions. Scattered emergent alder present in shallows.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: No development in vicinity. Angeles National Forest.

Visible disturbances: None.

Threats: Introduced fish, amphibian, and turtle species, including black bullhead, American bullfrog (as indicated by dam operator), & red-eared slider.

Comments: Red-eared slider taken into captivity.

Determination: *(check one or more, and fill in blanks)*

☑ Keyed (cite reference): Stebbins 2003
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: familiarity with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☑
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐