



SEQUOIA  
Ecological Consulting, Inc.



# STATEMENT OF QUALIFICATIONS

## HYDRO AND AQUATIC RESOURCES





## ABOUT SEQUOIA

Founded in 2011, **Sequoia Ecological Consulting, Inc. (Sequoia)** is a San Francisco Bay Area-based, disadvantaged small business that provides environmental consulting services to public agencies, utilities, construction firms, infrastructure developers, environmental and engineering firms, and private clients throughout California. Sequoia employs a staff of 35, including four registered professionals, who are based in our Contra Costa, San Diego, and Sacramento County offices.

As a biological specialty firm, Sequoia regularly consults with state and federal agencies for Endangered Species Act compliance and conducts field studies for permit applications and site assessments. We help our clients minimize project impacts on biological resources, and support them through permit applications, monitoring, and annual reporting to satisfy the requirements of varied complex permits. We apply our experiential knowledge early in the project design process to anticipate issues and avoid costly escalations in permitting, documentation, and monitoring requirements.

Sequoia's team includes wildlife biologists, botanists, construction monitors, restoration specialists, herpetologists, storm water inspectors, permitting specialists, and aquatic biologists – all of whom are experienced in the ongoing evaluation of biological services at all levels. Our staff are well-versed in the intricacies of Federal, State, and local codes and regulations including the Clean Water Act, the Fish and Game Code, Federal and State Endangered Species Acts, the National Environmental Protection Act, the California Environmental Quality Act, multiple Species Conservation Programs, Habitat Conservation Plans, and Natural Community Conservation Plans.

### Services

- Biological Services
- Habitat Restoration
- Environmental Planning and Regulatory Compliance
- Mitigation and Conservation
- Geographic Information Systems (GIS)
- Storm Water Services

### Markets Served

- Water/Hydroelectric
- Utilities
- Mining and Natural Resources
- Mitigation Planning and Conservation Banking
- Conservation, Parks and Open Space
- Transportation and Infrastructure
- Municipal
- Construction



## CERTIFICATIONS

Sequoia is a certified Disadvantaged Business Enterprise (**DBE**), Small/Micro Business Enterprise (**SBE/MBE**), Woman-owned Business (**WBE**), Woman-owned Small Business (**WOSB**).

WBE	CPUC	#11110228
DBE	CUCP/CA DoT	#40492
Small/Micro Business	CA DGS	#1790596
WBE	WBENC	#2005127466
WOSB & EDWOSB	Federal	
Gold Shovel Standard	PG&E	
IS Net World Approved	A Grade with All Clients	



Sequoia holds **GSA Contract No. 47QRAA18D0024** for Special Item Number (SIN) 899 1 – Environmental Consulting Services.

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GSA Schedule	00CORP
SIN No.	8991
Primary NAICS	541620

Please contact us at [gsa@sequoiaeco.com](mailto:gsa@sequoiaeco.com) to learn more about Sequoia's GSA contract services or to request a quote.

# SEQUOIA SERVICES



## Biological Services

Sequoia provides integrated biological, permitting, and project management assistance, effectively supporting projects from the planning phase through the mitigation monitoring phase. Our biological services include:

### Construction Compliance and Biological Monitoring

- Environmental training
- Pre-construction surveys
- Daily monitoring and reporting
- Long-term mitigation monitoring

### Botany

- Listed and sensitive plant surveys
- Vegetation mapping
- Focused surveys and California Native Plant Society protocol botanical surveys

### Fisheries

- Electrofishing surveys
- Fish relocations and fish rescues
- Seining/netting
- Snorkel surveys
- Salmonid habitat assessments
- Redd counts



## Biological Services - continued

### Biological Resource Surveys

- Wetland delineations and mapping
- Biological resource assessments
- Constraints analysis
- Infrared camera trapping surveys
- Nesting bird surveys
- Habitat surveys
- Species inventory
- Large mammal (deer) migration and movement surveys

### Special-status Species Surveys and Reporting

- USFWS 10(a)(1)(a) recovery permits and CDFW MOUs for:
  - California red-legged frog
  - California tiger salamander
  - San Francisco garter snake
  - Vernal pool branchiopods
  - Foothill yellow-legged frog
  - Western burrowing owl

- Protocol bird surveys
  - Burrowing owl
  - Swainson's hawk
  - California spotted owl
  - Northern goshawk
  - Bald eagle
  - Willow flycatcher
- Protocol herpetofauna surveys
  - California red-legged frog
  - California tiger salamander
  - Foothill yellow-legged frog
  - Sierra Nevada yellow-legged frog
  - Yosemite toad
- Bat surveys
- San Joaquin kit fox surveys
- Vernal pool branchiopod surveys





## Environmental Planning and Regulatory Compliance

Sequoia's team of biologists and planners streamline complex regulations and permitting requirements. We offer environmental planning and regulatory solutions including:

- Biological support for CEQA/NEPA compliance
- Mining and reclamation support
- Constraints analysis
- General and specific plan input
- Habitat Conservation Plan (HCP) compliance
- US Fish and Wildlife Service Section 7 consultation support
- Regional Water Quality Control Board Section 401 Water Quality Certification permitting
- California Department of Fish and Wildlife Section 1602 Lake and Streambed Alteration Agreements
- US Army Corps of Engineers Clean Water Act Section 404 permits



## Mitigation and Conservation Planning

Sequoia's conservation/mitigation bank development and permit-required resource mitigation implementation services include:

### Mitigation Site Assessments

- Identification of conservation/mitigation resources on private lands
- Focused surveys for listed species

### Resource Agency Permitting

- USFWS Section 7 and Section 10 permitting
- CDFW 2080.1 and 2081 permitting
- Interagency review team mitigation/conservation bank applications

### Long-term Management Plan Development and Monitoring

- Long-term management plan preparation
- Coordination of mitigation requirements with resource agencies
- Implementation of long-term monitoring for species and habitats





## Habitat Restoration

Sequoia's habitat restoration and planning services are rooted in our understanding of the natural world and how a project's habitat is influenced by regional geology, geomorphology, hydrology, and climate. Ultimately, the natural flora and fauna in a project area are attracted to suitable habitat and onsite resources; through our design and planning, we can create a platform for species restoration, from the soil to the tree canopy. Our services include:

### Restoration Planning and Design

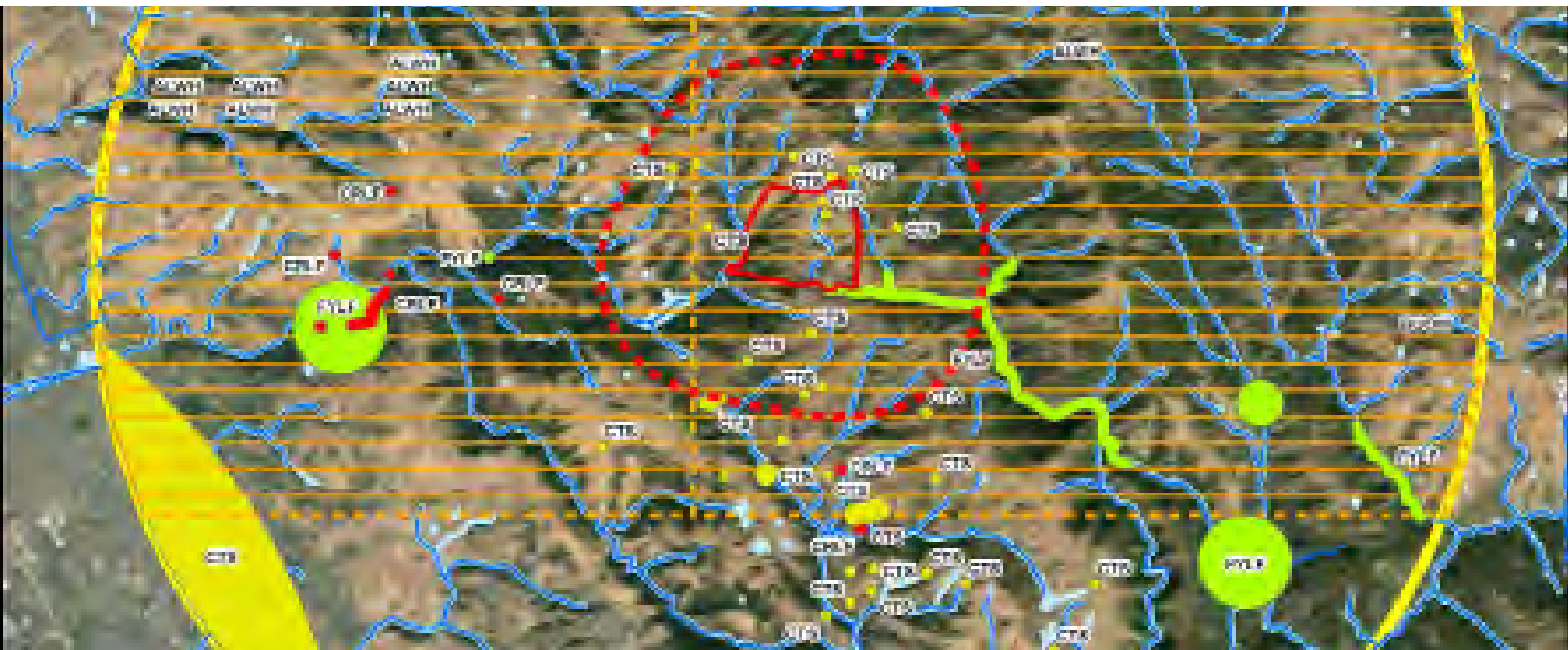
- Revegetation and restoration plans
- Seed sourcing and procurement
- Species-specific planting lists

### Restoration Monitoring and Reporting

- Baseline reporting, photo documentation, and long-term reporting
- Compliance monitoring
- Reporting requirements for submittal to agency personnel

### Habitat Creation, Design, and Build (Partnership)

- Feasibility assessments
- Conceptual planning and design
- Installation of restoration and mitigation plans
- Landscape monitoring



## Geographic Information Systems (GIS)

Our GIS team provides a range of services, from small-scale mapping to program-wide analysis and reporting. Specific services include:

- Data capture and GIS analysis
- Mapping and cartographic services
- Wildlife movement and corridor assessment mapping
- Remote sensing
- Special-status species distribution and habitat suitability analysis
- Drone services
  - Baseline imagery
  - Supplemental data collection
  - Vegetation habitat mapping
  - Project/field compliance before and after photography





## Storm Water Services

Sequoia's Qualified Storm Water Pollution Prevention Plan (SWPPP) Developers-Practitioners (QSDs-QSPs) support clients in complying with Clean Water Act (CWA), National Pollutant Discharge Elimination System (NPDES), and State Water Resources Control Board (SWRCB) rules and regulations. Sequoia is highly experienced with regional projects as well as the various agency permits governing work throughout California. We can provide local inspection staff statewide who can be onsite on short notice for storm events, agency meetings, and other time-sensitive storm water needs. Our services include:

- Site inspections and monitoring
- SWPPP training program design and on-site crew training
- On-site storm water collection
- Compliance management





## Additional Services

Sequoia offers customized project solutions and minimizes overhead costs by working closely with qualified associates that provide specialized expertise on an as-needed basis. These carefully selected companies and scientists support Sequoia staff in the field and on the desktop, providing expert guidance related to unique species or project requirements, as well as research assistance and peer review. Services that Sequoia can provide in this manner include cultural resources inventories, onsite cultural resources monitoring and support, and archeological assessments.

# MANAGEMENT TEAM



**Debie Montana, MS**  
President & Principal  
Biologist



**Bill Montana**  
Chief Financial Officer  
& Principal



**Brett Hanshew, MS**  
Senior Biologist &  
Project Manager



**Tashi MacMillen**  
Senior Biologist &  
Project Manager



**Jesse Reeb**  
Senior Biologist &  
Project Manager



**Amber Anderson, MS**  
Biologist & Project  
Manager



**Margaret Finch**  
Biologist &  
Project Manager



**Suzanne Brock**  
Financial Director &  
Controller



**Molly Ehlers**  
Business Operations  
Manager



**Melissa Krause**  
Marketing Manager



## SEQUOIA CULTURE

Sequoia constantly seeks to achieve the ultimate balance between outstanding client service, employee well-being, and financial success. We accomplish this by living our shared core values of **Respect, Excellence, Passion, Integrity,** and **Teamwork**, and celebrating the unique contributions and accomplishments of our team.

Sequoia provides excellent compensation and comprehensive benefits packages including mentoring and career advancement opportunities, outstanding paid training opportunities, vacation time, and excellent health and dental insurance.

Sequoia also sponsors regular staff events throughout the year. Our company events have included:

- Bocce ball & dinner at Plank Oakland
- Pizza night and doggy play date
- Team-building games
- A's, Giants, and 49ers games
- Holiday parties with white elephant gift exchange
- Wine train through Napa
- Food & clothing drives
- Happy hours



# THE SEQUOIA DIFFERENCE

**Statewide Multi-Regional Expertise.** Sequoia staff have worked extensively throughout the state, and our team has considerable experience with local species, habitats, agencies, and regulations.

**Experience Implementing Project Regulations from Multiple Agencies.** Sequoia frequently conducts biological surveys and monitoring in compliance with the guidelines of multiple agencies, and our surveys and work products are tailored to address the requirements of each.

**Extensive Habitat Conservation Plan (HCP) Experience.** Sequoia has worked under numerous HCPs including PG&E's San Joaquin Valley HCP and Bay Area HCP, the draft Solano Multispecies HCP, and the East Contra Costa County HCP.

**Competitive Rates.** As a result of our low overhead costs, local workforce, cloud-based real-time scheduling, and experienced, cross-trained staff, Sequoia's rates are highly competitive.

**Financial Stability.** Sequoia is profitable and financially stable, with excellent customer retention levels. Our project managers and accountants utilize widely accepted Oracle financial and project accounting software, enabling us to provide detailed, timely, and accurate project and financial data to clients.

**Ethics.** Sequoia is committed to ethical business practices and has never been involved in any litigation.

**Track Record of Success.** Sequoia has a history of providing our services on schedule and within budget. Our dedication to client service and project success has resulted in 85% return business from our clients.

**Commitment to Client Relationships and Satisfaction.** Sequoia is a small firm that delivers agile, customer-focused support. We develop lasting client relationships by providing tailored service that enables us to consistently exceed project goals.



## SEQUOIA'S PROJECTS

From water programs to utility projects, Sequoia works with clients to minimize project impacts on biological resources. Our highlighted projects detail Sequoia's experience helping our clients navigate the requirements of varied complex permits and regulations through preparation of permit applications, monitoring, and reporting.



## STANISLAUS AFTERBAY DAM REMOVAL AND REVEGETATION

### Tuolumne and Calaveras Counties

The Stanislaus Afterbay Dam was a 194-foot wide timber and steel dam built in 1907 along the Middle Fork of the Stanislaus River. After outliving its effectiveness following the completion of New Melones Reservoir in 1982, the dam bridge was removed in 2008 and the dam was removed in 2012. Sequoia was part of the team tasked with ensuring environmental compliance and restoration goals were met per requirements of permits from the U.S. Bureau of Reclamation, the USACE, the State Regional Water Quality Control Board, and the CDFW. Sequoia performed pre-construction surveys for foothill yellow-legged frog, western pond turtle, and nesting birds, and vegetation mapping for planned tree removal. During dam removal activities, Sequoia biologists helped lead the safe relocation of over 2,000 fish to avoid impacts from project activities. Following dam removal, Sequoia botanists and revegetation planners used the onsite survey information to draft the revegetation plan approved by the CDFW. Our revegetation team coordinated the purchase and installation of site-specific grassland seed and oversaw the replanting of at the project site. Sequoia harvested willow pole plantings onsite and re-planted the site according to CDFW permit guidelines.

We are assisting with revegetation monitoring and working with the client and permitting agencies to meet planned revegetation goals.





## OROVILLE DAM EMERGENCY TRANSMISSION LINE REPLACEMENT

### Oroville

In February of 2017, damage to a spillway at the nation's tallest dam placed the community of Oroville under evacuation due to flood threat. In response, the Department of Water Resources began working to repair the damages. Sequoia provided environmental support for this project to ensure protection of an active bald eagle nest onsite. While onsite, Sequoia conducted daily pre-construction surveys and monitoring for the bald eagle nest during emergency construction activities including tracking and monitoring fledging success if a bald eaglet during both ground and helicopter-based transmission line replacement activities. Biologist communicated with crews daily to ensure reduced disturbance to nesting bald eagles and other raptors.



## SANDBAR DAM FISH PASSAGE IMPROVEMENT PROJECT

### Central Sierra Nevada

In support of this multi-year fish passage improvement project, Sequoia conducted pre-construction surveys for nesting birds, pacific fisher, western pond turtle, and foothill yellow-legged frog. We performed two years of protocol-level surveys for California spotted owl, northern goshawk, and bald eagle, using techniques including broadcast calling, passive listening, and helicopter nest searches.

Sequoia performed regular inspections for USACE 404 permit compliance on a bi-weekly basis, which involved collaborating with construction contractors, engineers, and managers to ensure compliance on an array of biological and erosion and sediment control regulations. Sequoia also developed and implemented the restoration plan for the mitigation component of this project.



## BREUNER MARSH RESTORATION & PUBLIC ACCESS PROJECT

Richmond

East Bay Regional Park District oversaw this restoration and public access project at the Dotson Family Marsh at Point Pinole Regional Shoreline. The project restored historic San Francisco Bay wetlands, closing a key gap in the San Francisco Bay Trail, and developed other public access facilities. The restored marsh provides high quality habitat for threatened and endangered species, such as the Ridgway's rail and the salt marsh harvest mouse. Sequoia performed monitoring for salt marsh harvest mouse in support of restoration activities at the site.





## KENNEDY MEADOWS BANK STABILIZATION & RESTORATION

### Tuolumne County

Sequoia is performing preliminary studies to support the planning and permitting process of this multi-year effort to restore meadow ecosystem function to a section of the Stanislaus River below Relief Reservoir. Sequoia is conducting multiple site assessments across a range of disciplines including a wetland delineation, rare plant surveys, noxious weed surveys, a tree inventory, and wildlife surveys. Sequoia also conducted multiple surveys in the area including protocol surveys for Sierra Nevada yellow-legged frog, channel cross-section surveys, and a grazing impacts study.

Sequoia is also assisting with project permitting and regulatory support with development of the Initial Study/Mitigated Negative Declaration (IS/MND), as well as USACE Section 404 Nationwide Permit, CDFW Section 1602 Permit, State Water Board Clean Water Act (CWA) Section 401 Water Quality Certification, California General Construction Permit, and permit registration documents to be filed with the Central Valley Water Board that include a Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP). Sequoia staff is authoring impact analysis sections of the IS/MND to determine potential significance of project impacts and assisting in the development of Avoidance and Minimization Measures (AMMs) and Best Management Practices (BMPs) to mitigate these potential impacts.



## RUSSIAN RIVER ALEXANDER VALLEY INSTREAM MINING & SALMONID HABITAT IMPROVEMENT PROJECT

### Sonoma County

Sequoia provided comprehensive biological services for this planned instream gravel mining project that included the creation of off-channel habitat features for listed Chinook salmon and steelhead. Sequoia worked with the client and an independent Scientific Review Committee to ensure geomorphic and habitat studies complied with the various mining and restoration permits. Sequoia designed a comprehensive study plan, which included pre-construction surveys for special-status wildlife species, salmonid habitat assessment and delineation, and geomorphic studies of salmonid spawning gravels.

Sequoia also assembled and managed a team of subject matter experts to implement various technical studies and surveys for permit compliance including California Native Plant Society (CNPS) protocol rare plant surveys, tree inventories, salmonid redd counts, bat surveys, western pond turtle and foothill yellow-legged frog surveys, salmonid instream habitat delineations, and salmonid spawning habitat quality surveys. Sequoia's success on our inaugural project with Syar Industries has led to a strong business relationship and additional awards.





## RUSSIAN RIVER PITS RECLAMATION SALMONID HABITAT IMPROVEMENT

### Sonoma County

Sequoia is leading biological efforts and coordinating technical studies for a reclamation project of several large off-channel aggregate extraction sites immediately west of the Russian River Middle Reach, south of Healdsburg. The reclaimed open pits will be hydrologically reconnected with the main-stem Russian River. Sequoia is working with engineers, hydrologists, and project proponents to ensure that the final design will not jeopardize runs of listed salmonid evolutionarily significant units (ESUs) in the watershed, and ultimately provide enhanced off-channel rearing habitat for outmigrating juvenile coho salmon, Chinook salmon, and steelhead. Sequoia's work includes a biological assessment for Endangered Species Act (ESA) consultation with the National Marine Fisheries Service (NMFS); analysis of existing water quality data; development of project biological mitigation and habitat enhancement measures; habitat assessment and mapping; wetland delineation and mapping; preparation of a revegetation plan and a biological resource report and constraints analysis for the reclamation plan; and technical assistance with preparation of resource agency permit applications. In coordination with Syar, Sequoia has met with Scientific Review Committee and Sonoma County Permit and Resource Management Department (PRMD) personnel to present design concepts, discuss potential project impacts, and propose mitigation measures.





## LYONS DAM LLO VALVE RETROFIT PROJECT

### Central Sierra Nevada

Since 1934, Lyons Dam has created the 184-acre Lyons Reservoir on the South Fork of the Stanislaus River. The dam and its associated elements provide irrigation and municipal water, and contribute to downstream hydroelectric facilities. In order to upgrade the Low Level Outlet (LLO) valve elements and automate Instream Flow Requirements (IFR), Sequoia is working with the client to ensure that the project is successfully completed and environmental disturbance are limited to the extent possible.

Sequoia conducted a wetland delineation to identify Waters of the United States in support of permit planning. Additionally, for two years Sequoia biologists have conducted protocol-level surveys for California spotted owl, northern goshawk, and bald eagle. The field surveys for these species involved searching for field signs, station broadcast surveys, passive listening stations, and helicopter surveys for nesting sites. Based on the results of these field surveys, Sequoia is helping to develop innovative approaches to minimize disturbances to the species observed in the project vicinity.



## PHOENIX PROJECT SOUTH FORK STANISLAUS FLOW VARIANCE MONITORING

### Tuolumne County

Sequoia supported PG&E's Phoenix Project South Fork Stanislaus Flow Variance monitoring studies in 2014 and 2015. As a condition of the FERC license (No. 1061) for the Phoenix Project, minimum instream flows for the South Fork Stanislaus River were established to maintain habitat values for aquatic species. Due to drought conditions, a flow variance monitoring program was developed and implemented to maintain aquatic habitat quality during periods when minimum instream flows could not be attained.

Accordingly, Sequoia performed the following studies for FERC license compliance: conducted fish population assessments using backpack electrofishing units and block nets to isolate and survey selected reaches of the river; conducted visual encounter surveys for foothill yellow-legged frog on the Middle Fork Stanislaus River over two years; performed fish habitat assessment surveys and stranding potential studies; and conducted water quality monitoring using a handheld multi-parameter constant read water quality sampler.



## PHOENIX PROJECT RELICENSING SUPPORT

### Tuolumne County

In collaboration with the prime consultant to PG&E, Sequoia is currently performing several scopes of work to support the FERC relicensing process for the Phoenix Hydroelectric Project on the South Fork Stanislaus River. Sequoia prepared the Biological Resources section of the FERC Pre-Application Document (PAD), and is currently performing protocol surveys for foothill yellow-legged frog within the watershed. Sequoia is also performing water quality monitoring and assisting with the implementation of a pressure-stage transducer study. Sequoia will also be performing vegetation surveys and habitat typing, willow flycatcher habitat assessment, and great grey owl habitat assessment and focused surveys.





## CRANE VALLEY PROJECT WILDLIFE CROSSINGS STUDY

### Central Sierra Nevada

As part of the hydro license compliance, PG&E is required to study wildlife use of canal crossings and implement strategies to minimize adverse effects to wildlife. Sequoia led a wildlife crossing study that made recommendations for improvements to the system to reduce deer drownings. This work included the initial development of a clear strategy and study plan for PG&E, with an extensive literature review and presentation of multiple previous research strategies. Subsequently, Sequoia performed extensive field surveys including large mammal tracking and infrared camera surveys. Finally, Sequoia prepared recommendations reports and a monitoring plan.



## MOKELUMNE GEOMORPHOLOGY & RIPARIAN LONG-TERM MONITORING PROGRAM

### Mokelumne River

In support of Pacific Gas and Electric Company's (PG&E's) Federal Energy Regulatory Commission (FERC) license to operate the Mokelumne Hydroelectric Generation Project, long-term riparian and geomorphology studies are being conducted to determine the effects of the fluctuating river flows on associated habitats. Sequoia is performing field surveys and collecting data for cross-section profile, long profile, and residual pool depth; collecting data for Rosgen level II and III stream type; performing visual V\* pool surveys; collecting data in remote areas via helicopter access; performing work in accordance with an established study plan; and providing daily reporting and task management.



## CONTRA COSTA WATER DISTRICT CANAL REPLACEMENT

### Contra Costa County

The Contra Costa Water District is in Phases 3 and 4 of a project to replace just over 1 mile of an unlined drinking water conveyance canal with buried pipeline. Sequoia is providing biological support for project implementation including pre-construction surveys and habitat assessments for California red-legged frog, giant garter snake, burrowing owl, and San Joaquin kit fox.

Sequoia is also performing biological monitoring to ensure compliance with the Final Mitigated Negative Declaration (MND), U.S. Fish and Wildlife Service (USFWS) Biological Opinion, and U.S. Army Corps of Engineers (USACE) 404, Regional Water Quality Control Board (RWQCB) 401, and California Department of Fish and Wildlife (CDFW) 1600 and Incidental Take Permits.

Sequoia personnel coordinate directly with the District as well as contractors to identify potential constraints and work toward field-optimized solutions. Additionally, Sequoia prepares biological compliance documentation for transmittal to the appropriate regulatory agencies.





## KAISER POND AND SHINN POND FISH PASSAGE RETROFIT

### Fremont

Sequoia provided biological compliance support for two Alameda County Water District projects in the Alameda Creek Drainage. Our team of biologists conducted pre-construction surveys for initial ground disturbance, monitored construction activities to ensure compliance, and performed multiple fish relocations for the project.

The Kaiser Pond project included construction of a new diversion pipeline and cylindrical fish screen that replaced the prior unscreened diversion. The screen system and diversion intake are used to divert water from the Alameda Creek Flood Control Channel to Kaiser Pond. This project included extensive excavation, horizontal directional drilling, fish relocations, focused species surveys, and implementation of project-specific storm water Best Management Practices.

The Shinn Pond project installed a new 54-inch gravity rediversion pipeline underneath active Union Pacific Railroad and Bay Area Rapid Transit (BART) tracks. Sequoia ensured compliance with the terms of the CDFW Lake and Streambed Alteration Agreements and the USACE 404 Permit, with a scope of work that covered biological resources, water quality, and erosion control.



## PHILADELPHIA WEIR FACILITIES UPGRADE

### Central Sierra Nevada

The Philadelphia diversion dam routes water from the South Fork of the Stanislaus River to the Spring Gap Powerhouse on the Middle Fork of the Stanislaus River. In order to upgrade existing facilities and automate Instream Flow Requirements, Sequoia led the field effort and reporting requirements per the California Department of Fish and Wildlife, U.S. Army Corps of Engineers and the State Regional Water Quality Control Board. Sequoia conducted focused rare plant surveys, foothill yellow-legged frog visual encounter surveys and protocol-level surveys for California spotted owl, northern goshawk, bald eagle, and great gray owl. Sequoia worked with the client to ensure that pre-project permit conditions were met and to prepare for mobilization.



## STRAWBERRY WEIR REVEGETATION PROJECT

### Central Sierra Nevada

Sequoia is supporting the revegetation plan implementation, monitoring, and reporting for this riparian restoration project along the South Fork Stanislaus River. Specific tasks include planting wood pole cuttings and container plants following tree removal undertaken to replace a concrete gauging weir, monitoring the restoration plantings, and implementing adaptive management strategies over the next five years.



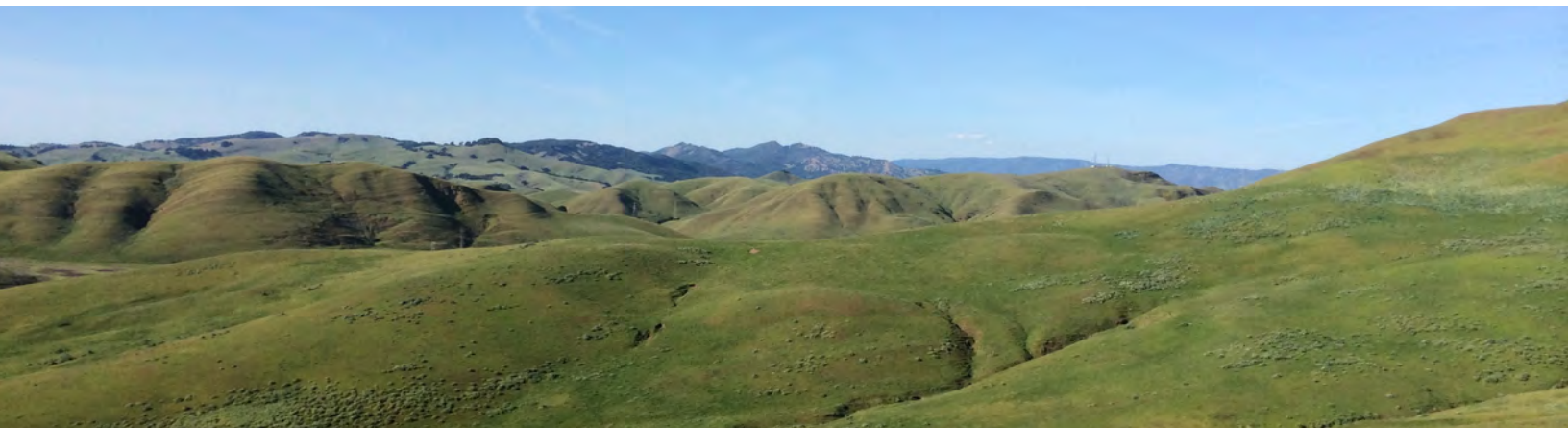


## GUADALUPE RIVER FLOOD PROTECTION PROJECT: UPPER GUADALUPE RIVER REACH 12

### Santa Clara County

This Santa Clara Valley Water District project aimed to protect more than 7,500 parcels from a 100-year flood event and provide long term beneficial impacts to stream ecology, hydrology, fisheries, and habitat. In 2015, the partners completed work in the lower and downtown portions—known as reaches—of the Guadalupe River and are now working on the upper segment of the river. This project runs along 5.7 miles of the river from Interstate 280 to Blossom Hill Road and is composed of seven project areas: Reaches 6 through 12.

Sequoia provided daily monitoring, environmental awareness training, and pre-construction surveys during the avian nesting season (February through August). Our biologists conducted daily nest surveys to determine whether disturbance to active nests would occur during construction, and completed daily monitoring reports for submittal to the client and agencies. In addition, at the request of the USACE, Sequoia conducted a study to determine how and if construction activity was disturbing nesting swallows during access by large construction equipment under the various bridges.



## IRWIN CREEK MITIGATION PROJECT

### Marin County

The Transportation Authority of Marin's (TAM's) Irwin Creek Mitigation Project will restore approximately 0.45 acres of riparian habitat along approximately 1,200 feet of Irwin Creek, using a mixture of trees, shrubs and ground cover, irrigation, and plant establishment for a period of three years.

Sequoia's biologists and botanists provided the initial technical report, discussing the project site, topography, and existing vegetation. The report included an inventory of existing plants, focused on native plants and aggressive invasive species, and recommendations for invasive plant eradication prior to native plant establishment. This information allowed the client to strategically target exotics eradication efforts and identify the most effective planting strategy. Sequoia will also serve as an on-site representative for the Authority and work with the installation team to ensure that planting and restoration conforms with the goals and objectives of the restoration plan.



## CHILKOOT LAKE SPECIAL-STATUS AMPHIBIAN STUDY

### Fresno County

Chilkoot Lake is a small, alpine lake within PG&E's Crane Valley hydroelectric Project, which is also in close proximity to Yosemite toad and Sierra Nevada yellow-legged frog designated Critical Habitat. To ensure that routine operations of this portion of the project were not impacting threatened and endangered amphibians, Sequoia was responsible for performing visual encounter surveys for Yosemite toad and Sierra Nevada yellow-legged frog, coordinating with clients, and preparing habitat assessment and survey report memoranda for submittal to relevant resource agencies.





## BIG CREEK HYDROELECTRIC PROJECT

### San Joaquin River

In support of this Southern California Edison project, Sequoia biologists conducted both snorkel and terrestrial surveys for various species in challenging terrain throughout the Big Creek 4 section of the San Joaquin drainage. Focused surveys included hardhead and salmonid counts as well as western pond turtle trapping and stream bank visual encounter surveys. Field surveys were conducted as part of long-term Federal Energy Regulatory Commission licensing requirements examining hydropower effects on multiple listed species.



## DINKEY CREEK FISH ASSESSMENT STUDIES

### Central Sierra Nevada

Due to an unexpected increase in flows during hydroelectric maintenance work, there was an increase in stranding potential for aquatic species in the Dinkey Creek watershed. Sequoia and PG&E's prime consultant performed field surveys for stranding potential and were onsite to potentially relocate species during the site assessment.



**SEQUOIA**  
Ecological Consulting, Inc.

DANVILLE

Debie Montana  
925.855.5500

SACRAMENTO

Brett Hanshew  
530.848.4925

SAN DIEGO

Tashi MacMillen  
831.239.1645