

## 1.0 INTRODUCTION

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The San Luis Obispo County Flood Control and Water Conservation District Zone 3 (District) operates Lopez Reservoir, in the Arroyo Grande Creek watershed (Figure 1-1), for municipal and agricultural water supplies. Lopez Reservoir provides recreational opportunities including boating, water-skiing, and recreational fishing. The Arroyo Grande Creek watershed provides habitat for fish and wildlife species including anadromous steelhead (*Oncorhynchus mykiss*) and California red-legged frogs (*Rana aurora draytonii*). Both are listed for protection under the Federal Endangered Species Act. Lopez Dam is an impassable barrier to steelhead migration. Steelhead habitat is restricted to the reach of Arroyo Grande Creek from Lopez Dam to the Pacific Ocean (Figure 1-1), a distance of about 13 miles.

Lopez Project operations include:

- Seasonally varying water releases to Arroyo Grande Creek for agricultural water supply;
- Operation of a municipal water treatment plant, including filter backwash water disposal and water sampling activities;
- Operation of the Arroyo Grande Creek stream gaging station; and
- Maintenance activities at Lopez Dam, debris removal and maintenance of channel road crossings, and sediment removal.

These activities under the authority and control of the District affect availability and quality of steelhead and red-legged frog habitat, and may result in direct or indirect incidental take of these protected species. In addition to construction, operation, and maintenance activities by the District, several other factors affect habitat quality and availability in Arroyo Grande Creek.

Section 10(a)(1)(B) of the Endangered Species Act of 1973 authorizes the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) to issue permits for the take of listed species incidental to otherwise lawful activities. An incidental take permit application must be supported by a habitat conservation plan that identifies conservation measures that the permittee agrees to implement for the species to minimize and mitigate the impacts of the permitted incidental take.

The District developed the following Habitat Conservation Plan (HCP) to comply with Section 10(a)(2)(A) of the Endangered Species Act and the Code of Federal Regulations [50 CFR 17.22(b)(1), 17.32(b)(1) and 222.22]. The HCP describes commitments and assurances associated with implementation of measures designed to avoid, minimize, and mitigate impacts of District activities on steelhead and red-legged frogs in Arroyo Grande Creek downstream of Lopez Dam, in order to obtain an incidental take permit under the Federal Endangered Species Act for authorized and covered activities. Operations, maintenance activities, habitat improvements, and protective measures identified for implementation as part of this HCP will be the sole responsibility of the District.

**Figure 1-1**

This HCP documents the technical and scientific basis for proposed management actions, based on the best scientific and commercial data available for Arroyo Grande Creek. Information from these scientific and technical analyses was used to characterize existing habitat conditions in Arroyo Grande Creek and identify factors affecting habitat quality and availability. The resulting information was then used to identify and evaluate project alternatives. Available information was compiled with the assistance of NOAA Fisheries, USFWS, California Department of Fish and Game (CDFG), and District staff.

In accordance with the guidelines for Habitat Conservation Plans (USFWS and NMFS 1996, and subsequent amendments and revisions), this document has been developed as a joint HCP and Environmental Assessment/Initial Study (EA/IS). The joint HCP and EA/IS, based on the environmental checklist analysis presented in Appendix C, provides the environmental documentation necessary for compliance with the California Environmental Quality Act (CEQA), and National Environmental Policy Act (NEPA). The document complies with provisions of the California and Federal Endangered Species Acts and environmental documentation requirements of NEPA and CEQA. In compliance with the requirements of NEPA and CEQA, Appendix C provides a CEQA environmental checklist and lists the NEPA environmental consequences for the proposed (preferred) alternative. The environmental checklist discusses land use and planning; population, employment, and housing; geology, soils, and seismicity; hydrology and water quality, including agricultural return flows and storm drain returns; biological resources; cultural and historical resources; traffic and transportation; visual quality and esthetics; air quality; noise and vibration; utilities and infrastructure; public services; energy; hazardous materials; recreation; socioeconomic effects; and mandatory findings of significance. The preferred alternative in the HCP is consistent with flood plains and sites in the National Trails and National Inventory of Rivers (Presidential directive, August 2, 1979), the Advisory Council on Historic Preservation (36 CFR800), National Marine Fisheries Service Habitat Conservation Policies, the Environmental and Health Impact on Low-Income and Minority Populations, the American Indian Religious Freedom Act, and the California and Federal Endangered Species Acts. The preferred alternative would have no adverse effects under National Marine Sanctuaries or Coastal Zone Management Plans. The HCP appendix addresses Indian Trust Assets, Environmental Justice, and socioeconomic impact of the proposed (preferred) alternative project. The District is the State Lead Agency for CEQA compliance. The U.S. Fish and Wildlife Service and National Marine Fisheries Service are the Federal Co-Lead Agencies for NEPA compliance.

## **1.1 OVERVIEW/BACKGROUND**

The Arroyo Grande Creek watershed is on the Central California Coast in an arid region with highly variable rainfall, precipitation and stormwater runoff. Anadromous steelhead occur in Arroyo Grande Creek. The watershed also supports permanent agricultural crops (e.g., citrus orchards and wine grapes) and seasonal row crops. The permanent populations of nearby Central Coast communities, including Arroyo Grande, Pismo Beach, Avila Beach, Grover Beach and Oceano, have increased substantially over the past decades, and the area has become a tourist destination. The District completed construction of Lopez Dam in May 1968, to provide a reliable water supply for agricultural and municipal needs. Lopez Reservoir stores stormwater runoff during the winter and early spring, and provides managed releases throughout the year to

meet downstream demand, as well as diversions from the reservoir through a three-mile pipeline to a water treatment plant which provides treated water to the municipalities listed above. Lopez Reservoir operations affect the seasonal timing and magnitude of streamflows in Arroyo Grande Creek and thereby affect habitat quality and availability for steelhead. Modifications to reservoir operations to improve instream flow or habitat conditions for steelhead could adversely affect habitat quality and availability for red-legged frogs that also inhabit the watershed.

Concerns about adverse effects of Lopez Reservoir operations on steelhead resulted in a water right complaint against the District by the California Sportfishing Protection Alliance (CalSPA) in 1994. The water right complaint claims District operation and maintenance of the Lopez Project adversely impacts aquatic habitat in Arroyo Grande Creek. For example, reduced releases from Lopez Reservoir in winter 1996 dewatered part of Arroyo Grande Creek. And, in the winter of 1998-1999, two adult steelhead were found stranded in a dry portion of the creek. To address these fishery issues, the District commissioned investigations of steelhead and red-legged frogs and their habitat in the lower reaches of Arroyo Grande Creek (Alley 1996, 1997). The District initially agreed to maintain an interim minimum release from Lopez Reservoir of 7.7 cfs (5 mgd). Subsequently, after completion of a series of stream studies and discussions with CDFG and NOAA Fisheries, the release rate was adjusted to 6.2 cfs (4 mgd) to protect the steelhead habitat and to support the scientific data collection for this HCP.

During 1999-2000, several studies were performed on the District's behalf to provide information for the HCP. Habitat surveys were conducted as part of an experimental streamflow study to evaluate changes in habitat conditions as a function of streamflow during the juvenile steelhead summer rearing period. Water and air temperatures were monitored along Arroyo Grande Creek downstream of Lopez Reservoir. Water quality surveys documented diel (within a day: daytime vs. night) variation in water quality parameters such as dissolved oxygen concentrations, and concentrations of various chemical constituents. Hydrologic data from the Arroyo Grande gaging station was used to determine streamflow before and after construction of Lopez Dam. Seasonal and interannual (between years) changes in Lopez Reservoir storage, reservoir inflow, and reservoir evaporation losses were determined. A computer simulation model was developed, using a monthly time-step, to evaluate changes in Lopez Reservoir storage under alternative reservoir release schedules to provide steelhead habitat, while meeting downstream agricultural and municipal water supply commitments. Habitat surveys characterized vegetation along the stream corridor and habitat conditions for red-legged frogs.

During 2001-2002, additional field studies were undertaken to evaluate reservoir storage capacity and the potential to adversely affect red-legged frogs or other protected species as a result of fluctuations in the elevation of Lopez Reservoir as a consequence of actions implemented in this HCP. Results of the wildlife and habitat surveys conducted around the periphery of Lopez Reservoir were used to assess and evaluate the potential effects of changes in reservoir storage operations on species and their habitat.

Bathymetric surveys were conducted as part of these investigations to determine changes in reservoir storage capacity that may have resulted from siltation and sediment deposition. Results of the reservoir survey documented a reduction in storage capacity that was subsequently used in the HCP hydrologic modeling to refine estimates of the effects of instream flow releases on reservoir storage and water supply availability. Results of these investigations were used to further analyze and evaluate alternative operational strategies and environmental consequences as part of the development of this HCP.

Information from these investigations, and from previous studies, is the best scientific and commercial data available for use in developing this HCP. Investigation, design and evaluation of factors affecting habitat quality and availability for steelhead and red-legged frogs in Arroyo Grande Creek were facilitated by a Technical Committee (TC) with representation and technical assistance from USFWS, NOAA Fisheries, CDFG, and the District.

Based on information from these surveys and analyses, the District evaluated alternative strategies for habitat protection and enhancement as part of this HCP. Accordingly, the District developed a conservation strategy that includes the following commitments:

- Modifications to operations and maintenance of Lopez Dam involving an instream flow schedule for steelhead and red-legged frogs;
- Removal of the Arroyo Grande streamflow gage that has been identified as a significant passage impediment to steelhead migration; and
- Funding for habitat protection and improvements, such as removal of fish passage impediments; improvements to instream habitat structures for steelhead spawning and juvenile rearing; development of habitat for red-legged frogs; and protection and improvement of wetland and riparian areas along the stream corridor.

In connection with this HCP, the District requests authorization for incidental take of steelhead and red-legged frogs (Section 5) under the Federal Endangered Species Act, and (in the event these species are listed) under the California Endangered Species Act (California Fish and Game Code 2080.1), resulting from activities covered under this HCP. This HCP addresses issues raised by the CalSPA complaint and environmental review requirements of the Lopez Project water rights permit amendment process.

The District is committed to an adaptive management process for identifying and evaluating potential management actions as part of this HCP (Section 6). Management actions will be considered in context with other activities influencing steelhead and red-legged frog populations and their habitat in the Arroyo Grande Creek watershed. As a result of 1) uncertainties associated with future management actions, 2) identification of actions that provide adaptive or synergistic benefit with other habitat enhancement programs, and 3) the availability of State and federal funding allocations to augment the financial commitments in this HCP, the proposed adaptive management process is appropriate for implementing the habitat enhancement elements of this HCP. The HCP provides the necessary framework, and commitment to funding required to identify, implement, and monitor performance of these habitat enhancement actions. State and federal resource agencies will continue to play an active role in working with the District to help ensure that the HCP meets these objectives.

## **1.2 PLAN AREA - DELINEATION OF HCP BOUNDARIES**

The HCP boundaries include Arroyo Grande Creek downstream from Lopez Dam to the flood control channel (Figure 1-1). The HCP boundaries extend laterally from the Arroyo Grande Creek channel to encompass riparian land along the creek (Section 3.6) supporting ecological processes associated with habitat for steelhead and red-legged frogs. The designated HCP boundaries include land and facilities under the ownership and responsibility of the District.

Habitat enhancement or conservation measures within the designated HCP boundaries on lands not owned or managed by the District are not, however, precluded from consideration under this HCP provided that access is granted by the landowners. With the concurrence of landowners, such measures will be considered if the Interagency Technical Committee established by the HCP, believes habitat protection or enhancement in these areas is consistent with avoiding, minimizing, or mitigating adverse impacts identified for habitat improvements funded under the HCP.

### **1.3 PRIORITIZATION OF HCP ACTIONS**

Priorities for management actions under this HCP are as follows. First, modify the instream flow schedule for Arroyo Grande Creek using managed releases from Lopez Reservoir to:

- Enhance instream habitat for various lifestages of steelhead and red-legged frogs;
- Reduce or avoid adverse impacts from stranding or dewatering steelhead habitat; and
- Reduce or avoid adverse impacts of instream flow releases on red-legged frog habitat.

Second, implement habitat improvement or other actions to reduce or avoid impacts and enhance environmental conditions to benefit steelhead and/or red-legged frogs, as associated with land and facilities owned and operated by the District within the Arroyo Grande Creek designated HCP boundaries. Third, implement habitat improvements or other actions to reduce or avoid impacts and enhance environmental conditions to benefit steelhead and/or red-legged frogs, as associated with land or facilities within the designated HCP boundaries, which are not owned or managed by the District, with concurrence and approval of willing private landowners and other responsible parties. The HCP includes a proposed education and outreach element to provide information to local landowners and other interested parties on opportunities for enhancing and protecting habitat for sensitive species within the Arroyo Grande Creek watershed. A variety of habitat enhancement measures can be considered under this HCP, but first priority will be given to projects directly benefiting the covered species, and addressing impacts of operations or maintenance activities on Arroyo Grande Creek and the adjacent watershed under the direct authority of the District.

Decisions about future actions funded under this HCP will be evaluated under the Adaptive Management Program (Section 6.2). Consideration will be given to maximizing benefits for covered species within the designated HCP boundaries. Although the HCP commits the District to fund the identified conservation actions, consideration will also be given to opportunities for funding augmentation through State, federal, or other fishery restoration programs.

### **1.4 SPECIES AND ACTIVITIES COVERED BY PERMIT**

A wide variety of native fish, wildlife, and plant species inhabit the Arroyo Grande Creek watershed, but species covered by the incidental take permit associated with this HCP are limited to anadromous southern steelhead (*Oncorhynchus mykiss*), and California red-legged frog (*Rana aurora draytonii*). Steelhead and California red-legged frog are listed as threatened species

under the Federal Endangered Species Act. The District requests authorization for incidental take of these two species within the HCP boundaries associated with:

- Reservoir storage;
- Uncontrolled spills and managed instream flow releases;
- Municipal water treatment and supply, including backwash water disposal and water sampling activities;
- Water releases for irrigated agriculture;
- Rainfall and stream gaging;
- Dam and stream channel maintenance by the District in Arroyo Grande Creek.;
- Lopez Dam and Reservoir operations;
- Arroyo Grande stream gage removal and replacement and other habitat enhancement actions implemented as part of this HCP;
- Instream flow releases exceeding flows established by this HCP; and
- Channel and facility maintenance by the District in Arroyo Grande Creek.

Neither steelhead nor California red-legged frogs are currently listed for protection under the California Endangered Species Act. However, these species are identified as species of special concern and may be listed in the future. For this HCP, both steelhead and California red-legged frogs have been identified as covered species, and the District has requested incidental take authorization under the California Endangered Species Act. Incidental take authorization requested under this HCP, and the associated implementation agreement, would provide authorization by appropriate state and federal agencies for incidental take for currently listed steelhead and red-legged frog. The HCP would also provide the conservation framework for authorizing incidental take of future listed species under each agency's respective authority under California or Federal Endangered Species Acts.

## **1.5 DURATION OF THE HCP**

The proposed duration of this HCP and the associated incidental take permit is 20 years from HCP approval which is expected to start in 2005 and last through 2025. The actual initiation of the HCP will be based on final approvals of the plan and authorization of the incidental take permit.

## **1.6 ORGANIZATION OF THE HCP**

The HCP is based on the best scientific and commercial data currently available, in accordance with guidelines in the Endangered Species Habitat Conservation Planning Handbook (USFWS and NMFS 1996). The guidelines allow preparation of a joint HCP and Environmental Assessment/Initial Study to facilitate review and approval of proposed projects. The following document has been prepared as a joint HCP and Environmental Assessment/Initial Study to comply with provisions of NEPA and CEQA.

The purpose and need for the HCP are discussed in Section 2. The HCP describes the affected environment and environmental baseline conditions including existing land-use, Lopez Reservoir storage and operations, and District water delivery facilities. It includes a description of the environmental setting, and selected fish and wildlife resources within the HCP boundaries (Section 3). Alternatives considered in developing the HCP are discussed in Section 4. Section 4 also describes the proposed project and activities covered by the permit. Section 5 discusses environmental consequences and presents a take assessment of Lopez Reservoir and Arroyo Grande Creek operations and maintenance. Conservation strategies and measures in the HCP to avoid, minimize, and mitigate for impacts, adaptive management, monitoring and reporting are discussed in Section 6. Section 7 discusses funding for the HCP. Section 8 describes the implementation plan; including incidental take permit authorization and a process for addressing changed and unforeseen circumstances. Individuals participating or consulted during preparation of this document are presented in Section 9. Literature cited in the HCP is documented in Section 10.

Appendices to the HCP include the results of temperature and water quality monitoring (Appendix A) and the draft Implementation Agreement for the HCP (Appendix B). Appendix C presents the environmental checklist and findings of the Environmental Assessment/Initial Study in compliance with NEPA and CEQA requirements.