Gavin Newsom, Governor
NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE
WILDLIFE CONSERVATION BOARD
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Revised* Final Meeting Agenda

WILDLIFE CONSERVATION BOARD

Stream Flow Enhancement Program
April 1, 2020, 10:00 a.m.

* This agenda has been revised to remove the in-person participation location in Sacramento. Consistent with Governor Newsom's Executive Order N-29-20, the public and Board members will participate in the meeting via Skype or teleconference. Public comment will be accepted per the agenda.

This Board meeting will be available via Skype. A recording will be posted after the meeting.

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Agenda Summary

Adjourn

Attachments

Attachment A – List of Acronyms
Attachment B – WCB Strategic Plan Goals and Objectives

PERSONS WITH DISABILITES

Persons with disabilities needing reasonable accommodation to participate in public meetings or other CDFW activities are invited to contact the Department's EEO Officer at (916) 653-9089 or EEO@wildlife.ca.gov. Accommodation requests for facility and/or meeting accessibility and Requests for American Sign Language Interpreters should be submitted at least two weeks prior to the event. Requests for Real-Time Captioners should be submitted at least four weeks prior to the event. These timeframes are to help ensure that the requested accommodation is met. If a request for an accommodation has been submitted but is no longer needed, please contact the EEO Officer immediately.

1. Roll Call

Wildlife Conservation Board Members
- Charlton H. Bonham, Chair
  Director, Department of Fish and Wildlife
- Alina Bokde, Public Member
- Keely Bosler, Member
  Director, Department of Finance
- Diane Colborn, Public Member
- Mary Creasman, Public Member
- Fran Pavley, Public Member
- Eric Sklar, Member
  President Fish and Game Commission

Joint Legislative Advisory Committee
- Senator Andreas Borgeas
- Senator Nancy Skinner
- Senator Henry Stern
- Assemblymember Laura Friedman
- Assemblymember Al Muratsuchi –Alternate
- Assemblymember Eduardo Garcia
- Assemblymember Miguel Santiago –Alternate
- Assemblymember Monique Limon
- Assemblymember Marc Levine -Alternate

Executive Director
- John P. Donnelly

2. Public Forum for Items not on this Agenda

3. California Stream Flow Enhancement Program (SFEP) FY 2019/2020 Informational Item

The future of California's water supply faces many uncertainties. To address these uncertainties, the California Water Action Plan (CWAP) was developed as a framework for sustainable water management, to enhance the resilience of the water resource system, and to restore important species and habitat. The Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1) authorized the Legislature to appropriate funds to address these challenges. The Wildlife Conservation Board (WCB) was allocated $200 million for projects that enhance stream flow.

A total of $64 million, including $2.5 million designated for scientific studies, was available for expenditure in Fiscal Year (FY) 2019/20 for the SFEP through a competitive grant process, in coordination with the California Department of Fish and Wildlife (CDFW), State Water Resources Control Board (SWRCB) and other partners. Guided by the CWAP, funding is focused on projects that will lead to a direct and measurable enhancement to the amount, timing and/or quality of water, for anadromous fish; special status, threatened, endangered or at risk species; or to provide resilience to climate change.

WCB released the 2019 SFEP Proposal Solicitation Notice (PSN) on July 9, 2019. This PSN closed on September 10, 2019, with a total of 27 proposals received, and $43,704,789 in requested funds. The distribution of projects is identified in Table 1 (following page).

Proposals were reviewed through a multi-tiered process. First, submissions were required to pass an administrative review, where applications were evaluated on adherence to SFEP's guidelines and completeness. Proposals that passed the administrative phase were then scored by a minimum of three reviewers, consisting of a CDFW regional specialist, SFEP staff, and other technical experts. Scores were based on the scoring criteria and standards delineated in the PSN. All proposals were presented to a Selection Panel for further assessment and discussion. The Selection Panel was made up of managers and staff from CDFW, WCB, and SWRCB. The Selection Panel met on January 14, 2020 and developed a recommended list of projects based on numerous factors, including scoring, feasibility, durability, and how projects supported the specific goals of the SFEP PSN. Projects recommended for funding by the Selection Panel were reviewed by the WCB Executive Director, in preparation for the April 1, 2020 Board meeting.

4. Fund Allocation of Recommended SFEP Projects FY 2019/2020

Project Category	Proposals Received	Funds Requested	Projects Recommended for Funding	Proposed Allocation for Recommended Projects
Scientific Study	5	$3,752,712	3	$2,067,523
Planning	7	$3,801,955	6	$2,507,212
Implementation	11	$25,450,889	7	$14,633,418
Acquisition	4	$10,699,233	3	$5,123,110
Totals	27	$43,704,789	19	$24,331,263

* $64 million, including $2.5 million designated for scientific studies, was available for expenditure in FY 2019/20

Consent Items

Items 5-12 are part of the Consent Calendar

5. Lower Prairie Creek Floodplain Restoration Design Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $332,000 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), California Water Code (CWC) Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Lower Prairie Creek Floodplain Restoration Design
Project Type:	Planning
Applicant/Grantee:	Save the Redwoods League
Amount Recommended:	$332,000
Funding Partners:	SCC, NOAA
Landowner:	Save the Redwoods League
County:	Humboldt
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project site is located on the most downstream mile of Prairie Creek, before it merges with Redwood Creek in coastal Humboldt County. It is the former site of the Orick Mill, now owned by Save the Redwoods League (League). The majority of the Prairie Creek and lower Redwood Creek watersheds are located within Redwood National and State Parks. The creeks in Redwood Creek watershed, and many of the tributaries, are designated critical habitat for three species of threatened salmonids: Southern Oregon Northern California Coast coho salmon, Northern California steelhead, and California Coastal Chinook salmon. All accessible habitat here is considered critical habitat for coho salmon.

PROJECT DESCRIPTION
The Lower Prairie Creek Floodplain Restoration Design Project is part of a larger, multi-benefit cooperative project coordinated by the League, California Trout, the Yurok Tribe, National Park Service and California State Parks to develop a new world-class visitor center adjacent to lower Prairie Creek near the town of Orick in Humboldt County. The new visitor center will replace the current Thomas H. Kuchel Visitor Center west of Orick, located in the former estuary and subject to coastal flooding related to climate change. The proposed planning Project aims to provide design for later implementation efforts: implementation efforts following completed design plans would improve the timing, availability and quality of stream flow by reconnecting Prairie Creek to its historic floodplain and backwater habitats, repair channel incision and restore emergent wetland habitat.

Problem:
The 125± acre Project site is located at a former sawmill now owned by the League, at the most downstream mile of Prairie Creek before it merges with Redwood Creek and flows to the sea. Redwood Creek watershed and many of its tributaries are designated critical habitat for Southern Oregon Northern California Coast coho salmon, Northern California steelhead, and California Coastal Chinook

salmon. The Orick Mill occupied a large paved area which was constructed on river run fill and elevated above natural grade to prevent flooding. Current conditions at the Project site include 25± acres of asphalt, grazing pastures, an incised channel with ten-foot high failing stream banks, along with a disconnected floodplain. Natural streamflow and annual flood events are confined to the channel and bound by an elevated floodplain. In addition, the asphalt and compacted fill offer little infiltration or substrate for the growth of native vegetation. Restoring the connections to the floodplain and correcting the channel incision will allow storm flows to overtop the channel banks, providing juvenile salmonids frequent access to a broad area of floodplain and tributary channels for summer and winter rearing.

Solution:
The Project will supplement existing partner funds in order to complete 90 percent engineering designs, baseline environmental studies, and develop a monitoring plan to prepare for implementation proposed in 2021. At that time, project implementation will remove asphalt, recontour the landscape to reconnect the creek channel with its floodplain, improve tributary connectivity, provide in- and off-channel habitat features, remove invasive plants, and revegetate with native plants. Plans will include designs for improvement of 0.8 miles of instream habitat, connection to 18± acres of floodplain and backwater habitat, and restoration of 15± acres of emergent wetland and 29± acres of riparian vegetation. The final implemented project will also play a significant role in educating the public about the needs of salmonids and their fragile status. The future Redwood National and State Parks Visitor Center, of which the restoration project is a part, will be located at the gateway to the world's tallest trees and a national treasure that regularly draws visitors from around the world. Visitors to the new planned center, anticipated to be upwards of 800,000 annually, may view and experience a healthy functional salmonid ecosystem and learn about the important interdependence of these threatened salmonids with California's iconic redwood forests.

PROJECT FUNDING

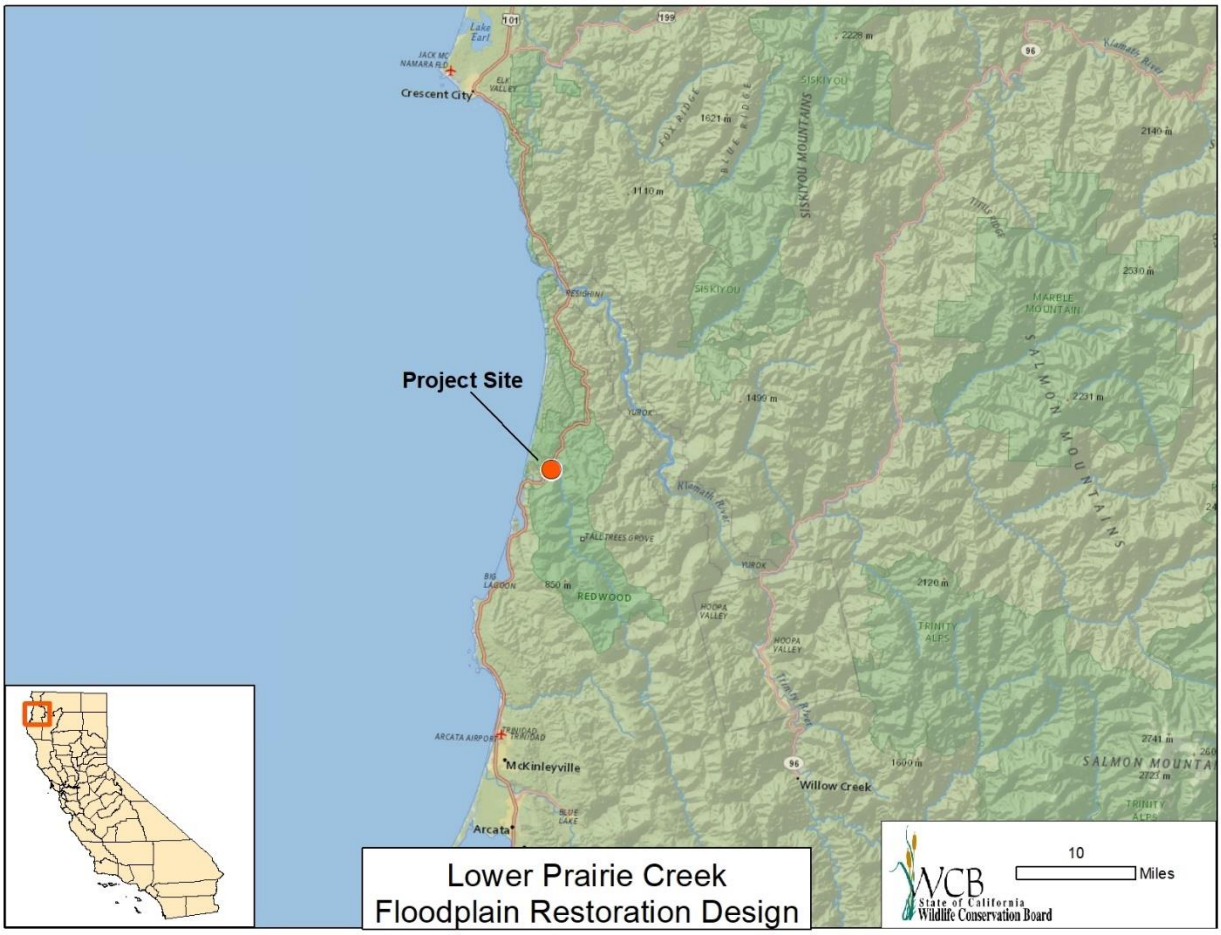
Partners	Amount
WCB	$332,000
Other	$265,000
Total	$597,000

Project costs will be for project management, stakeholder engagement, engineering design development, and monitoring.

Other secured funding sources include the State Coastal Conservancy (SCC) and the National Oceanic and Atmospheric Administration (NOAA).

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from California Environmental Quality Act (CEQA) pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15262), Feasibility and Planning Studies, as it involves only

feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



6. Martin Slough Flow Enhancement Planning Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $589,413 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Martin Slough Flow Enhancement Planning
Project Type:	Planning
Applicant/Grantee:	Redwood Community Action Agency
Amount Recommended:	$589,413
Funding Partners:	CDFW, SCC, Ocean Protection Council, NOAA, and City of Eureka
Landowner:	City of Eureka
County:	Humboldt
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project is located on the Eureka Municipal Golf Course, adjacent to Fairway Drive, within the City of Eureka (City), in Humboldt County. Martin Slough is tributary to the Elk River, via Swain Slough, which flows into Humboldt Bay.

PROJECT DESCRIPTION
The goal of this planning Project is to produce a shovel-ready implementation project that will greatly reduce or eliminate the need for the City to divert water out of Martin Slough during low flow periods to irrigate the Eureka Municipal Golf Course, leaving water in the stream when it is needed most by fish and wildlife. Reduction or elimination of this surface diversion is a critical component of the restoration and habitat enhancement efforts that have been ongoing in Martin Slough since 2001. Focal species include coho salmon, Chinook salmon, steelhead, tidewater goby, and numerous other non-listed estuarine species.

Problem:
The City exercises its riparian water right to divert from the North Fork of Martin Slough to irrigate the Eureka Municipal Golf Course. The pump is located in a flow-through pond (Pond G) and diverts approximately 50,000 to 150,000 gallons per day at a rate of 150 to 300 gallons per minute (gpm) over a 6- to 8-hour period, from May through October. During a study conducted between August and October 2008, summer baseflows in the North Fork and mainstem of Martin Slough were approximately 50 gpm and 100 gpm, respectively. Previous water level monitoring (September 2013) showed that irrigation pumping not only draws water levels down in the North Fork Martin Slough, but can also cause water from the mainstem to flow upstream into Pond G. This indicates that the water supplied to the existing pump intake, at times, originates from both the North Fork and mainstem of Martin Slough. The amount of fresh water flowing through the system represents a critical limiting factor affecting coho salmon rearing habitat, as well as

habitat conditions for various other fish and aquatic organisms utilizing Martin Slough. In addition, for the habitat restoration and enhancement actions planned for implementation of the Martin Slough Habitat Enhancement Project to function as intended, the irrigation pumping needs to be significantly reduced or eliminated.

Solution:
This planning Project will produce a shovel-ready implementation project that will greatly reduce or eliminate the need for the City to divert water from the North Fork of Martin Slough during low flow periods to irrigate the Eureka Municipal Golf Course. The Project will conduct stream flow monitoring and a groundwater investigation, evaluate water conservation opportunities, design an alternative irrigation system (e.g., switch to a deep groundwater well with water stored in a new irrigation pond), secure necessary environmental compliance and permits, develop a Monitoring and Reporting Plan, and draft a Long-Term Management and Maintenance Plan. In addition, the Project will prepare a draft forbearance agreement and conduct due diligence regarding potential use of a CWC Section 1707 instream dedication. The forbearance agreement would require the City to forbear diversion from Martin Slough and tributary waters for a specified period each year, based on available hydrological and biological information. The forbearance agreement would be finalized, but not executed during this planning Project; execution would occur during the implementation phase. An alternative irrigation system could result in approximately 42 acre-feet of water being left in Martin Slough each year during the summer and fall months, when it is needed most by endangered coho salmon and other fish and wildlife and, importantly, allow Pond G to maintain relatively fresh water through the spring and summer and provide habitat for rearing salmonids, in accordance with enhancement designs and plans.

PROJECT FUNDING

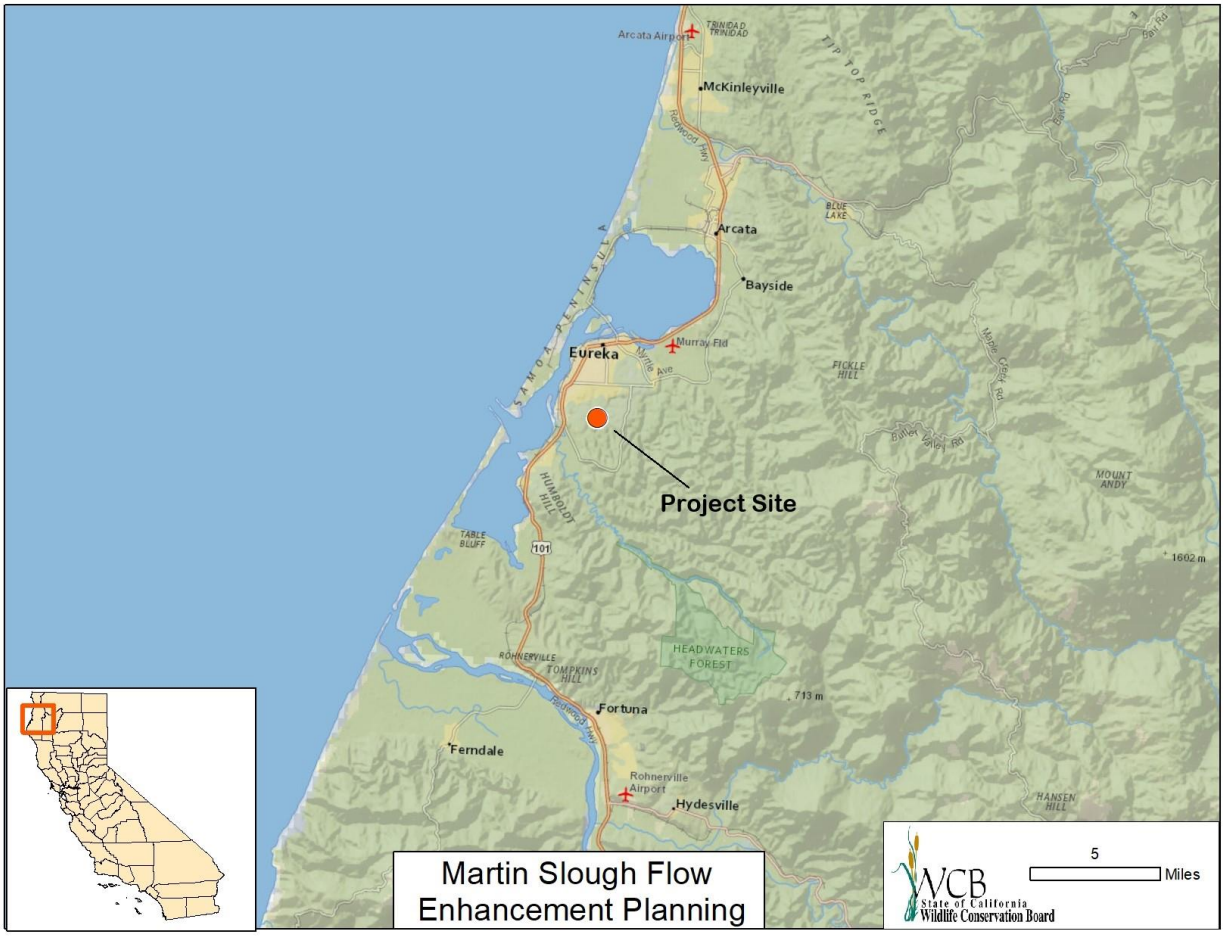
Partners	Amount
WCB	$589,413
Other	$124,275
Total	$713,688

Project costs will be for project management, stream flow monitoring, groundwater investigation, evaluating water conservation opportunities, assessing approaches for instream dedication, developing project designs and securing environmental compliance/permitting, developing a Monitoring and Reporting Plan and a Long-Term Management and Maintenance Plan.

Other secured funding sources include CDFW, SCC, Ocean Protection Council, NOAA, and the City.

CEQA REVIEW AND ANALYSIS

The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



7. Salt Creek Floodplain Restoration Planning Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $236,287 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Salt Creek Floodplain Restoration Planning
Project Type:	Planning
Applicant/Grantee:	The Watershed Research and Training Center
Amount Recommended:	$236,287
Funding Partners:	USFWS, The Nature Conservancy, and Trinity River Restoration Program
Landowners:	Tom and Douglass Evans
County:	Trinity
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project is located primarily on private land adjacent to Salt Creek, near its confluence with Hayfork Creek, 1± mile west of the community of Hayfork, in Trinity County. Salt Creek drains to Hayfork Creek, a tributary of the South Fork Trinity River, which flows to the Trinity River and finally to the Klamath River.

PROJECT DESCRIPTION
The goal of this planning Project is to produce a shovel-ready implementation project that will reconnect a highly degraded segment of stream to its historical floodplain in order to increase shallow groundwater storage, improve steelhead habitat, and improve water quality and quantity through the slow release of cold water into Salt and Hayfork creeks during summer baseflow periods.

Problem:
The Salt Creek-Hayfork Creek subwatershed was one of the largest groundwater aquifers in the Trinity River basin. Historically named the “Hay Fork” of the Trinity River, its lush meadows provided most of the hay and cattle to early settlers and miners. However, mining and industrial development have negatively impacted the creeks, restricting their connection to the floodplains and resulting in major creek incision which subsequently dewatered the shallow aquifers. Dredge gold mining likely had the greatest impact as the dredge moved across large portions of the valley removing riparian vegetation, inverting the sediments and causing major hard points associated with the tailings piles. Subsequently, berms and levees were constructed to protect farms and industrial lumber mills from flooding, which only further exacerbated stream constriction and incision. These activities led to Salt Creek becoming disconnected from its floodplain and shallow aquifer and degraded habitat conditions for salmonids and other native fish and wildlife.

Solution:
This Project will develop final (100 percent) project designs and secure necessary environmental compliance and permitting for a future restoration project that, when implemented, will re-establish connectivity between Salt Creek and its historical floodplain, and will improve aquatic habitat for salmonids. The project objectives are:

- To increase the vertical connectivity between the stream and the alluvial aquifer;
- To restore lateral connectivity between the stream and the floodplain;
- Improve physical and chemical measures of the water quality; and
- To provide a range of improved habitat conditions for salmonids and other native organisms.

Future restoration is anticipated to include lowering of the floodplain and removing a manmade levee in order to allow the stream to spread out across the floodplain. Increasing the frequency and duration of floodplain inundation will reduce the velocity of discharge during high flow events, increase shallow groundwater storage, enhance summer baseflow, reduce flooding locally, and reduce down-cutting of the channel. The design will also include instream structures (e.g. large wood) to retain sediment and rebuild the stream bed elevation, increase sorting of sediments with associated increases in salmonid spawning gravels, create pools for cool water refugia, and restore native riparian and upland flora. Other facets of the Project will include stormwater catchment and off-channel pond habitat. Reconnecting Salt Creek to its historical floodplain will increase hyporheic exchange and the amount of cold water stored in the shallow aquifer for slow release to Salt and Hayfork creeks, reducing stream temperatures and increasing water quantity for fisheries, while creating a myriad of other habitat benefits for salmonids and other aquatic species.

PROJECT FUNDING

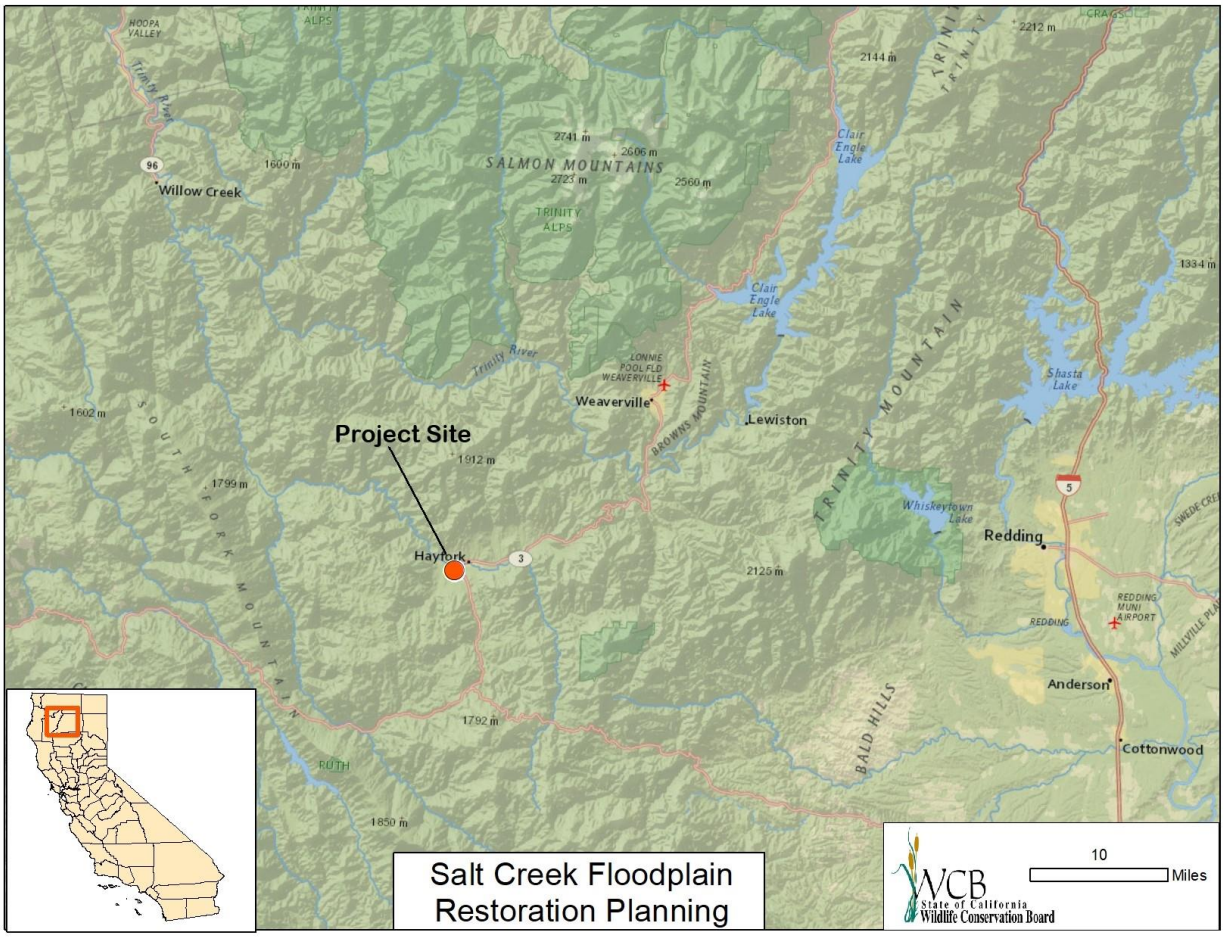
Partners	Amount
WCB	$236,287
Other	$72,063
Total	$308,350

Project costs will be for project management, pre-project monitoring, project design, environmental compliance and permitting, and community outreach.

Other secured funding sources include the U.S. Fish and Wildlife Service (USFWS), The Nature Conservancy, and Trinity River Restoration Program.

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262,

Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



8. Mt. Gilead Water Conservation and Flow Improvement Design Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $331,694 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Mt. Gilead Water Conservation and Flow Improvement Design
Project Type:	Planning
Applicant/Grantee:	North Coast Resource Conservation and Development Council
Amount Recommended:	$331,694
Funding Partners:	National Fish and Wildlife Foundation, Sonoma County Water Agency, DWR
Landowner:	Mt. Gilead Bible Camp and Conference Center
County:	Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project site is on the Mt. Gilead Bible Camp and Conference Center (Mt. Gilead) grounds, adjacent to upper Green Valley Creek approximately six miles outside Sebastopol.

PROJECT DESCRIPTION
This Project will develop designs and permitting for a suite of water conservation measures and a large-scale rainwater catchment system as an alternative water supply for playing field irrigation at Mt. Gilead. These improvements are estimated to lower the camp's water demand by 90 percent, which will substantially reduce dry season water extraction from a series of shallow alluvial wells adjacent to Green Valley Creek.

Problem:
Green Valley Creek, a major tributary to the lower Russian River, provides critical habitat for remnant native populations of Central California Coast coho salmon and steelhead trout, particularly in its upper reaches. It has been a focus watershed for CDFW's coho recovery program, for the Russian River Coho Water Resources Partnership, and for the Russian River Coho Salmon Captive Broodstock Program. Adequate summer and fall flows are critical to the survival of juvenile coho, which spend a full year in their natal streams before migrating to the Pacific Ocean. Salmonid habitat streams typically have more than adequate streamflow during the rainy season and early summer, but discharge drops steadily through the summer into fall. The dry season is also the period of greatest human demand for water, and California's recent drought exacerbated this pattern. Portions of upper Green Valley Creek disconnect or go dry in most years, including reaches that have been documented to be among the most important for coho spawning and rearing. A

2018 study conducted by the California Sea Grant concluded that the duration of late summer pool connectivity was the metric most closely correlated to coho oversummer survival, and that connectivity could be maintained by as little as 0.1 cubic feet per second (cfs) in small streams.

Solution:
This planning phase will bring the project to shovel-ready status and will also include stream flow monitoring and baseline data collection to gauge project efficacy. Once designs are complete, a forbearance agreement and monitoring plan will be developed to ensure the water savings will continue into the future after project construction is complete.

Following this project planning phase, the implementation of water conservation measures and a rainwater catchment system at Mt. Gilead would substantially reduce dry season water extraction from near-stream shallow alluvial wells; water consumption will be reduced from approximately 3.5 million gallons to only 350,000-400,000 gallons each summer. This equates to roughly 0.05 cfs left instream which, when combined with several other rainwater catchment systems that have been or are currently being implemented on rural residential properties along Green Valley Creek, will significantly improve stream flow and pool connectivity. Water conservation measures to be planned for Mt. Gilead include shrinking the irrigated field area, amending and aerating playing field soil, replacing the existing grass with a drought-tolerant turf and installing an efficient irrigation system. A rainwater catchment and storage system would be constructed to capture and store roughly 375,000 gallons of water per year. By reducing late summer diversions by over three million gallons, implementation of the project following this planning stage would improve connectivity during the critical August-October low flow season, thereby addressing the most critical bottleneck to oversummer survival of juvenile salmonids.

PROJECT FUNDING

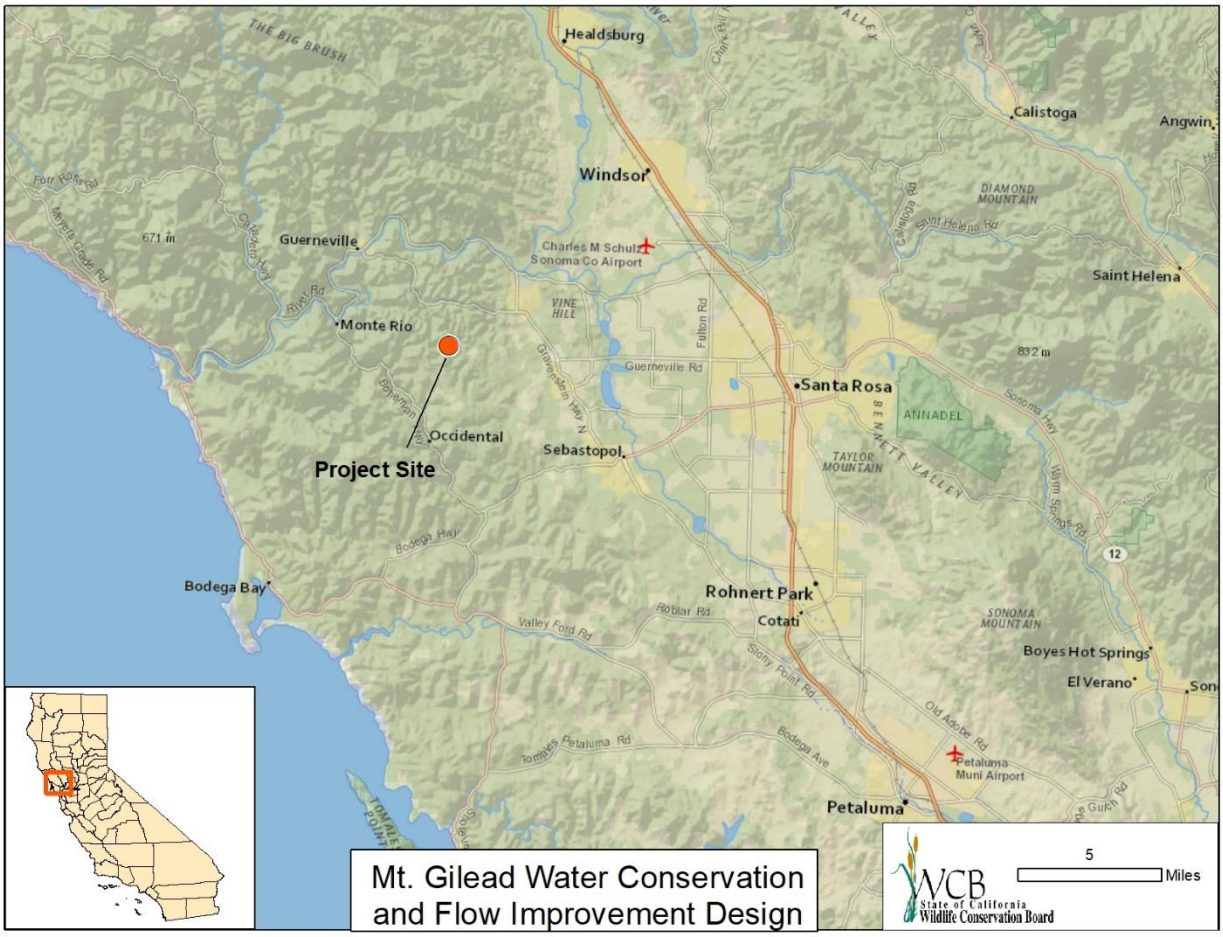
Partners	Amount
WCB	$331,694
Other	$98,902
Total	$430,596

Project costs will be for project management, design development and stream flow monitoring.

Other secured funding sources include the National Fish and Wildlife Foundation, Sonoma County Water Agency and the California Department of Water Resources.

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262,

Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



9. Pena Creek Flow Enhancement Prioritization Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $523,460 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Pena Creek Flow Enhancement Prioritization
Project Type:	Scientific Study
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$523,460
Funding Partners:	Trout Unlimited, California Sea Grant, Sonoma County Water Agency, and Sonoma Resource Conservation District
Landowners:	Multiple
County:	Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Project activities will occur within the Pena Creek watershed, which is located near Healdsburg, west of Highway 101, in Sonoma County. The Pena Creek watershed drains to Dry Creek, which is tributary to the Russian River. Streams that will be monitored through this Project may include Pena, Pechaco, Woods, Dead Coyote, and Redwood Log creeks.

PROJECT DESCRIPTION
This scientific study will generate the hydrologic, water quality, and habitat data and human water demand estimates needed to identify, prioritize, and develop future stream flow enhancement projects in the Pena Creek watershed.

Problem:
Pena Creek, which lies within the Russian River watershed, is utilized by Central California Coast coho salmon (federally endangered), Central California Coast steelhead (federally threatened), and California Coast Chinook salmon (federally threatened). The National Marine Fisheries Service (NMFS) identified Pena Creek as a high priority “Phase 1” tributary that is essential for recovery of Central California Coast coho salmon populations. In recent years, results from Coastal Monitoring Program surveys in the Russian River watershed indicate that more salmonid spawning occurs in Pena Creek than in any other tributary within the Russian River watershed. In neighboring Mill Creek and other streams throughout the Russian River watershed, survival of juvenile coho salmon during the summer season has been consistently poor in many stream reaches due to low streamflow conditions, particularly during years with less-than-average precipitation. Currently, there are no stream flow gauges in the Pena Creek watershed; however, opportunistic wet/dry mapping surveys in the watershed indicate that extensive stream drying occurs during the summer season and is likely a critical bottleneck to

salmon and steelhead recovery. A lack of sufficient scientific information has prevented resource managers and other recovery partners from initiating projects that will improve conditions for imperiled fish and other sensitive species that require sufficient stream flow.

Solution:
This scientific study will fill a major scientific data gap in salmonid recovery efforts in the Russian River basin. The Project will generate the hydrologic, water quality, and habitat data, and human water demand estimates needed to identify, prioritize, and develop future stream flow enhancement projects in the watershed. Project tasks include stream flow and groundwater monitoring, mapping conditions, wet/dry mapping, water quality data collection, fish monitoring (funded through cost share), landowner outreach, a human water demand analysis, and a final prioritized plan for future stream flow enhancement project implementation. Landowner outreach is an important aspect of this scientific study because it will help to identify landowners who are interested in stream flow enhancement work and will allow the project team to begin the initial phase of stream flow enhancement project development. In addition to informing the prioritization plan, data collected through the project will serve as a baseline for evaluating future implementation projects. Results of the study will be directly communicated to resource agencies and recovery partners through technical and stakeholder meetings, web-based mapping tools, uploads to statewide databases, and summary reports. The findings will also be made available to a broader public audience through presentations at scientific conferences, as well as websites and social media pages maintained by the project team.

PROJECT FUNDING

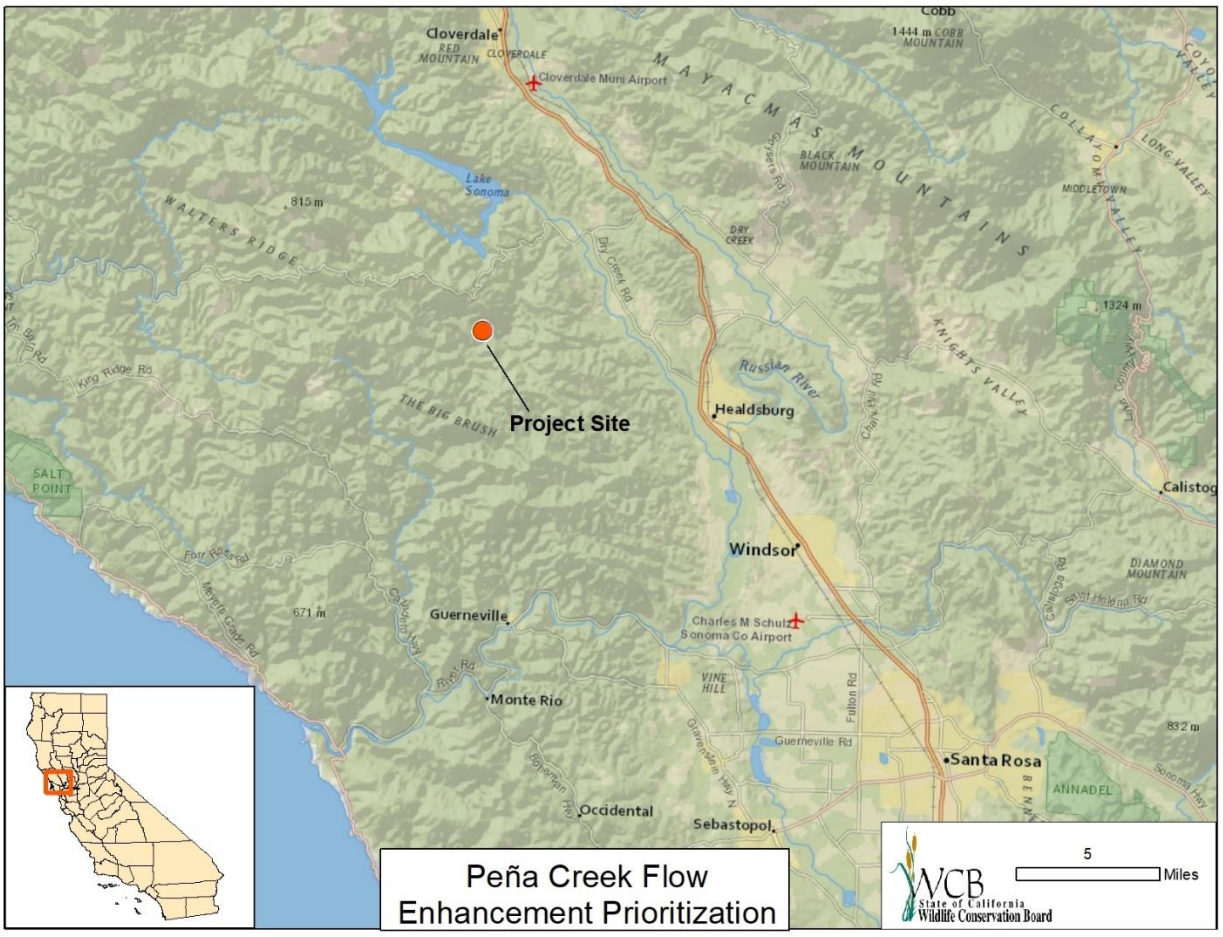
Partners	Amount
WCB	$523,460
Other	$236,600
Total	$760,060

Project costs will be for project management; targeted landowner outreach; hydrologic, water quality, habitat, and fish monitoring (cost share); human water demand analysis; development of a prioritized implementation plan; and dissemination of project findings.

Other secured funding sources include Trout Unlimited, California Sea Grant, Sonoma County Water Agency, and Sonoma Resource Conservation District (RCD).

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, Feasibility and Planning Studies, as it involves only feasibility and planning studies

for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



10. Sonoma Creek Flow Enhancement Design Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $520,039 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Sonoma Creek Flow Enhancement Design
Project Type:	Planning
Applicant/Grantee:	Sonoma Ecology Center
Amount Recommended:	$520,039
Funding Partners:	CDFW, SCC, Sonoma Valley Groundwater Sustainability Agency
Landowners:	Multiple
County:	Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Project activities will take place on four private properties adjacent to upper Sonoma Creek. The properties are within the rural communities of Kenwood and Glen Ellen, in eastern Sonoma County, and consist of three family farms and Morton's Warm Springs Resort, a long-standing local business.

PROJECT DESCRIPTION
This Project will produce plans and permits for four streamflow enhancement projects on private parcels along upper Sonoma Creek, included in a high-priority groundwater basin which supports steelhead, California freshwater shrimp, and other imperiled stream flow-dependent wildlife. Prior work under the Sonoma Creek Stewardship Program, supported by the WCB SFEP (2016) and other partners, funded collection of stream flow data and development of landowner relationships that comprise this proposal.

Problem:
The Sonoma Creek watershed has been farmed and hydrologically altered since the early 1800s. Historically, the Kenwood Valley, in the upper watershed below the headwaters of Sonoma Creek, consisted of a large alluvial fan and extensive wetlands which encouraged the retention of stormwater and infiltration into the Kenwood aquifer. This abundance of water supported a thriving population of steelhead and other salmonid species. A 2008 study found that the Sonoma Creek watershed likely supported the second largest steelhead run among Bay Area streams historically, and identified Sonoma Creek as an "anchor" steelhead stream of the San Francisco Estuary. However, the storage and infiltration capacity of the Kenwood Valley has been reduced substantially through the straightening and channelizing of streams and the installation of drainage ditches and tile drains to support agricultural and residential land development. Hundreds of small residential parcels line most of the stream network, and extensive vineyards that

were developed on old farms use wells to draw water from the aquifer and, in some cases, directly from the stream or from near-stream wells. Thus, groundwater declines have accelerated in the last ten years. The result of these modifications has been an increase in peak flows during winter storm events, and declining base flows in the dry season. Flooding and channel erosion have become increasing problems throughout the years. Bank erosion and lowering water tables are listed as top concerns among area residents, as are concerns about stream health and the plight of steelhead populations.

Solution:
The Sonoma Creek Stream Flow Stewardship Program seeks to develop and foster landowner relationships and stewardship actions that help reduce harmful stream flow impacts: reduce wintertime flood peaks, promote groundwater recharge, and increase stream flows in the summertime to reverse harmful stream flow impacts. Previous funding supported the purchase of five stream flow gauges along with two seasons of stream flow monitoring, landowner outreach and water rights consultations, and the development of a Stream Flow Stewardship Plan for Sonoma Creek. However, the project faced later obstacles. In October 2017, the Sonoma Complex Fires destroyed over ten percent of the area's homes, along with two of the streamflow gauges and data, which severely hindered project progress. The Stream Flow Stewardship Plan continues development, and outreach efforts have yielded several landowners willing to consider implementing stream flow enhancement projects on their private lands. This Project will include implementable plans and designs for the following individual efforts on private properties:

- An alluvial fan restoration project – 100 percent designs.
- An off-channel water storage project – 30 percent designs.
- Two water storage and water rights modification projects that will help two separate landowners eliminate the need for dry season pumping of water from Sonoma Creek – 100 percent designs.

When implemented, these projects will produce late-summer stream flow increases of up to 25 percent over known dry season baseflow. The Project will also extend current stream flow monitoring and continue landowner outreach to build a network of local stream flow enhancement projects.

PROJECT FUNDING

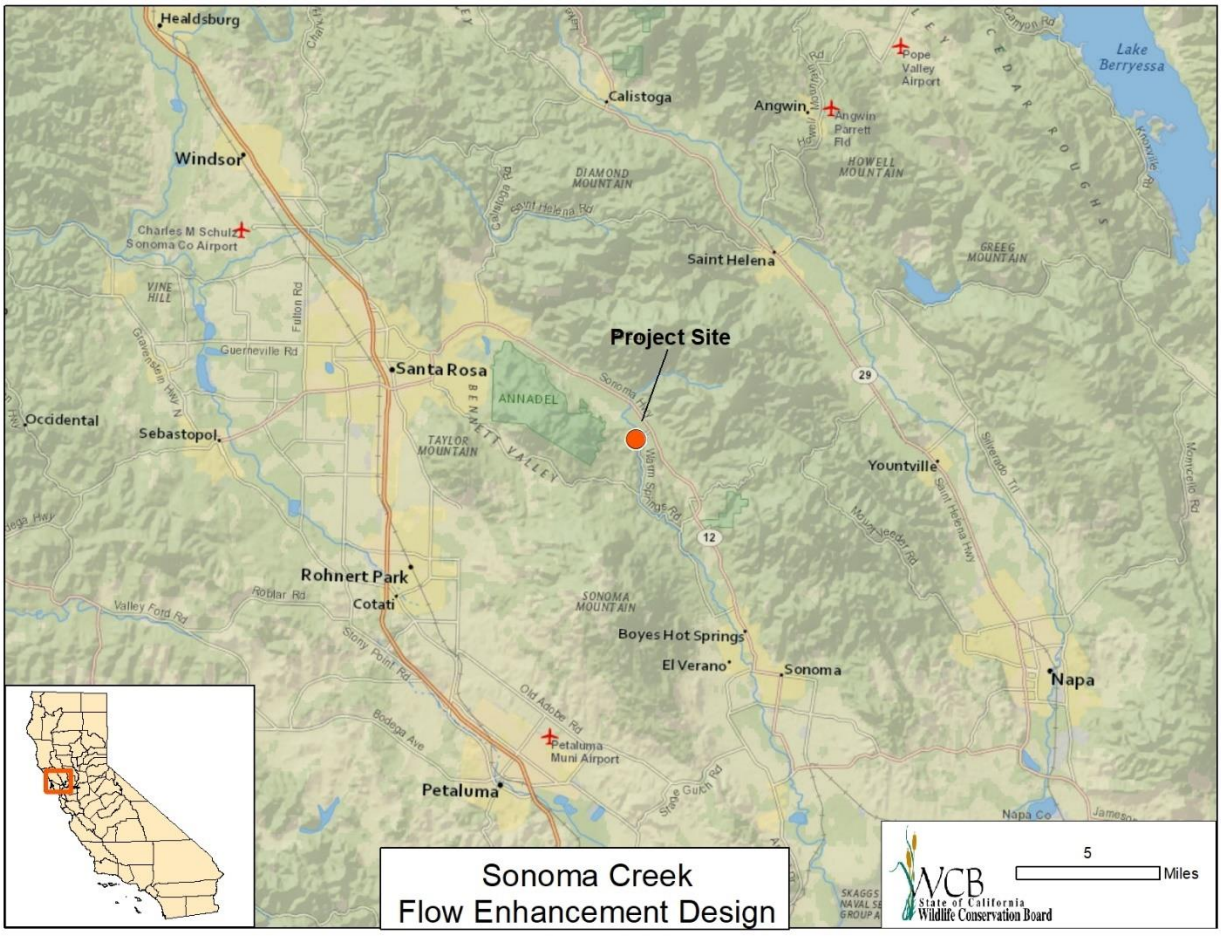
Partners	Amount
WCB	$520,039
Other	$270,000
Total	$790,039

Project costs will be for project management, design and permitting, environmental assessments, monitoring and outreach.

Other secured funding sources include CDFW, SCC and Sonoma Valley Groundwater Sustainability Agency.

CEQA REVIEW AND ANALYSIS

The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



11. Redwood Creek Floodplain Restoration Design Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $497,779 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Redwood Creek Floodplain Restoration Design
Project Type:	Planning
Applicant/Grantee:	Golden Gate National Parks Conservancy
Amount Recommended:	$497,779
Funding Partners:	California State Parks, National Park Service
Landowner:	California State Parks
County:	Marin
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Redwood Creek in Marin County traverses Muir Woods National Monument, Mount Tamalpais State Park, and Golden Gate National Recreation Area lands. The section of creek selected for this floodplain restoration project is located within Mount Tamalpais State Park.

PROJECT DESCRIPTION
This Project addresses two priorities for stream flow enhancement by evaluating stream flow conditions and protecting critical habitat through restoring ecological flow function. WCB funding will support monitoring, site analysis, a feasibility study to prioritize restoration designs, and development of a Basis of Design Report with 35 percent designs.

Problem:
Approximately seven miles of Redwood Creek provide accessible habitat for anadromous salmonids and this watershed is considered one of the most productive and restorable for anadromous salmonid habitat in Marin County. It is largely undeveloped, and its resources are protected as State and federal parklands. However, the Redwood Creek channel is deeply incised. Both the mainstem and associated tributaries in this reach became incised in the early and mid-20th century. Since that time, much of the channel in this reach has developed inset terraces, but tributaries have continued to incise, thus likely lowering groundwater elevations. Deep channels, separated from the floodplain, allow water to quickly drain out of the watershed to the ocean. During large winter storms, flow velocity is high and there are few places for young salmonids to shelter. During the summer, base flows in the creek are low. A comprehensive study and review of existing literature for the watershed finds that a combination of low summer baseflows and lack of winter refugia are significant causes of coho salmon decline.

Solution:
The Golden Gate National Parks Conservancy and the California State Parks have been collaborating on this Project since 2017 through the One Tam partnership. One Tam is a collective of interested groups working through cooperative agreements to facilitate multi-jurisdictional, landscape-scale conservation and increase public awareness and engagement. Project design alternatives will focus on increasing shallow groundwater storage by encouraging natural sediment deposition within the active channel and lowering the adjacent floodplain. Addressing floodplain reconnection will provide multiple benefits: high flows would more frequently engage the floodplain, increasing recharge and wet meadow habitat. In addition, total potential groundwater storage volume can significantly increase, which may yield summer or dry season flows supportive to coho salmon. Floodplain reconnection also provides winter refugia for salmonids, while also capturing large winter flow events so that floodplain water will be held, permeate, and recharge the aquifer, later providing summer groundwater flows. The use of grade controls, revegetation, beaver dam analogs, and other methods to control incision on tributaries and slow water movement out of the watershed during large winter flows is a major goal of the Project.

Concurrent with these planning activities, California State Parks will implement its Redwood Creek Trail Realignment Project to move the Redwood Creek Trail uphill and out of the floodplain. This will provide space for the future floodplain restoration, as well as addressing NOAA Fisheries priority restoration actions for coho, which include setting trails away from creeks and eliminating horse access to creeks.

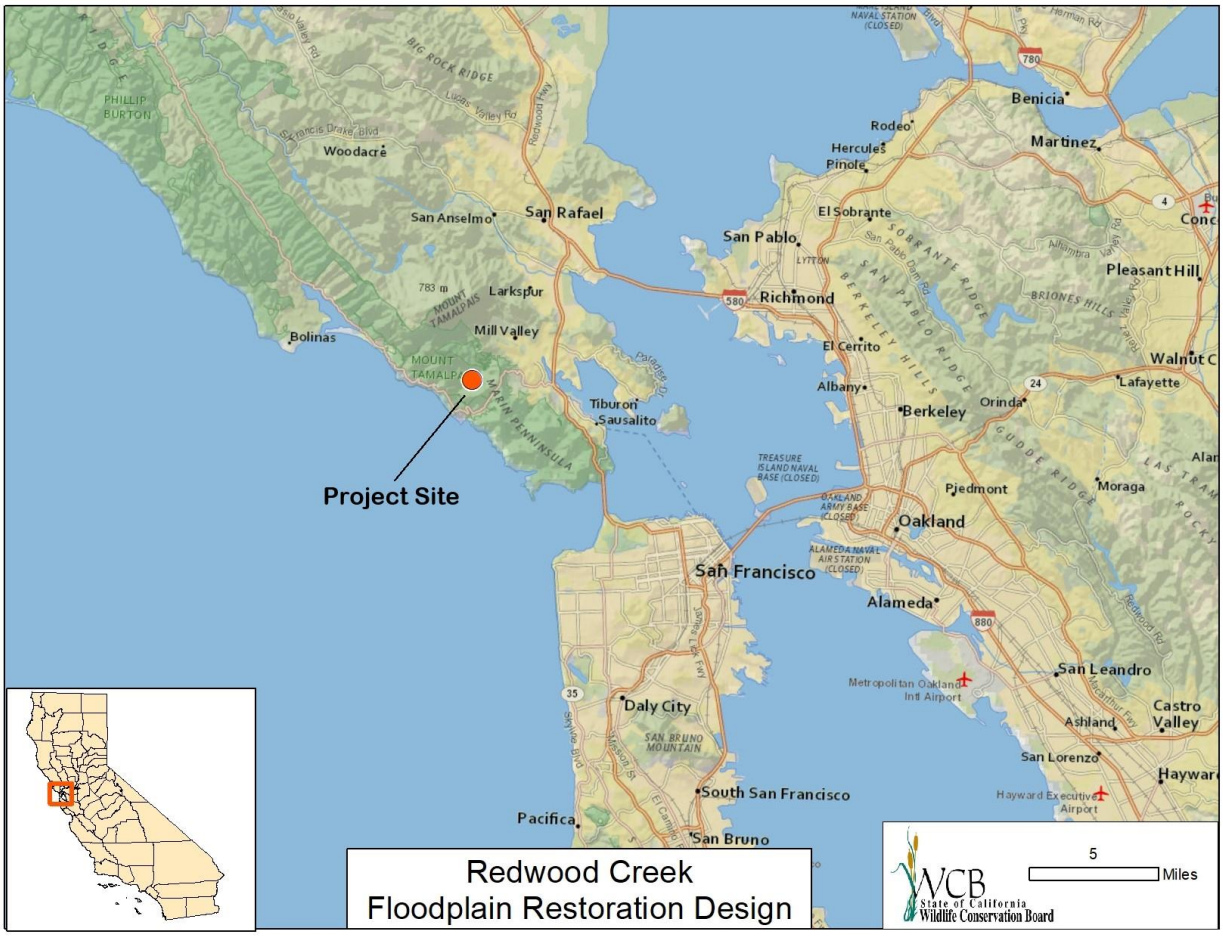
PROJECT FUNDING

Partners	Amount
WCB	$497,779
Other	$1,261,896
Total	$1,759,675

Project costs will be for baseline data collection, project management, project design and site analysis.

Other secured funding sources include California State Parks and the National Park Service.

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.


Project Site
Redwood Creek
Floodplain Restoration Design
5
Miles
WCB
State of California
Wildlife Conservation Board
Benicia
Martinez
Rodeo
Hercules
Pinole
San Pablo
El Sobrante
Richmond
Pleasant Hill
Walnut C
Lafayette
Orinda
Berkeley
Albany
El Cerrito
Moraga
Piedmont
Oakland
San Francisco
Alameda
San Leandro
Castro Valley
Ashland
San Lorenzo
Hayward
Hayward Executive Airport
Metropolitan Oakland Intl Airport
Daly City
South San Francisco
San Bruno
Pacifica
San Rafael
San Anselmo
Woodacre
Larkspur
Mill Valley
Bolinas
Tiburon
Sausalito
783 m
MOUNT TAMALPAIS
MARIN PENINSULA
BIG ROCK RIDGE
SAN PABLO RIDGE
BERKELEY HILLS
SOBRANTE RIDGE
BRIONES HILLS
GUDDE RIDGE
SAN BRUNO MOUNTAIN
PHILLIP BURTON
TREASURE ISLAND NAVAL BASE (CLOSED)
OAKLAND ARMY BASE (CLOSED)
ALAMEDA NAVAL AIR STATION (CLOSED)
HUNTERS POINT NAVAL SHIPYARD (CLOSED)
780
580
880
24
35
4

12. Integrated Water Strategies for Flow Enhancement in the Ventura River Watershed Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $299,185 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Integrated Water Strategies for Flow Enhancement in the Ventura River Watershed
Project Type:	Scientific Study
Applicant/Grantee:	Creek Lands Conservation
Amount Recommended:	$299,185
Funding Partners:	Watershed Progressive, Eagle Aerial, and Hicks Law
Landowners:	Multiple (Public and Private)
County:	Ventura
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project is a regional study that encompasses the Ventura River watershed, in Ventura County. This will inform stream flow enhancement opportunities in the Ventura River and its tributaries, including San Antonio, Cañada Larga, Matilija, North Fork Matilija, and Coyote creeks.

PROJECT DESCRIPTION
This scientific study will identify and analyze opportunities to enhance stream flow throughout the Ventura River watershed. The Project will assess water demand, infiltration, and opportunities for reduced consumptive use in order to prioritize parcels that have the highest potential to enhance stream flow. Potential projects, such as on-site recycled water opportunities, ornamental and agricultural irrigation best management strategies, low impact development stormwater infiltration, water conservation best management practices, and potential for forbearance and/or dedication, will be assessed and rated by their local instream flow benefits.

Problem:
NMFS designated the Ventura River watershed as critical habitat for federally endangered southern California steelhead. However, fish passage barriers, water storage, withdrawal, conveyance, and diversions for agriculture and municipal purposes have greatly reduced or eliminated historically accessible habitat for the species throughout the Ventura River watershed and its subwatersheds. Modification of existing low flow regimes has resulted in depleted flows impacting migration, spawning and rearing habitats for southern California steelhead; reduced flushing of sediments from spawning gravels; reduced gravel recruitment; increased water temperatures; and caused changes in fish community structures. Stream flow is a recognized barrier to the recovery of steelhead in the Ventura

River and its tributaries. The effects of the 2017 Thomas Fire have likely exacerbated existing limiting factors in the Ventura River watershed.

Solution:
The Project will expand the Integrated Water Strategies (IWS) to Enhance Flows in Santa Barbara and Ventura Counties project, partially funded by the SFEP (2017), from the San Antonio Creek watershed to the entire Ventura River watershed, and integrate it with an innovative quantified data protocol (Toolkit Analysis) that has been tested in a portion of the Ventura River watershed (Comparative Analysis for Reduced Consumptive Use and Recharge, Ojai City 2018). This Project will occur at a critical time that leverages many concurrent efforts at the local, regional and State levels. The Project will: 1) integrate two methods, IWS and the Toolkit Quantification; 2) fill critical data gaps; 3) provide a quantification of individual and cumulative potential for instream flow opportunities for every parcel in the watershed; and 4) prepare and integrate results for use with other related programs engaged in instream flow enhancement.

The IWS model will prioritize parcels that have the highest potential to enhance stream flow. Toolkit Quantification will assess water demand, infiltration, and opportunities for reduced consumptive use. Potential projects, such as onsite recycled water opportunities, ornamental and agricultural irrigation best management strategies, low impact development stormwater infiltration, water conservation best management practices, and potential for forbearance and/or dedication, will be assessed and rated by their local instream flow benefits. Additionally, this portfolio of tools is selected with multiple benefits to the local habitat and community in mind, including reduced flooding and property damage, groundwater recharge, reduced heat island effect, carbon sequestration, increased job economies, and upland habitat enhancement. In the aggregate, the selection of toolkit project types presents a non-regulatory strategy to reduce surface and/or groundwater diversions and enhance flows for the long-term persistence of viable self-sustaining populations of anadromous steelhead in the Ventura River.

Further, these innovative methodologies are scalable to other watersheds and can provide a long-term accessible foundation for community-based science to solve regional resource problems. The recent Ventura Watershed Flow Enhancement and Water Resiliency Regional Framework, which was awarded SFEP funding in 2019, attests that a community of water and land use participants – including supply water agencies, hotels, school districts, farmers and residents – are ready to voluntarily work together to build a healthier and more resilient community and watershed. The science and information to be developed through this Project will help to define and prioritize where and what types of opportunities exist to implement projects that enhance stream flow and provide other societal and ecological benefits. The coordination efficiency of overlapping project teams, and focus of Ventura River instream flow efforts, make this study timely and cost effective.

PROJECT FUNDING

Partners	Amount
WCB	$299,185
Other	$117,640
Total	$416,825

Project costs will be for project management, model development and application, integration with other studies (e.g., CDFW's Instream Flow Study), and outreach.

Other secured funding sources include in-kind contributions from Watershed Progressive, Eagle Aerial, and Hicks Law.

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, Feasibility and Planning Studies, as it involves only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.

Proposed Items

13. Shasta River Fish Passage and Instream Habitat Enhancement Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $3,302,443 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Shasta River Fish Passage and Instream Habitat Enhancement
Project Type:	Implementation
Applicant/Grantee:	Shasta Valley RCD
Amount Recommended:	$3,302,443
Funding Partners:	USFWS and others
Landowners:	2019 Lowell L Novy Revocable Trust, Rice Livestock Co., LLC, and Joe and Rita Zenkus
County:	Siskiyou
Strategic Plan Goals:	B.1 Objectives: SI 1.3, 2.3, 2.4, and 5.1

LOCATION
The Project involves activities on three ranches (Novy, Rice, and Zenkus) located adjacent to the Shasta River, 1.5± miles east of the community of Grenada and Interstate 5, in Siskiyou County. The Shasta River is tributary to the Klamath River.

PROJECT DESCRIPTION
The proposed Project will remove a critical fish passage barrier, relocate and upgrade a fish screen, replace an inefficient irrigation system, and enhance stream flows in the Shasta River. The landowners are in negotiations with NMFS and CDFW to secure voluntary Safe Harbor Agreements intended to promote the survival and recovery of the Southern Oregon/Northern California Coast coho salmon Evolutionary Significant Unit, which is listed as threatened under the Endangered Species Act.

Problem:
The three subject properties have riparian rights that have been exercised since pre-1914 and were not adjudicated in the Shasta Valley Decree (Decree). A shared point of diversion on the Shasta River provides water to flood irrigate 302± acres across the three ownerships. Irrigation typically occurs from March 15 to October 15, but may begin as early as March 1 and continue as late as November 1. The rate of diversion reported to SWRCB is 10 cfs. This riparian right is exercised through a flashboard diversion dam that raises the river surface elevation to send water into an open, earthen, gravity-fed delivery ditch.

The existing diversion facility consists of a constructed riffle utilizing two steel beams that span the river, one located at the bed elevation of the river and the

other spanning bank to bank several feet above the elevation of the river at the riffle crest. During irrigation season, the steel beams are used to position flashboards vertically, as needed, to increase water surface elevations to fill the ditch diversion approximately ten feet upstream of the flashboard dam structure. Hydraulic modeling results indicate that the existing riffle at the point of diversion, with and without flashboards, exceeds maximum velocity criteria for juvenile salmon, and with flashboards it exceeds the maximum adult velocity criteria. The existing fish screen is operated approximately 1,700 feet down ditch, and fish with tailwater are returned to the river. Neither the ditch nor bypass channel are considered beneficial habitats for salmonids.

The current irrigation system is inefficient, oversized, and requires significant and progressively more flashboards to elevate the water in the gravity-fed ditch system. Later in the season, as river base flows diminish, aquatic vegetation growth in the ditch system constricts conveyance capacity, further increasing the volume of water needed to move irrigation water to the pastures. Additionally, application time for irrigation at each field is extended to compensate for evaporation rates in July to September, therefore larger volumes are also lost as use of the ditch progressively increases through the season. Multiple sources of additional water loss exist when the ditch is charged by the diversion, including bypass flow for fish screen operation, bank overtopping from uncontrolled gravity flows, losses through burrowing animal holes in ditch banks, and seepage losses. As much as half of the diverted water is estimated to be lost during delivery.

Solution:
The Project will replace the flashboard dam structure with an engineered roughened channel that meets regulatory fish passage requirements, eliminates a fish barrier, and provides adequate hydraulic head under base flow conditions to supply water to a gravity irrigation pipeline at the point of diversion. The fish screen will be relocated to the new constructed streambank point of diversion and replaced with a new on-channel screen and intake facility using ISI (Intake Screens, Inc.) cone screen technology that meets current CDFW screen requirements. The new fish screen will improve effectiveness, reduce entrainment risk, and enhance water quality in the Shasta River.

This Project also includes abandoning the current ditch system and replacing the conveyance system with PVC irrigation pipeline. The new irrigation system will eliminate ditch-loss for improved water efficiency throughout the system, as well as improved field applications due to the more reliable system that remains charged even when not in use. Additionally, the irrigator will have greater control of application rates, so additional conservation may result from cultural practices that arise from the irrigator’s adaptive management under the new delivery system. Water management and tracking for this riparian right will be regulated with new SB88-compliant flow meters located in the intake pipe at the point of diversion and at the splits to the Zenkus property and Rice property. The landowners will enter into a forbearance agreement with Shasta Valley RCD, committing to a reduced (by at least 4 cfs) rate of diversion for a period of at least 20 years.

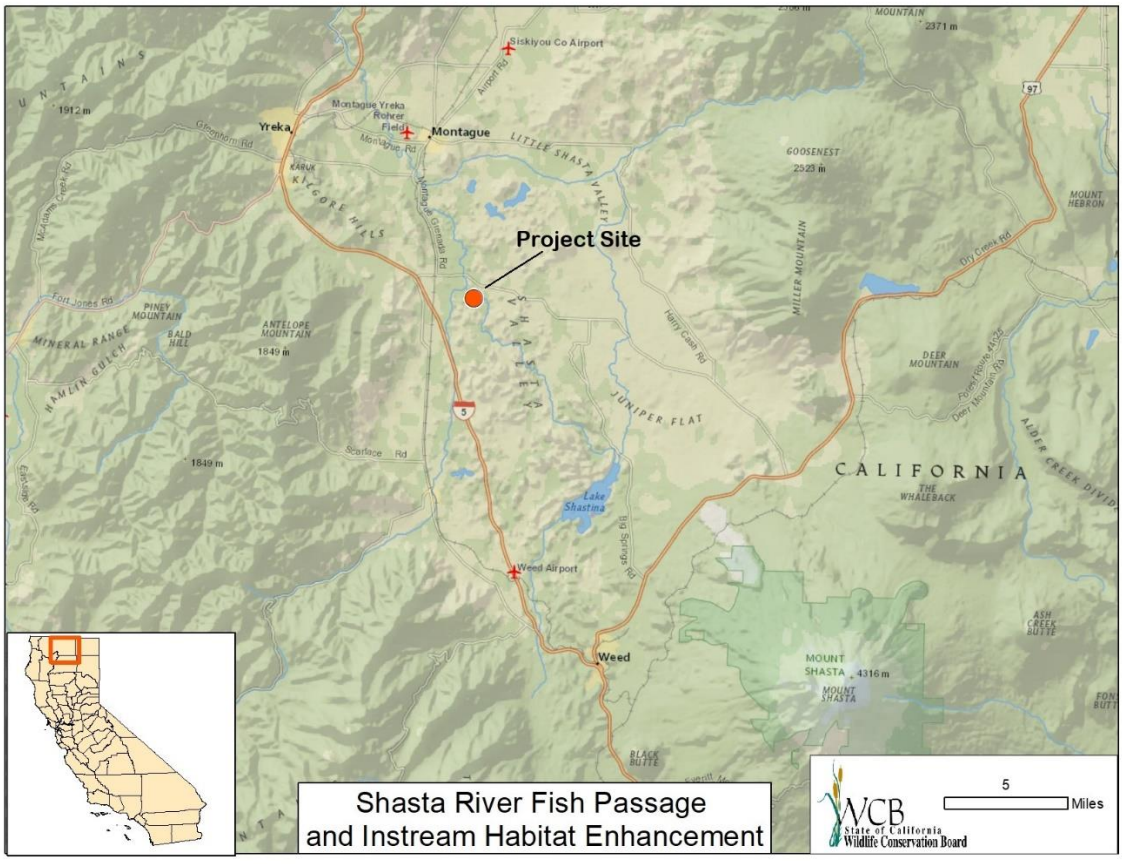
PROJECT FUNDING

Partners	Amount
WCB	$3,302,443
Other	$223,215
Total	$3,525,658

Project costs will include project management, design and environmental compliance, project construction, monitoring, and legal support.

Other secured funding includes USFWS, Hicks Law, and North Coast Resource Partnership.

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15304, Class 4, Minor Alterations to Land, as minor alterations to land and water; and Section 15333, Class 33, Small Habitat Restoration Projects, as restoration of habitat for fish and wildlife not to exceed five acres. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



14. Parks Creek Flow Enhancement and Fish Passage Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $3,807,868 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Parks Creek Flow Enhancement and Fish Passage
Project Type:	Implementation
Applicant/Grantee:	California Trout
Amount Recommended:	$3,807,868
Funding Partners:	USFWS
Landowner:	Cardoza Family
County:	Siskiyou
Strategic Plan Goals:	B.1 Objectives: SI 1.3, 2.3, 2.4, and 5.1

LOCATION
The Project is located on the Cardoza Ranch (Ranch) in Siskiyou County. The property encompasses Parks Creek, a critical tributary to the Shasta River in the Mid-Klamath Basin and part of the Big Springs Complex. The Ranch currently operates an impoundment on Parks Creek approximately 1.5 miles upstream of its confluence with the Shasta River.

PROJECT DESCRIPTION
The purpose of this Project is to enhance flows in Parks Creek and restore critical spawning and rearing habitat for salmon and steelhead throughout the watershed. The Ranch currently impounds Parks Creek approximately 1.5 miles upstream of the confluence with the Shasta River. The 25-acre impoundment head delivers the Ranch's water right by gravity feed down 6,000 feet of open ditch to the Ranch's place of use. A fish screen is located in the ditch 1,300 feet downstream of the headgate. This current means of diversion produces major impacts to instream habitat: a migration barrier for juvenile and adult salmon, an increase in stream temperatures as a result of the reservoir created by the diversion, and an inefficient irrigation system that also creates warm water returns to the Shasta River.

The Project would replace the existing diversion with a pumping facility in the Shasta River one mile downstream from the confluence of the Parks and Shasta rivers. The Project will result in enhanced flow of a minimum of 2.98 cfs of water instream by moving the existing Ranch point of diversion 2.8 miles downstream and will also keep water instream due to increased irrigation efficiency. Additionally, the Project will remove a major fish passage barrier and diversion structure on the Ranch, alleviating an existing 25-acre impoundment, and providing access for State and federally listed coho salmon to over 14 miles of critical spawning and rearing habitat upstream. The water dedicated instream as part of this Project originates from the Bridgefield, Kettle, and Black Meadows springs, which historically provided reliable flows and ideal temperatures for salmon. The

landowners are in negotiations with NMFS and CDFW to secure voluntary Safe Harbor Agreements intended to promote the survival and recovery of the Southern Oregon/Northern California Coast coho salmon Evolutionary Significant Unit, which is listed as threatened under the Endangered Species Act.

Problem:
The Shasta River was historically one of the most productive salmon streams in California. Groundwater from cold, nutrient-rich springs provided nearly ideal aquatic habitat conditions that supported large Chinook and coho salmon populations. Parks Creek below Kettle Springs was identified as a priority reach for summer rearing of juvenile salmonids due to the cold-water contributions from multiple spring complexes. Additionally, lower Parks Creek was identified as a critical migration corridor for adult salmon migrating to upstream spawning grounds. These are the populations set to recolonize the Klamath basin when the four Klamath dams are removed in 2021 and 2022. However, over a century of aquatic and riparian habitat degradation along the Shasta River and its tributaries has resulted in dramatic declines in wild salmon populations. Water development led to reductions in the quantity and quality of cold-water habitats for rearing coho salmon. The Ranch's existing diversion structure and flashboard dam block access for salmon and steelhead to over 14 miles of ideal cold-water habitat. The dam creates the large 25-acre impoundment, supporting a physical and thermal barrier for fish as well as degrading summer water temperatures downstream.

Solution:
Project implementation will eliminate the Parks Creek impoundment, improve fish passage, and enhance water quality. Moving the Ranch point of diversion will result in stream flow enhancement for the 2.8 miles between the existing point of diversion on Parks Creek to the new point of diversion on the Shasta River. This will eliminate the need for the 25-acre impoundment, the removal of which will open up access to 14 miles of ideal cold-water habitat to coho, Chinook and steelhead, and improve habitat quality downstream. Moving the point of diversion downstream requires the Ranch to upgrade existing water conveyance infrastructure with approximately four miles of new pipeline so it can maintain agricultural operations and continue to irrigate the designated place of use. For the landowner, a significant hurdle to the Project has also been the additional electrical cost associated with a pump station diversion, since the existing impoundment and point of diversion allows for the water to be delivered by gravity, and the change to a pumped diversion would result in a significant utility bill for a small family ranch. Therefore, the Project design includes the installation of a solar array, which will offset the new electrical costs. This will not only make the Project economically feasible for the Ranch, it will also offset the carbon footprint of the new pump station. New water-conserving technology will also be employed as part of the Project. A network of soil moisture sensing devices will be installed to monitor subsurface soil conditions within the root zone. This will inform the landowner where and when irrigation is necessary, and the pipeline will enable them to only irrigate areas on the Ranch that truly need water. The pump station will also be equipped with a smart phone-enabled controller which can operate the pump

remotely. The two technologies used together will allow the landowner to check soil moisture levels in real time, be alerted when optimal soil moisture levels are reached, and have the capability to turn the pump off remotely, avoiding over-irrigation. Finally, a CWC Section 1707 instream dedication will permissively allow the landowner to deliver the consumed portion of the adjudicated right (2.98 cfs) to a downstream place of use, protecting the enhanced flow instream.

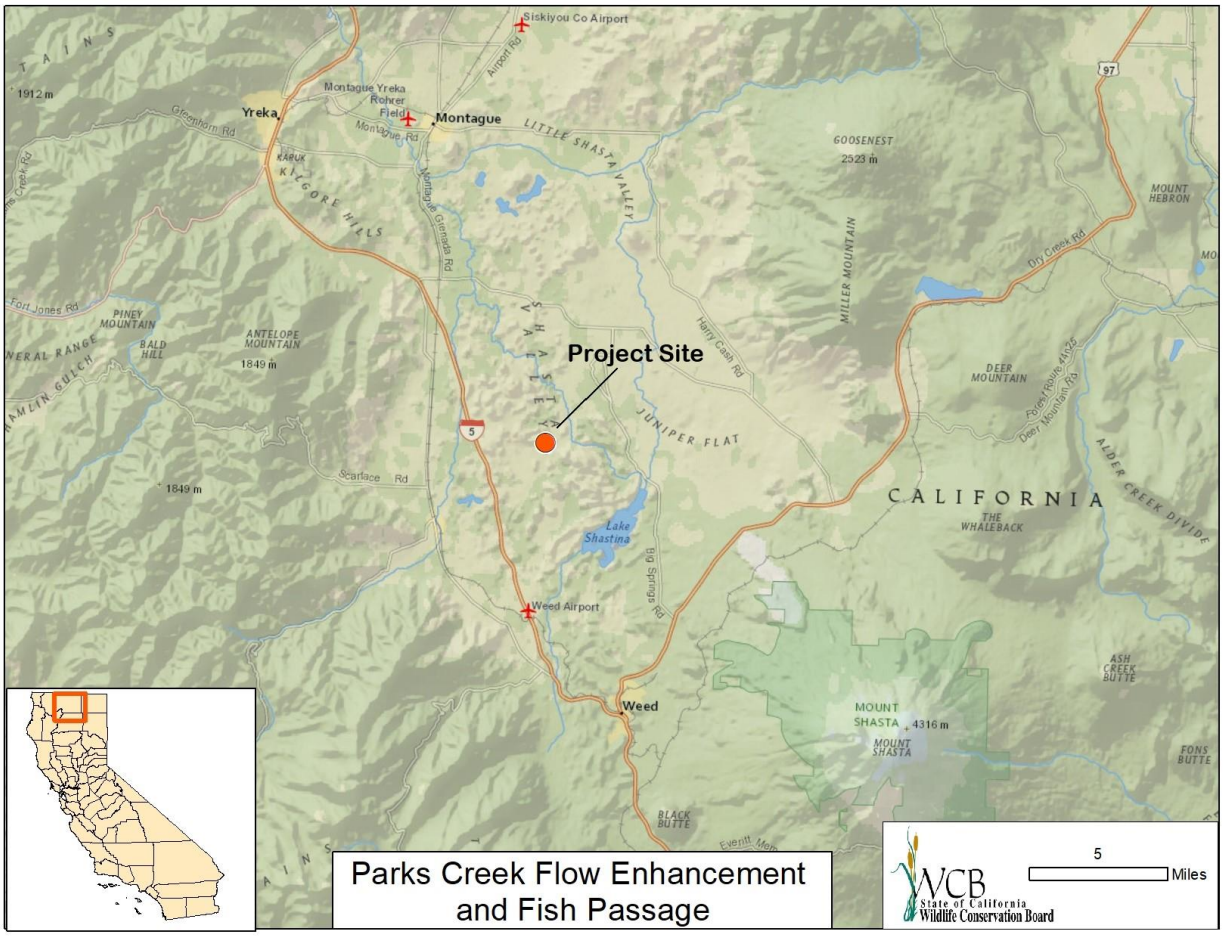
PROJECT FUNDING

Partners	Amount
WCB	$3,807,868
Other	$158,000
Total	$3,965,868

Project costs will be for project management; pipeline, solar array, and fish screen construction; and monitoring.

Other secured funding sources include the USFWS.

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15333, Class 33, Small Habitat Restoration Projects, as a restoration project to assure the maintenance, restoration, enhancement, or protection of habitat for fish and wildlife; and Section 15304, Class 4, Minor Alterations to Land, as minor alterations in the condition of land or water. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.


Project Site
Parks Creek Flow Enhancement and Fish Passage
Yreka
Montague
Weed
Weed Airport
Siskiyou Co Airport
Lake Shastina
CALIFORNIA
MOUNT SHASTA
5
Miles
WCB
State of California
Wildlife Conservation Board

15. Battle Creek, Tompkins Water Right Acquisition Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $689,618 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Battle Creek, Tompkins Water Right Acquisition
Project Type:	Acquisition/Planning
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$689,618
Funding Partners:	Trout Unlimited
Water Right Owner:	Tompkins Family Trust
County:	Tehama
Strategic Plan Goals:	B.1 Objectives: SI 2.3, 2.4, and 1.3

LOCATION
The current point of diversion for the subject pre-1914 appropriative right to divert water from Battle Creek is the headgate of the Battle Creek Ranch Ditch, located 8± miles east of the town of Cottonwood, in Tehama County. The point of diversion is located 7.3± miles upstream of Battle Creek's confluence with the Sacramento River.

PROJECT DESCRIPTION
The Project will accomplish the following activities:

- Acquire the Tompkins pre-1914 water right on lower Battle Creek and transfer ownership to the Willow Creek Mutual Water Company (WCMWC).
- File a petition with SWRCB pursuant to CWC Section 1707 to dedicate the water right to instream flow in the lower 7.3 miles of Battle Creek.
- Change the point of diversion and place of use for the water right, in accordance with CWC Section 1706, allowing WCMWC, in cooperation with USFWS, to divert the water from the Sacramento River and deliver it to enhance wetlands on private lands managed as part of the Sacramento National Wildlife Refuge Complex.
- Develop an engineering design to modify the shared headgate structure at the head of the Battle Creek Ranch Ditch, to ensure that the 12 cfs face value of the water right remains instream in Battle Creek.

Problem:
Battle Creek historically provided habitat for four separate runs of Chinook salmon, plus steelhead. However, these populations have diminished, causing growing need for restoration. Winter-run Chinook are State and federally listed as endangered. Spring-run Chinook are State and federally listed as threatened. Fall and late fall-run Chinook are identified as species of concern. Steelhead are

federally listed as threatened. Lower Battle Creek serves primarily as a migration corridor for salmon and steelhead migrating to and from spawning and rearing habitat in the upper watershed, and for hatchery fish produced at Coleman National Fish Hatchery just downstream of the Battle Creek Ranch Ditch diversion. Battle Creek has been identified as having high potential for successful fisheries restoration because of its relatively high and consistent flow of cold water.

The Tompkins Family Trust owns an appropriative water right to divert from Battle Creek that was perfected before the State's adoption of the water right permitting system in 1914. This pre-1914 water right was appurtenant to the 128± acre Tompkins Ranch (Ranch). The Tompkins family sold the Ranch to the State of California in 1993, which is now part of CDFW's Battle Creek Wildlife Area, but reserved the appropriative water right from the sale of the land. The former Tompkins Ranch is one of the properties served by a 50 cfs diversion from Battle Creek into the Battle Creek Ranch Ditch. The Tompkins water right is 12 cfs of this 50 cfs diversion. The water right was used for irrigation of the Ranch by the Tompkins family and their predecessors.

Following the sale of the Ranch to the State, the Tompkins family loaned the water right to CDFW for development of new wetlands and enhancement of existing wetlands on the Ranch and elsewhere within the Battle Creek Wildlife Area. CDFW used the water right until 2016, when it notified the Tompkins family that the water right was no longer required at the Battle Creek Wildlife Area. The Tompkins Family Trust desires to sell its water right to a buyer that will use the water right for fish and wildlife purposes.

Solution:
The Project will acquire the Tompkins pre-1914 water right and transfer ownership to WCMWC. Following transfer of ownership of the right, Trout Unlimited will work with WCMWC to file and process a petition under CWC Section 1707 to dedicate the right to instream flow in lower Battle Creek, coupled with a change in the point of diversion and place of use pursuant to CWC Section 1706, to provide for downstream consumptive use of the water to enhance wetland habitat on private lands managed as part of the Sacramento National Wildlife Refuge complex pursuant to wetland easements held by USFWS. WCMWC currently wheels other water from rights on lower Battle Creek – including other rights on the Battle Creek Ranch Ditch – to those same easement lands pursuant to a 25-year wheeling agreement with USFWS, in what is known as the Battle Creek Water Exchange. The water from the Tompkins right will be managed as part of the Exchange under a similar arrangement. The Project also includes the development of an engineering design for modifying the diversion structure at the head of the Battle Creek Ranch Ditch to reduce the existing rate of diversion to ensure the 12 cfs value of the Tompkins water right is left in Battle Creek on a continual basis, with minimal need for active management. The final design will be implemented in a subsequent phase of the Project.

The Project will produce two major conservation benefits. First, it will increase instream flow in the lower 7 miles of Battle Creek by approximately 12 cfs, improving instream conditions for fish and wildlife, including critically endangered winter-run Chinook salmon and other anadromous fish. Second, it will enhance wetland habitat for the benefit of waterfowl and other wetland-dependent species within the Sacramento National Wildlife Refuge complex. The newly acquired water will primarily be used to flood wetlands in the fall and winter for wintering waterbirds and could also be used to help provide semi-permanent wetland habitat for breeding waterbirds during the summer.

PROJECT FUNDING

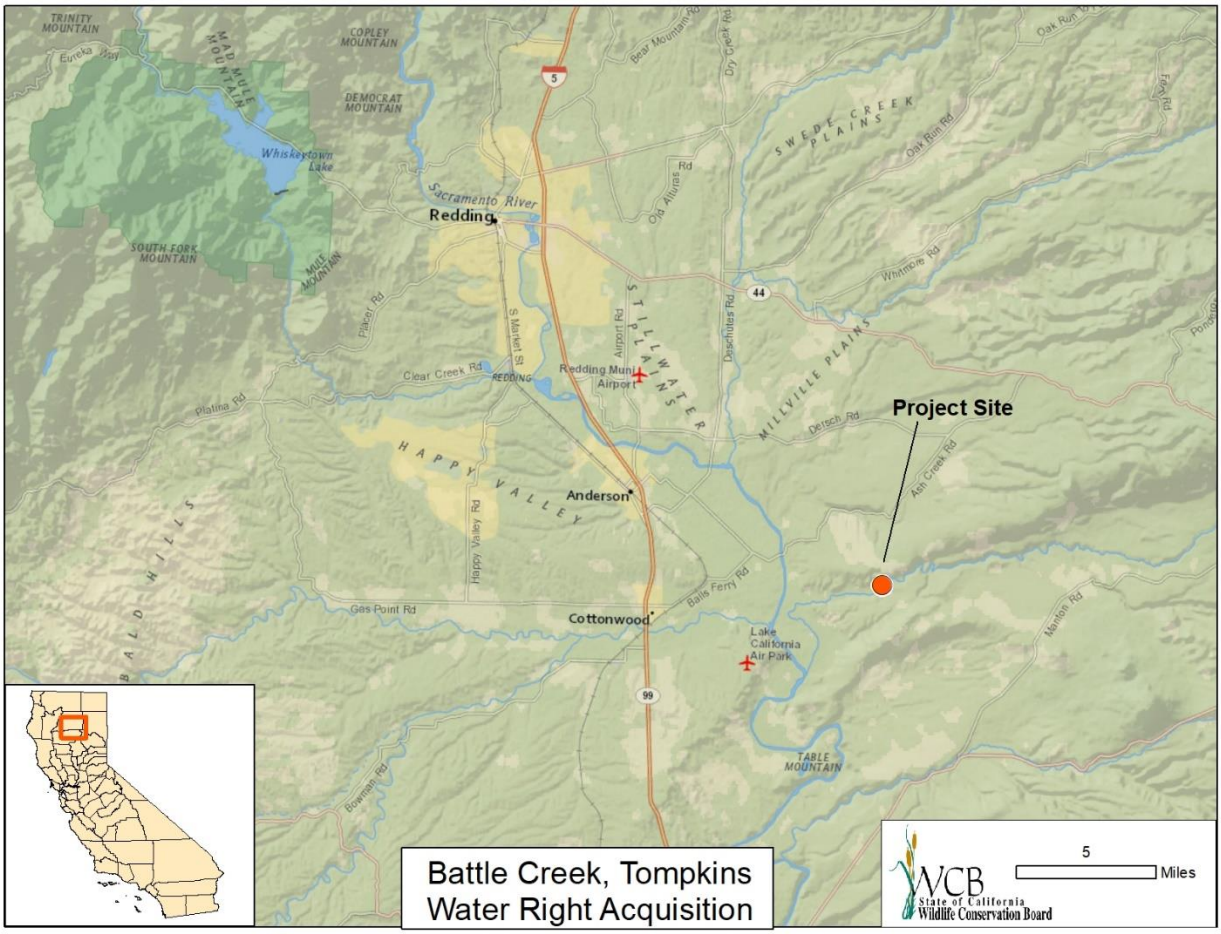
Partners	Amount
WCB	$689,618
Other	$3,972
Total	$693,590

Project costs will be for project management, water right acquisition, water right changes (an instream dedication), development of design for headgate modification, and monitoring and reporting.

The other secured funding source includes in-kind contributions from Trout Unlimited.

CEQA REVIEW AND ANALYSIS

The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15304, Class 4, Minor Alterations to Land, as minor alterations to land and water; and Section 15301, Class 1, Existing Facilities, as operation, repair, maintenance, and minor alteration of existing facilities. In addition, the Project includes planning activities that are statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, as they involve only feasibility and planning studies for possible future actions. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.


Project Site
Redding
Anderson
Cottonwood
Sacramento River
Whiskeytown Lake
Redding Muni Airport
Lake California Air Park
Battle Creek, Tompkins
Water Right Acquisition
WCB
State of California
Wildlife Conservation Board
5
Miles

16. Advancing Flow Enhancement Measurement Capabilities from Forest Restoration in Northern California Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $1,244,879 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Advancing Flow Enhancement Measurement Capabilities from Forest Restoration in Northern California
Project Type:	Scientific Study
Applicant/Grantee:	Pepperwood Foundation
Amount Recommended:	$1,244,879
Funding Partners:	CDFW, Natural Resources Conservation Service, and Sonoma County Water Agency
Landowners:	American River Conservancy and Pepperwood Foundation
Counties:	Placer and Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Project activities will occur within two Northern California watersheds: the Russian and American rivers. Activities in the Russian River watershed are planned to occur in the Upper Franz Creek subwatershed, within the Pepperwood Preserve. The Pepperwood Preserve encompasses 3,117± acres, situated 8± miles northeast of Santa Rosa in the Southern Mayacamas Mountains, in Sonoma County. Activities in the American River watershed are planned to occur in the Rice Creek subwatershed, on lands owned by the American River Conservancy, located 3± miles east of French Meadows Reservoir and 10± miles west of Tahoe City, in Placer County. Rice Creek is tributary to the Middle Fork American River, which flows through French Meadows Reservoir and onward through Folsom Lake to the Sacramento River. In 2015, WCB contributed $3,500,000 to the American River Conservancy for the acquisition of fee title to 9,955± acres of real property known as the American Rivers Headwaters, on which monitoring activities associated with this Project will occur.

PROJECT DESCRIPTION
This scientific study is designed to: 1) monitor the impacts of forest thinning on forest evapotranspiration (sum of evaporation from the land surface plus the release of water from plants) and stream flow in two Northern California watersheds; and 2) expand an existing instrumentation network to two new forest types to improve a top-down monitoring approach of forest disturbance and stream flow. The additional instrumentation in these watersheds will allow for a more

constrained predictive ability to evaluate the impacts of forest management actions on stream flow.

Problem:
Russian River: Similar to conditions across California, the forests of Pepperwood Preserve and much of the inner coastal range are shaped by a history of fire suppression over the last century. The subsequent overstocking, accumulation of fuels, and encroachment of non-fire-resistant species, such as Douglas fir, into typically fire-adapted ecosystems have created high potentials for severe devastating fire. The October 2017 Tubbs Fire was fueled in part by these conditions. Fire events of this magnitude can nullify many of the positive effects that more frequent, less intense fires impart to the ecosystem. Current conditions of overstocked forests in tandem with infrequent but intense wildfire negatively impact the hydrologic conditions needed to sustain spawning populations of anadromous species in the Russian River watershed. High evapotranspiration demands from overstocked forests between fires shift the water balance away from sustained stream flow, while conditions post (catastrophic) fire generate high runoff, extreme high-flow events, and high sediment loading. Forest thinning and the use of low intensity prescribed fire are predicted to augment stream flow resulting in prolonged summer baseflows and pool connectivity.

American River: A legacy of fire suppression has led to overstocked forest conditions susceptible to catastrophic wildfire, like the 2014 King Fire that occurred just south of this region, along with drought-induced mortality. Fire and drought-related mortality is projected to intensify with reduced snowpack due to further precipitation shifts and earlier snow melt. The American River Conservancy worked with the USFS and other partners, to plan a forest restoration project across Tahoe National Forest and American River Conservancy lands to reduce the risk of high-intensity wildfires, improve forest health and resilience, increase tree species diversity, and restore meadows. The project, called the French Meadows Project, involves several forest fuel treatments including prescribed fire, mechanical thinning, mastication, and hand thinning, for a total of 12,080± treated acres. Restoring this region to ecological, wildfire, and climate resilience will enhance both stream flows and improve conditions for a number of native species.

Data from eddy covariance towers (instruments that continuously measure exchanges of gas and energy between ecosystems and the atmosphere) have been paired with a satellite-derived vegetation greenness index to produce spatially explicit estimates of forest evapotranspiration, and paired with precipitation data, have evaluated the impacts of forest thinning, wildfire, climate, and drought on water supply in the Sierra Nevada. However, these spatially explicit data have greater uncertainty in Northern California coastal forests, and in the wetter central and northern Sierra, due to a lack of ground-based measurements.

Solution:
Through this Project, four eddy covariance towers will be installed for measuring forest evapotranspiration and evaluating the water balance from forest thinning.

Two will be installed in the Rice Creek subwatershed in the headwaters of the Middle Fork American River, upstream of French Meadows Reservoir, on a control and recently thinned forest and two will be installed in the Upper Franz Creek subwatershed tributary to the Russian River on a control and in a forest that will be thinned during the term of this Project. Several existing towers are currently monitoring forest evapotranspiration in the drier southern Sierra, lower-elevation central Sierra, and southern California regions; these new towers will fill a measurement gap in an upper watershed mixed-conifer forest of high precipitation and vegetation density in the American River, and an oak savanna forest in the Russian River.

The Project objectives are to:

- Measure evapotranspiration at thinned and control forest sites in the Russian and American rivers over two years (2022-2023) to evaluate stream flow enhancement from thinning.
- Complete a comprehensively measured water balance for the Russian River and American River sites (2022-2023).
- Improve verification of water balance modeling at the American River site.
- Improve scaling of ground-based evapotranspiration measurements using satellite-derived vegetation greenness index (normalized difference vegetation index [NDVI]) in a new climate and forest type.
- Provide technical assistance to water-related utilities on stream flow enhancement potential from forest restoration projects using the advanced satellite-based water balance modeling.

The towers at Pepperwood Preserve will augment instrumentation at an existing long-term monitoring site for ecosystem monitoring and management including climate and stream flow. Additional hydrologic instrumentation as part of this Project will include subsurface soil moisture and stream gauging to more comprehensively monitor the water balance. Towers in the American River will be installed near existing hydrologic instrumentation for monitoring climate, snowpack, soil moisture, sap flow, and stream flow, funded in part by the SFEP (2018), as part of the French Meadows Restoration Project.

Data from the four new eddy covariance towers will be incorporated into an existing algorithm for calculating spatially explicit evapotranspiration using satellite-derived NDVI at a 30-meter resolution. Current algorithms use ten ground-based measurement points to calculate evapotranspiration, and these additional four measurement points would advance the development of new, more constrained relationships between ground data and satellite-based estimates. The techniques to be employed through this Project have been used in numerous peer-reviewed studies and are expected to better inform land managers and water utilities on the impacts of forest management and restoration on stream flow, water supply, and security. Dissemination of information will be made to the scientific community through peer-reviewed publications and participation at conferences, to land managers and policy makers through State-aligned climate risk and adaptation

efforts, and to water utilities becoming more involved in headwater forest management for water supply resiliency.

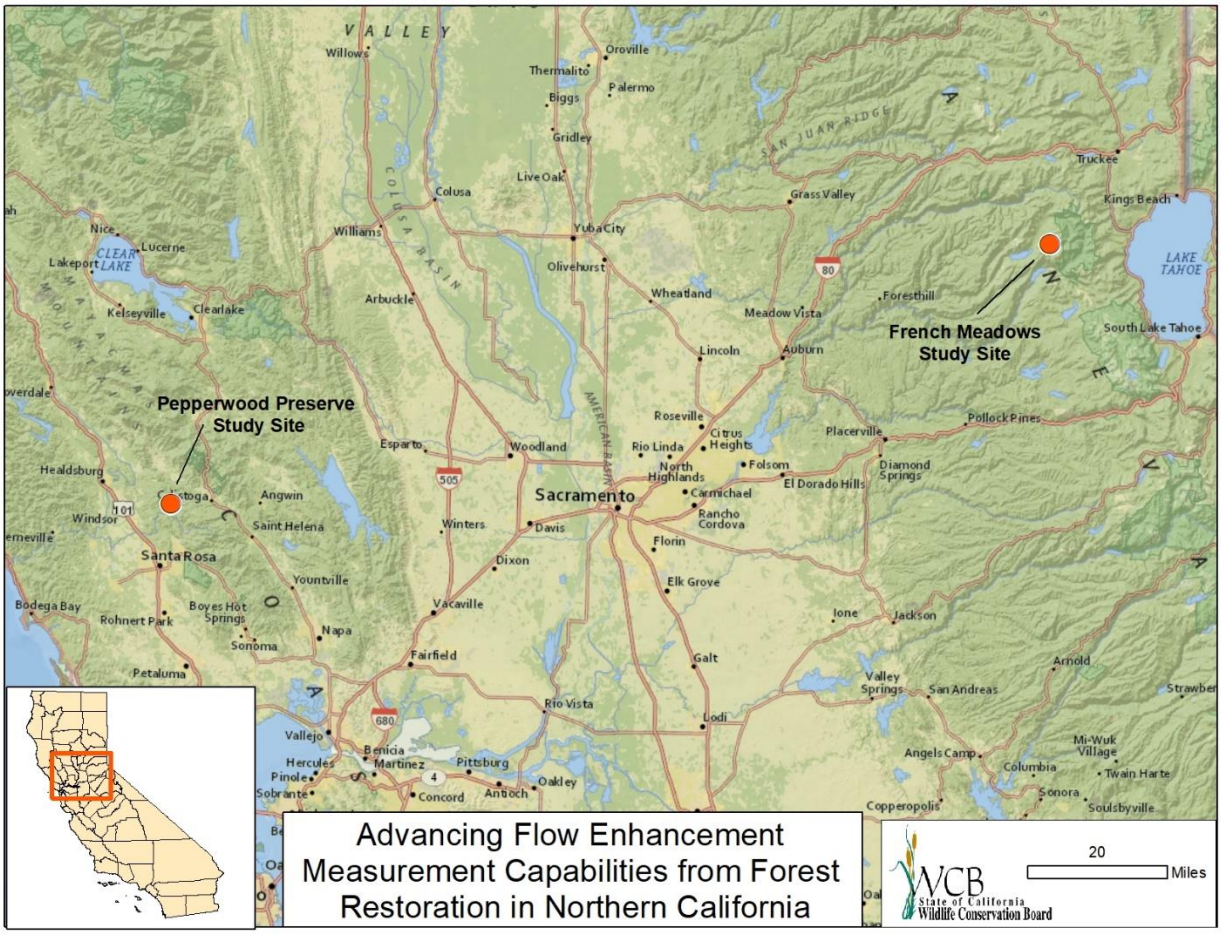
PROJECT FUNDING

Partners	Amount
WCB	$1,244,879
Other	$155,360
Total	$1,400,239

Project costs will be for project management, instrument fabrication and installation, water balance measurements, spatial scaling of evapotranspiration measurements, and communication and outreach.

Other secured funding sources include CDFW, Natural Resources Conservation Service, and Sonoma County Water Agency.

CEQA REVIEW AND ANALYSIS
The Project is statutorily exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15262, as it involves only feasibility and planning studies for possible future actions. In addition, the Project is proposed as exempt from the CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15306, Class 6, Information Collection, as basic data collection, research, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.


Pepperwood Preserve
Study Site
French Meadows
Study Site
Sacramento
Advancing Flow Enhancement
Measurement Capabilities from Forest
Restoration in Northern California
20
Miles
WCB
State of California
Wildlife Conservation Board

17. Alliance Redwoods Water Conservation Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $1,526,416 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and the CDFW to proceed substantially as planned.

Project Title:	Alliance Redwoods Water Conservation
Project Type:	Implementation
Applicant/Grantee:	North Coast Resource Conservation and Development Council
Amount Recommended:	$1,526,416
Funding Partners:	CDFW, National Fish and Wildlife Foundation, Alliance Redwoods Conference Grounds
Landowner:	Alliance Redwoods Conference Grounds
County:	Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Alliance Redwoods Conference Grounds (ARCG) is located along the mainstem of Dutch Bill Creek, a tributary to the Russian River. It is approximately ten miles from Sebastopol near the communities of Monte Rio and Camp Meeker. A similar project has already been implemented at Westminster Woods, the adjacent property, a camp and retreat center directly downstream from Alliance.

PROJECT DESCRIPTION
This Project will improve dry season stream flows in Dutch Bill Creek from May to October for the benefit of listed salmonids and aquatic habitat by addressing water use and water sources at the ARCG. Dutch Bill Creek has populations of both coho salmon and steelhead trout, and the downstream reaches contain roughly two and a half miles of the best spawning and rearing habitat in the system. These reaches have been the site of extensive habitat restoration and enhancement efforts over the past two decades.

Problem:
Dutch Bill Creek typically has more than adequate stream flow to support juvenile salmonids during the winter and spring of each year, but through the summer and fall dry season flow can reach levels low enough to cause disconnection, where the pools used as habitat by juvenile fish become isolated. This process has been documented through stream gauging for nearly a decade. In all years, discharge decreased to levels well below 0.5 cfs, and in many years flow approached zero. During the 2011-2015 drought, measured flow in Dutch Bill Creek was progressively lower each dry season, indicating a progressive drying of the landscape and stream through time. The work of California Sea Grant and the Russian River Coho Monitoring Program has shown that juvenile coho survival is inversely correlated to the length of time pools are isolated. In small streams,

incremental increases to stream flow can dramatically improve the chances of juvenile fish survival by eliminating or reducing the period during which pools become isolated.

Solution:
This Project will result in a minimum flow improvement of nearly 0.05 cfs in Dutch Bill Creek by implementing irrigation water conservation measures and addressing ARCG's existing water sources. Currently, ARCG employs two sources of water to meet its needs. Non-potable water for irrigation is diverted from two surface water diversions at a rate of 0.049 cfs. Potable water is sourced from a series of sidehill wells adjacent to the stream, then filtered in a treatment facility on the property. Reducing water extraction from this source may further increase the stream flow benefit by up to 0.02 cfs. To replace potable water diversion from the sidehill wells, ARCG proposes to move the points of diversion for their two surface water rights to a well owned by the Camp Meeker Recreation and Park District and located at the confluence of Dutch Bill Creek and the Russian River. A petition to change the points of diversion is currently pending with SWRCB. As part of the Project, the well and treatment facility will receive upgrades in order to add ARCG to the system. In turn, the purpose of the existing sidehill wells will be switched from potable to non-potable. The irrigation demand will be reduced by over 50 percent through water conservation measures, including shrinking the irrigated area, replacing the grass with a drought-tolerant turf, and upgrading the irrigation system. Implementation of the Project will eliminate direct diversion of surface water by ARCG and will reduce their overall water demand (combined surface water and sidehill well) by 90 percent, from an average of 2.8 million gallons per dry season to 300,000 gallons.

PROJECT FUNDING

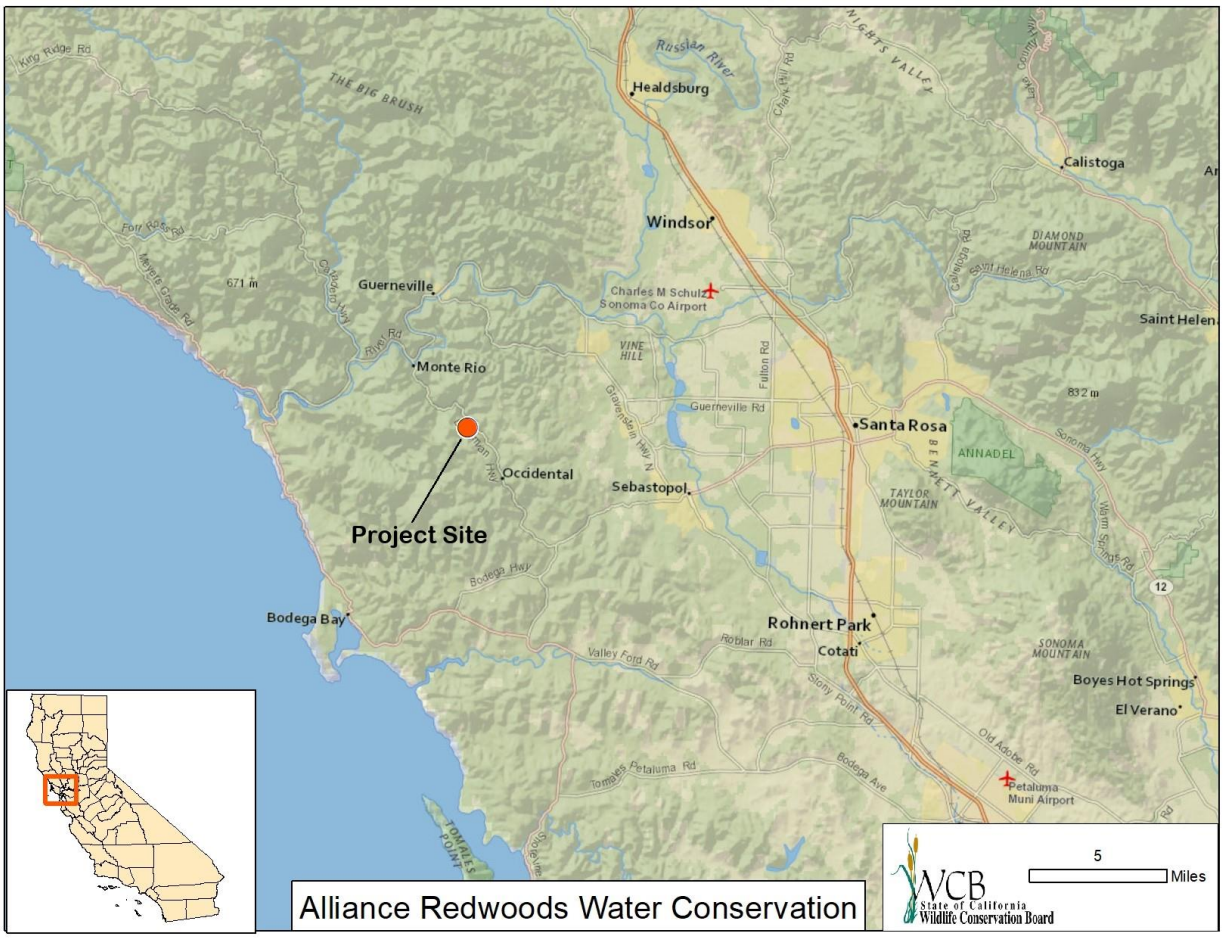
Partners	Amount
WCB	$1,526,416
Other	$121,372
Total	$1,647,788

Project costs will be for project management, construction, permitting, water rights filings and stream flow monitoring.

Other secured funding sources include CDFW, the National Fish and Wildlife Foundation and Alliance Redwoods Conference Grounds

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15303, Class 3, New Construction or Conversion of Small Structures, consisting of construction and location of limited numbers of new, small facilities; and Section 15304, Minor Alterations to Land, as minor alterations in the condition of water.

Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



18. Mark West Creek Flow Enhancement Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $1,082,455 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Mark West Creek Flow Enhancement
Project Type:	Implementation
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$1,082,455
Funding Partners:	Trout Unlimited, Sonoma County Water Agency, Sonoma RCD
Landowners:	Multiple
County:	Sonoma
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Project sites will be on multiple private properties in the Mark West Creek watershed on the outskirts of Santa Rosa. A tributary to the Russian River, Mark West Creek has been identified as one of the highest priority streams for endangered coho salmon and threatened steelhead trout. It was also selected during the recent drought as one of five priority watersheds in the entire State for stream flow enhancement in the CWAP. A large portion of the Mark West Creek watershed burned in the October 2017 Sonoma Complex Fires, from which the rural communities in the area are still recovering.

PROJECT DESCRIPTION
Trout Unlimited and the Sonoma RCD will work with private landowners to implement up to ten water storage and forbearance projects on properties adjacent to Mark West Creek, resulting in potential stream flow enhancement of 100,000 gallons or 0.4 cfs per dry season. The Project will also include extensive stream flow and instream habitat monitoring by Trout Unlimited and California Sea Grant.

Problem:
While the Mark West Creek watershed provides some of the best remaining summer rearing habitat in the Russian River watershed, in the dry season pools can become disconnected, especially during drier water years. Stream flow data from Trout Unlimited’s gauge shows the stream became disconnected each summer from 2012 through 2016 and in 2018. These drops in flow are likely influenced by human water management activities, such as direct surface water diversions or groundwater pumping from wells adjacent to the channel. Mark West Creek and its tributaries upstream of the confluence with the Laguna de Santa Rosa have also been listed by SWRCB as temperature impaired. Studies in Mark West Creek and similar Russian River tributaries have linked low flows and disconnected pool conditions with low dissolved oxygen, and one study

established a strong correlation between days of pool disconnection and reduced over-summer survival of coho salmon. In addition, the watershed was significantly impacted by the October 2017 Sonoma Complex Fires.

Solution:
This Project has a unique and timely opportunity to couple stream flow enhancement and water conservation with post-fire rebuilding efforts, and to be a model for fundamental change in water management across the watershed. Projects will either involve a rainwater catchment system with storage tanks, or direct stream diversion to storage tanks as appropriate for each property. These systems will allow landowners to shift the timing of water extraction from the summer to the winter, meeting their summertime water needs while keeping water instream during the critical dry periods. Through implementing similar projects in the Russian River watershed, the project team has found that the average pumping rate for a residential landowner generally ranges from 10 to 20 gallons per minute or 0.02 to 0.04 cfs. Storage and forbearance projects that replace direct diversions from the stream channel result in an increase of stream flow equal to the rate of the diversion pumps. Therefore, it is estimated that completion of ten projects would result in an increase of stream flow up to 0.4 cfs. A recent study in Russian River tributaries found that flows as low as 0.1 cfs can prevent surface flow disconnection and greatly improve the chances that juvenile coho salmon will survive the summer. Landowners will sign maintenance and forbearance agreements with Sonoma RCD, requiring them to maintain the project systems for 20 years, and to forbear stream flow diversion and/or well pumping for 20 years during the peak dry season, in an amount equal to the storage volume. These agreements will be recorded on each landowner's property deed to ensure that maintenance and forbearance will continue in the event that a landowner sells their property before the 20-year period has been completed.

PROJECT FUNDING

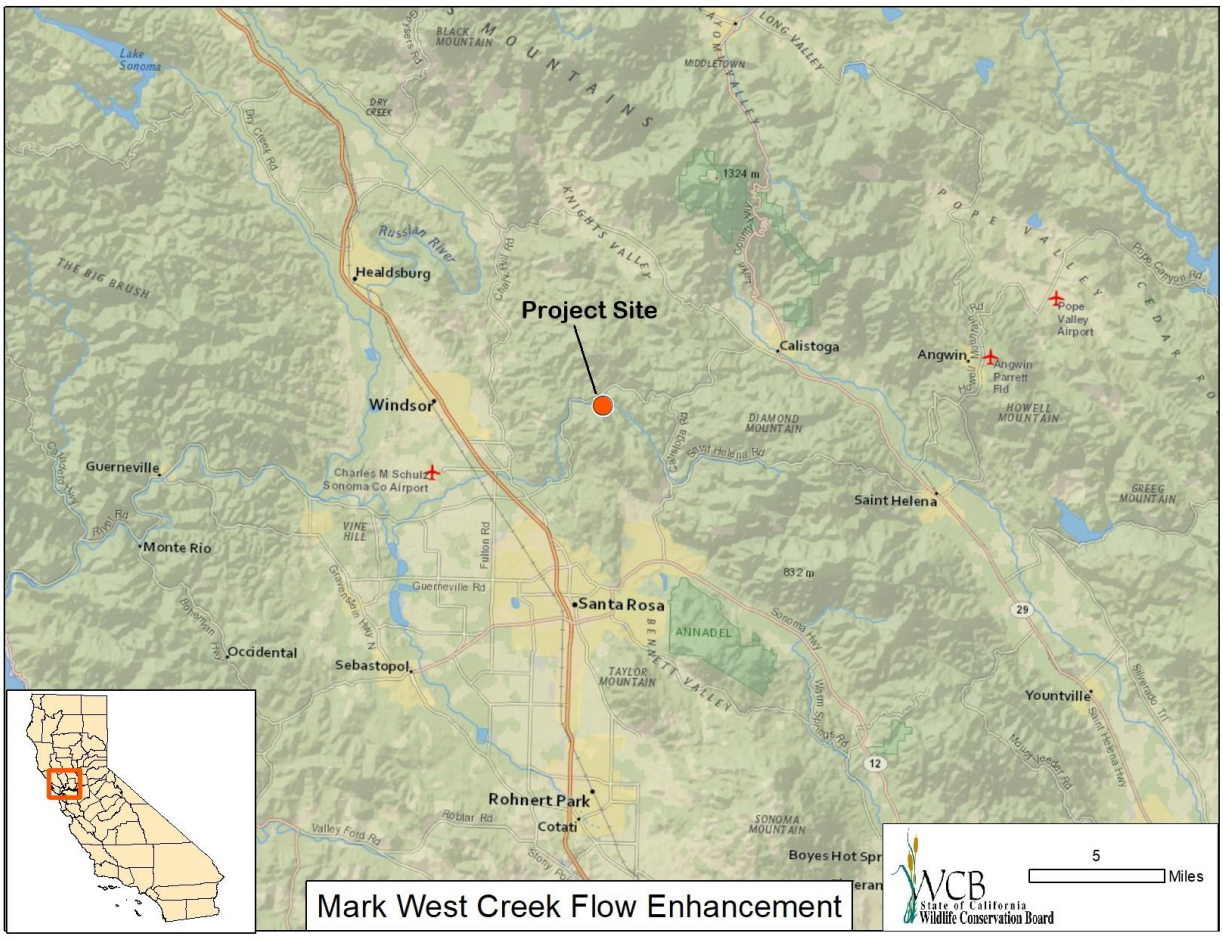
Partners	Amount
WCB	$1,082,455
Other	$287,936
Total	$1,370,391

Project costs will be for project management, construction and stream flow monitoring.

Other secured funding sources include Trout Unlimited, Sonoma County Water Agency and Sonoma RCD.

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15303, Class 3, New Construction or Conversion of Small Structures, as construction of

limited numbers of new, small structures; and Section 15304, Minor Alterations to Land, as minor alterations in the condition of land and water. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



19. Putah-Cache Watershed Arundo Eradication Program, Phase I Project

STAFF RECOMMENDATION
Staff recommends that WCB adopt the written findings and approve this Project as proposed; allocate $2,221,858 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Putah-Cache Watershed Arundo Eradication Program, Phase I
Project Type:	Implementation
Applicant/Grantee:	Yolo County RCD
Amount Recommended:	$2,221,858
Funding Partners:	Cache Creek Conservancy, Natural Resources Conservation Service, Yolo County Flood Control and Water Conservation District, Solano RCD, and Yolo County
Landowners:	Multiple (Public and Private)
Counties:	Yolo and Solano
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project is located within the Putah-Cache watershed, in the southern Sacramento Valley immediately west of Sacramento. The watershed covers approximately 2,500 square miles and contains three major subwatersheds: Cache Creek, Putah Creek, and Willow Slough. Project activities will occur in Putah, Pleasants, Dry, and Cache creeks, and Willow, Chickahominy, Union School, and Dry sloughs.

PROJECT DESCRIPTION
The Project represents the first implementation phase of the Putah-Cache Watershed Arundo Eradication Program. Through this Project, the Grantee and partners will treat 64± acres of *Arundo donax* (Arundo) distributed across Putah Creek and its tributaries Pleasants, Dry, and Cache creeks, and Willow, Chickahominy, Union School, and Dry sloughs. The planning phase for this Project was partially funded through a SFEP grant (2018) to the Yolo County RCD.

Problem:
Extensive infestations of Arundo exist in the Putah-Cache Watershed. With funding from the WCB SFEP (2016), the California Invasive Plant Council mapped 254± acres of Arundo over 92± river miles in the watershed. Arundo is a bamboo-like perennial grass that grows up to 25 feet tall in riparian habitat, often forming large dense stands capable of producing a wide range of impacts to natural ecosystems, including high water use, increased fire risk, displacement of native riparian vegetation, and degraded habitat for native fish and wildlife species. Arundo has been documented to utilize large amounts of water to support its extensive above-ground vegetation. While variation exists in water use rates due to stalk height,

stand density, ambient conditions (e.g., temperature, humidity, wind, available soil water) and other variables, average evapotranspiration rates for Arundo are estimated at 24 acre-feet per acre per year. For comparison, native riparian vegetation generally uses approximately 4 acre-feet per acre each year. This substantial increase in water use removes water from the system that would contribute to instream flows directly, or through percolation to shallow groundwater.

Solution:
The Project will enhance stream flow and improve riparian habitat quality in the Putah-Cache watershed by removing 64± acres of Arundo infestations in Putah Pleasants, Dry, and Cache creeks, and Willow, Chickahominy, Union School, and Dry sloughs. Native revegetation using plugs, seed, cuttings, and container plants will also occur on streambanks where active revegetation may be beneficial and where the soils and hydrology allow for plantings without supplemental irrigation. Estimated net water savings from removing an acre of Arundo, adjusted to account for replacement vegetation, is 20 acre-feet per acre per year. The removal of 64± acres of Arundo is estimated to result in water savings of 1,280 acre-feet per year. As a result of the Project, more water will be available in project waterways for native fish and wildlife. These benefits will be sustained over the long-term through implementation of the watershed-based eradication program and long-term maintenance commitments of project team members and landowners.

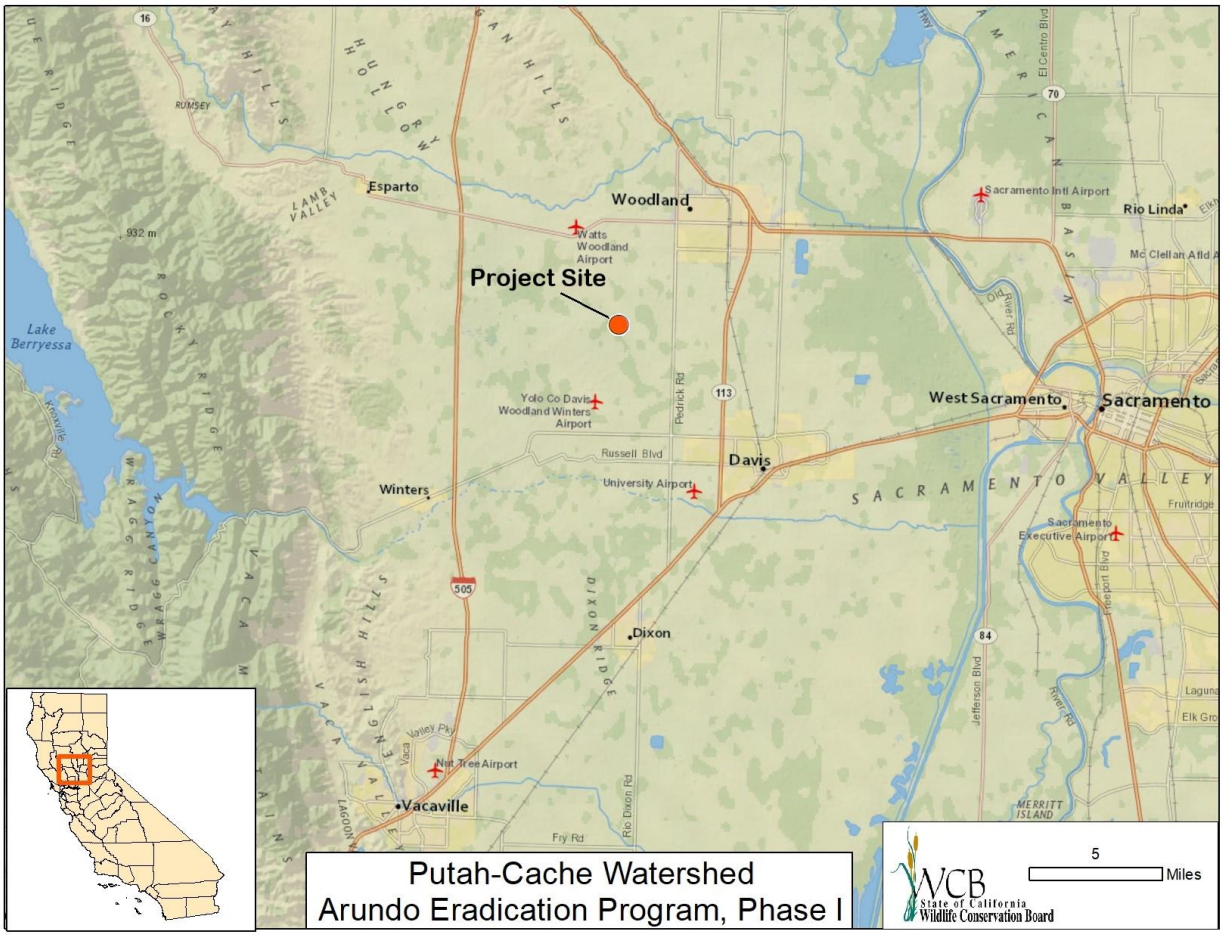
PROJECT FUNDING

Partners	Amount
WCB	$2,221,858
Other	$411,925
Total	$2,633,783

Project costs will be for project management, coordination, Arundo control, revegetation, monitoring, and outreach.

Other secured funding sources include Yolo County RCD, Cache Creek Conservancy, Natural Resources Conservation Service, Yolo County Flood Control and Water Conservation District, Solano RCD, and Yolo County.

CEQA REVIEW AND ANALYSIS
The Yolo County RCD, as lead agency, prepared a Mitigated Negative Declaration (MND) for the Project pursuant to the provisions of CEQA. Staff considered the MND and has prepared proposed, written findings documenting WCB's compliance with CEQA. Subject to approval of this proposal by WCB, the appropriate Notice of Determination will be filed with the State Clearinghouse.


Project Site
Esparto
Woodland
Watts Woodland Airport
Sacramento Intl Airport
Rio Linda
Mc Clellan Afld
Lake Berryessa
Yolo Co Davis Woodland Winters Airport
West Sacramento
Sacramento
Russell Blvd
Davis
University Airport
Winters
SACRAMENTO VALLEY
Sacramento Executive Airport
Dixon
Nut Tree Airport
Vacaville
Fry Rd
MERRITT ISLAND
Putah-Cache Watershed
Arundo Eradication Program, Phase I
WCB
State of California
Wildlife Conservation Board
5
Miles

20. San Gregorio Creek Flow Enhancement, Marchi and Son Farm Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $495,392 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	San Gregorio Creek Flow Enhancement, Marchi and Son Farm
Project Type:	Acquisition
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$495,392
Funding Partners:	Trout Unlimited, Peter Marchi
Landowner:	Peter Marchi and Son Farm
County:	San Mateo
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
Land use in the San Gregorio Creek watershed combines protected State and Regional Open Space parklands, commercial irrigated field row crop agriculture, rural residential communities, and upland rangelands.

The Project is located on lower San Gregorio Creek in coastal San Mateo County. San Gregorio Creek is the second largest coastal watershed in San Mateo. According to NMFS, this watershed contains over 36 miles of potential salmonid habitat including the mainstem and viable tributaries. San Gregorio Creek has a sustaining population of federally threatened Central California Coast steelhead. The system also once maintained a population of federally endangered Central California Coast coho salmon.

PROJECT DESCRIPTION
Marchi and Son Farm is the fourth in a series of San Gregorio Creek stream flow enhancement projects. Trout Unlimited and partners have developed publicly-funded projects with three of the four farms on lower San Gregorio Creek, two of which received funds from SFEP (2018 and 2019) resulting in 20-year forbearance agreements to cease irrigation pumping from the creek for the months of August, September and October. With the completion of this Project, all of the commercial farms in the lower San Gregorio Creek will have implemented irrigation efficiency measures and will be committed to 20 years of diversion forbearance during the dry season.

Problem:
San Gregorio Creek is considered a focus stream for NMFS Recovery Plan actions for Central California Coast steelhead and Central California Coast coho salmon. Low stream flows during the dry season are a critical limiting factor for these

populations. Average monthly discharge in late summer and early fall is as low as one cfs.

Solution:
Trout Unlimited seeks to acquire three months of summer irrigation water forbearance in the amount of 83 acre-feet (AF) from Peter Marchi and Son Farm. The landowner will enter into a forbearance agreement and file a petition with SWRCB for a permissive dedication for instream use under CWC Section 1707. In addition, the farm will undergo irrigation system improvements including a replacement pump, compliant screen and meter, and more water-efficient irrigation infrastructure. Taken in combination with the other three projects in lower San Gregorio Creek, stream flow will effectively increase by two cfs during each of the most critically low flow months, which will improve passage and rearing conditions for anadromous fish.

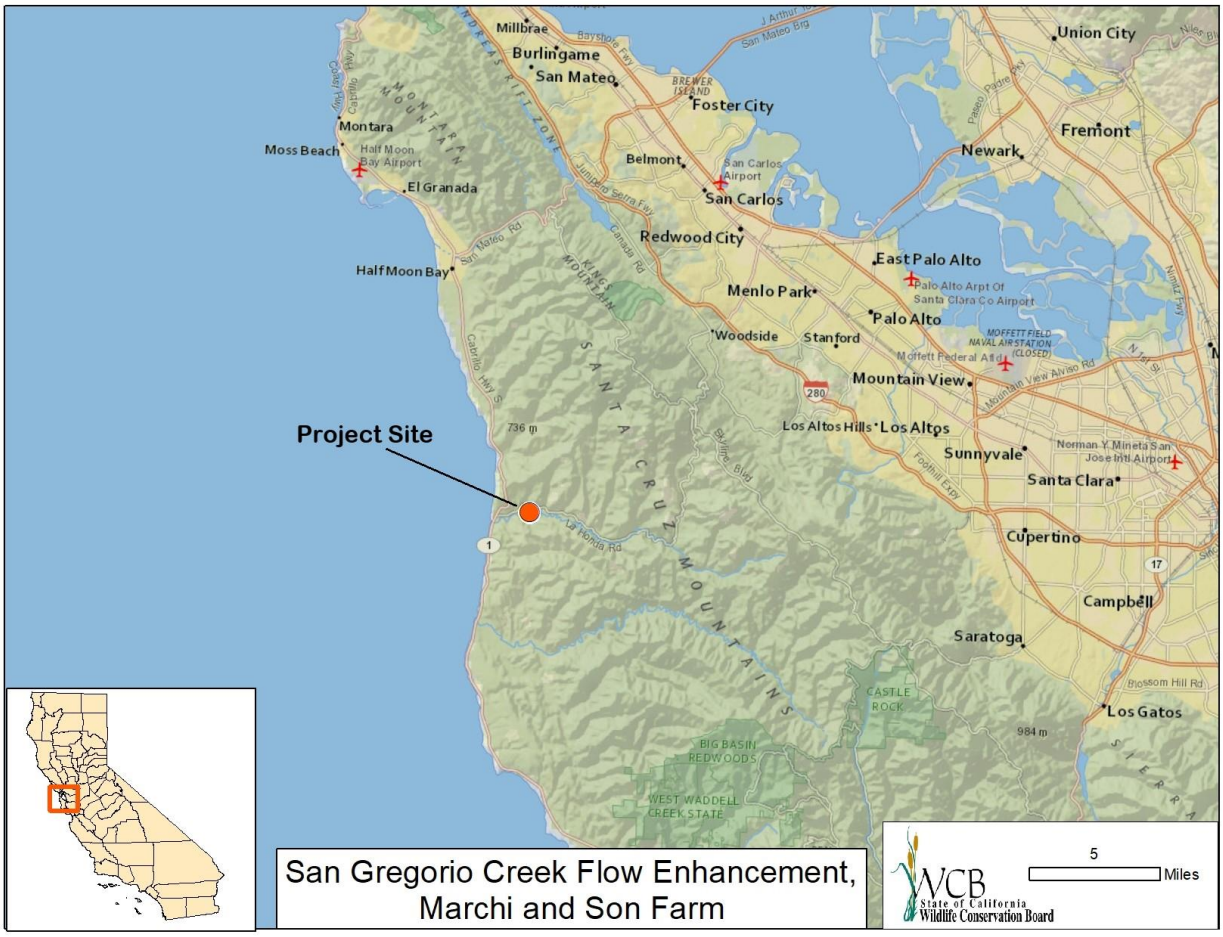
PROJECT FUNDING

Partners	Amount
WCB	$495,392
Other	$119,688
Total	$615,080

Project costs will be for project management, acquisition of a forbearance agreement, and subcontractor costs related to filing a CWC Section 1707 petition and upgrading existing irrigation and diversion infrastructure.

Other secured funding sources include Trout Unlimited and Peter Marchi.

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15301, Class 1, Existing Facilities, as operation, repair, maintenance, and minor alteration of existing facilities; Section 15302, Class 2, Replacement or Construction, as replacement of existing utility systems; and Section 15304, Class 4, Minor Alterations to Land, as minor alterations to land and water. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.


Project Site
San Gregorio Creek Flow Enhancement,
Marchi and Son Farm
WCB
State of California
Wildlife Conservation Board
5
Miles
Millbrae
Burlingame
San Mateo
Foster City
Union City
Fremont
Newark
Montara
Moss Beach
Half Moon Bay Airport
El Granada
Belmont
San Carlos Airport
San Carlos
Redwood City
East Palo Alto
Palo Alto Arpt Of Santa Clara Co Airport
Menlo Park
Palo Alto
Woodside
Stanford
Moffett Federal Airfield
Mountain View
Half Moon Bay
Los Altos Hills
Los Altos
Sunnyvale
Norman Y Mineta San Jose Intl Airport
Santa Clara
Cupertino
Campbell
Saratoga
Los Gatos
736 m
984 m
SANTA CRUZ MOUNTAINS
BIG BASIN REDWOODS
WEST WADDELL CREEK STATE
CASTLE ROCK

21. Peters Creek Flow Enhancement Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $1,875,977 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Peters Creek Flow Enhancement
Project Type:	Implementation
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$1,875,977
Funding Partners:	Trout Unlimited and California State Parks
Landowner:	California State Parks
County:	San Mateo
Strategic Plan Goals:	B.1 Objectives: SI 2.3 and 2.4

LOCATION
The Project is located in Portola Redwoods State Park, which is situated 6± miles southeast of the community of La Honda, in San Mateo County. Peters Creek is tributary to Pescadero Creek, which flows into the Pacific Ocean at Pescadero State Beach.

PROJECT DESCRIPTION
The primary objective of this Project is to construct sufficient storage to enable Portola Redwoods State Park (Park) to forbear diversion from Peters Creek during summer and fall when stream flow is lowest, and diversion has the greatest impact on aquatic life.

Problem:
The Pescadero Creek watershed historically supported large, persistent populations of Central California Coast coho salmon and steelhead. However, recent observations suggest that coho salmon may be extirpated or on the verge of extirpation from Pescadero Creek and steelhead numbers have declined by orders of magnitude from historic levels. Despite the decline of both species, the watershed's largely undeveloped area, ample rainfall, improved land use practices, and large basin area present a high potential for salmonid recovery. Peters Creek is the largest tributary in the upper Pescadero Creek watershed. A 2004 watershed assessment found the best spawning and rearing habitat in the upper watershed where development is less intense. Peters Creek may represent the best opportunity for recovering coho salmon in the Pescadero Creek watershed.

While fish passage for juvenile coho salmon in the Pescadero watershed is generally good, State and federal fisheries agencies identified inadequate summer flow as a primary limiting factor to salmonid production in the Pescadero Creek watershed. Stream flow in the upper watershed typically falls to baseflow levels between July and October. In 2013, a dry water year, stream flow in Pescadero

Creek near the Peters Creek confluence hovered around 0.5 cfs. These stream flow levels are associated with diminished rearing habitat quality and quantity for salmonids.

The Park draws 100 percent of its water supply from a diversion on Peters Creek, 0.5± miles above its confluence with Pescadero Creek. Park staff have directly observed pumping for the water system to have a visible impact on flow in Peters Creek during the late summer, when stream flows are lowest, and when staff have contemporaneously observed juvenile salmonids at the diversion site. In the summers of 2014 and 2015, Park staff voluntarily stopped diversion, closed the Park to overnight visitors, and installed portable toilets to conserve water, in order to avoid dewatering rearing pools containing juvenile salmonids.

Solution:
This Project will construct additional storage capacity and water system improvements needed to implement complete forbearance of diversion from June 15 to October 31, annually. The Project will obtain the necessary water rights and execute agreements to institute long-term summer forbearance of diversion. This will entail securing an appropriative water right for winter storage, adding instream uses to the Park's existing water right as an authorized use of the conserved water pursuant to CWC Section 1707, and executing a 20-year forbearance agreement. Eliminating diversion from June 15 to October 31 will increase streamflow by 0.028 cfs in Peters and Pescadero creeks in the critical low-flow period. In addition, a CDFW and NMFS approved fish screen will be installed in order to protect juvenile salmonids that may be present during diversion operations. The Project will also implement water conservation measures to reduce water demands, which will better prepare the Park for potential drought impacts to the water source by reducing the amount of water required to keep the Park in operation.

The Project will implement an Operation, Maintenance, and Monitoring Plan to ensure the Project is operated and maintained as designed. The monitoring element will include installation of a network of stream gauges and temperature and dissolved oxygen loggers to collect flow and water quality data for the duration of the Project. This gauge network will yield important data for evaluating the Project and assessing the degree of flow impairment in Upper Pescadero Creek.

PROJECT FUNDING

Partners	Amount
WCB	$1,875,977
Other	$370,580
Total	$2,246,557

Project costs will be for project management, final designs and permits, instream dedication, construction, and monitoring.

Other secured funding sources include Trout Unlimited and California State Parks.

CEQA REVIEW AND ANALYSIS

The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15303, Class 3, New Construction of Small Structures, as construction of limited numbers of new, small structures; Section 15304, Class 4, Minor Alterations to Land, as minor alterations to water; and Section 15333, Class 33, Small Habitat Restoration Projects, as restoration and enhancement of habitat for fish, plants, and wildlife not to exceed five acres. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.

22. Sequoia National Forest Prioritized Meadows Restoration Project

STAFF RECOMMENDATION
Staff recommends that WCB adopt the written findings and approve this Project as proposed; allocate $816,401 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Sequoia National Forest Prioritized Meadows Restoration
Project Type:	Implementation
Applicant/Grantee:	Trout Unlimited
Amount Recommended:	$816,401
Funding Partners:	Trout Unlimited and Kern Community Foundation
Landowner:	Sequoia National Forest
County:	Tulare
Strategic Plan Goals:	B.1 Objectives: SI 2.3, 2.1, 2.4, 2.5, and 4.1

LOCATION
The Project encompasses five meadows (Granite Knob, Little Horse, Little Troy, Upper Parker, and Lower Parker meadows) on federal lands in the Sequoia National Forest, located approximately 20 to 30 miles north of Kernville, in Tulare County. All five meadows are located in the headwaters of the Kern River. Geographically, the meadows occur in two watershed groups: North Fork Kern River group (Upper Parker and Lower Parker meadows) and South Fork Kern River group (Granite Knob, Little Horse, and Little Troy meadows).

PROJECT DESCRIPTION
The Project will restore condition and function of five meadows (112± acres) in Sequoia National Forest: Granite Knob (40± acres), Little Horse (11± acres), Little Troy (22± acres), Upper Parker (17± acres), and Lower Parker (22± acres) meadows. Reconnecting stream channels to the floodplains within these meadows will attenuate peak flows, raise groundwater elevations, enhance late season base flows, decrease water temperature and sediment loading, and provide improved habitat conditions for native fish and wildlife.

Problem:
Each of the proposed meadows are in a degraded state, containing active or historic gullied stream channels that are drying the meadows out. Evidence of degradation includes active head-cutting, channel down-cutting, soil erosion, diminished vegetative productivity, and conifer encroachment. The current processes in these meadows have developed a self-reinforcing degradational cycle. As drainage channels within the meadows increase in size from headcutting and erosion, they capture a greater proportion of the flow that would otherwise move across the floodplain. The resultant erosional forces within these concentrated flow paths then erode more soil, and the flow path further increases in size and depth. The incised channel drains the adjoining meadow soils,

preventing water storage early in the season when spring runoff occurs. As the meadows dry out from channel incision, vegetation composition shifts towards drier plant communities. Drier sites tend to favor annual grasses, forbs, and other species that are less resistant to erosion, creating another feedback loop that accelerates soil erosion and the degradational trend.

Solution:
The Project will improve ecosystem resiliency and hydrologic processes primarily by reconnecting the stream channels to the meadow floodplain. This will be accomplished through various treatments, such as filling incised channels, installing rock riffles, building rock grade control structures, and placement of woody debris, dependent upon conditions within the subject meadows. These actions will result in greater frequency and duration of floodplain inundation, which will: 1) increase the wetted aerial extent of the meadow; 2) raise groundwater elevations; 3) reduce peak flood flows; 4) increase/extend summer base flows; 5) reduce soil erosion; 6) enhance aquatic and terrestrial habitat value; 7) improve water quality (reduce sedimentation and lower summer water temperatures); and 8) improve vegetative productivity. By restoring ecosystem function and processes, the resilience of these systems is increased and habitat for fish and wildlife species can be improved. Resilient ecosystems are less vulnerable to changes due to climate, natural disasters, and other disturbances.

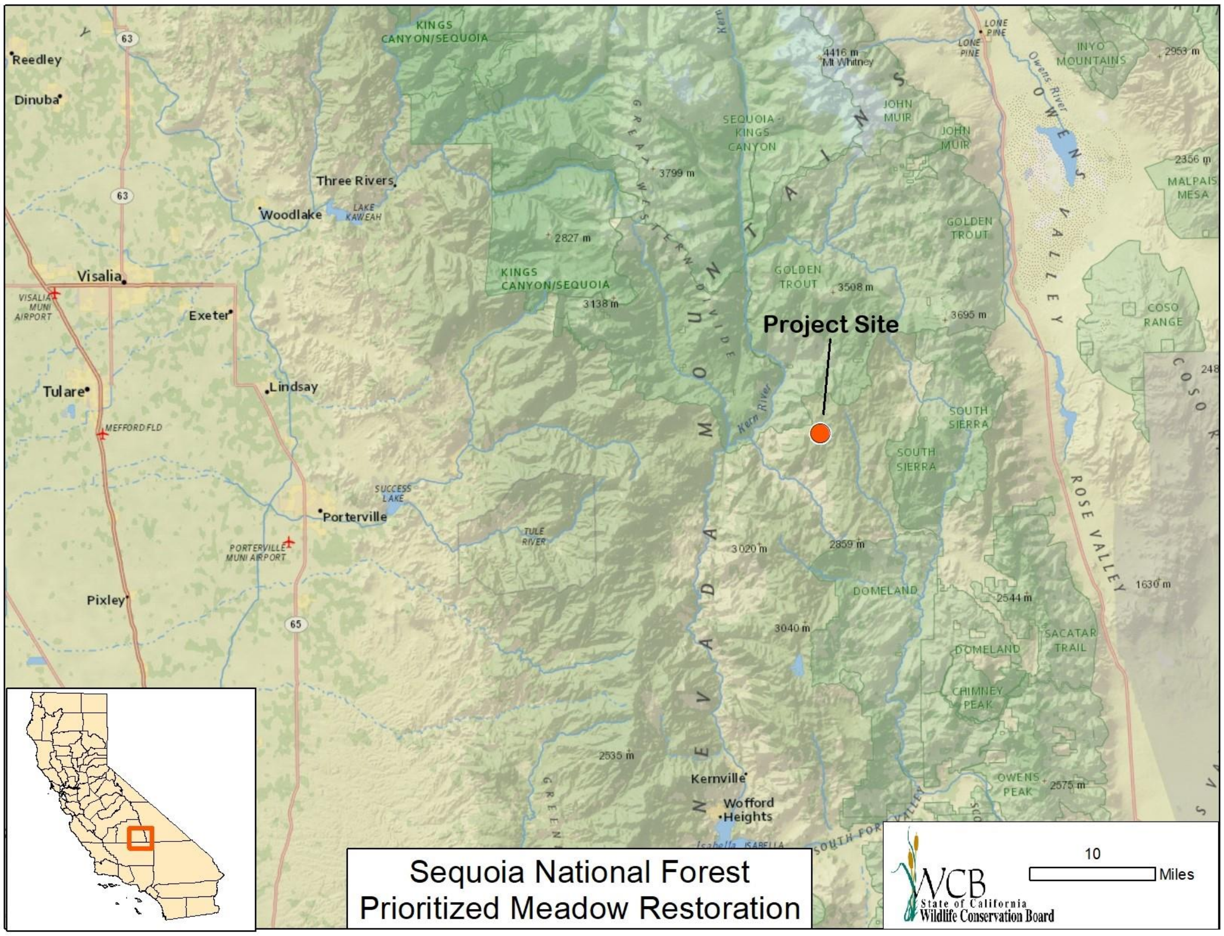
PROJECT FUNDING

Partners	Amount
WCB	$816,401
Other	$128,055
Total	$944,456

Project costs will be for project management, final design and permitting, project construction, outreach and communication, and monitoring.

Other secured funding includes Trout Unlimited and Kern Community Foundation.

CEQA REVIEW AND ANALYSIS
The Central Valley Regional Water Quality Control Board, as lead agency, used the final Environmental Assessment/Finding of No Significant Impact prepared by the U.S. Forest Service, in the place of a Negative Declaration, for the Project pursuant to the provisions of CEQA. Staff considered the final Environmental Assessment/Finding of No Significant Impact and has prepared proposed, written findings documenting WCB's compliance with CEQA. Subject to approval of this proposal by WCB, the appropriate Notice of Determination will be filed with the State Clearinghouse.


Project Site
Sequoia National Forest
Prioritized Meadow Restoration
10
Miles
WCB
State of California
Wildlife Conservation Board
Reedley
Dinuba
Three Rivers
Woodlake
Visalia
Exeter
Lindsay
Tulare
Porterville
Pixley
Kernville
Wofford Heights
KINGS CANYON/SEQUOIA
SEQUOIA KINGS CANYON
JOHN MUIR
GOLDEN TROUT
SOUTH SIERRA
DOMELAND
CHIMNEY PEAK
SACATAR TRAIL
OWENS PEAK
INYO MOUNTAINS
MALPAIS MESA
COSO RANGE
ROSE VALLEY
OWENS VALLEY
Kern River

23. Santa Rita Ranch Acquisition and Flow Enhancement Project

STAFF RECOMMENDATION
Staff recommends that WCB approve this Project as proposed; allocate $3,938,100 from the Water Quality, Supply, and Infrastructure Improvement Fund of 2014 (Proposition 1), CWC Section 79733; authorize staff to enter into appropriate agreements necessary to accomplish this Project; and authorize staff and CDFW to proceed substantially as planned.

Project Title:	Santa Rita Ranch Acquisition and Flow Enhancement
Project Type:	Acquisition (Fee, 1715± acres)
Applicant/Grantee:	The Land Conservancy of San Luis Obispo County
Amount Recommended:	$3,938,100
Funding Partners:	The Land Conservancy of San Luis Obispo County, Hicks Law
Landowner:	The Conservation Fund
County:	San Luis Obispo
Strategic Plan Goals:	B.1 Objectives: SI 2.3, 2.4, 1.2, and 3.4

LOCATION
The Santa Rita Ranch (Ranch) is located along Highway 46, approximately 6 miles west of Templeton in San Luis Obispo County. The 1,715±-acre property includes the headwaters of Santa Rita Creek as well as the Hartzell Dam, which forms a 234 acre-feet (AF) reservoir. The Santa Rita Creek begins near the top of the Paso Robles Creek watershed in the Upper Salinas River watershed. The Hartzell Dam is located just below the confluence of Santa Rita and Cienega creeks. These two creeks form the mainstem of Santa Rita Creek along its 7.5 mile run to Paso Robles Creek. The Ranch is located in a rural setting and features diverse, intact wildlife habitats, including mixed oak and riparian woodland, mixed hardwood forest, sage scrub, oak savannah, grassland, and chaparral. In addition, serpentine outcrops support a variety of rare plant species. The region is home to a diverse array of flora and fauna, including a number of special-status species, such as California red-legged frog, Swainson’s hawk, coast range newt, and others.

PROJECT DESCRIPTION
The Land Conservancy of San Luis Obispo County (The Land Conservancy) is partnering with The Conservation Fund (TCF) in order to secure this conservation opportunity. The Land Conservancy will be the long-term owner and steward of the ranch. Once the acquisition is complete, The Land Conservancy will petition SWRCB under CWC Section 1707 for a permissive instream dedication on the entirety of the water rights (234 AF) and sign a forbearance agreement with a local conservation partner to enhance stream flow in Santa Rita Creek. The Ranch will also be opened to the public for passive, non-motorized recreational uses.

Problem:
Water availability is a clear limiting factor for sustaining healthy populations of steelhead within the Upper Salinas River watershed. A record of U.S. Geological Survey stream flow data between 1961 and 1994 confirm highly limited seasonal

flow in Santa Rita Creek. Average flows during July, August, and September are less than one cfs and often the creek runs dry. Steelhead have been observed in Santa Rita Creek and within the greater Paso Robles watershed during multiple studies. Year-round instream water availability and healthy wetland and riparian habitat are required to sustain healthy populations of steelhead on the Central Coast. California red-legged frog and other threatened, endangered, and special status riparian and aquatic species are also dependent on instream water quantity and healthy riparian corridors to thrive throughout the year. These environmental requirements are identified in the South-Central California Coast Steelhead Recovery Plan and the Recovery Plan for the California Red Legged Frog.

Solution:
The Santa Rita Ranch is currently for sale on the open market. TCF is under contract to purchase the Ranch and will subsequently sell it to The Land Conservancy. The Land Conservancy is a committed conservation buyer for the property and will serve as the long-term owner and steward of the protected Ranch. The Hartzell Dam is the fourth largest privately-owned reservoir in the Upper Salinas River watershed. Acquiring fee title to the Ranch is the only pathway to acquire the associated water rights, which is a primary driver of this conservation transaction. Following the acquisition of the Ranch from TCF, The Land Conservancy will file a CWC Section 1707 petition with SWRCB for a permissive instream dedication on the entirety of the water rights (234 AF) for the benefit of fish and wildlife, wetland habitat, and riparian habitat restoration. The 1707 petition will add fish and wildlife instream uses to the allowable uses under the appropriative water rights and eliminate future risk of forfeiture of those rights. The Land Conservancy will also enter into a 20-year forbearance agreement, which will define the terms and conditions of the instream dedication, with a local public interest partner, such as the Upper Salinas - Las Tablas RCD, to enhance stream flow downstream of the reservoir and maximize the conservation value during the dry season. While the specific timing and quantity of water to be dedicated below the Hartzell Dam for instream benefits will be quantified through development of the forbearance agreement, even 25 percent of the total stored water would result in 0.2 cfs on average over the dry season. Stream flow enhancement will be monitored using a bypass flow monitor located at the dam alongside a long-term monitoring plan to verify and observe changes in stream flow and related conservation benefits over time.

PROJECT FUNDING

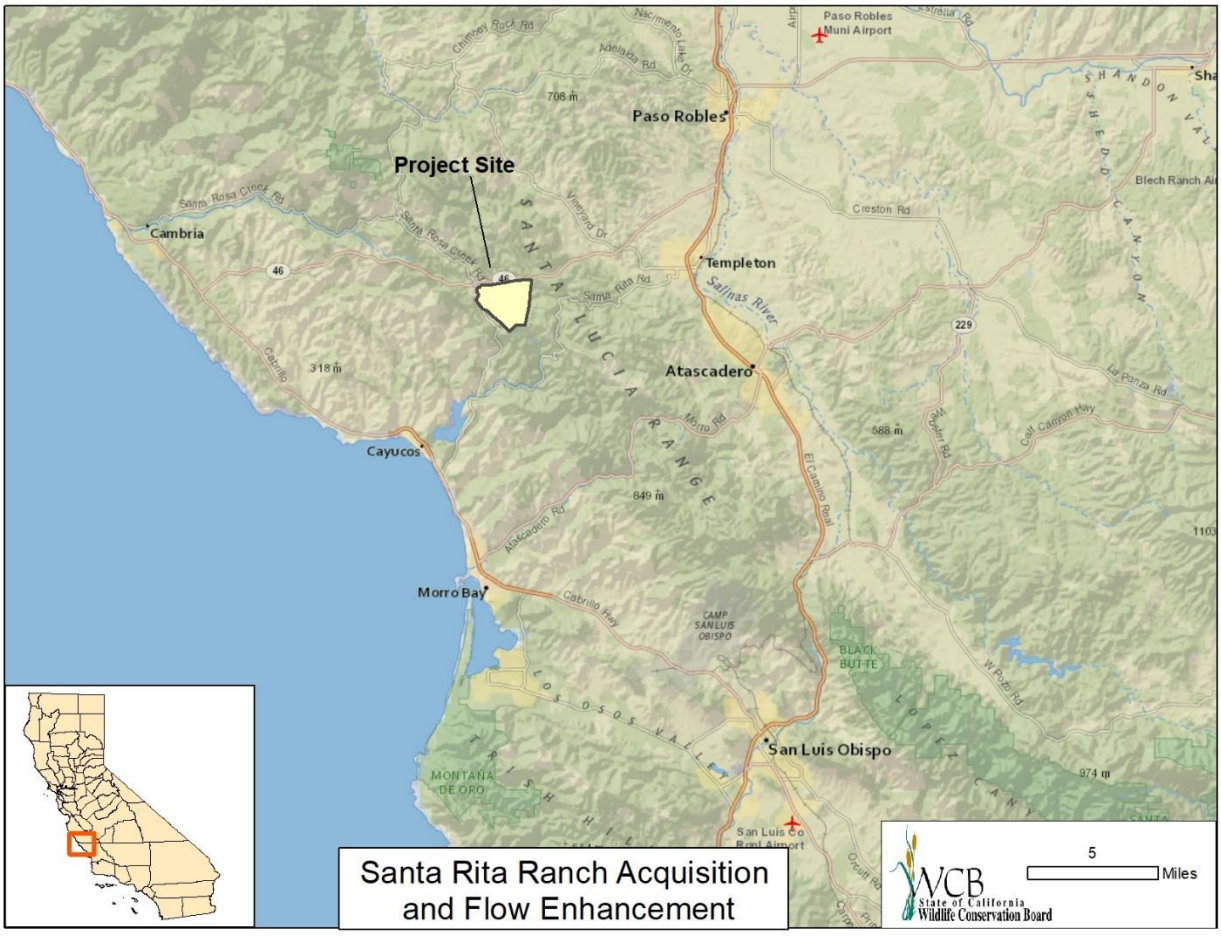
Partners	Amount
WCB	$3,938,100
Other (in-kind contributions)	$51,525
Other (remaining funds for acquisition) *	$3,700,000
Total	$7,689,625

*Other funds will be secured before the property can be acquired.

The majority of WCB Project costs will be for acquiring the Santa Rita Ranch. A CWC Section 1707 petition for instream dedication will be filed, and a forbearance agreement secured.

Other secured funding sources include in-kind contributions from Hicks Law and The Land Conservancy of San Luis Obispo County.

CEQA REVIEW AND ANALYSIS
The Project is proposed as exempt from CEQA pursuant to the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) Section 15301, Class 1, Existing Facilities, as maintenance of stream flows to protect fish and wildlife resources; Section 15313, Class 13, Acquisition of Lands for Wildlife Conservation Purposes, as an acquisition of land for wildlife conservation purposes; Section 15325, Class 25, Transfers of Ownership in Land to Preserve Existing Natural Conditions, as a transfer of an ownership interest in land to preserve open space and existing natural conditions, including plant or animal habitats; and Section 15304, Class 4, Minor Alterations to Land, as a minor alteration to water. Subject to approval of this proposal by WCB, the appropriate Notice of Exemption will be filed with the State Clearinghouse.



Adjourn

ATTACHMENT A – LIST OF ACRONYMS

California Department of Fish and Wildlife	CDFW
California Department of Water Resources	DWR
California Environmental Quality Act	CEQA
California Water Action Plan	CWAP
California Water Code	CWC
Cubic feet per second	cfs
Gallons per minute	gpm
National Marine Fisheries Service	NMFS
National Oceanic and Atmospheric Administration	NOAA
Resource Conservation District	RCD
State Coastal Conservancy	SCC
State Water Resources Control Board	SWRCB
Stream Flow Enhancement Program	SFEP
U.S. Fish and Wildlife Service	USFWS
Wildlife Conservation Board	WCB

ATTACHMENT B – WCB STRATEGIC PLAN GOALS AND OBJECTIVES

GOAL A. ENVIRONMENTAL PROTECTION AND CONSERVATION

Acquire and invest in wildlife habitat and natural areas, and work towards long-term, landscape level conservation, habitat quality and connectivity, and the success of wildlife species and populations.

A.1 Fund projects and landscapes that provide resilience for native wildlife and plant species in the face of climate change.

A.2 Fund projects and landscape areas that conserve, protect, or enhance water resources for fish and wildlife.

A.3 Fund projects that support the implementation of Natural Community Conservation Plans, Habitat Conservation Plans and recovery of listed species.

A.4 Invest in priority conservation projects recommended under CDFW's land acquisition evaluation process or within other conservation plans supported by CDFW.

A.5 Improve transparency and efficiency of WCB and CDFW project evaluation and recommendations to approve or deny applications

A.6 Coordinate acquisition application processes to ensure that WCB project evaluation is unified across programs to the fullest possible extent.

GOAL B. ENVIRONMENTAL RESTORATION AND ENHANCEMENT

Work with partners to restore and enhance natural areas, create viable habitat on working lands, manage adaptively, and ensure long-term ecosystem health.

B.1 Invest in projects and landscape areas that help provide resilience in the face of climate change, enhance water resources for fish and wildlife and enhance habitats on working lands.

B.2 Strengthen the grant application process to further highlight the importance of the following factors in project design and selection: robustness and resilience to extreme weather events, ecosystem services (e.g. groundwater recharge, flood reduction, fire prevention, etc.), water quality and quantity, and compatible public use and access.

B.3 Improve transparency and efficiency of WCB and CDFW project evaluation and recommendations to approve or deny applications.

B.4 Expand project monitoring and evaluation of restoration activities to assess long-term project success, moving beyond compliance monitoring.

B.5 Provide opportunities for greater public involvement in restoration projects.

GOAL C. PUBLIC USE AND RECREATION

Leverage WCB investments in programs and projects by expanding opportunities for outdoor wildlife-oriented recreational activities that are compatible with conservation goals.

C.1 Support a wide range of recreational activities (e.g. hunting, fishing, birding, hiking, camping, photography, etc.) in conjunction with other land uses and without degrading environmental resources.

C.2 Document and describe the current public access project evaluation and selection processes and explore the option of establishing a competitive grant making cycle for the Public Access Program.

C.3 Standardize existing project monitoring protocols to facilitate consistent reporting and improved performance management.

C.4 Place greater emphasis on projects that accommodate compatible wildlife-oriented public uses, while supporting urban areas and disadvantaged communities.

SI 1: CLIMATE CHANGE ADAPTATION, RESILIENCY, AND MITIGATION (PLAN GOALS A, B, AND C)

OBJECTIVE SI 1.1 Invest in at least three wildlife under-or over-crossings each year for the next three years (2019 - 2021), in locations deemed high priority by both transportation and fish and wildlife agencies.

OBJECTIVE SI 1.2 Invest in at least five projects that contribute to connectivity as highlighted in the California Terrestrial Connectivity Map, or linkages as mapped in regional assessments.

OBJECTIVE SI 1.3 Ensure 40 percent of all acquisition and restoration projects are in areas identified as habitat for vulnerable species or as highly resilient to climate change.

OBJECTIVE SI 1.4 Invest in at least five projects that provide long-term measurable carbon sequestration benefits.

OBJECTIVE SI 1.5 Collaboratively develop and publish criteria for addressing catastrophic natural resource events like extreme fire and prolonged drought, for inclusion as priorities in future solicitations.

OBJECTIVE SI 1.6 Collaboratively identify and fund five upper watershed improvement projects each year that have a primary or secondary purpose of providing resilience to climate change

SI 2: BIODIVERSITY ACTIONS (PLAN GOALS A AND B)

OBJECTIVE SI 2.1 Increase habitat for sensitive species to support biodiversity through statewide protection or restoration of oak woodlands, riparian habitat, rangeland, grazing land, and grassland habitat by funding at least 10 projects in each of these WCB programs with at least 25 percent of restoration projects on conserved lands.

OBJECTIVE SI 2.2 Each year, invest in at least three acquisitions and two restoration grants that advance habitat and natural community targets embodied in RCIS, NCCPs, or regional conservation plans.

OBJECTIVE SI 2.3 Implement at least 10 projects each year that enhance stream flow, increase water resiliency and meet priorities in the California Water Action Plan.

OBJECTIVE SI 2.4 Ensure 75 percent of all approved projects meet one or more conservation priorities expressed in the SWAP.

OBJECTIVE SI 2.5 Protect or restore at least 1,000 acres each of riparian, wetlands, and grassland habitats in priority areas as defined in the SWAP.

SI 3: PUBLIC ACCESS AND WILDLIFE-ORIENTED RECREATION (PLAN GOAL C)

OBJECTIVE SI 3.1 Invest in at least five projects providing public access for disadvantaged or severely disadvantaged communities.

OBJECTIVE SI 3.2 Invest in at least five projects providing boating/fishing/hunting access to disadvantaged communities and providing additional facilities for mobility-impaired visitors and/or access compliant with the Americans with Disabilities Act.

OBJECTIVE SI 3.3 Invest in at least 10 projects that provide hunting or fishing opportunities (at least five each).

OBJECTIVE SI 3.4 Invest in at least 10 projects that have a primary or secondary purpose of non-consumptive wildlife recreation, such as bird watching or hiking.

OBJECTIVE SI 3.5 Attend or conduct at least two meetings per year that provide outreach, workshops, and materials to increase visibility of the WCB Public Access Program. At least one should be in a disadvantaged community.

SI 4: ECOSYSTEM SERVICES (PLAN GOAL A, B AND D)

OBJECTIVE SI 4.1 Each year, invest in at least five acquisition or restoration projects that have a demonstrated and measurable upper watershed ecosystem services benefit.

OBJECTIVE SI 4.2 Each year, invest in at least three projects that have a primary purpose of conserving or restoring native pollinator habitat in locations that provide a measurable ecosystem services benefit.

OBJECTIVE SI 4.3 Invest in at least five projects that provide tangible ecosystem services benefits to local lower watershed (urban or rural) communities, and document that benefit.

SI 5: PARTNERSHIPS (PLAN GOALS A, B, C, AND D)

OBJECTIVE SI 5.1 Invest in at least three projects that support state or federal Safe Harbor programs.

OBJECTIVE SI 5.2 Conduct outreach, including meetings or field visits to five new partners per year.

OBJECTIVE SI 5.3 Implement at least three competitive grant solicitations over the next five years that have been coordinated among multiple organizations and are directed at a high priority habitat per WCB program priorities.

OBJECTIVE SI 5.4 Per the USFWS Urban Wildlife Conservation Program, establish a new partnership with one urban community each year to support nature and wildlife connections consistent with WCB programs.

SI 6: WCB ORGANIZATION AND TRANSPAREN-CY (PLAN GOALS D AND E)

OBJECTIVE SI 6.1 By the end of 2020, implement a system to make WCB meetings accessible online.

OBJECTIVE SI 6.2 By the end of 2020, make substantial progress in standardizing solicitation content, criteria, and process, and develop an online application portal for competitive grants.

OBJECTIVE SI 6.3 By the end of 2020, update the WCB website to include current goals, targets, metrics, and conservation priorities for each WCB Program.

OBJECTIVE SI 6.4 By the end of 2020, develop and make mapped data that illustrates WCB projects and their relationship to program conservation objectives available to the public.

OBJECTIVE SI 6.5 Each year, hold at least one conservation partner workshop in a different part of the state, to discuss competitive grant programs and receive feedback.

OBJECTIVE SI 6.6 Sponsor at least five conferences or workshops each year throughout the state and distribute outreach materials about WCB programs.

SI 7: NATURAL RESOURCE CONSERVATION LEADERSHIP (PLAN GOALS D AND E)

OBJECTIVE SI 7.1 Take the lead to coordinate among the state conservancies and other agencies, regarding habitat-based priorities for upcoming competitive grant solicitations.

OBJECTIVE SI 7.2 Participate in the development and implementation of the natural working lands elements of the State Safeguarding and Scoping Plans.

OBJECTIVE SI 7.3 With CDFW, complete a unified, simplified process to identify CDFW's acquisition investment priorities and obtain CDFW's review and endorsement of WCB projects

OBJECTIVE SI 7.4 Participate in statewide policy development efforts to improve fire resiliency and forest management through natural resource protection and restoration.

OBJECTIVE SI 7.5 Refine priority conservation areas for each WCB program (consistent with overall WCB goals), and report progress toward program-specific goals annually or biannually

SI 8: MONITORING AND PROGRAM EVALUATION (PLAN GOAL E)

OBJECTIVE SI 8.1 By 2021, define criteria for effectiveness monitoring by program, habitat or geography.

OBJECTIVE SI 8.2 Through continued implementation of the annual monitoring program, by 2024, cumulatively monitor 20 percent of completed projects, summarize the project compliance results, and post on the WCB website.

OBJECTIVE SI 8.3 By 2024, make the monitoring survey platform accessible on the WCB website for use by project partners.

OBJECTIVE SI 8.4 Include monitoring data in each WCB annual report and list projects by county and by SWAP habitat type.

OBJECTIVE SI 8.5 By 2022, update the WCB 60-year assessment—for WCB's 75th anniversary—to highlight program accomplishments, including the acreage of habitat type preserved and restored.