

# Statement of Qualifications

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Swaim Biological, Inc.



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and

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# Company Overview

Swaim Biological Incorporated (SBI) is a multidisciplinary environmental consulting firm that applies scientific expertise, experience, initiative, and innovation to natural resource management. For over thirteen years SBI has provided clients in the San Francisco Bay Area effective solutions to conservation issues.

SBI is a woman-owned and operated small business headquartered in San Francisco, California. Ms. Swaim, the CEO and Principal Investigator, has over twenty years of experience as a professional herpetologist, and is a widely recognized expert on threatened and endangered reptiles and amphibians in the Bay Area. SBI applies a holistic approach to natural resource management, employing a variety of techniques for data acquisition and analysis. Swaim Biological conducts protocol-level status surveys, prepares mitigation and monitoring plans, habitat enhancement, management, and restoration plans, and develops take-avoidance measures specific to all levels of impact, for a wide variety of special-status fauna and flora species in and around the Bay Area.

SBI is made up of a small staff of highly-qualified wildlife biologists who pride themselves on maintaining the highest standards of professionalism and integrity in their work.

# Partial List of Clients

Alameda County Resource Conservation  
District  
Amec Earth and Environmental  
Ameresco  
Black and Veatch  
Brooks Street Real Estate  
California State Parks  
Contra Costa Water District  
East Bay Municipal Utilities District  
East Bay Regional Park District  
Environmental Science Associates  
Golden Gate National Recreation Area  
Go Native, Inc.  
Hayward 1900 Incorporated  
Jones and Stokes  
Lawrence Livermore National Laboratory  
Lemke Construction Incorporated  
LSA Associates  
Mid-Peninsula Regional Open Space District  
North Coast County Water District  
NRM Environmental Consulting  
O'Brien Homes  
Pacific Gas and Electric  
Peninsula Open Space Trust  
San Francisco Public Utilities  
Commission  
San Mateo County Department of Public  
Works  
San Mateo Resource Conservation  
District  
Signature Properties  
SCS Engineers  
Sycamore Associates, LLC  
Tetra Tech  
URS Corporation  
Wetland Research Associates  
Zentner and Zentner



# Endangered Species Surveys

SBI conducts surveys, habitat assessments and population studies for special status species protected under the California State and Federal Endangered Species Acts and CEQA. In recent years, SBI has expanded beyond its original focus on northern California herpetology to include other disciplines such as aquatic and terrestrial ecology, and botany. In addition to conducting field surveys for amphibians, reptiles, fish, birds and mammals, SBI performs habitat assessments and suitability analyses for a wide range of special-status plant and animal species.

SBI biologists have expertise with a wide range of special status wildlife species and currently hold appropriate state and/or federal permits to conduct studies and recovery actions for those indicated (\*). The following is a partial list of species with which the SBI staff has expertise.

- San Francisco garter snake\*
- Alameda whipsnake\*
- Giant garter snake\*
- California legless lizard\*
- Western pond turtle\*
- Desert tortoise
- California red-legged frog\*
- California tiger salamander\*
- Foothill yellow-legged frog\*
- Mountain yellow-legged frog
- Western spadefoot\*
- Arroyo toad
- Santa Cruz long-toed salamander
- Western burrowing owl
- San Joaquin kit fox
- Vernal pool branchiopods\*



# Endangered Species Surveys

## **West-of-Bayshore San Francisco Garter Snake (SFGS) Population Estimate and Recovery Plan Implementation Millbrae, San Mateo County, CA**

**Client: LSA Associates / San Francisco International Airport**

**Dates: April 2007-April 2017 (ongoing)**

SBI has been conducting a mark-recapture survey of SFGS at the West-of-Bayshore property in Millbrae in order to assess population status and measure the effects of management actions on snake activity and habitat use at the site. In 2007 SBI captured and collected data on over 450 SFGS while completing the first of three surveys in a ten-year trapping effort. In addition to informing management actions on the site, data obtained will increase understanding of life history and demography of SFGS.



## **Cloverdale Ranch SFGS Management and Monitoring Cloverdale Ranch, San Mateo County**

**Client: Peninsula Open Space Trust (POST) and US Fish and Wildlife Partners Program**

**Dates: Fall 2005-2007**



SBI is working with POST on multiple projects at the Cloverdale Ranch near Pescadero in San Mateo County. In the fall of 2005 and 2006 SBI conducted pre-burn surveys for SFGS and California red-legged frogs (CRLF) in the treatment areas, monitored for take avoidance during the burns and collected temperature data in potential SFGS refuges. Temperature data was collected to determine, to the degree possible, if typical rodent burrows on the site were adequate protective retreats for SFGS during the fires.

# Endangered Species Surveys

**Elk Creek TAP Pole Replacement Project: Constraints Analysis and Biological Monitoring  
Glenn County, CA**

**Client: PG&E**

**Dates: June - July 2010**



SBI performed a constraints analysis study along a 20-mile transmission line replacement site from Willows to Elk Creek in Glenn County owned and operated by Pacific Gas and Electric (PG&E). SBI biologists identified all ecological factors with the potential to constrain project activities that occurred within the project area. These included botanical and wildlife resources protected by state and federal legislation, and wetlands and waterways potentially subject to state and federal jurisdiction. SBI characterized habitat for the giant garter snake (*Thamnophis gigas*) using a standardized system, documented habitat for the foothill yellow-legged frog (*Rana boylei*) and identified nesting locations for the Swainson's hawk (*Buteo swainsoni*). SBI developed a constraints analysis report that recommended avoidance and minimization measures that would allow construction to proceed while avoiding impacts to sensitive resources. SBI also provided biological monitoring during the pole installation and ensured that avoidance and minimization measures were implemented during the project.

## **Alameda County Resource Conservation District Surveys**

**Client: ACRC (Alameda County Resource Conservation District)**

**Dates: 2007 - ongoing**

SBI biologists conducted visual surveys and habitat assessments for California red-legged frogs, foothill yellow-legged frogs, California tiger salamanders, Alameda whipsnakes, burrowing owls, and San Joaquin kit fox on over 5,000 acres in eastern Alameda county. We both visually assessed survey areas, and used aquatic sampling methods including seining and dip-netting for amphibian larvae.



# Ecosystem Management and Habitat Restoration

Meeting the challenges facing California's unique ecosystems demands an integrative approach that incorporates ecological conservation with the goals of the public and private sectors. Finding innovative solutions to natural resource issues involving multiple stakeholders is a main focus at SBI. Over the years we have accomplished this by developing various management plans that coordinate the goals of our clients and government agencies with our knowledge of California ecology.

SBI has been involved with every stage of the planning process for resource management projects from goal-setting and concept development through implementation and long-term monitoring. Our experience includes projects ranging from small-scale efforts to measure the effects of specific vegetation management techniques on wildlife, to implementing species recovery to developing long term resource conservation strategies.

SBI is working closely with the City of San Francisco Department of Recreation and Parks, Tetra Tech, and the state and federal wildlife agencies to develop a restoration plan for Laguna Salada, a coastal lagoon in San Mateo County. SBI biologists performed inventory surveys for special status wildlife at the site and developed recommendations for habitat enhancements. We are currently developing an Environmental Impact Report and a habitat enhancement plan that will incorporate the goals of increasing wildlife populations and maintaining opportunities for human recreation at the lagoon.

## **Laguna Salada Restoration Plan Sharp Park, San Mateo County, CA**

**Client: Tetra Tech / City of San Francisco**

**Dates: 2007- present**

## **Frenchman's and Apanolio Creek Fish Passage Projects Half Moon Bay, San Mateo County, CA**

**Client: San Mateo County Resource Conservation District (SMCRCD)**

**Dates: 2007**

SBI completed biological surveys and monitoring during two projects involving the removal of barriers to steelhead migration on Frenchman's and Apanolio Creeks in Half Moon Bay, CA. Both creeks are potential habitat for San Francisco garter snakes, California red-legged frogs, and steelhead. SBI performed pre-construction nesting bird, frog, and dusky-footed woodrat surveys; removed fish, including steelhead trout, from dewatered sections of creek; built and maintained block nets during dewatering; and provided biological monitoring services during the removal of culverts. SBI biologists also trained contractors, completed daily reports, and ensured contractor compliance.

# Construction Monitoring

## **South Bay Aqueduct Biological Monitoring Contra Costa County, CA**

**Client: ESA Associates/  
California Department of Water Resources**

**Dates: 2007-2008**

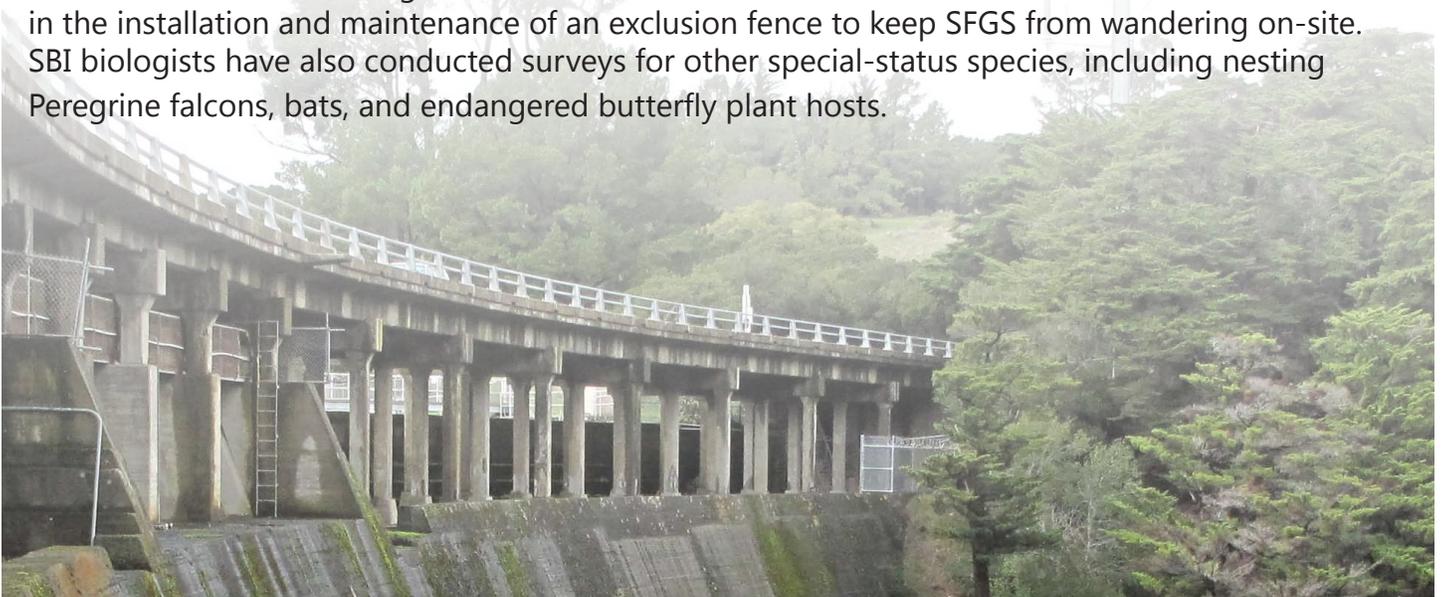
Swaim Biological provided biological monitoring for construction activities related to several components of the South Bay Aqueduct Enlargement project in Alameda County. Working with the California Department of Water Resources and Environmental Science Associates (ESA), SBI biologists conducted surveys and provided monitoring for the western burrowing owl, California tiger salamander and CRLF at the project sites. We monitored contractor activities to ensure compliance with all environmental permit requirements for the expansion of the South Bay Pumping Plant, construction of the Brushy Creek Pipeline and surge tower, and performed surveys related to the construction of the Dyer Reservoir.

## **Crystal Springs Bridge Demolition Hillsborough, San Mateo County, CA**

**Client: San Mateo County**

**Dates: July 2010 - present**

Swaim biologists are providing biological monitoring during the demolition of the Crystal Springs Bridge in Hillsborough, CA. The project involves the protection of a pond that supports a breeding population of CRLF that sits directly under the bridge. We monitor this population of frogs, conduct environmental training and ensure that take-avoidance measures are taken. We also assisted in the installation and maintenance of an exclusion fence to keep SFGS from wandering on-site. SBI biologists have also conducted surveys for other special-status species, including nesting Peregrine falcons, bats, and endangered butterfly plant hosts.



# Permitting and Compliance

At SBI, we guide our clients through the environmental review and permitting process in a clear, coordinated way that reflects our experience with state and federal environmental regulations. SBI's staff is experienced in negotiating and preparing permits for clients in both the public and private sectors. Our expertise spans a wide range of legal contexts including the California State and Federal Endangered Species Acts, Clean Water Act, California Environmental Quality Act, National Environmental Policy Act, and California Fish and Game Code. We assist clients with obtaining environmental permits for projects and as they move forward we monitor their progress to ensure they remain in compliance with environmental regulations and permit requirements.

In consultation with our clients, SBI reviews the applicable regulations, identifies potential exemptions or special circumstances, coordinates with government officials, and produces documents supporting our clients' applications. SBI has developed and maintains positive working relationships with all permitting agencies and can help facilitate a smooth permitting process.

## **Michael Whyler #1 Gas Line Replacement Project Glenn County, California**

**Client: PG&E**

**Dates: May - December 2010**

SBI developed a constraints analysis for a project involving the retirement of a two-mile gas line in Glenn County. The study identified special status wildlife habitat (the giant garter snake [*Thamnophis gigas*]) and jurisdictional wetlands within the project vicinity.

Under a separate contract SBI obtained permits on behalf of PG&E to allow the project to proceed. As part of this effort, SBI biologists performed a wetland delineation study, developed a biological assessment, and prepared an archaeological survey report, and a historic properties survey report. SBI submitted these documents along with the appropriate applications to the U.S. Army Corp of Engineers and the Central Valley Regional Water Quality Control Board to obtain project approval. Anticipated impacts to wetlands and biological resources were quantified and avoidance and minimization measures were proposed.



# Permitting and Compliance

## **Lower Crystal Springs Reservoir Dam Improvement San Mateo County, California**

**Client: Entrix- MSE Joint Venture**

**Dates: 2005-present**

Beginning in 2005, SBI designed and implemented surveys for target species in the Crystal Springs Reservoir project area and vicinity, per protocols agreed to by the agencies. This was followed by impact analysis and preparation of draft mitigation strategies. Development of conceptual mitigation strategies required extensive field reconnaissance throughout the watershed and knowledge of Permitting and planning of this project is on-going.

SBI monitored restoration activities at MROSD's Skyline Tree farm acquisition site - part of the Russian Ridge Preserve. We conducted a pre-restoration trapping survey for San Francisco garter snakes and monitored non-native tree removal, grading and culvert repair activities.

## **Skyline Tree Farm La Honda, San Mateo County, CA**

**Client: Mid-Peninsula Regional Open Space District**

**Dates: April 2007 - present**

## **Ox Mountain Landfill Half Moon Bay, San Mateo County, CA**

**Client: SCS Engineers**

**Dates: April 2007 - present**

SBI performed the formal Section 7 Consultation for San Francisco garter snakes and California red-legged frogs and conducted the subsequent compliance monitoring. SBI biologists monitored during construction of an alternative energy plant on the site. We also inspected exclusion barrier fencing to CRF and SFGS to minimize adverse threats.

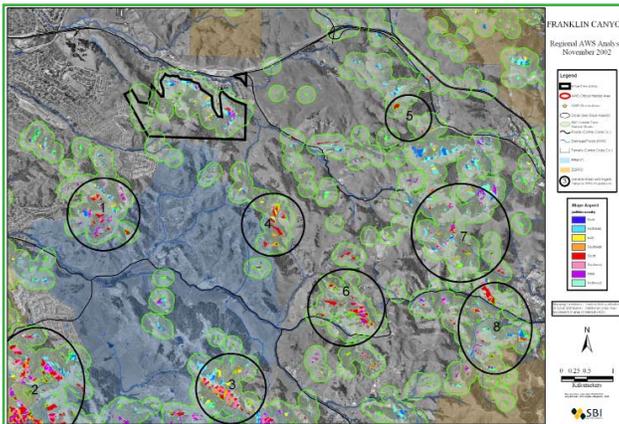


# GIS Analysis and Mapping

Computer-generated imagery and analysis has become a crucial part of identifying the source, extent, and location of many environmental impacts and can be an important tool in analyzing and displaying environmental outcomes. Geographic Information Systems (GIS) are an important part of SBI's approach to managing environmental issues.

Our staff employs techniques of satellite imagery analysis, GIS and computer-based mapping to natural resource management. We use the latest technology to meet our clients' needs with complex spatial analysis and figures of the highest professional standards. Data collected in the field using Geographic Positioning System (GPS) technology may be integrated with existing datasets and combined with high-resolution aerial photographs or remote-sensing satellite imagery to model impacts and analyze proposed actions.

Our GIS staff has experience with the ESRI suite of GIS products, ERDAS remote-sensing applications, and a variety of mapping software. From small scale renderings of localities that enhance and clarify report findings, to large-scale, complex regional analyses, our GIS-trained staff deliver products in a clear and easy-to-understand presentation.



## Lower Crystal Springs Reservoir Dam Improvement San Mateo County, California

**Client: San Francisco Public Utilities Commission**

**Dates: 2005-present**

SBI is assessing the potential impacts of dam improvements and subsequent water level increases on special-status wildlife in and around the Lower Crystal Springs Reservoir. A detailed spatial analysis of potential changes to the perimeter of the reservoir and adjacent upland vegetation through GIS will be a key component of the project. Results of our analysis will play a role during consultation with state and federal agencies to determine the appropriate mitigation and long-term management plans for the reservoir and other aquatic habitats in the watershed.

# Research

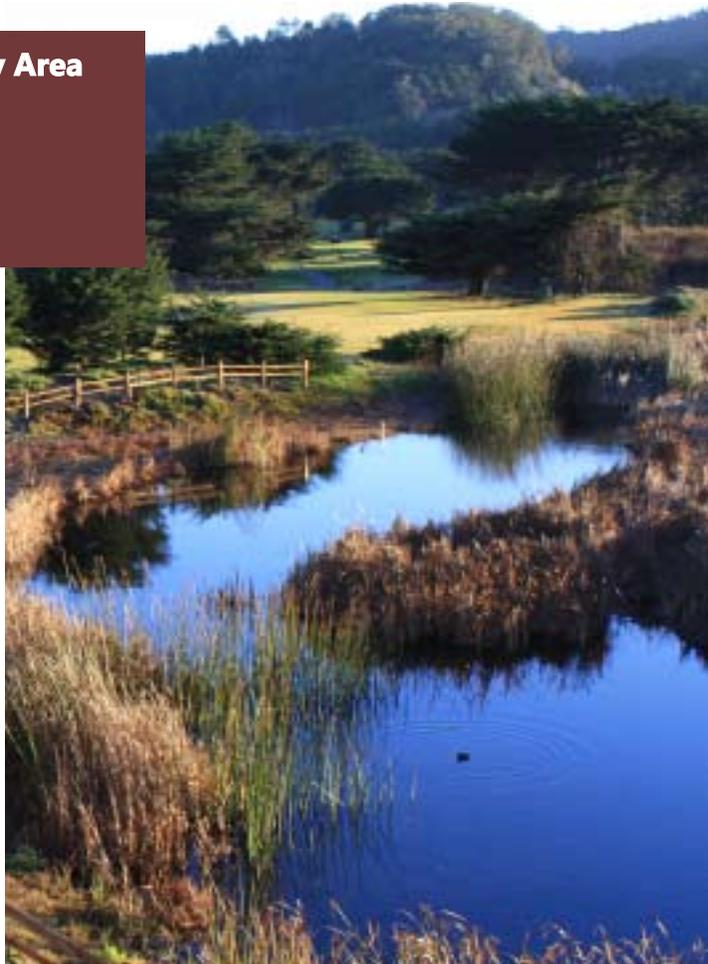
As part of our commitment to maintaining the health of ecosystems, SBI contributes to scientific knowledge by conducting and supporting research projects. Both by establishing relationships with universities and nonprofit organizations, and as an independent entity, SBI leads or takes part in ecological studies on topics ranging from genetic diversity to the spread of infectious pathogens in wildlife populations. Our staff, many of whom hold advanced degrees in biology, have produced numerous publications and regularly present their findings to the scientific community.

## **Distribution of Chytrid in the San Francisco Bay Area**

**San Francisco State University**

**Date: 2007-present**

SBI biologists are collecting data that will be used to determine the geographic distribution of *Batrachochytrium dendrobatidis*, the fungus that causes chytridiomycosis in amphibians. Amphibian chytrid is a newly emerging disease that has been implicated in the decline or extinction of over 100 species of amphibians worldwide. SBI biologists take swab samples from captured amphibians and release the animals unharmed. The samples are then analyzed by student volunteers at a local university and will be made available to the scientific community.



## **Phylogeography of the SFGS San Francisco Bay Area, California**

**U.S. Fish and Wildlife Service / San Francisco State University**

**Date: 2004 – present**

SBI is collaborating with researchers at San Francisco State University to investigate the population genetics of the SFGS. This unique partnership takes full advantage of SBI's expertise in herpetological field work and access to sites and specimens while utilizing the lab facilities and human resources at SFSU. Specific research questions include comparisons of the common garter snake complex to the genetic variation in other species of garter snakes.

# Research

**Tilden Regional Park Vegetation Management  
Tilden Park, Berkeley, Alameda County, CA**

**Client: East Bay Regional Park District (EBRPD)**

**Dates: March 2005-present**

SBI is measuring the effects of prescribed burns on the federally threatened Alameda whipsnake and their habitat. Vegetation mapping pre- and post burn will provide information on how fire alters the type and structure of plants in the area and inform future management decisions. Ultimately the analysis of the sites and their snake populations will yield valuable information on the use of fire as an appropriate management practice to protect the snake and its habitat.



The Tilden Park site is one of several where SBI has been conducting field research on the response of the Alameda whipsnake to vegetation management practices for eight years. Management practices have included fire, mechanical clearing (“all terrain brush machines”), goat grazing, and hand clearing efforts. Research sites include Contra Costa Water District’s Los Vaqueros Reservoir Watershed, Chabot Regional Park, Tilden Regional Park and Claremont Canyon Regional Preserve. These projects have been funded by the EBRPD, USFWS, Contra Costa Water District, Lawrence Livermore National Laboratories and California State Parks.



# Business Certifications

- **Woman-owned Business Enterprise** - California Public Utilities Commission
- **Small Business (Micro)** - State of California Department of General Services
- **Small, Local and Emerging Business** - County of Alameda
- **Disadvantaged Business Enterprise** - California Unified Certification Program



# Staff Biographies

## *Karen Swaim – Senior/Principal Wildlife Biologist*

Karen Swaim has over twenty years of experience as a professional herpetologist. She earned a Master's Degree in Biology at California State University, Hayward where her thesis research focused on field studies of the state threatened Alameda whipsnake. Ms. Swaim currently holds recovery permits for the San Francisco garter snake, giant garter snake, California tiger salamander, California red-legged frog, and Alameda whipsnake. She has made significant improvements to the sampling techniques and protocols for San Francisco Bay Area amphibians and reptiles and is a major contributor to the U.S. Fish and Wildlife Service (USFWS) Draft Chaparral Recovery Plan. Ms. Swaim is also a Species Expert on the giant garter snake recovery team, recently formed by the USFWS and a technical expert for the Upland Habitat Goals project currently preparing a form of conservation strategy for the nine Bay Area counties.

## *Chris Swaim – GIS Specialist*

With over 11 years of professional experience using GIS technology, Chris Swaim is the GIS Manager and a field biologist at SBI. He manages and maintains GIS data for all biological trapping surveys and wildlife habitat mapping projects for special status species. He is proficient in the use of GPS hardware and software for positional accuracy in database management and mapping. Mr. Swaim has prepared maps and graphics for environmental documents using ArcGIS 9, Canvas and other applications. In addition to his GIS skills, Mr. Swaim has conducted surveys (live trapping and visual) for the San Francisco garter snake at multiple locations in San Mateo and Santa Cruz Counties and for giant garter snakes in northeast Contra Costa County. He is trained in field identification and survey methods (day and night) for special status amphibians and permitted to handle California red-legged frogs and California tiger salamanders.

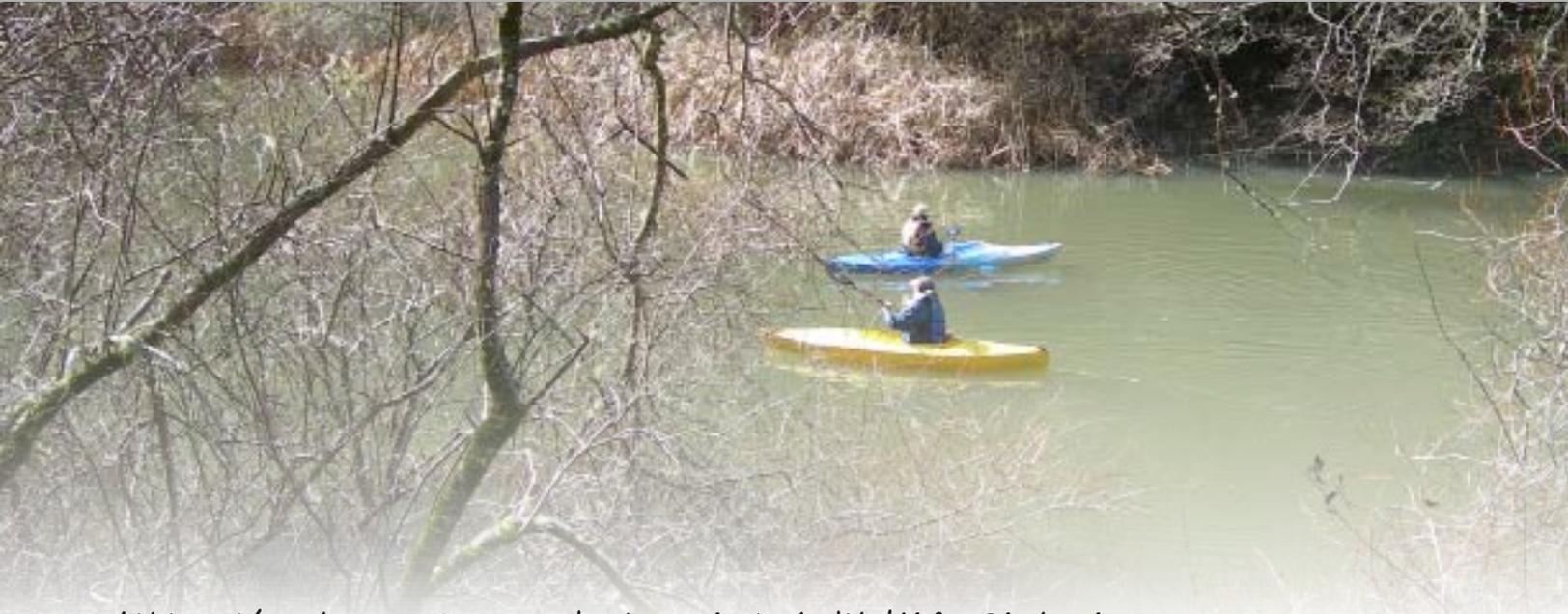
## *Jeff Mitchell – Project Manager/Wildlife Biologist*

Jeff Mitchell holds a bachelor's degree in Wildlife Management from the State University of New York and is currently pursuing an M.A. in Resource Management and Environmental Planning at San Francisco State University. As a biological consultant, Mr. Mitchell has ten years of experience conducting habitat assessments, sensitive species surveys and environmental permitting for a variety of clients. His experience encompasses a wide array of regulatory contexts including the Federal and California Endangered Species Acts, California Environmental Quality Act (CEQA), and California Fish and Game Code. Mr. Mitchell holds state and federal permits to take California red-legged frogs and California tiger salamander and has experience working with Western burrowing owls and other listed species.

## *Tammy Lim – Project Manager/Wildlife Biologist*

Tammy Lim has a B.S. in Wildlife, Fish and Conservation Biology from the University of California, Davis. She is currently pursuing M.A. in Ecology and Systematic Biology at San Francisco State University, studying the population genetics of the San Francisco garter snake. Ms. Lim has ten years of field experience working with herpetofauna, birds, and small mammals. She has been working for SBI for almost six years; in that time she has helped develop and manage a database for ecological data, managed field crews and participated in all field aspects of San Francisco garter snake and California red-legged frog studies including protocol level surveys. She is authorized on SBI's Federal Recovery Permit and California Department of Fish and Game permits to handle, San Francisco garter snakes, California red-legged frogs, California tiger salamanders, giant garter snakes and Alameda whipsnakes.

# Staff Biographies



## *Milton Yacelga – Research Associate/Wildlife Biologist*

Milton Yacelga has a M.S. in Biology from the University of Texas at Tyler where his research focused on comparing the foraging ecology of four semi-aquatic snake species. He is responsible for study design and data analysis of projects investigating San Francisco garter snake response to management actions. He designed and led a project to systematically survey the Crystal Springs Reservoir for California red-legged frog breeding habitats. Mr. Yacelga has participated in all aspects of field research for the San Francisco garter snake, Alameda whipsnake, California red-legged frog, California tiger salamander, and giant garter snake. He has also monitored construction and implemented take-avoidance measures in special status species habitat.

## *Eric Britt – Research Associate/Wildlife Biologist*

Eric Britt received his Ph.D in Biology at the University of California, Irvine and he completed his undergraduate degree at the University of California, Davis. He conducted research on the energetics of diet specialization in garter snakes for his doctorate. He has also completed post-doctoral research on the life history and population ecology of the Florida Sand Skink (*Plestiodon reynoldsi*) for the South Florida Multi-Species Recovery Plan. He assists with the design and implementation of special-status species research projects and monitors construction.

## *Dave Tannaci – Field Technician*

Dave Tannaci has a B.S. in Zoology from the University of California, Santa Barbara. In previous work, he has conducted population surveys for the Sierra Nevada Fisher (*Martes pennanti*) and performed herbaceous, arthropod and herpetology surveys in the Mojave Desert. For SBI, Dave has assisted with numerous construction monitoring and Alameda whipsnake trapping surveys.

## *Jacqueline Taylor – Field Technician*

Jacqueline Taylor has a B.S. in Biology with an emphasis in Zoology from San Diego State University. She integrates her biological field experience with writing and literature research skills. She possesses knowledge in multiple biological disciplines, including threatened and endangered species surveys, bird surveys, ecological restoration, and construction monitoring. At SBI, she participates in multiple Alameda whipsnake live-trapping studies, construction monitoring, and data management.



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