

1.1 Purpose of and Need for the Proposed Project

The Sutter-Butte Flood Control Agency (SBFCA) is proposing to construct the Oroville Wildlife Area (OWA) Flood Stage Reduction Project (proposed project). The purpose of the proposed project is to improve the connectivity of the Feather River to its historic floodplain, reduce flood stages within the main channel, provide more frequently inundated floodplain rearing habitat for juvenile salmonids, reduce the extent of invasive plant species, and plan for future habitat restoration at the OWA.

The project is needed to improve conditions of the OWA D-Unit that have caused potential fish stranding concerns, hydraulic isolation, poor water quality, and widespread invasive plant species.

The project area consists of the OWA D-Unit, which is a highly disturbed floodplain that includes extensive, isolated ridges and piles of rock left by gold dredging and drainage canals that were excavated during use of the site as a borrow area. The ground surface elevation is approximately 115 feet in the northern part of the project area and approximately 100 feet in the southern project area. The project area is a basin that is entirely disconnected from the Feather River during times of low flow. A berm along the perimeter of the project area adjacent to the river is generally between 15 and 20 feet higher in elevation than the adjacent land. During times of high flow, water flows into and out of the project area via a system of inflow and outflow weirs. The interior of the project area contains a network of channels and disconnected ponds. The bottoms of these interior channels and ponds are, in many places, lower in elevation than the adjacent Feather River.

SBFCA is the CEQA Lead Agency. The project area is owned by the State of California and managed by the Department of Fish and Wildlife (DFW). It lies within the Federal Energy Regulatory Commission's (FERC) project 2100 boundary, which is administered by the California Department of Water Resources (DWR).

1.2 Document Purpose and Use

This initial study was prepared in accordance with Article 5, Section 15060 et seq. of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3). It describes the existing environmental resources in the project area, evaluates the environmental impacts of the proposed project on these resources, and identifies mitigation measures to avoid or reduce any potentially significant impacts to a less-than-significant level.

The CEQA Lead Agency, SBFCA, will consider the findings of this initial study in determining whether preparation of an environmental impact report (EIR) is necessary prior to implementation of the proposed project. The initial study will also be used by multiple responsible, trustee, and cooperating agencies, including DFW, the Central Valley Regional Water Quality Control Board (Regional Water Board), California State Lands Commission (CSLC), Office of Historic Preservation

(SHPO), and California Central Valley Flood Protection Board (CVFPB), in taking action under CEQA and other state regulations to authorize implementation of the proposed project.

1.3 Objectives of the Proposed Project

The objectives of the proposed project are to enhance fish and wildlife habitat, restore native vegetation, improve the connectivity of the Feather River to its historic floodplain, reduce flood stages in the main channel and thereby reduce scour of stream bed and margins, provide more frequently inundated floodplain rearing habitat for juvenile salmonids, and reduce the extent of invasive plant species. The proposed project would provide a more natural flood corridor both in the project area and downstream.

More specifically, the project would:

- Increase hyporheic recharge and discharge; hyporheic discharge to the river will cool stream temperatures, particularly in the shoulder seasons as temperature rises.
- Improve functionality of existing flow regime; lack of inundated floodplain habitat for rearing salmonids and other species is a major limiting factor in the Feather River corridor.
- Restore the project area floodplain, which would lead to increased channel complexity that would result in better water quality and habitat throughout the reach. Overbank flows combined with riparian vegetation (see below) are key to reestablishing in-channel complexity. In addition, restored channel complexity will enhance in-stream hyporheic exchange through bedforms, buffer temperature fluctuations, and provide temperature refugia for salmonids, significantly improving out-migrant survival during spring heat waves.
- Restore riparian vegetation to shade the flows that flood the project area and reduce water temperatures.
- Remove invasive plants in the project area, substantially reducing or eliminating the contributions of the project area to this ecological stressor of the entire downstream environment, including the Sacramento-San Joaquin River Delta.

1.4 Project Area and Setting

The project area consists of the OWA D-Unit and is on the east side of the Feather River in Butte County, California, just west of State Route 70 and across the river from the Thermalito Afterbay outlet (Figure 1-1).

The project area is characterized by a highly disturbed floodplain that has been hydraulically disconnected from the Feather River by gold dredging and borrow pits excavated during construction of the Oroville Dam. The project area is disconnected from the Feather River during times of low flow by a 15-foot-high to 20-foot-high berm along the northeast boundary of the project area. When flow is greater than 43,000 cubic feet per second (cfs), water flows into the project area through the outflow weirs, and when flows reach 60,000 cfs, water spills through the inflow weir (Peterson Brustad 2015). The interior of the project area contains a network of channels and disconnected ponds. Gold dredging and drainage canals left behind extensive, isolated ridges and piles of rock. Use of the area for borrow during construction of the Oroville Dam leveled areas to an

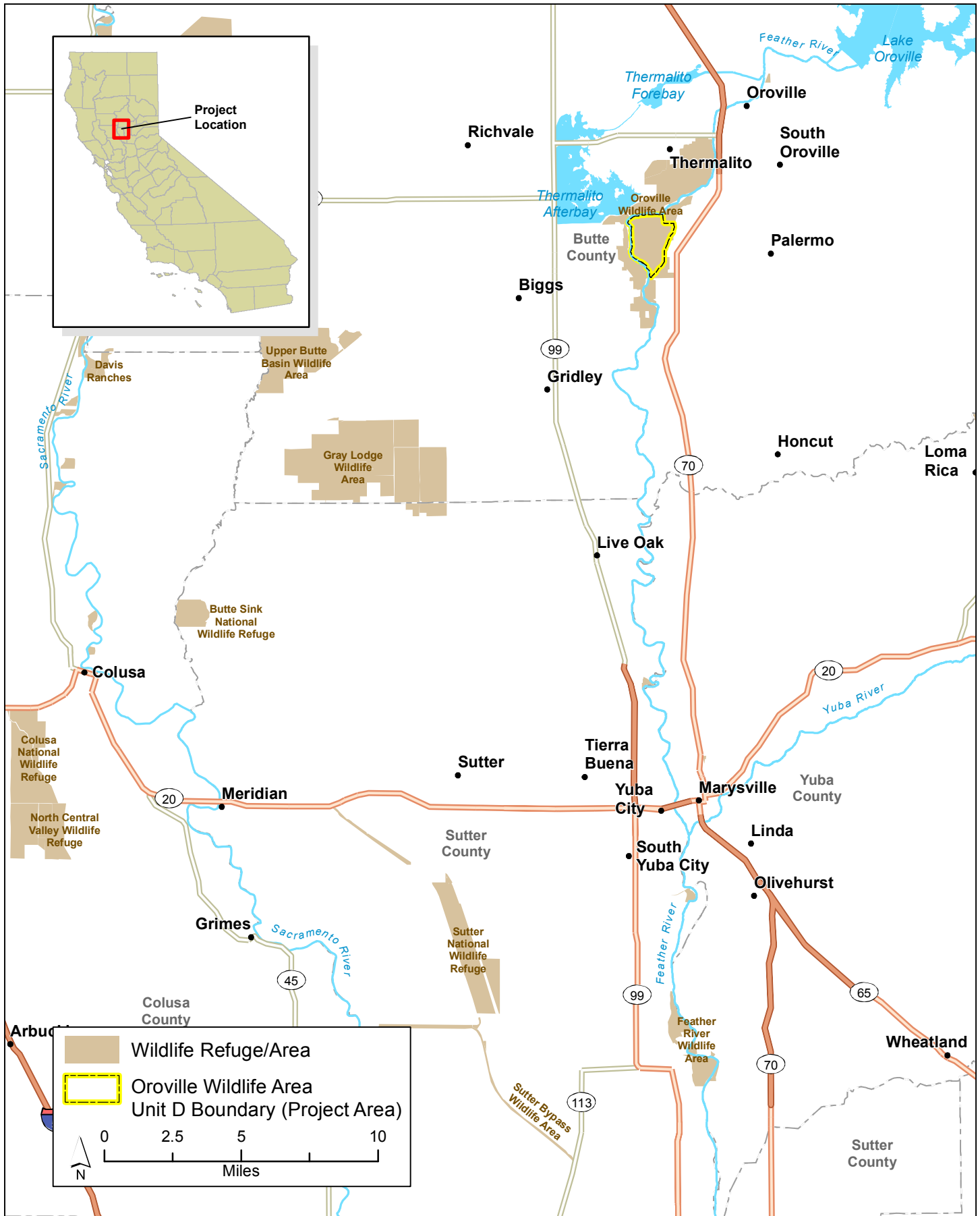


Figure 1-1
Project Vicinity

elevation of roughly 3 feet above the summer flow level of the Feather River. The leveled areas are pocked with water-filled sloughs and deep excavations. The bottoms of the interior canals and ponds are, in many places, lower in elevation than the adjacent Feather River. Photographs of the project area are shown in Appendix 1-A.

The historical ground disturbance has resulted in existing conditions that are conducive to colonization by invasive plant species and the potential stranding of native fish. Widespread invasive plant species present in the project area include water primrose (*Ludwigia* spp.), annual grasses, broom, giant reed (*Arundo donax*), scarlet wisteria (*Sesbania punicea*), purple loosestrife (*Lythrum salicaria*), tree-of-heaven (*Ailanthus altissima*), yellow star-thistle (*Centaurea solstitialis*), and Himalayan blackberry (*Rubus armeniacus*). There is potential for fish stranding to occur when fish enter the area during high flows and become stranded in the ponds and interior waterways as flows recede.

1.5 Background of Proposed Project

The altered hydrology in the project area has created an environment where invasive plant species thrive and fish can become stranded. In combination, the proposed project and SBFCA's Feather River West Levee Project (ICF 2013) demonstrate integrated flood protection, ecosystem restoration, and recreation benefits.

Floodplain inundation is an important process in the ecological functioning of riparian areas. Historically, seasonal inundation was a common occurrence every few years. Flows moderately scoured the channel, moderately eroded the banks and deposited sediment and large wood debris across the floodplain. These natural processes are fundamental to the development of young riparian forests. The lack of natural river processes, combined with the abundance of rich soils and Mediterranean climate, has provided invasive plant species with access to riparian areas. The proposed project would remove invasive plant species in the project area and would identify upstream populations to treat in future phases.

Floodplain connectivity is vital in providing rearing habitat and velocity refugia for native fish such as fall- and spring-run Chinook salmon and steelhead. A flood event that provides a minimum of 2 weeks of shallow-water habitat brings favorable velocities and food sources for native fish. The slow-moving waters of inundated floodplains are very important to the aquatic food web. The availability of invertebrates from the floodplain results in higher growth rates for young fish, making them more likely to survive the swim downstream to the ocean. However, this phenomenon occurs relatively infrequently because the hydrology of many Central Valley rivers has been modified by dams and levees.

1.6 Regulatory Compliance

SBFCA would obtain all necessary permissions, authorizations, concurrences and permits to comply with all applicable regulatory conditions listed below:

- National Environmental Policy Act
- Rivers and Harbors Appropriation Act
- Federal Energy Regulatory Commission

- California Code of Regulations
- Clean Water Act
- California Fish and Game Code
- National Historic Preservation Act
- Federal Endangered Species Act
- California Endangered Species Act
- Porter-Cologne Water Quality Control Act
- Federal Clean Air Act
- California Clean Air Act

SBFCA has consulted with the CSLC to determine whether a lease will be needed for placement of fill within public trust lands of the State of California, which includes the bed and banks of the Feather River. The State Lands Commission has indicated that the notch connection (described in Section 2.3.3.2, *Construction of Notch Connections to the Feather River*) would extend into State-owned sovereign land under the jurisdiction of the CSLC and two river access areas (described in Section 2.3.4.1, *Improvement of Public Parking Areas*) may also extend into State-owned sovereign land under the jurisdiction of the CSLC. An application for lease of these lands would need to be submitted to the CSLC.

1.7 Document Organization

This document is organized as follows.

- Chapter 1, *Introduction*, describes the project background, elements, purpose, and regulatory compliance.
- Chapter 2, *Project Description*, describes the project area.
- Chapter 3, *Environmental Setting and Impacts*, describes the environmental resources present in the project area, and analyzes the proposed project's potential to affect such resources.
- Chapter 4, *Cumulative Impacts*, discusses the potential for the proposed project's incremental effect to be cumulatively considerable when combined with other projects causing related impacts.
- Chapter 5, *References*, provides a list of all printed references and personal communications used to prepare the initial study.
- Chapter 6, *List of Preparers*, presents a list of all personnel who assisted in the preparation of this document.
- Appendix 1-A, *Photographs of the Project Area*, provides photographs of various features in the project area.
- Appendix 1-B, *Environmental Checklist*, contains the Environmental Checklist Form, CEQA Guidelines Appendix G.
- Appendix 2-A, *Invasive Species Management Plan, Oroville Wildlife Area D Unit*, describes the approach that will be used to manage invasive plant species in the project area.

- Appendix 3.2-A, *Basis of Design Report*, provides the technical basis for the 65% design plans and specifications for the proposed project.
- Appendix 3.3-A, *Reconnaissance-Level Geomorphic Assessment Technical Memorandum*, provides supplemental information for the flood control and geomorphic conditions analysis.
- Appendix 3.6-A, *Vegetation Management Equipment List and CalEEMod Output Files*, provides supplemental information for the analyses related to air quality, climate change, and greenhouse gases.
- Appendix 3.16-A, *Test Pit Excavation Technical Memorandum*, contains supporting information for the hazards and public health analysis.
- Appendix 3.19-A, *Mitigation, Monitoring, and Reporting Plan*, provides a list of the mitigation measures associated with each resource section, as well as the timing and agency responsible for implementing each mitigation measure.