

January 22, 2008

Chairman Patrick Kruer  
ATTN: Mark Delaplaine  
California Coastal Commission  
45 Fremont Street, Suite 2000  
San Francisco, CA 94105-2219

Re: Response to "Response to Coastal Commission Staff Report Released September 2007, Foothill South Transportation Corridor South" regarding impacts to the endangered arroyo toad (*Anaxyrus [Bufo] californicus*)

Dear Chairman Kruer and Members of the Commission:

I was recently made aware of and have reviewed the TCA response to the Coastal Commission Staff Report for the above-referenced project proposal. This letter responds to that document's discussion of the project's impacts to the endangered arroyo toad and misinformation contained therein.

My credentials as an expert on the arroyo toad are set forth in my letter to the Commission dated **August 16, 2007**. In my original letter, I detailed the best scientific information available on the arroyo toad in the lower San Mateo and San Onofre Creek watersheds. All information provided in that letter was and is sound, repeatable, and observable.

Page 8 of the executive summary of TCA's response states that the arroyo toad was not identified by surveys "within the coastal zone portion of the project." However, even if these particular surveys did not find the arroyo toad, the fact remains that they do occur within the footprint of the project within the coastal zone. Overwhelming evidence for this exists in the collections, peer-reviewed literature, contract reports, and my own personal observations (Holland and Goodman 1998, Shanahan 1998, Atkinson et al. 2003, Brehme et al. 2006, pers. Obs.). Precise locations in reports plus the mobile nature of this species guarantees occupation and utilization of the project footprint by arroyo toads. TCA thus ignores the best available scientific information amassed over decades of work on the arroyo toad in San Mateo Creek.

EXHIBIT 8  
Application No.  
CC-018-07  
TCA

Page 8 of the executive summary of TCA's response also references a statement by a TCA consultant asserting that the bridge spans for the toll road would be above the river and that therefore impacts to arroyo toad are limited to the footprint of the supporting bridge columns. This statement is flawed. Impacts to the toads will occur simply by spanning the bridge over its habitat. Arroyo toads are not known to breed beneath bridges because shading reduces the capacity for thermoregulation of these ectothermic organisms. Even a permanent shadow cast across the creek from 50 feet above will cause a reduction of habitat and impacts to existing and occupied arroyo toad habitat.

The letter of Dr. Dennis Murphy, attached to and referenced in the TCA Response document, ignores the science available on arroyo toads in the San Mateo Creek. He points to the Monitoring Protocol developed by Camp Pendleton for the species. I am very familiar with that protocol: I conceived of the project, funded it, developed it by contracting my colleagues from the USGS, and contracted the implementation thereof. The protocol has no relevance to the Toll Road project. Dr. Murphy also questions the occurrence of arroyo toads in the coastal zone, despite all of the scientific work cited above that proves their occurrence.

In the letter from Dr. Murphy (page 4 of 6, 1<sup>st</sup> paragraph), he erroneously states that "the fate of the arroyo toad in the overall project area is very much a matter of its survival in areas inland." This is a completely unsubstantiated claim that distracts from the obvious impacts to arroyo toad habitat in the project footprint. As noted above, the peer-reviewed and other information clearly demonstrates the occurrence of the arroyo toad in the coastal zone of Lower San Mateo Creek.

Page 4 of 6, paragraphs 2 and 3 of Dr. Murphy's letter criticizes the Commission for ignoring conservation efforts on Camp Pendleton and in the Southern Subregion HCP. These are stand-alone efforts that have nothing to do with the Toll Road project and do not address its impacts nor mitigate for them in any fashion.

Moreover, Murphy's claim that the proposed project does not affect an important portion of the species range is wrong. Rather, it would impact one of only three coastal populations extant in the United States. The arroyo toad historically occurred in all rivers of southern California terminating only where the saltwater influence begins. The Toll

Road as proposed would further reduce the potential for one of the last three populations to survive in perpetuity.

Section iv. of TCA's response claims that "There is absolutely no scientific evidence that arroyo toads closer to the coast are any different from those inland." This is a false statement. The M.S. Thesis by Shanahan (1998) that I cited in my letter, conclusively proves otherwise. Arroyo toads are significantly different genetically in coastal portions of San Mateo and San Onofre Creek than populations farther inland or in other watersheds. The Toll Road would reduce the gene flow between populations necessary to avert deleterious inbreeding by cutting off connectivity.

In my previous letter, I addressed the proposed mitigation measures, which are primarily construction-related. These in no way compensate for the loss of habitat and connectivity.

In conclusion, the TCA's response disregards the available scientific literature that documents arroyo toad occupancy in the coastal zone and fails to account for the project's adverse and unmitigable effects.

Please feel free to contact me if you have further questions.

Sincerely,



Robert Lovich, M.S.

4886 Mount Armour Drive

San Diego, CA 92111

rlovich@gmail.com

Atkinson, A. J., B. S. Yang, R. N. Fisher, E. Ervin, T. J. Case, N. Scott, H. B. Shaffer. 2003. MCB Camp Pendleton Arroyo Toad Monitoring Protocol.

Brehme, C.S., S.L. Schuster, C.J. Rochester, S.A. Hathaway and R.N. Fisher, 2006. MCBCP Arroyo Toad Monitoring Program: 3-Year Trend Analyses for 2003-2005. U.S. Geological Survey Data Summary prepared for Marine Corps Base Camp Pendleton. 102pp.

Griffin, P.C. and T.J. Case. 2001. Terrestrial habitat preferences of adult arroyo southwestern toads. *Journal of Wildlife Management*. 65(4):633-644.

EXHIBIT 8 Application No. CC-018-07 TCA
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Holland, D.C. and R.H. Goodman, Jr. 1998. A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, San Diego County, California.

Shanahan, J.A. 1998. Characterization of nine highly polymorphic microsatellite loci for use in examination of population subdivision and genetic diversity in the endangered arroyo toad (*Bufo microscaphus californicus*). Thesis (M.S.). University of California, San Diego.

EXHIBIT 8  
Application No.  
CC-018-07  
TCA

August 16, 2007

**RECEIVED**

AUG 20 2007

CALIFORNIA  
COASTAL COMMISSION

Mr. Mark Delaplaine  
California Coastal Commission  
45 Fremont Street, Suite 2000  
San Francisco, CA 94105

Re: Foothill South Transportation Corridor (San Diego and Orange Counties), and  
Potential Impacts to Endangered Arroyo Toads (*Anaxyrus [Bufo] californicus*)

Dear Mr. Delaplaine:

I recently received your letter requesting my expert opinion on potential impacts to San Mateo Creek populations on the federally endangered arroyo toad (*Bufo californicus*) as a result of the proposed Foothill South Transportation Corridor (San Diego and Orange Counties), as assessed in the Coastal Zone Management Act Consistency Application for the project.

As a PhD. candidate, and having earned an M.S. in Biology, I have more than a working understanding of this species. My dissertation research is related to the conservation genetics of the arroyo toad, and I also have nearly a decade of direct experience with the management, research, and conservation of this species. I have conducted field studies of arroyo toads in every river system that they occur in both in California, and in Baja California, México. I have documented new populations, and even rivers for the species (Mahrdt et al. 2003). I have spent thousands of hours studying the arroyo toad in the wild throughout its range. I have also reviewed and/or drafted dozens of environmental documents related to arroyo toad impacts in my professional career.

I have reviewed the CZMA Consistency Application submitted to the Commission by TCA, as well the SEIR for the project. Contrary to the findings in the application, this project would significantly disrupt arroyo toad populations in the coastal zone of San Mateo Creek watershed, and over the long term would impact populations in neighboring watersheds and tributaries as well, including those in San Juan Creek, and

EXHIBIT 8  
Application No.  
CC-018-07  
TCA

likely San Onofre Creek. Current scientific evidence of the known distribution, habitat use, and overall biology of the arroyo toad indicate several factors:

1. Occupied and known arroyo toad habitat would be directly and significantly disrupted within the coastal zone of lower San Mateo Creek. Arroyo toads are well known as inhabiting the lower portions of San Mateo Creek, even west of I-5 (Griffin and Case 2001, Holland and Goodman 1998). Besides inhabiting suitable riparian habitat in the main branch of San Mateo Creek, they also occupy riparian habitats immediately adjacent to the San Mateo Creek estuary, the lower end of the agricultural fields in San Mateo Creek, and upland habitats adjacent to the San Mateo Campground. These areas are within the proposed Tollroad footprint. Any construction or disturbance activities in lower San Mateo Creek within or adjacent to the coastal zone will directly result in impacts to occupied arroyo toad habitat.
2. Outside of coastal zone impacts, arroyo toad occupied habitat would be disrupted along the length of upland habitats on the north side of San Mateo Creek, Cristianitos Creek, Lower Gabino Creek, and San Juan Creek. Arroyo toads are known to occupy upland habitats in Cristinatos Creek as far as 1175 meters from the edge of Riparian habitat (Holland and Sisk 2000). Not only were they documented at nearly 1.2 km from the edge of riparian habitat, but these were the farthest that arrays were placed for the study. Findings of Holland Sisk (2000) determined that there is no natural limiting factor to preclude them from moving even greater distances than 1.2 km from the riparian edge. Griffin and Case (2001) also documented telemetered toads ranging widely along the lower San Mateo Creek habitats. Arroyo toads are also known to occupy San Juan Creek, and Gabino Canyon. Any disturbance or construction in riparian or adjacent upland habitats along these drainages will result in impacts to occupied arroyo toad habitat as well. Supporting evidence for upland habitat use shows that arroyo toads have moved similar horizontal and vertical distances from riparian habitats respectively in Boden Canyon and De Luz Creek, San Diego County (Pers. Obs.), and at San Faustino and in the Rio San Rafael, Baja California, México (Lovich et al. In Press).

3. An important biological consideration is that arroyo toads overland movements and upland habitat use is correlated with rainfall. When conditions are wetter, arroyo toads can range farther from water sources without desiccating, and they are capable of moving larger distances overland. Thus any surveys conducted in dry, or below-average rainfall years should be considered suspect, and not representing the total available habitat for the species.
4. Preliminary results of my dissertation indicate that very low mitochondrial DNA sequence variation exists in the arroyo toad, supporting the importance of gene flow between watersheds and the hypothesis that arroyo toads move between watersheds and utilize upland habitats far more frequently than existing data indicates. Movements and gene flow between watersheds contributes to increasing gene flow and maintaining similar ancestral DNA sequences as a result.
5. Shanahan (1998) studied the population genetics of the arroyo toad using microsattellites and found evidence of recent gene flow between populations in San Onofre and San Mateo Creek watersheds. Variation was found among populations within San Mateo Creek tributaries as well. This data, and that from my PhD. Dissertation support the model that gene flow is occurring in geographically proximal streams such as San Mateo River and San Juan Creek. Such gene flow is well known to maintain genetic diversity and avoid deleterious effects from inbreeding. Impacts on known arroyo toad populations in lower San Mateo Creek could result in a lowered potential for gene flow between San Mateo Creek and San Onofre, because populations will be reduced and fragmented by habitat impacts.
6. Mitigation measures in the CZMA application are insufficient. Most of the measures are related to pre-construction and construction related impacts, and the duration of funding for surveys of long-term impacts, exotic species control, and landscaping and restoration activities is nebulous at best. Given the above information, it is well-known that occupied arroyo toad habitat will be significantly and permanently disrupted as a result of construction of the tollroad.

The above scientific evidence clearly shows that occupied arroyo toad habitat in coastal zone and elsewhere will be destroyed if the tollroad is constructed as proposed. Available habitat will be reduced, in turn reducing genetic variation and limiting natural movements of the arroyo toad. However, immediate loss of habitat will also result as the tollroad would remove many acres of suitable upland habitat utilized by the arroyo toad for foraging and also for burrowing retreats between periods of activity.

In my professional opinion, potentially irreversible fragmentation of arroyo toad populations within and without the coastal zone would result from the construction of the proposed tollroad. The Tollroad footprint represents the last wildlife corridor that extends from the Pacific Ocean inland to the Santa Ana Mountains. Areas to the north and south have already been compromised by development, and arroyo toads vanished from these areas long ago. The tollroad in this location would degrade and fragment this extraordinary relict of a once-larger functional ecosystem in Southern California.

I also know from direct study that the herpetofauna along the southern end of the tollroad represent an intact species assemblage. That is, all of the reptile and amphibian species that were there historically are currently extant except for the red-legged frog (*Rana draytonii*). The cost of developing these lands could be very high to some of the approximately 40 species of native reptiles and amphibians likely to occur there. Some of these roughly 40 species are highly endangered as well, such as the Southwestern Pond Turtle (*Emys marmorata*), coastal banded gecko (*Coleonyx variegatus abbotti*), and coastal glossy snake (*Arizona elegans occidentalis*), although these species currently lack federal protection warranted to the arroyo toad under the Endangered Species Act.

Arroyo toads studied in the vicinity of the project area represent the first documented movements by the species of well over a kilometer from riparian habitats into adjacent upland habitats (Holland and Sisk 2000). To claim in the application that no impacts will occur to occupied arroyo toad habitat flies in the face of the good science that broadened our understanding of upland habitat use in this very location.

This project is surrounded by textbook examples of arroyo toad management, both good and bad. The San Luis Rey River to the south lacks arroyo toads from Bonsall downstream because of dense urban development, abundant exotic species, altered hydrology, and other factors. Just to the north is the Santa Margarita River, which has

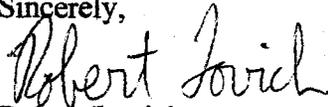
continuous populations of arroyo toads along its last ten miles, and also has very little development infringing upon it along that course.

The San Onofre, San Mateo and Santa Margarita Rivers have the only extant continuous populations of arroyo toads that occur from the coast to inland areas throughout their entire range in California. They have been completely fragmented in every other river system, and are no longer found in coastal areas elsewhere in California. In general, development adjacent to arroyo toad occupied river systems has resulted in the loss of this species, and it is highly likely that similar fragmentation would occur if the proposed project is developed.

The CZMA application is false in claiming no impacts will result and does not adequately analyze how arroyo toads will be affected by the project, and successfully protected and managed in perpetuity. My personal challenge as a professional biologist working in this region has always been to find a balance between effective conservation of threatened species, and sustainable use of the landscape. However, as it stands, this project is inconsistent with that balance by significantly reducing the viability of arroyo toads in and adjacent to the proposed project. A far more thorough and forthright analysis of impacts and mitigation needs is required.

Please feel free to contact me if you have further questions.

Sincerely,



Robert Lovich

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Griffin, P.C. and T.J. Case. 2001. Terrestrial habitat preferences of adult arroyo southwestern toads. *Journal of Wildlife Management*. 65(4):633-644.

Holland, D.C. and R.H. Goodman, Jr. 1998. *A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, San Diego County, California*.

Holland, D.C. and N.R. Sisk. 2000. *Habitat Use and Population Demographics of the Arroyo Toad (*Bufo californicus*) on MCB Camp Pendleton, San Diego County, California*:

EXHIBIT 8 Application No. CC-018-07 TCA
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Final Report for 1998-1999.

Lovich, R.E., C.R. Mahrtd, S.J. Zimmitti, and G. D. Danemann. In Press. The Distribution and Conservation Status of the Arroyo Toad (*Bufo californicus* Camp) in Baja California, México

Mahrtd, C.R., R.E. Lovich, S.J. Zimmitti, and G. D. Danemann. 2003. Geographic Distribution. *Bufo californicus*. Herpetological Review. 34(3):256-257.

Shanahan, J.A. 1998. Characterization of nine highly polymorphic microsatellite loci for use in examination of population subdivision and genetic diversity in the endangered arroyo toad (*Bufo microscaphus californicus*). Thesis (M.S.). University of California, San Diego.

EXHIBIT 8  
Application No.  
CC-018-07  
TCA

**Robert E. Lovich, M.S.**

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**Education -** B.S. in Zoology, University of Hawaii 1996  
M.S. in Biology, Loma Linda University 2000  
*PhD. student, Loma Linda University, 2002-present*

**PROFESSIONAL EXPERIENCE**

**Natural Resources Specialist, U.S. Navy, 2006-present**

Duties include management of natural resources on military lands in the southwestern United States, with an emphasis on federally listed threatened and endangered species, compliance with environmental regulations, and formulating, contracting, and conducting research relevant to wildlife resources. I focus primarily on natural resources of Marine Corps installations in the California, Nevada, and Arizona region.

**Senior Biologist, AMEC Earth and Environmental, 2005-2006**

Providing support of natural resource and other contracts, including exotic species mitigation for Kinder Morgan Pipeline Project at MCBCP, MCBCP Artillery Firing Area Surveys for the Endangered Stephens' Kangaroo Rat, as well as the Santa Clara River Arundo Removal Program, and Desert Tortoise Surveys.

**Senior Biologist, Anteon Corporation, 2004-2005**

Provided biological oversight for natural resource contracts, environmental document editing and preparation. Assisted in developing the following specific projects and/or contracts:  
Development of the Final Environmental Assessment for Range Modernization at the Pohakuloa Training Area, Island of Hawaii for the Department of the Army, Schofield Barracks (2004);  
Draft Biological Assessment for Training at Red Beach, United States Marine Corps, Camp Pendleton, California (2004);  
Draft Biological Assessment for Steelhead Salmon (*Oncorhynchus mykiss*), United States Marine Corps, Camp Pendleton, California (2004).

**Wildlife Biologist, Marine Corps Base Camp Pendleton, 2001-2004**

Duties included array of responsibilities pursuant to wildlife management on the base, with special emphasis on federally listed threatened and endangered species, compliance with environmental regulations, and formulating, contracting, and conducting research relevant to wildlife resources. MCBCP is home to more endangered species than any other military base, and the workload demands and experience reflects this.

Exemplar projects and/or contracts managed: Development and Implementation of a Basewide Monitoring Protocol for the Arroyo Toad (2003); Development and Implementation of a Basewide Monitoring Protocol for the Tidewater Goby (2003); Creation of a 20-acre Coastal Sage Scrub Mitigation Bank (2001-ongoing); Juliett Area Stephens' Kangaroo Rat Habitat Enhancement;

Section 7 ESA Consultations Conducted: Range 314 Access Road (2003); Expan

EXHIBIT 8  
Application No.  
CC-018-07  
TCA

parking areas associated with P-017/098 BEQ at Camp San Mateo (2002); P-633 Infantry squad battle course (26 Jul 2001); SDG&E access road near San Onofre housing (2002); Sempra Energy Talega Substation (2001); P-634 Armor/Anti-armor tracking range (2001); Juliett perimeter firebreak road and erosion control project (2001).

#### **Research Technician, San Diego State University, 1999-2001**

Contract Employee of the United States Geological Survey, Western Ecological Research Center. Duties included but not limited to: surveying and monitoring terrestrial vertebrates and invertebrates throughout southern California, report preparation and publication, data entry and payroll. Conceived, conducted, and published and/or presented several original research projects as part of the responsibilities of this position.

#### **Dynamic World Biological Services, 1997-2000**

Performed General Biological and Habitat Assessments throughout the Coachella and Imperial Valleys, including focused desert tortoise surveys. Consulting biologist for 'The Canyons at Bighorn' in Palm Desert, CA. Biological subcontractor for 'Varanus Biological Consulting.' Collaborated in development of Biological Assessment Reports for both the San Pasqual and San Luis Rey River corridors. Biological subcontractor for 'Tierra Madre Consulting,' Inc. Performed desert tortoise (*Gopherus agassizii*) and arroyo toad (*Bufo californicus*) surveys throughout southern California.

#### **Loma Linda University, 1996-1999**

Extensive laboratory experience in conducting genetic research. Proficient with DNA extraction, amplification, visualization by gel electrophoresis, sequencing and data analysis.

#### **University of Hawaii at Manoa, 1993-1994**

Field and lab assistant for native Hawaiian forest bird study at Harold Lyon Arboretum. Extensive experience in mist netting of native passerines, and in field observations of many species of native Hawaiian forest birds.

### **PUBLICATIONS**

- Lovich, R.E., T.S. Akre, M. J. Ryan, N.J. Scott, and R.E. Ford. 2006. Herpetofaunal survey of Cerro Guanacaure, Montaña La Botija and Isla Del Tigre protected areas in southern Honduras. Report prepared for the United States Agency for International Development. 33pp.
- Lovich, R.E., T. Akre, J. Blackburn, T. Robison, and C. Mahrtdt. 2007. Geographic Distribution. *Actinemys marmorata*. Herpetological Review. 38(2): 216-217.
- Ervin, E., R. Lovich, K. Gray Lovich, N. Scott, and J. Lopez. 2007. *Eleutherodactylus stejnegerianus* (Stejneger's Robber Frog): Predation. Herpetological Review. 38(2): 185.
- Lovich, R.E., E. Dugan, and C.R. Mahrtdt. In prep. Terrestrial Herpetofauna of the Bahía de Los Angeles. In, Danemann, G., and E. Ezcurra (Eds.), "Natural History of the Bahía de Los Angeles."
- Lovich, R.E. W. Hayes, H. Mushinsky, and G. Rodda. In Press. Transect Sampling. In, Foster, M. et al. (Eds.) "Measuring and Monitoring Biodiversity: Standard Methods for

- Reptiles." Smithsonian Press. Washington D.C., USA.
- Lovich, R.E. and A.M. Bauer. In Press. Saxicolous Reptiles. *In*, Foster, M. et al. (Eds.) "Measuring and Monitoring Biodiversity: Standard Methods for Reptiles." Smithsonian Press. Washington D.C., USA.
- Lovich, R.E. and C.K. Lovich. In Press. Microhabitat description. *In*, Foster, M. et al. (Eds.) "Measuring and Monitoring Biodiversity: Standard Methods for Reptiles." Smithsonian Press. Washington D.C., USA.
- Lovich, R. E., E. E. Ervin, and R. N Fisher. In Prep. Terrestrial fauna community composition of *Arundo donax* (Poaceae) root masses.
- R.E. Lovich, Mahrtdt, C.R., and Downer, B. 2005. Geographic Distribution. *Actinemys marmorata*. Herpetological Review 36(2):200-201.
- Mahrtdt, C.R., and R.E. Lovich. 2004. Geographic Distribution. *Bufo californicus*. Herpetological Review. 35(3):280
- Lovich, R.E. 2004. Book review: *Introduction to Horned Lizards of North America* by Wade C. Sherbrooke 2003. Bulletin of the Chicago Herpetological Society. 39(8):151-152.
- Lovich, R.E. 2003. Habitat Use by the Amakihi, *Hemignathus chloris* (Aves: Drepanidinae) in an Urban Setting: Indications of ecological plasticity. *Elepaio* 63(7):51, 54-55.
- Mahrtdt, C.R., R.E. Lovich, S.J. Zimmitti, and G. D. Danemann. 2003. Geographic Distribution. *Bufo californicus*. Herpetological Review. 34(3):256-257.
- Lovich, R.E. 2003. Book review: *Amphibians and Reptiles of Baja California: Including its Pacific Islands and the Islands in the Sea of Cortés* by L. Lee Grismer 2002. Bulletin of the Chicago Herpetological Society. 38(3):153-154.
- Lovich, R. E., and L. L. Grismer. 2003. *Xantusia gracilis*. Catalogue of American Amphibians and Reptiles. 772.1-772.2.
- Mittermeier, C. G., W. R. Konstant, R. E. Lovich, and J. E. Lovich. 2002. The Mojave Desert. Pp.351-356. *In*, Wilderness: Earth's Last Wild Places. Mittermeier, R, C. G. Mittermeier, P. Robles Gil, G. Fonseca, T. Brooks, J. Pilgrim, and W. R. Konstant (eds.). CEMEX, México.
- Mahrtdt, C.R., R.E. Lovich, and S.J. Zimmitti. 2002. Habitat and population status of the arroyo toad (*Bufo californicus*) in the Rio Guadalupe, Baja California, Mexico. Herpetological Review 33(2):123-125.
- Lovich, R.E. 2001. Phylogeography of the night Lizard, *Xantusia henshawi*, in southern California: Evolution across fault zones. Herpetologica 57(4):469-486.
- Lovich, R.E. 1997. Recent fisher (*Martes pennanti*) sightings in Indiana County, Pennsylvania: Return of a native? The Maryland Naturalist. 41(1-2):45-48.
- Lovich, J. E., and R. E. Lovich. 1996. The decline of native brook trout (*Salvelinus fontinalis*) populations along the Upper West Branch of the Susquehanna River: canaries outside the coal mine. Journal of the Pennsylvania Academy of Science. 70(2):55-60.

#### ONGOING RESEARCH

**PhD. Dissertation 2002-present** - Phylogeography and conservation genetics of the federally endangered arroyo toad (*Bufo californicus*).

EXHIBIT 8 Application No. CC-018-07 TCA
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**2006** – Led a herpetofauna investigation of three protected areas in southern Honduras, involving Loma Linda University, USAID, and numerous additional supporting institutions.

**2004** – Led a herpetofauna investigation in the southern Pacific coast of Costa Rica, involving Loma Linda University, San Diego Zoological Society, ASANA, and several other institutions.

**2001-present** – Conducting rangewide surveys of the status and distribution of the arroyo toad (*Bufo californicus*), and other aquatic herpetofauna in northern Baja California. Manuscript in preparation.

### PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

Assistant Editor, *Herpetological Conservation and Biology*, 2006-present

Partners in Amphibian and Reptile Conservation (PARC), CA State Coordinator, 2003-present

Research Associate, Pronatura

American Society of Ichthyologists and Herpetologists

Society for the Study of Amphibians and Reptiles

Herpetologists League

Society of Systematic Biologists

Chicago Herpetological Society

Inland Empire Reptile and Amphibian Society – Vice President from 1997-1999

### GRANTS AND AWARDS

**Chicago Herpetological Society**, 2002 Herpetological Grant Awarded for Proposed Survey to Determine the Distribution and Status of the Arroyo Southwestern Toad (Bufonidae: *Bufo californicus* Camp) in Baja California, México

**Bob Adams Student Paper Award**, 1999 Desert Research Symposium, San Bernardino County Museum.

**Research Assistantship**, 1997-1999 Loma Linda University Graduate School Awards

### CONTRIBUTED TALKS AND SYMPOSIA

**2005** – Lovich, R., M. Ryan, and N. Scott. Status of *Atelopus varius* within a biological corridor in South-central Pacific Costa Rica. American Society of Ichthyologists and Herpetologists Herpetologist's League, and Society for the Study of Amphibians and Reptiles Annual Joint Meetings.

**2005** – The Status and Distribution of the Arroyo Toad (*Bufo californicus*) and other amphibians in the rivers of northern Baja California. Palomar Audubon Society. May, 2005.

**2005** – First Meeting of California Partners in Amphibian and Reptile Conservation. **February at San Diego Zoological Society.**

**2004** – A new strategy for monitoring arroyo toad populations. Brehme, Cheryl S., Atkinson, A., Lovich, R., And R.N. Fisher. Western Section of the Wildlife Society Annual Meeting. Rohnert Park, CA.

**2003** – Natural Resources and Military Training: Striking the Balance at Camp Pendleton. San Diego State University Seminar in Biology. 5/5/03.

**2003** – The Plight of the Arroyo Toad (*Bufo californicus*) and other amphibians in the rivers of northern Baja California: Tales of Sapos, Tacos, and Random Encounters. American Fish

Society Annual Meeting, San Diego, CA 4/15/03.

**2003** – Herpetofaunal Habitat Use among Shared Species in Sonoran, Mojavean, and Coastal Military Lands in Southern California. The Western Section of the Wildlife Society, Annual Meeting. Irvine, CA. 2/28/03

**2002** – Distribution and Status of the Arroyo Southwestern Toad (*Bufo californicus* Camp) in Baja California, México. American Society of Ichthyologists and Herpetologists Herpetologist's League, and Society for the Study of Amphibians and Reptiles Annual Joint Meetings.

**2002** – Hop, Slither, or Crawl? Contrasting Corridors for Herpetofauna. Invited speaker for 'South Coast Missing Linkages: Habitat Connectivity Planning for the South Coast Ecoregion' workshop.

**2002** – Camp Pendleton's Herpetofauna: Tracking the Success of Upland Management Practices in a Vanishing Landscape. The Wildlife Society – Western Section Annual Meeting

**2001** – Reptiles and Amphibians of Southern California: More Diversity than Meets the Eye! Invited speaker for the Chicago Herpetological Society. Chicago, Illinois

**2001** – Terrestrial fauna community composition of *Arundo donax* (Poaceae) root masses. 15<sup>th</sup> Annual Meeting of the Society for Conservation Biology. Hilo, Hawaii, USA

**2000** – **Organized:** Natural History and Evolution of the Reptiles and Amphibians of Baja California. Sponsored by the American Society for the Study of Amphibians and Reptiles. La Paz, Mexico. Symposium organized by Robert Lovich, M.S. and Robert Fisher, PhD.

**2000** – Proposed genetic analysis of the arroyo toad (*Bufo californicus*). Marine Corps Base Camp Pendleton Arroyo Toad Symposium. 10/5/00.

**1999** – Phylogeography of the granite night lizard (*Xantusia henshawi*). International Herpetological Symposium 23<sup>rd</sup> Annual Meeting. San Diego, California.

**1999** – Phylogeography of the granite night lizard (*Xantusia henshawi*). San Bernardino County Museum Quaternary Desert Research Symposium.

**1996** - An Inventory of native brook trout (*Salvelinus fontinalis*) populations along the upper west branch of the Susquehanna River. Albert Tester Symposium, University of Hawaii at Manoa.

**1996** – Populations of the endangered species Ihi'ihilauakea (*Marsilea villosa*) and Recommendations for its Survival along the Ka Iwi coast. Ka Iwi Action Council Meeting. Honolulu, Hawaii

#### SYMPOSIA AND WORKSHOPS ATTENDED

**2003** – The Wildlife Society – Western Section Annual Meeting

**2002** – South Coast Missing Linkages: Habitat Connectivity Planning for the South Coast Ecoregion

**2002** – The Wildlife Society – Western Section Annual Meeting

**2001** – California Exotic Pest Plant Council Symposium. San Diego, CA, USA.

**2001** – 15<sup>th</sup> Annual Meeting of the Society for Conservation Biology. Hilo, Hawaii, USA.

**1997- 2000, 2002, 2004, 2005** – American Society of Ichthyologists and Herpetologists Herpetologist's League, and Society for the Study of Amphibians and Reptiles Annual Joint Meetings.

EXHIBIT 8 Application No. CC-018-07 TCA
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- 2000** – Planning for Biodiversity: Bringing Research and Management Together. Pomona, CA  
**1999** – Population viability analysis (PVA) conference and workshop. Sponsored by University of California, Berkeley. San Diego, CA  
**1998** – Herpetology of the Californias 1<sup>st</sup> Annual Klauber Symposium. San Diego Natural History Museum. San Diego, California  
**1998** – Declining Amphibian Populations Workshop at the San Diego Natural History Museum. San Diego, California  
**1996** – Desert Tortoise Council. Attended the Desert Tortoise Council Workshop in Ridgecrest, California on October 26-27, 1996. Received USFWS approved courses in handling of tortoises

### HOBBIES AND INTERESTS

- Classic American musclecar restoration.
  - Outdoor recreation activities including hiking, camping, fishing and surfing
  - Wildlife Photography
- International travel experience** – Costa Rica, France, Italy, Germany, Monaco, Mexico, Canada, Japan, Haiti, Thailand, South Korea, Hong Kong, Malaysia, Singapore, Puerto Rico, US Virgin Islands, and extensive travel throughout the United States

### REFERENCES

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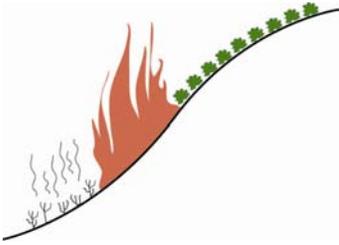
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EXHIBIT 8 Application No. CC-018-07 TCA
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# The California Chaparral Institute

*...the voice of the chaparral*



January 22, 2008

Chairman Patrick Kruer  
ATTN: Mark Delaplaine  
California Coastal Commission  
45 Fremont Street, Suite 2000  
San Francisco, CA 94105-2219

## **Re: Fire Impacts, Foothill Transportation Corridor-South**

Dear Chairman Kruer and Members of the Commission:

I am a trained wildland firefighter and have studied for more than 20 years the shrubland plant communities through which the proposed Foothill Transportation Corridor is planned to be built.

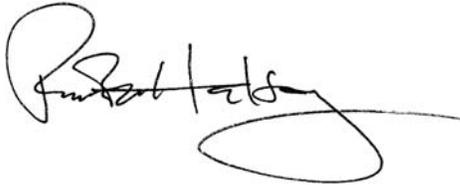
The Coastal Commission's staff report correctly concluded that the toll road would "increase the likelihood of fires occurring within gnatcatcher habitat surrounding the toll road route." The TCA's response that the project would "not substantially increase the risk of wildfire" is simply unsupported.

TCA notes that the "entire alignment would be fenced, in part, to restrict access from adjacent land uses." But the absence or presence of fencing has nothing to do with whether or not a road increases fire risk. The mere presence of vehicles and associated passenger activities, accidents, and equipment malfunctions dramatically increase fire risk. This is why so many fires originate next to roads. For example, road activity is one of the primary causes of fire starts within the Cleveland National Forest. I have attached a map showing the origins of fires within the Descanso Ranger District of the Cleveland National Forest. As you can see, a significant percentage of fire starts occur along the I-8 corridor (USFS 2007).

To state that the presence of a major road like the proposed Foothill-South in a fire-prone shrubland ecosystem would not increase fire risk is contrary to all the data concerning wildland fires in southern California (UWM 2006).

TCA's argument that the toll road would provide access to firefighters, might act as a fire break, and would include mitigation measures such as warning signs and call boxes, does not mitigate the increased fire risk the road would cause. During increasingly frequent extreme fire weather conditions, wind-driven wildland fires usually jumped multi-lane interstate highways. And while firefighting resources can certainly use the toll road, the increased fire risk the road brings to the landscape is not an acceptable trade off. The TSA's reference to the 2007 Santiago Canyon fire and the 2006 Anaheim Hills fire as evidence large roads can be an advantage during wildfire events, is not compelling. **The Santiago fire jumped over the 241 Toll Road several times.** The more important issue is that *we could dramatically reduce fire starts in the first place* by eliminating roads through fire-prone environments.

Sincerely,

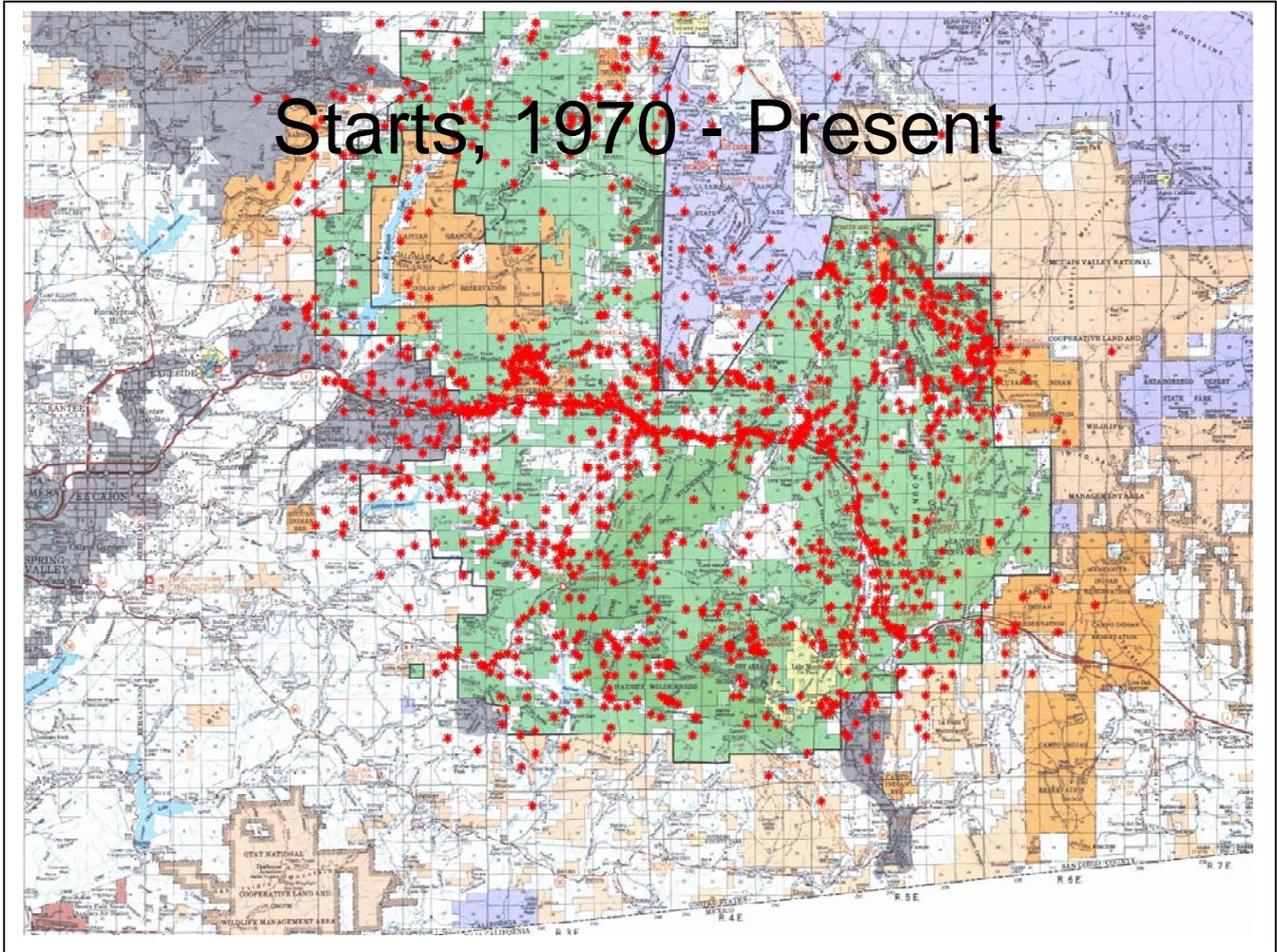


Richard W. Halsey  
Director

#### Cited references

USFS (2007). Fire Starts, 1970-Present (2007). Map of fire starts in the Cleveland National Forest, Descanso Ranger District. USFS. Attached.

UWM (2006). University of Wisconsin-Madison (2006, December 28). New Maps Emphasize The Human Factor In Wildfire Management. *ScienceDaily*.



Fire Starts in the Cleveland National Forest, Descanso Ranger District. Note number of fire starts along the Interstate Highway 8 corridor, marked by the dark line running through the center of the map. Data source: USFS.