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**Ecological Sciences, Inc., "Results of Focused Arroyo Toad Surveys, Castaic  
Creek, Santa Clarita, California" (August 17, 2005; 2005A)**



August 17, 2005

Mr. Sam Rojas  
Newhall Ranch Company  
23823 Valencia Boulevard  
Valencia, CA 91355

**SUBJECT: Results of Focused Arroyo Toad Surveys, Castaic Creek, Santa Clarita, California**

Dear Mr. Rojas:

This letter report summarizes methodology and findings of focused protocol surveys for the federally listed endangered arroyo toad (*Bufo californicus*) conducted by Ecological Sciences, Inc. The surveys were conducted to determine the presence/absence of the arroyo toad within the subject study area. All surveys followed federal U.S. Fish and Wildlife Service (Service) protocol (2001). This represents the third consecutive year of protocol surveys in Castaic Creek as required by the USACOE in their permit modification letter dated March 17, 2003, and in accordance with the December 17, 2002 Service Biological Opinion Conservation Recommendation No.2.

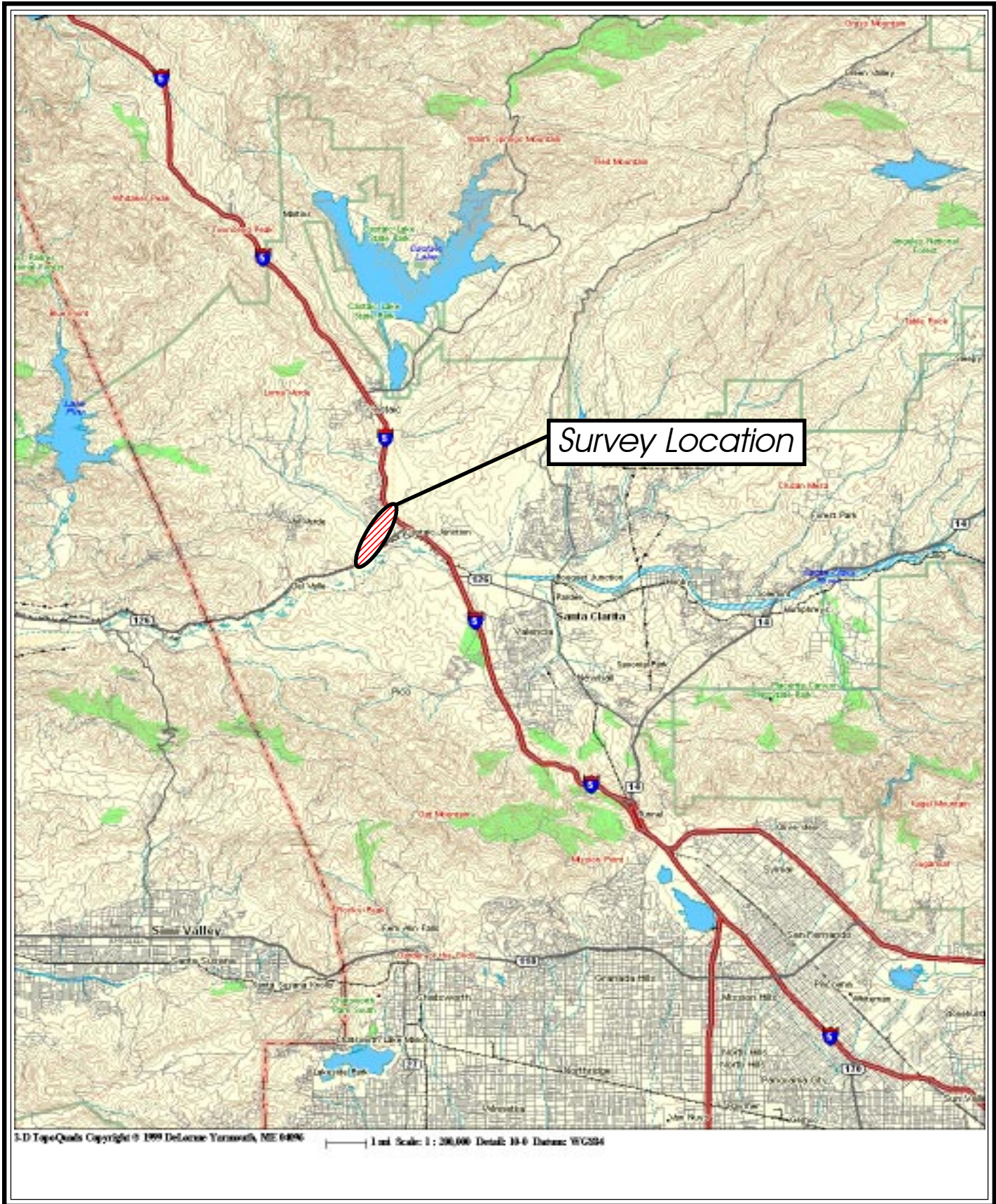
### **Introduction**

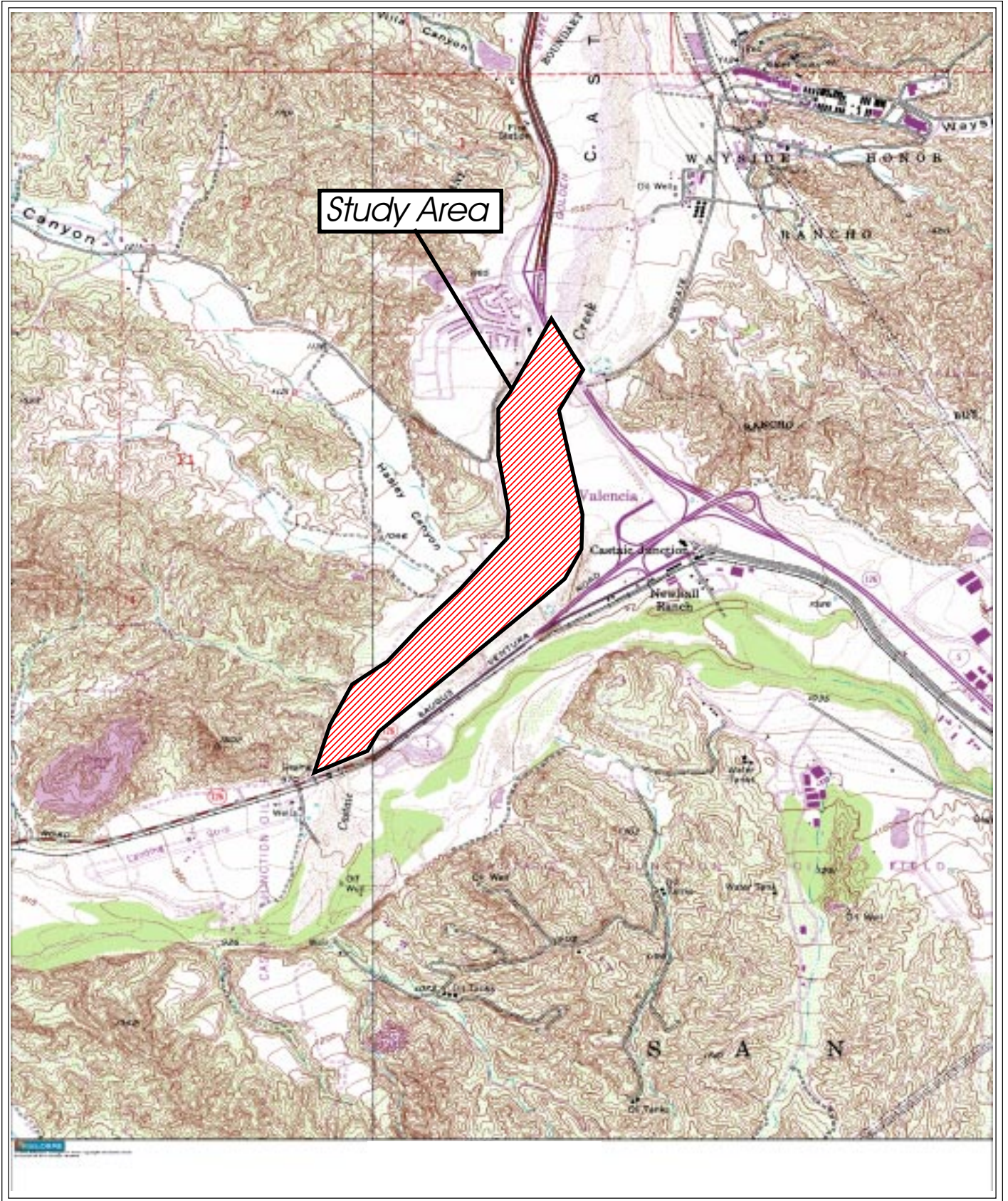
Surveys were conducted within potentially suitable habitat in a portion of Castaic Creek ( $\pm 10,800$  feet in length-herein site or study area) from State Route 126 upstream to just above the Interstate 5 Freeway. Regional and site vicinity survey location maps are included as **Plate 1** and **Plate 2**, respectively. The survey area is located on the "Val Verde" and "Newhall", California U.S. Geological Survey (USGS) 7.5-minute quadrangle maps.

### **General Arroyo Toad Ecology**

The arroyo toad was listed as an endangered species by the Service on December 16, 1994, and is also considered a California species of special concern. A federal Recovery Plan was prepared in 1999 and critical habitat was initially defined in February 2001. This species is restricted to the coastal slopes of southern California and northern Baja California, Mexico, except for one small, isolated population in the Mojave River. The arroyo toad averages 5 to 8 cm in length, and has a greenish-gray or tan coloration. It is restricted to rivers with shallow, gravelly pools adjacent to sandy terraces. Eggs are deposited in shallow pools with sand or pea gravel substrate overlain with flocculent silt. These pools have minimal current and little or no emergent vegetation. Juveniles and adults forage for insects on sandy terraces with nearly complete coverage of cottonwoods, oaks, and willows (USFWS 1994).

Many areas that may have historically contained suitable breeding habitat for arroyo toad have been degraded by dam and flood control construction, off-road recreation, urbanization, mining, and introduced predators (USFWS 1999). This species is currently found in relatively small, isolated populations. Most remaining populations of arroyo toad occur on privately owned lands. Less than 50 percent of the known extant populations of arroyo toad occur on the Los Padres, San Bernardino, and Cleveland National Forests (USFWS 1994).





August 2005

plate 2

**Site Vicinity**  
Castaic Creek-NRMP

## Arroyo Toad Critical Habitat

### **Unit 6: Upper Santa Clara River Basin, Los Angeles County**

Unit 6 includes portions of the Santa Clara River, Castaic Creek, and adjacent uplands. This unit is divided into three subunits. **Subunit 6a**, predominantly within the administrative boundary of the Angeles National Forest, includes approximately 4 miles of Castaic Creek upstream from the Elderberry Fore bay of Castaic Lake, and approximately 0.7 miles of Fish Creek upstream from its confluence with Castaic Creek. **Subunit 6b** includes approximately 6 miles of the Santa Clara River from its confluence with the South Fork of the Santa Clara River down to its confluence with Castaic Creek, and San Francisquito Creek from the Newhall Ranch Road bridge, downstream to its confluence with the Santa Clara River. **Subunit 6c** includes approximately 3 miles of the upper Santa Clara River from approximately 0.5 mile above its confluence with Agua Dulce Creek downstream through Soledad Canyon to its confluence with Bee Canyon Creek (Federal Register, Final Rule, Vol. 70, No. 70, April 13, 2005).

The majority of the lands within unit 6 are privately-owned, and special management considerations are required in this unit to address urban development, agriculture, recreation, and mining threats. Castaic Creek from its confluence with the Santa Clara River upstream to Castaic Lagoon was included within subunit 6b in the February 7, 2001 designation of critical habitat. A portion of lower Castaic Creek containing suitable arroyo toad habitat was also included in the April 28, 2004 proposed rule (area of current surveys). However, flows in this reach are affected by the operations of Castaic Dam (e.g., water removed from the system for a municipal drinking water supply) and arroyo toads have never been observed within lower Castaic Creek; thus, the Service no longer considers it essential to the conservation of the species in its current state. Similarly, the Service concluded that San Francisquito Creek above the Newhall Ranch Road bridge lacks surface water for a sufficient duration during spring of most years to allow for arroyo toad tadpole development. Thus, this portion of San Francisquito Creek, which was included in subunit 6b in the proposed rule, does not provide breeding habitat for arroyo toads, and the Service no longer considers this portion of San Francisquito Creek to be essential for the conservation of the species (Federal Register, Final Rule, Vol. 70, No. 70, April 13, 2005).

### **Primary Constituent Elements**

Criteria used by the Service to select critical habitat includes evaluation of an area to determine the presence of 'primary constituent elements'. As defined in 50 CFR, Part 17, Federal Register, Final Rule, Vol. 70, No. 70, April 13, 2005, these elements include physical and biological features that are essential to the conservation of the species as follows.

Primary constituent elements for the arroyo toad include aquatic breeding habitats and non-breeding upland habitats. These elements include: **(1)** A hydrologic regime that supplies sufficient flowing water of suitable quality and sufficient quantity to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads; Specifically, the conditions necessary to allow for successful breeding of arroyo toads are: (a) breeding pools with areas less than 12 inches deep; (b) areas of flowing water with current velocities less than 1.3 feet per second; and (c) surface water that lasts for a minimum length of 2 months in most years (i.e., a sufficient wet period in the spring months to allow arroyo toad larvae to hatch, mature, and metamorphose); **(2)** Low-gradient stream segments (typically less than 6 percent) with sandy or fine gravel substrates which support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles; **(3)** A natural flooding regime or one sufficiently corresponding to a natural regime that will periodically scour riparian vegetation, rework stream channels and terraces, and redistribute sands and sediments, such that adequate numbers and sizes of breeding pools and sufficient terrace habitats with appropriate vegetation are maintained; **(4)** Riparian and adjacent upland habitats (particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground to provide foraging and living areas for subadult and adult arroyo toads; **(5)** Stream channels and adjacent upland habitats that allow for migration to foraging areas, overwintering sites, dispersal between populations, and recolonization of areas that contain suitable habitat. Critical habitat



does not include man-made structures existing on the effective date of this rule and not containing one or more of the primary constituent elements, such as buildings, aqueducts, airports, roads, and the land on which such structures are located (Federal Register, Final Rule, Vol. 70, No. 70, April 13, 2005).

## ***Methodology***

Pursuant to federal survey protocol, six (6) surveys were conducted within the subject study area, with at least seven (7) days between each survey. Arroyo toad surveys were conducted both during daylight hours and at night between one hour after dusk and midnight. Each day and nighttime arroyo toad survey was conducted within the same 24-hour period. One or two biologists systematically surveyed the survey area at a time. Scott Cameron and Ron Francis conducted the survey effort. Surveys were conducted between late March and June, with at least one survey conducted per month during April, May, and June per protocol. Daytime surveys included an assessment of arroyo toad habitat suitability as well as searches for sign of arroyo toad presence (e.g., eggs, larvae, or juveniles), and for the purpose of identifying the most likely calling sites for any adult males potentially present in the area. Extreme caution was taken to avoid inadvertent disturbances to arroyo toad potentially presence within adjacent stream areas.

All nighttime surveys were conducted when air temperatures were at least 55 degrees Fahrenheit. Periods of full moon phases were generally avoided. Surveys were conducted each night from about 8:30 p.m. to approximately 12:00 a.m. Weather conditions were generally calm and clear throughout the survey effort with just a few days of relatively overcast conditions. The site was surveyed by walking slowly and carefully along stream banks or within the stream itself when necessary. As with the daytime surveys, every precaution was taken not to disturb or create silt deposits within potential breeding pools, and care was taken not to disturb or injure potentially occurring arroyo toad adults, juveniles, tadpoles, or egg masses. Periodic stops were taken to listen for calling toads at 15-minute intervals or as appropriate depending upon individual site conditions. Surveys were conducted as quietly as possible to maximize the potential to hear calling arroyo toad. Handheld flashlights and headlamps were used to visually locate arroyo toad within potential breeding pools and along stream banks. In addition to documenting arroyo toad data, all aquatic herpetofauna observed during both day and night surveys were recorded. Surveys were initiated on April 7 and completed on June 9, 2005 as follows: Survey One (April 7); Survey Two (April 30); Survey Three (May 15); Survey Four (May 23); Survey Five (June 2); and Survey Six (June 9).

Periodic site visits were performed by Scott Cameron and Ron Francis in an off-site area known to be occupied by arroyo toad to evaluate seasonal status. The visits were initially conducted to determine if and when adult males were calling, and later to evaluate larval stages of development. The area surveyed included a portion of Castaic Creek that is located approximately one mile north of the Castaic reservoir on U.S. Forest Service land. During the initial visit in May, arroyo toads were heard vocalizing. Tadpoles and egg masses were recorded in the lower reaches of this known occupied area in mid-June as well.

## ***Existing Study Area Conditions***

### **Castaic Creek (Creek) from State Route 126 to Interstate 5 Bridge**

This reach supports a mosaic of riparian and terrace habitats within the Creek channel, barren sandbars, and various densities of riparian scrub and woodland that are consistent with many arroyo toad primary constituent elements. Contrary to the previous two seasons of surveys conducted in Castaic Creek, a well-developed hydrological regime was present within the Castaic Creek survey area as surface water was present from the initiation of surveys in April to the completion of surveys in June. Due to higher than average rainfall during the 2005 season, the Creek had been extensively scoured and much of the relatively overgrown and dense vegetation from previous years had been removed by major water flow. The channel provided sufficient low gradient segments to support shallow pools with suitable substrates. There are some suitable upland terrace habitats between the banks of the Creek to



support foraging and over-wintering arroyo toad. However, nearly all of the uplands located outside the stream banks are either developed or are heavily disturbed through agricultural or pre-grading activities. In addition, portions of the stream banks currently contain large rip-rap boulders and concrete slabs in association with each of the three bridge structures present in this survey reach. In these areas, such structures are likely to impede any upland movement of arroyo toad. As such, very little habitat outside of the banks of the stream support habitat (patchy distribution along the creek) for over-wintering arroyo toad.

### ***Survey Results/Conclusion***

No direct observations or vocalizations of arroyo toad were recorded during the focused survey effort conducted in 2005. In addition, no egg masses or other sign of arroyo toad were recorded within the subject survey area. Common amphibian species recorded during the focused arroyo toad survey effort included adults, juveniles, and tadpoles of the western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*). No sensitive aquatic species were recorded during the survey effort.

Potentially suitable habitat consistent with many arroyo toad primary constituent elements occurred within the survey area in 2005, primarily due to the above average seasonal rainfall that contributed to the presence of a consistent hydrological regime, an essential habitat component required for the existence and survival of the arroyo toad. Detrimental factors for arroyo toad detected within or adjacent to the Creek included the use of off road vehicles (ORV) in portions of the drainage and the overall absence of adjacent upland habitats suitable for migration, overwintering, and/or dispersal between populations. No arroyo toad were recorded in this portion of Castaic Creek during focused surveys conducted in 2003 and 2004 (Ecological Sciences 2003, 2004). The nearest recent arroyo toad observation (2003) known to Ecological Sciences is located  $\pm 2.25$ -miles southeast of the subject study area, upstream of the Interstate 5 bridge crossing, near the confluence of the Santa Clara River and San Francisquito Creek.

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If you have any questions regarding results presented in this report, please don't hesitate to contact us at the letterhead address.

Sincerely,

Ecological Sciences, Inc.



Scott D. Cameron  
Principal Biologist



## **References**

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