

*Curriculum Vitae*

**JEFF ALVAREZ-WILDLIFE BIOLOGIST**

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**RESEARCH POSITIONS:**

*The Wildlife Project (7/90-date)*

**Wildlife Biologist:** Designed, developed and tested wildlife management techniques and equipment. Prepared grant proposals for various research projects for reptiles, amphibians, bats, and rodents. Sought and received funding for proposed projects. Implemented, managed, and collected data, for various research projects. Documented findings and published results.

*Smithsonian Institution - Department of Zoological Research (2/93-8/95)*

**Research Biologist:** Designed and implemented a study to determine the habitat suitability and distribution of San Joaquin Kit Fox in Alameda and Contra Costa Counties, CA. Also determined habitat suitability for San Joaquin Kit Fox in Fresno, Madera, Mariposa, Merced, Stanislaus, and Tuolumne Counties, CA, and assisted in the development of management goals. Analyzed data; wrote, submitted and defended a report to the Calif. Dept. of Fish and Game.

**PUBLICATIONS:**

Fellers, G. M., A Launer, G. Rathbun, S. Bobzien, J. Alvarez, D. Sterner, R. Seymour, and M, Westphal. 2001. Overwintering tadpoles in the red-legged frog (*Rana aurora draytonii*). Herpetological Review 32:156–157.

Alvarez, J. A. 2004. Use of artificial egg laying substrate to detect California tiger salamanders (*Ambystoma californiense*). Herpetological Review 35: 45–46.

Alvarez, J. A. 2004. An easily constructed Tuttle trap for bats. Wildlife Society Bulletin 32:264–266.

Alvarez, J. A., C. Dunn, and A. Zuur. 2004. Response of California red-legged frogs to predatory fish removal. Transactions of the Western Section of the Wildlife Society 38/39:9–12.

Alvarez, J. A. 2004. *Rana aurora draytonii* (California red-legged frog) Microhabitat. Herpetological Review 35:162–163.

Alvarez, J. A. 2004. Overwintering larvae in the California tiger salamander (*Ambystoma californiense*). Herpetological Review 35:344.

Alvarez, J. A. 2005. Unanticipated predation of California red-legged frog at constructed wetlands (California). Ecological Restoration 21:66-67.

Alvarez, J. A. 2005. A compilation of observations of Alameda Whipsnake outside of typical habitat. Transactions of the Western Section of the Wildlife Society 41:21-25.

Alvarez, J. A. 2006. Use of artificial basking substrate to detect and monitor western pond turtles (*Emmys marmorata*). Western North American Naturalist 66:129-131.

- Alvarez, J. A. 2006. *Masticophis lateralis euryxanthus* (Alameda whipsnake) Habitat. Herpetological Review 37:233.
- Alvarez, J. A. 2006. *Actinemys marmorata*. (Pacific Pond Turtle) Habitat. Herpetological Review 37:339-340.
- Alvarez, J. A. 2008. *Complete List of the Vertebrates of California, 6<sup>th</sup> edition*. 24 pp. The Wildlife Project Press. 23 pp.
- Alvarez, J. A., M. A. Shea, J. L. Alvarez. *In Press*. California tiger salamander and California red-legged frog sympatry in eastern Contra Costa County, CA. California Fish and Game.
- Alvarez, J., C. Dunn, and M. A. Shea. *In Press*. Colonization and use of constructed wetlands by California red-legged frogs. Journal of Herpetology.

## **PERMITS**

*Recovery permit [10(a)1(A)].*

VERTEBRATES: California tiger salamander, Alameda Whipsnake, California red-legged frog; and named as a permittee for San Francisco garter snake

INVERTEBRATES: conservancy fairy shrimp, longhorn fairy shrimp, San Diego fairy shrimp, Riverside fairy shrimp, and vernal pool tadpole shrimp.

## **RESEARCH PROJECTS IN PROGRESS:**

Colonization and use of constructed wetlands by California tiger salamanders.

Removing mosquito fish from ponds utilized by threatened amphibians.

Collateral impacts to threatened amphibians using mitigation wetlands; recommendations for improvement.

Microhabitat characteristics at oviposition sites of California red-legged frogs.

A parsimonious key to California garter snakes: a simplified method for identifying California *Thamnophis*.

Alvarez, J. A. The fairy shrimps of western North America. The Wildlife Project Press, Modesto, CA.

## **PRESENTATIONS:**

Response of California red-legged frogs to predatory fish removal. Western Section of the Wildlife Society Conference, 2000.

Colonization and use of constructed wetlands by California red-legged frogs. Western Section of the Wildlife Society Conference, 2000.

Review of five years of California red-legged frog (*Rana aurora draytonii*) survey results at the Los Vaqueros watershed: is there an optimal time to survey? Western Section of the Wildlife Society Conference, 2004.

Foods of Bullfrogs in Kellogg Creek, California. Western Section of the Wildlife Society Conference, 2004.

Extirpation as a management tool: can controlling bullfrogs benefit a population of red-legged frogs? A preliminary report. Western Section of the Wildlife Society Conference, 2007.

#### **INVITED PRESENTATIONS AND WORKSHOPS:**

Mammals: a review of the worldwide orders. Oakland Zoological Society, annually 1997-2005.

California tiger salamander management at the Los Vaqueros Watershed. San Francisco Bay Chapter of The Wildlife Society, 1999.

Managing California tiger salamanders in a drinking water watershed—a five-year update. San Francisco Bay Chapter of The Wildlife Society, 2003.

Western pond turtle management: lessons learned and recommendations for the future. San Francisco Bay Chapter of The Wildlife Society, 2005.

Rare pond species survey techniques: California red-legged frog, California tiger salamander, western pond turtle. Laguna Foundation and The Wildlife Project, Rohnert Park, CA

#### **WORK EXPERIENCE:**

The Wildlife Project - *Self-employed*. (7/90-date).

**Biological Consultant:** Determined the status of common and listed species including listed fairy shrimp; Tehachapi slender, yellow-blotched, and California tiger salamanders; California red-legged, mountain yellow-legged, and foothill yellow-legged frogs, Alameda whipsnake, desert tortoise, western pond turtle, black rail, clapper rail, California least tern, western burrowing owl, pallid bat, Townsend's big-eared bat, San Joaquin kit fox, and many other species on various sites throughout central California. Assessed the biotic component (plants and animals) of proposed development sites for conservation organizations, private industry, and governmental agencies within California and west-central Nevada.

Offered wildlife survey techniques workshops for the general public and colleagues. Developed and tested new techniques and equipment for surveying wildlife. Conducted environmental education programs for civic and peer groups with an emphasis towards vertebrate natural history, endangered and threatened species conservation, and career choices in biological fields.

Prepared various documents including EIRs, BAs, NESs, EAs and site-specific documentation from field surveys. Offered oral presentations in support of findings.

Contra Costa Water District – (9/98-5/00).

**Wildlife Biologist:** Implemented mitigation monitoring for California tiger salamander, California red-legged frog, western pond turtle, San Joaquin kit fox, Alameda whipsnake, western burrowing owl, golden eagle, bald eagle, long-horned fairy shrimp and other species within the upper Kellogg Creek Watershed. Monitored and managed small mammal and raptor populations. Designed and implemented a recreational fisheries program for public recreation in the Los Vaqueros Reservoir. Monitored, managed, and maintained native and non-native fish stock in the reservoir and watershed. Assessed and monitored other special status wildlife, plants and artificial wetlands. Suppressed fires and enforced ordinances under water district jurisdiction. Analyzed data and assembled various documents and reports

Jones and Stokes Associates, Inc. - (10/94-8/00).

**Biological Consultant:** Implemented mitigation plans for California tiger salamander and monitored and assessed several (PIT-tagged) populations over a several year period. Captured, marked, relocated, and monitored California red-legged frogs, and western pond turtles in the upper Kellogg Creek Watershed. Maintained salamander, frog, and turtle traps and exclusion fence lines.

Assisted in the assessment of habitat suitability for San Joaquin kit fox in Alameda, and Contra Costa Counties. Assessed habitat suitability and presence of protected bat species on various State, Federal, and private properties. Assessed habitat suitability and status of red-legged frogs in 11 different Counties. Conducted presence/absence surveys for red-legged frogs, spadefoot toad, arroyo toad, California tiger salamander, pond turtle, giant garter snake, Alameda whipsnake, two-striped garter snake, desert tortoise, western burrowing owl, golden eagle, pallid bat, Townsend's big-eared bat, kit fox, and fairy shrimp species.

#### **INTENSIVE LISTED-SPECIES SURVEYS:**

**California Tiger Salamander** (*Ambystoma californiense*) - 2105 hours of intensive surveys including trapping and marking salamanders in 5 different counties.

**California Red-legged Frog** (*Rana draytonii*) - 2745 hours of intensive surveys including long-term monitoring all life stages, presence absence surveys, in 12 different counties throughout California.

**Alameda Whipsnake** (*Masticophis lateralis euryxanthus*) - 1940 hours protocol level surveys including trapping and marking snakes in 2 different counties.

**San Francisco Garter Snake** (*Thamnophis sirtalis tetrataenia*) - 1170 hours protocol level surveys including trapping and marking snakes in 1 county.

**Desert Tortoise** (*Gopherus agassizii*) - 552 hours protocol level surveys in 3 different counties.

**San Joaquin Kit Fox** (*Vulpes macrotis mutica*) - 830 hours of protocol levels kit fox surveys in 11 different counties throughout California.

#### **EDUCATION AND ON-GOING TRAINING:**

Undergraduate education - *Wildlife*, Humboldt State University, Arcata, California - emphasis on understanding the natural history and management of vertebrates. 1988-1990.

1994. Natural history and handling of western bats. *Bat Conservation International*. Strong emphasis on trapping and handling techniques, and identification of bats and their habitat.

1998. Conservation and identification of fairy shrimp. *Denton Belk, PhD*. Emphasis on identification of fairy shrimp and their habitat.

2006. Biology and Conservation of the Alameda Whipsnake. *Karen Swaim*. Emphasis on the identification of Alameda Whipsnake and its habitat.

**DISCIPLINE/SPECIALTY**

- Aquatic Ecology
- Fisheries Biology
- Instream Flow Surveying
- Data Analysis
- Special Status Species Surveys

**EDUCATION**

- M.S., Biology, University of Nevada, Reno, 2006
- B.S., Environmental Science, University of Colorado, 2001

**TRAINING/CERTIFICATIONS**

- Protocol-level CRLF Surveys
- EPA Ambient Water Quality Monitoring
- MatLab Statistical Modeling
- ArcView GIS
- Program MARK
- S-Plus Statistics
- ENVI 3.2 (Remote Imagery)

SUMMARY OF QUALIFICATIONS

Mr. Graf has a strong interdisciplinary background in aquatic ecology and environmental sciences. For 10 years he has been involved in field-based fisheries studies. His primary focus has been on aquatic issues related to hydroelectric licensing including fisheries, amphibians, and instream flow studies. Specifically, Mr. Graf has lead habitat mapping studies, fish population studies, hardhead distribution surveys, entrainment studies, and foothill yellow-legged and California red-legged protocol-level surveys. Mr. Graf also has experience conducting hydraulic and instream flow surveys.

RELEVANT EXPERIENCE

**HYDROELECTRIC LICENSING**

***Aquatic Studies Senior Scientist – Middle Fork American River Integrated Hydroelectric Licensing Project (Placer County Water Agency), Western Slope Sierra Nevada***

Mr. Graf played a leading role in the design and implementation of the aquatic studies associated with the hydroelectric re-licensing process on the Middle Fork American River. The studies implemented on the project included:

- Fisheries population and distribution
- Foothill yellow-legged frog habitat use and distribution
- Instream flow surveys and modeling
- Protocol-level California red-legged frog surveys
- Benthic and drift macroinvertebrate collection
- Hydraulic modeling
- Fish entrainment

***Senior Staff Biologist – Big Creek Strategic Alternative Licensing Project, Central Sierra Nevada, California***

Mr. Graf assisted in the monitoring of spawning activity and radio-tagged adult hardhead along key stream reaches of the San Joaquin River. Mr. Graf also assisted in the monitoring of stream temperatures and reservoir temperature profiles.

**FISHERIES BIOLOGY**

***Fisheries Biologist – Road Condition and Stream Crossing Habitat, Prince of Wales, Alaska***

This project assessed the stream habitat and water quality in the vicinity of road crossing. Mr. Graf was responsible for identifying anadromous fish rearing streams and the condition of culverts in relation to fish passage. Duties included surveying, electrofishing, data management, planning and organizing field work in remote field stations.

***Fisheries Biologist – Road Condition Surveys, Seward, Alaska***

Mr. Graf trained USFS employees on to perform road survey and stream habitat assessments.

***Fisheries Biologist – USDA Forest Service, Sitka, AK***

Mr. Graf operated and maintained a remote fish wier, provided daily updates of salmon population status, collected water quality data, and assessed the condition of spawning habitat.

**Research Assistant – National Geographic/Mekong, Wetland Biodiversity Project, Thailand**

Mr. Graf was a field assistant and lead surgeon for Giant catfish movement and conservation project. Mr. Graf assisted in the implementation of acoustic telemetry planning and data collection.

**Ecologist – Point Reyes and Golden Gate NP, Coastal, CA**

In this study Mr. Graf assisted in data collection related to stream restoration and hydrology projects in Point Reyes NP and the Golden Gate NP.

EMPLOYMENT HISTORY

- ENTRIX, Inc., Staff Senior Scientist, Aquatic Ecology, 2007-to date
- ENTRIX, Inc., Staff Scientist, Aquatic Ecology, 8/2006-2007
- University of Nevada at Reno, Graduate Research Assistant, 8/2003-5/2005
- PBS Environmental, Fish Biologist, 4/2002-8/2002
- US Forest Service, Field Technician, 4/2001-10/2001

## **ANN M. CRISP**

### **Project Biologist**

Ms. Ann M. Crisp is a terrestrial biologist with more than 6 years of experience. Ms. Crisp is experienced in conducting a wide range of biological surveys, including special-status plants and noxious weeds, bald eagle nesting and wintering surveys, and vegetation community mapping. Ann has conducted vegetation surveys throughout the Central Valley and Sierra regions of California, as well as northwest Oregon. Ann conducted field studies and drafted biological assessments for various projects. She assisted in the development of the technical study reports for Placer County Water Agency Middle Fork American River Hydroelectric Project Relicensing.

**EDUCATION** B.S., Wildlife Biology, 2004, University of California, Davis

**REPRESENTATIVE PROJECT EXPERIENCE** **LOS VAQUEROS WATERSHED—CCWD, CONTRA COSTA COUNTY**

Ms. Crisp attended a field visit/training at several stock ponds at the Los Vaqueros Watershed in July 2009. Ms. Crisp, under the supervision of permitted biologist, Jeff Alvarez, dip-netted for California tiger salamander and California red-legged frog larvae in stock ponds. As part of the field work, 33 California tiger salamander larvae and over 480 California red-legged frog larvae were captured and released. Ms. Crisp also observed 17 adult California red-legged frogs.

**NEVADA IRRIGATION DISTRICT LOWER CASCADE CANAL—BANNER/CASCADE PIPELINE PROJECT**

Ms. Crisp completed special-status plant surveys to comply with measures in the Lower Cascade Canal—Banner/Cascade Pipeline Project Final Environmental Impact Report.

**PLACER COUNTY WATER AGENCY MIDDLE FORK AMERICAN RIVER HYDROELECTRIC RELICENSING PROJECT**

Project biologist for the Middle Fork American River Project (MFP) Integrated Licensing Process (ILP) for the Placer County Water Agency (PCWA). Researched and compiled information on existing biological resources for the Preliminary Application Document. Coordinated and executed technical studies in the Sierra (1,100 feet to 5,300 feet in elevation) for biological resources, including special-status plants, noxious weeds, and special-status wildlife such as bald eagle. Conducted data management and assisted in the development of technical study reports and presentations based on the conclusions of field studies.

**BIG CREEK SYSTEM HYDROELECTRIC RELICENSING PROJECT**

Project biologist for the Big Creek System Alternative Licensing Process (ALP) for Southern California Edison Company (SCE). This project has submitted applications to the Federal Energy Regulatory Commission



(FERC) for four projects: Big Creek Nos. 1 & 2 (FERC No. 2175); Big Creek Nos. 2A, 8, and Eastwood (FERC No. 67); Big Creek No. 3 (FERC No. 120); and Mammoth Pool (FERC No. 2085). Assisted in field studies in preparation of the biological resources component of the FERC license, including wildlife and botanical—special-status plant species, noxious weeds and plants of cultural concern for Native Americans—for a nearly 1,500-square-mile watershed in the Upper San Joaquin River.

**BIG CREEK NO. 4 HYDROELECTRIC ENVIRONMENTAL TRAINING AND COMPLIANCE PROJECT**

Project biologist for the Big Creek No. 4 Traditional Licensing Process (TLP) for SCE. Assisted in the preparation of the documents supporting various management plans, including yearly monitoring reports for the Noxious Weed Management Plan and Valley Elderberry Longhorn Beetle Management Plan. Assisted in the development and implementation of compliance-related products for Big Creek No. 4.

**KAWEAH HYDROELECTRIC PROJECT**

Project biologist for the SCE Kaweah Hydroelectric Project (Federal Energy Regulatory Commission Project No. 298). Completed a Biological Assessment (BA) that evaluated to what extent, if any, maintenance activities of the Project may affect valley elderberry longhorn beetle (VELB).

**NEVADA IRRIGATION DISTRICT COLE SIPHON REPLACEMENT PROJECT BIOLOGICAL RESOURCES ASSESSMENT**

The Cole Siphon Replacement Project Biological Resources Assessment was completed for a proposed pipeline replacement. The project, located in Grass Valley, involved the replacement and rerouting of an existing pipeline to a new alignment. As project biologist, completed a literature review, reconnaissance survey and prepared a biological assessment and CEQA compliance documentation.

**NEVADA IRRIGATION DISTRICT ELIZABETH GEORGE WATER TREATMENT PLANT**

Ms. Crisp was a member of the team that conducted CEQA compliance and documentation for the Nevada Irrigation District's expansion of the E. George WTP to meet future community potable water demands associated with planned and approved development envisioned in the City of Grass Valley 2020 General Plan and the Nevada County General Plan. Ann's tasks included assisting in the preparation of the biological resources section of the Initial Study / Mitigated Negative Declaration. Concurrent with the expansion of the water treatment plant, NID proposes to construct improvements to the existing facility to reliably meet state and federal drinking water standards.



**NEVADA IRRIGATION DISTRICT WATER LINE EXTENSION AND AD/CFD PROJECTS**

Ms. Crisp is currently working with NID to complete biological resource surveys and prepare necessary documentation for over 15 water line extension and other infrastructure improvement projects in the NID Service Area. Following completion of necessary surveys, agency consultation, and reporting, NID will have necessary documentation and permitting approvals to streamline project design and construction.

**CALIFORNIA DEPARTMENT OF FISH AND GAME RESOURCE ASSESSMENT PROGRAM**

Research technician for the Resource Assessment Program of the California Department of Fish and Game (CDFG). Conducted long-term reptile and amphibian surveys on various CDFG Wildlife Areas and Ecological Reserves. Conducted small mammal mark-recapture surveys using live traps, California tiger salamander larval dipnet surveys, and burrowing owl nesting surveys. One objective of these studies was to investigate species response to seasonal flood events. Ms. Crisp collaborated in the design of vegetation sampling protocol and implemented the protocol at all wildlife survey areas.

Ms. Crisp also conducted field-based vegetation sampling to classify vegetation types to alliance level on multiple Wildlife Areas and Ecological Reserves, and was responsible for data management and preparation for inclusion in a statewide database.

**TRAINING** Rare Pond Species Workshop (western pond turtle, California red-legged frog, and California tiger salamander), Laguna de Santa Rosa Foundation, Rohnert Park, California, 2009.

Ecology and Conservation of California Bats, San Francisco State University Sierra Nevada Field Campus, Sattley, California, 2007.

**PROFESSIONAL AFFILIATIONS** The Wildlife Society