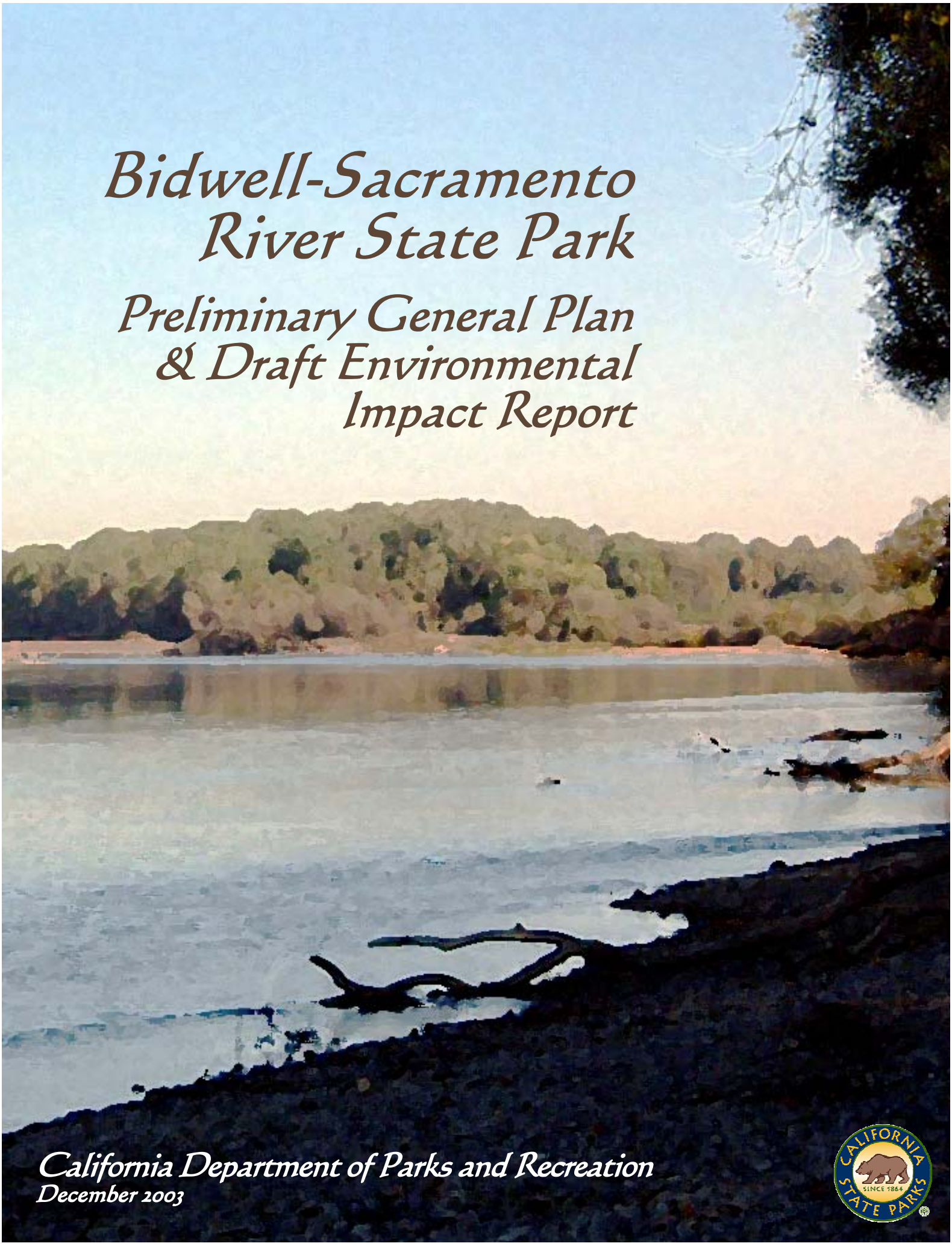

Bidwell-Sacramento River State Park

Preliminary General Plan & Draft Environmental Impact Report

California Department of Parks and Recreation
December 2003

December 12, 2003

All Interested Agencies, Organizations, and Persons

NOTICE OF AVAILABILITY
BIDWELL-SACRAMENTO RIVER STATE PARK
PRELIMINARY GENERAL PLAN / DRAFT ENVIRONMENTAL IMPACT REPORT

A Draft Environmental Impact Report (DEIR) has been prepared by the California Department of Parks and Recreation (Department) for the Bidwell-Sacramento River State Park (Park) Preliminary General Plan (General Plan). The Department is the lead agency, pursuant to the California Environmental Quality Act (CEQA), responsible for preparation of this document.

Project Location:
The Park is located approximately 6 miles west of the City of Chico in the northern Sacramento Valley. The Park consists of four discontiguous subunits that straddle the Sacramento River between State Route 32 and the mouth of Big Chico Creek. The Irvine Finch River Access area is located on the west side of the river in Glenn County, while the Pine Creek Landing, Indian Fishery, and Big Chico Creek Riparian Area subunits are situated east of the River in Butte County.

Project Description:
The project consists of the proposed approval of a new General Plan for Bidwell-Sacramento River State Park. The General Plan will guide future management direction at the Park over an approximate 20-year planning horizon. The lack of an existing general plan, proximity to abundant conservation-oriented lands managed by other State and federal agencies and public-interest organizations, and the consideration of potential property additions to the Park emphasize the need for a plan that establishes the future vision of the Park.

The General Plan contains a comprehensive and integrated set of park-wide goals and guidelines for the long-term management of the Park that focus on protection of environmental resources, enhancements to visitor use and opportunities, and improvements to administration and operations of the Park. In addition, the General Plan provides a spatial dimension to Park planning through the use of area concept planning, which includes area-specific management and facility prescriptions for the subunits and potential property additions that have been considered in the planning process. A range of new recreation facilities are proposed at the Park, which include, but are not limited to, overnight campgrounds, day-use areas, trails, and a visitor center.

Summary of Impacts:

The DEIR provides a program-level analysis of the potential environmental impacts associated with implementation of the General Plan. For the most part, significant environmental effects of the project are avoided through the set of park-wide goals and guidelines, many of which are founded on principles of environmental stewardship and resource protection. However, implementation of the General Plan could result in the conversion of agricultural land designated as "Important Farmland" to non-agricultural uses (i.e., restoration of natural habitat and recreation); conversion of this farmland represents a significant and unavoidable environmental impact of the project.

Public Comment Period:

The 45-day public comment period for the Draft EIR begins on December 12, 2003, and ends on January 26 (comment letters must be postmarked by January 26, 2004). Copies of the Preliminary General Plan and Draft EIR are available for review at the Department's offices in Sacramento (see address below), the Northern Buttes District office (400 Glen Drive, Oroville CA 95966), Bidwell Mansion State Historic Park (525 The Esplanade, Chico CA 95926), and at the Chico Branch of the Butte County Library (1108 Sherman Avenue, Chico CA 95926). Electronic copies of the Preliminary General Plan/Draft EIR are posted on the project website (http://www.parks.ca.gov/default.asp?page_id=22600) and can be requested by contacting the Department below. Please submit comments in writing to the following address:

California Department of Parks and Recreation
Northern Service Center
One Capital Mall, Suite 500
Sacramento, CA 95814
Contact: Wayne Woodroof

Bidwell-Sacramento River State Park

Preliminary General Plan and Draft Environmental Impact Report

SCH# 2003022113

Arnold Schwarzenegger
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Department of
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December 2003

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Table of Contents

Chapter/Section Page

Chapter/Section Page

Tables

Exhibits

Appendices

Executive Summary

EXECUTIVE SUMMARY

DESCRIPTION OF THE PARK

Bidwell-Sacramento River State Park (Park), referred to by local residents as "River Park," is located along the banks of the Sacramento River near the community of Chico in the northern Sacramento Valley (see Exhibit 1-1). The Park is organized into four non-contiguous subunits totaling approximately 210 acres: (1) Irvine Finch River Access, (2) Pine Creek Landing, (3) Indian Fishery, and (4) Big Chico Creek Riparian Area (see Exhibit 2-1).

The Irvine Finch River Access area is a small subunit (approx. 5 acres) representing the northernmost extension of the Park. It represents the most developed recreation area of the Park and includes an entrance station/information kiosk, boat launch, picnic tables, permanent restroom facilities, and an approximately 250-space paved parking area for automobiles, boat trailers, and recreation vehicles (RVs). Recreational opportunities available at Irvine Finch include boating (i.e., motor-boating, kayaking, canoeing, inner-tubing), fishing (facilitated by boat launching opportunities), en-route camping (it is the only subunit that permits overnight camping), and day use/picnicking. Many visitors use the facilities at Irvine Finch to begin their sport-fishing and river-floating experience.

The Pine Creek Landing subunit consists of two long and narrow discontiguous properties (approx. 5 acres) located along Pine Creek, a tributary to the Sacramento River, and is the northernmost property on the east side of the river in Butte County. It is served by several access points off of River Road. The main facility is a joint boat launch and day-use area. This area contains a concrete boat launch, paved parking area, and concrete picnic tables/pads; a vault restroom facility is planned. To the south, there are three additional pull-out areas on the west side of River Road that serve this subunit. These are basically undeveloped areas, fenced and marked as State Park property, with limited facilities, such as picnic tables, informal trails, and an interpretive panel that represents the approximate location of the Bidwell Ferry site. Recreation uses at Pine Creek Landing include boating (both motor-boating and kayaking/canoeing), fishing, picnicking, hiking/walking, and nature viewing.

The Indian Fishery subunit (approx. 101 acres) is characterized by large expanses of native riparian habitat and is located, in part, adjacent to an oxbow lake formed by the meander of the Sacramento River. This area contains the Park's most prominent picnic area and a small loop trail that provides opportunities for hiking, walking, nature and wildlife viewing, and other passive recreation activities. Although not located directly on the river, this subunit provides river access via volunteer trails, and thus, indirectly provides bank fishing opportunities. In addition, the Park's administration facilities, which consist of several modular buildings, are located here.

The Big Chico Creek subunit (approx. 97 acres) represents the southernmost extension of the Park. This area contains abundant native riparian vegetation. The property is transected by River Road, with river access and portions of a gravel bar created by the river's meander on

the east side of the road. Active habitat restoration is occurring on the west side of the road, with no developed facilities available. The gravel bar area is a popular location for bank fishing and non-motorized boat or inner-tube takeout. Other recreation uses available include trail use, nature viewing, swimming, sunbathing, and picnicking (at undeveloped locations). Access to the gravel bar area is controlled by a gate, which is locked during the winter months (due to flooding) and when necessary to control unauthorized use and vandalism.

Approach to the Preliminary General Plan

Although the Park was formally classified as a State Park in 1990, a general plan has yet to be developed. Moreover, potential property additions to the Park (i.e., Beard Property, Sunset Ranch, and Singh Orchard), as well as proximity to abundant conservation-oriented lands managed by other State and federal agencies and public-interest organizations, have elevated the need to establish the future vision of the Park through the development of a formal general plan, which will guide future management direction at the Park over an approximate 20-year planning horizon.

The Preliminary General Plan (Plan) for the Park reflects the California Department of Parks and Recreation's (Department's) dual mandates as the steward of sensitive ecological resources and the provider of recreation opportunities, all in the context of the network of public lands in the project area. The protection and restoration of natural and cultural resources are key components of the Plan. The Plan allows for additional biological habitat restoration and water quality protection; preserves scenic and cultural resources; and calls for facility developments and improvements in response to local and regional demand, yet with consideration given to physical and environmental constraints.

The Plan also addresses key planning issues that have been identified during the planning process. These issues include definition of a purpose and vision for the Park; renaming of the Park; resource protection and management; recreational opportunity/visitor service enhancement; interpretation; facility development; operational improvements; and property acquisition/park expansion.

In the context of the general plan process, a revised Declaration of Purpose is proposed and a new Vision would be established to reflect current conditions, including knowledge of the resources at the Park and planning actions being undertaken in the project area, and to more succinctly state the understood significance and value of the Park with respect to California and the State Park system.

The Plan considers the appropriate carrying capacity of the Park both to protect its resources and to provide high-quality visitor experiences. It emphasizes the importance of long-term sustainability, the use of environmental indicators, and adaptive management practices.

The Plan provides the parkwide goals and guidelines that would direct short- and long-term management decisions and environmental stewardship in the Park. It is acknowledged that

the stated purpose and vision in the Plan would be achieved incrementally, as funding becomes available, and would be reached over time through the efforts of Department staff and the community.

STEPS IN THE PLANNING PROCESS

A thorough analysis of existing conditions was the first step undertaken as part of the planning process. The District and other interested agencies, along with individuals and nonprofit groups, provided information about the conditions at the Park. A geographic information system (GIS) compiles much of the information collected about the resources present at the Park and was used to help make informed decisions regarding environmental constraints to development. Existing conditions and preliminary planning issues were presented at a public workshop held in March 2003 to inform the public about the planning process and to explore ideas for Park enhancements and different visions for the Park's future. Public and agency scoping efforts also identified important issues that are addressed in the Plan.

Subsequently, the Department developed alternatives for consideration in the development of a preferred General Plan alternative. These three alternatives presented different options for resolving existing issues of resource management and visitor use for the Park and to represent a range of management treatments (i.e., minimum, moderate, and maximum) for natural and recreational resources at the Park. These three alternatives were presented to the public and resource agencies in July 2003 for their review and feedback. Features of each of these alternatives were used to develop the preferred General Plan alternative, which was further refined through the development of parkwide goals and guidelines presented in the Plan and a land use and facility map that depicts approximate locations of proposed facility developments and other improvements.

The third major step in the planning process is environmental analysis. The Plan includes an environmental impact report (EIR) that identifies the potential environmental effects of the General Plan, consistent with the requirements of CEQA. Because the Plan establishes resource-specific management goals and guidelines, it in essence serves as a "self-mitigating" plan, designed to avoid, reduce, or minimize environmental impacts of the proposed implementation of the Plan to a less-than-significant level whenever possible. The opportunity for public review of this Preliminary General Plan and Draft EIR is provided during the CEQA review process.

SUMMARY AND STRUCTURE OF THE PLAN

The General Plan is composed of three main sections: (1) Existing Conditions and Issues; (2) Park Plan; and (3) Environmental Analysis.

The Existing Conditions and Issues component of the General Plan (Chapter 2) describes the current physical and social conditions at the Park. This includes information on land use; significant physical, biotic, cultural, aesthetic, and recreational values; and existing facilities and operational parameters. It also describes systemwide and regional planning influences

affecting the Park, describes the demographic profile of local resident and representative visitors, and lists issues that have been identified during the planning process and are addressed in the General Plan.

The Park Plan (Chapter 3) presents the Purpose and Vision for the Park, which serve as overarching guidelines for future management directives. It also presents a set of parkwide goals and guidelines that apply to all geographic areas of the Park. The goals and guidelines create a management framework that would protect existing natural and cultural resources while establishing needed visitor support facilities and a program for enhancing and interpreting the Park's resource values. These goals and guidelines are organized into three main categories: (1) environmental resource management, (2) visitor use and opportunities, and (3) administration and operations.

In addition to the goals and guidelines, the Plan provides a spatial dimension to Park planning through the use of area concept planning, which includes area-specific management and facility prescriptions for the various subunits that comprise Bidwell-Sacramento River State Park . Proposed facility developments are also presented in the land use and facility plan developed for the Park (see Exhibit 3-1). The following list summarizes potential facilities and developments considered for Bidwell-Sacramento River State Park:

Irvine Finch Recreation Area (includes Irvine Finch River Access and Beard Addition)

- Regular maintenance of the Irvine Finch boat ramp to accommodate larger vessels.
- New overnight campground, including family and group campsites, at the Beard Addition.
- Parking expansion to serve day-users, boaters, and overnight campers.

Sunset Ranch Addition

- New administrative center (relocated from Indian Fishery).
- New day-use area.
- New visitor center that could serve multiple public land managers.
- Potential for new multi-agency loop trail and associated trailhead.

Pine Creek Landing

- Ongoing maintenance of existing boat launch facility.
- Provision of additional parking as demand warrants based on the availability of land.

Indian Fishery

- Relocation of existing administrative center to a more centralized location.
- New day-use area at the location of the existing administrative center.
- Ongoing operation and use of existing day-use area.
- Expansion of existing loop trail system to the southern portion of the subunit.

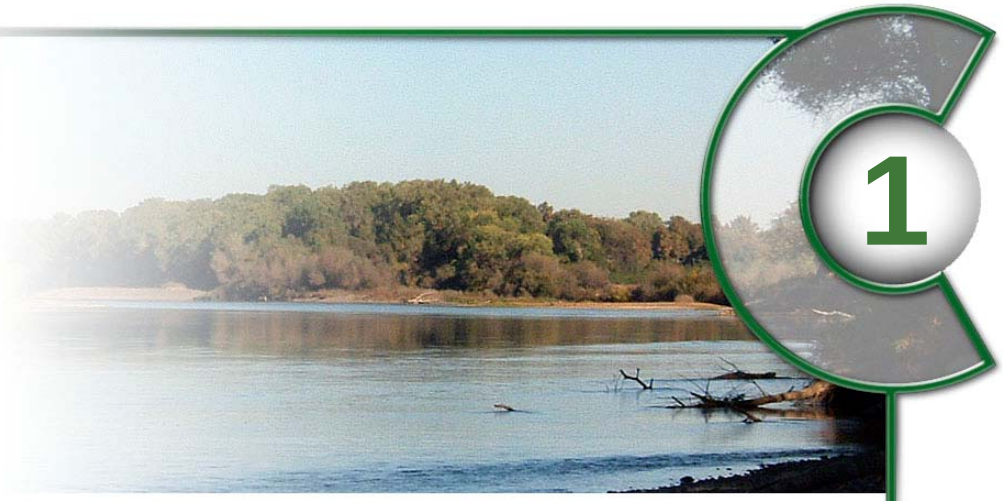
Big Chico Creek Riparian Area (includes Singh Orchard Addition)

- Car-top boat access area along Big Chico Creek.
- Environmental (or primitive) campground east of River Road.
- Expansion of fishing access through improvements to existing entrance road.
- Loop trail system and trailhead that would connect all properties.

The proposed land use and facilities plan for the Park recommends the development of recreational and administrative facilities throughout the Park, including potential property additions. Because these properties are not currently owned by the Department, there exists the potential that facilities proposed on these properties may not ultimately be developed at these particular locations. Because many of these facilities and/or improvements have been identified by the Department as being integral to the future development of the Park in terms of meeting visitor needs and promoting the vision of the Park, a set of site-selection criteria has been developed that will allow the Department to evaluate other Park locations and/or potential property additions for their appropriateness for certain types of facilities and developments.

In compliance with CEQA, an evaluation of the potential for significant environmental impacts is provided in Chapter 4. The environmental analysis is based on the physical effects that would result from implementation of the Plan, including management actions in pursuit of the goals and guidelines and the proposed land use and facilities plan. The goals and guidelines contained in Chapter 3 (Park Plan) seek to avoid potentially significant effects on the environment whenever possible. For the most part, implementation of the General Plan, in conjunction with compliance with applicable federal, state, and local laws and regulations, is not expected to result in significant impacts on the environment. The one exception is a significant and unavoidable environmental impact related to the conversion of designated Important Farmland to non-agricultural uses. Several of the proposed property additions are designated as Important Farmland, and if they are added to the Park, they would be removed from agricultural production. This represents a significant environmental impact, and because no feasible mitigation measures are available, it is considered significant and unavoidable.

The environmental analysis prepared for the Preliminary General Plan (Chapter 4) is programmatic in scope and does not contain project-specific analysis for the facilities recommended in the Plan. However, the plan also includes guidelines that govern project-level environmental review of area-specific projects to avoid or minimize any potential adverse site-specific effects to some resources during construction or operation of the facilities. Specific projects would undergo subsequent CEQA review in the future as appropriate.



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Introduction

1 INTRODUCTION

1.1 INTRODUCTION TO THE PARK

Bidwell-Sacramento River State Park (Park) lies in the heart of the Sacramento Valley, flanking the banks of the river on which it depends. The Park is organized into four subunits totaling approximately 210 acres: (1) Irvine Finch River Access Area, (2) Pine Creek Landing, (3) Indian Fishery, and (4) Big Chico Creek Riparian Area.

The Park is characterized by lush valley oak riparian woodland and other riparian communities, including unique ecological associations, providing habitat to several special-status species. In addition to its valuable natural resources, the Park possesses outstanding opportunities for river-oriented recreation. Recreational opportunities range from quiet nature walking, fishing, picnicking and biking, to paddling, floating, and motorized boating along the Sacramento River and its tributaries.

1.1.1 PROJECT LOCATION

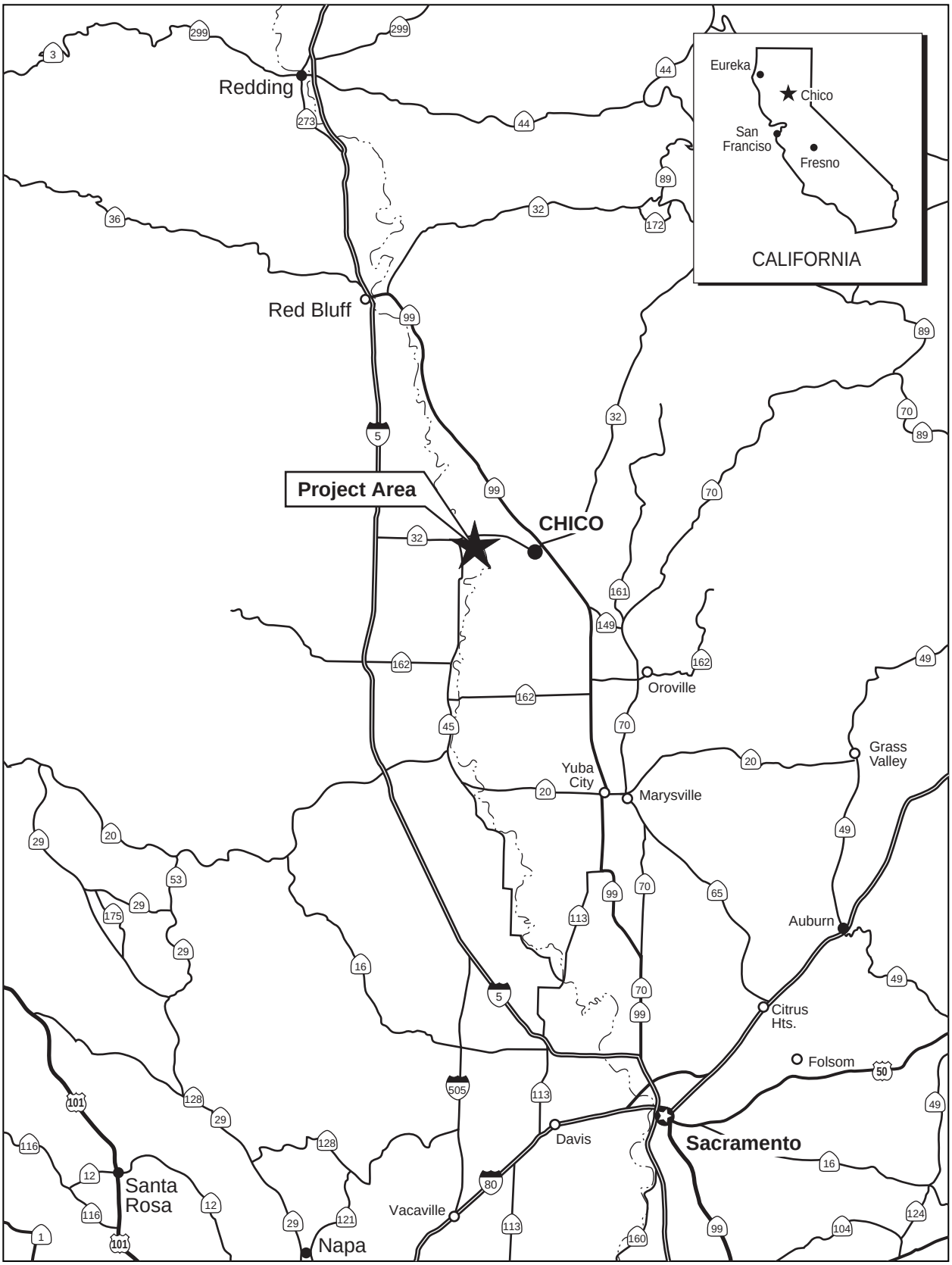
The Park, commonly referred to by locals as "River Park," is located approximately 6 miles west of the City of Chico, and approximately 90 miles north of Sacramento, and 170 miles northeast of San Francisco (Exhibit 1-1). All but one subunit lie on the east side of the Sacramento River in Butte County; they are Pine Creek Landing, Indian Fishery, and the Big Chico Creek Riparian Area. At the northern end of the Park, the Irvine Finch subunit is situated on the west side of the river in Glenn County.

Several local roadways provide direct access to the Park. Access to eastern subunits of the Park is provided by River Road, a County-maintained road, which runs in a north-south alignment adjacent to various subunits located along the eastern banks of the Sacramento River and its tributaries. Access to the Irvine Finch subunit on the west side of the river is provided by State Route 32, which travels in an east-west direction just north of the Park. From nearby community of Chico, West Sacramento Avenue runs into River Road thereby linking the downtown Chico area to the Park.

PURPOSE FOR ACQUISITION AND HISTORY OF BIDWELL-SACRAMENTO RIVER STATE PARK

A rich history lies behind the present-day Park, beginning with the Maidu Native Americans, who exploited the large diversity of botanical and faunal resources fostered by the marshland/riparian environment along the Sacramento River and its tributaries. Early Settlers used the site to construct a ferry landing, allowing goods to be transported from one river bank to the other. Eventually ownership came to John and Annie Bidwell, who largely influenced the development of the greater Chico area.

The progression of Park ownership from the Bidwell family to the State occurred over the last century and is described in the Interpretive Prospectus (1997) prepared for the Park. In 1908, Annie Bidwell deeded land to the State of California (State Forestry Service) to protect



Regional Vicinity Map

EXHIBIT 1-1

Bidwell-Sacramento River State Park
General Plan
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0 20 40 MILES

NORTH

EDAW

tree growth along the wooded riparian banks of the Sacramento River and its tributaries, to minimize the diversion and use of the water for private purposes, and to minimize the loss of water to maintain natural hydrological conditions and the natural beauty of the waterways. Prior to this, in 1882, John Bidwell conveyed roughly 11 acres to the County of Butte to build roads in an effort to provide access to the river. Due to the possible overlapping areas in deeds and conveyances, and the resultant clouding of titles between the State and the County, a decision was made in 1950 that the State would convey its land holdings to the County and thereby merge the deeds. Because the County did not want to develop a parks and recreation program at the time, it leased portions of the land to the Chico Area Recreation and Park District, who in turn leased nearly all the property to a rod and gun club. By the 1960s, boundary disputes with neighboring landowners frustrated efforts at developing a master facilities plan. Hunting, shooting, wood-cutting, dumping, and the intrusion of off-road vehicles defiled the park area. In 1972, at the request of petitioning local government, the California Department of Parks and Recreation (the Department) was mandated by the State legislature to study alternative methods to preserve what had become referred to as "Bidwell River Park." A resulting 1974 report recommended that Bidwell River Park be re-acquired by the State as part of the State Park System. A 1977 state bill authorized the acquisition of the park, and on August 1, 1979, the park was transferred into the State Park System. It was not until 1990 that it was named and classified as Bidwell-Sacramento River State Park.

1.1.2 Spirit of Place

The spirit of Bidwell-Sacramento River State Park is that of a river experience. The characteristics of the Park, including its location along the banks of the Sacramento River and its tributaries, make this a place of recreation, inspiration, and renewal. The Park provides different ways of enjoying the river and surrounding riparian habitat, catering to a diverse visitor base. In a physical sense, the river provides active recreational opportunities on the water. For example, the heat of the summer brings many river recreationists to the Park to float down the river, while later in the fall, it becomes a popular river access point for anglers fishing the salmon run. More passive recreation opportunities, such as hiking and nature walks along the river banks, are also enjoyed by Park visitors. The rich history and physical characteristics of the Park also serve interpretive and educational interests, and based on its close proximity to the river, the Park allows visitors to experience the natural functions of an evolving river system, including river meandering, sediment deposition, and flooding. In an inspirational sense, the natural environment of the Park and relatively low use levels during non-summer months are conducive to those visitors seeking peace and solitude.

1.2 Purpose of this General Plan

1.2.1 General Plan and the State Park Planning Process

This General Plan is meant to serve as a long-range management tool that provides guidelines for achieving the defined purposes of the Park. By defining a purpose and vision with long-term goals and guidelines, it provides the framework for a unit's development,

ongoing management, and public use. This framework serves as the basis for developing more detailed management and site-specific project plans.

The General Plan identifies and analyzes important park resources, provides guidelines for their preservation and management, and makes proposals for their appreciation through recreation and interpretation. It proposes improvements to attain expected compatible land uses, and describes the nature and general location of future developments. It outlines future operational needs and also provides an assessment of the potential cumulative environmental impacts as a result of the plan's implementation.

The role of the General Plan is not to provide detailed management recommendations, but rather to establish parameters for future planning of specific management actions. After a unit's General Plan is completed and approved, management plans are typically developed that give more specific direction on individual resources, issues, or programs. The General Plan also provides the context for defining and evaluating specific development and management plans. These specific development and management plans may require additional data collection and review processes to ensure adherence to the goals and guidelines established within this General Plan.

Planning Hierarchy

Statewide planning for State Park units occurs under a planning hierarchy as illustrated by the diagram on the next page. This hierarchy provides direction for the future of the Park at both the statewide and local level. The highest, or most broad level of planning, is based on the Mission Statement for California State Parks. Each unit of the State Park system is assigned a classification, which is generally based on the physical attributes of the unit, and carries with it specific management guidelines.

Individual park planning starts with the Declaration of Purpose. Once the purpose of the park is established, park-wide goals and guidelines are developed that implement the Department's mission and the park's classification, purpose, and vision. Lastly, management zones (or development prescriptions) and specific area goals and guidelines are developed that focus on unique attributes of sub-areas of the Park. These planning concepts are encapsulated in this General Plan, which provides a framework for planning in Bidwell-Sacramento River State Park.

Subsequent Planning Actions

Major programs and projects that will be implemented during the lifespan of the General Plan will require additional planning. Future planning efforts may include the preparation of specific Resource Management Plans to protect sensitive resources or may involve site-specific facility planning to site and design new park facilities and analyze how they would relate to surrounding land uses.

Department Mission: For all units of the California State Park System, "*The Mission of the California Department of Parks and Recreation is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.*"

Classification: Along with all units that have been designated as "state parks," Bidwell-Sacramento River State Park is managed under the direction of Public Resources Code Section 5019.53.

Declaration of Purpose Vision Statement: Broad statements of direction, unique to Bidwell-Sacramento River State Park.

Park-wide Management Goals and Guidelines: Topical guidance whose scope is relevant for the entire park.

Management Zones (or Area Concept Planning): A land-use zoning (or concept) plan for the park that links four general levels of desired resource conditions and visitor experience to geographic areas depicted on a map.

Specific Area Goals and Guidelines: Management goals and guidelines that clarify goals for a specific area.

Future planning efforts, such as management plans, or planning associated with subsequent development projects may require preparation of project-specific environmental compliance documents for implementation of management plans. These documents should tier off and be consistent with the program Environmental Impact Report contained in this General Plan. Securing any permits required for future implementation projects would also be part of subsequent planning actions.

Finally, the General Plan may need to be amended if future projects being proposed are not considered in this plan or if other important circumstances change.

PUBLIC INVOLVEMENT

Public involvement is an important component of the General Planning process. Input from the public is sought at the beginning and throughout the planning process for a variety of reasons. Most importantly, State Park units are owned by the people of the State of California, and are managed to protect natural and cultural resources and to provide recreation and accommodate use by the people of California. In addition, local residents and stakeholders, as well as specific statewide user groups, may be able to provide important information about the Park's resources, as well as help the Department better manage the Park.

A range of methods, such as public meetings, user surveys, newsletters, and written comments, were used to identify stakeholders of the Park and to identify their needs and concerns for the future management of the Park.

1.2.2 DISCLOSURE OF ENVIRONMENTAL EFFECTS OF THE GENERAL PLAN

In addition to providing management guidelines for the Park, the purpose of the General Plan is to provide public disclosure of the environmental effects of the plan. The General Plan includes a program Environmental Impact Report (EIR) as defined in the California Environmental Quality Act (CEQA) Guidelines §15166. The analysis of broad environmental issues in the environmental analysis component of this plan will be a reference for future environmental analyses for site-specific developments and projects.

PURPOSE OF THE PROGRAM EIR

The purpose of the program EIR is to analyze and disclose the preferred alternative's effect on the environment. It describes significant and potentially significant effects that may result from the implementation of the General Plan, mitigation measures to reduce any significant effects, and level of significance after mitigation. The EIR also includes an overview of significant cumulative environmental effects and mitigation measures, and other contents required by CEQA and the State CEQA Guidelines including growth-inducing effects, unavoidable significant effects, irreversible commitment of resources, and a summary.

PROGRAM EIR SCOPE

Because the EIR prepared for the General Plan is programmatic in scope, it does not contain project specific analysis for any of the projects recommended in the General Plan. Separate, more in-depth project-specific environmental compliance documents will be needed for such projects in the future as described above under "Subsequent Planning Actions."

1.3 CONTENTS OF THE GENERAL PLAN

1.3.1 EXISTING CONDITIONS AND ISSUES

The existing conditions and issues component of the General Plan (Chapter 2) describes the current physical and social conditions at the Park. This includes information on land use, significant physical, biotic, cultural, aesthetic, and recreational, interpretive, and educational values, as well as existing facilities. The existing conditions chapter also lists system-wide and regional planning influences affecting the Park, describes the demographic profile of local resident and representative visitors, and lists issues to be addressed in the General Plan that have been identified during the planning process. Input for the existing conditions chapter has been gathered through a variety of sources including:

- Review of the unit data file;
- Review of other applicable technical documents,
- Review of local and regional applicable planning documents;
- Database searches;
- Limited fieldwork;
- Contact with agencies and other knowledgeable individuals; and
- User surveys and public meetings.

1.3.2 PARK PLAN

The "plan" component of the General Plan (Chapter 3) for Bidwell-Sacramento River State Park contains the following features:

- Unit Purpose and Vision
  - Declaration of Purpose
  - Vision Statement
- Park-wide Management Goals and Guidelines
  - Natural Resources
  - Visitor Use and Opportunities
  - Administration and Operations
- Area-Specific Management and Development
  - Area-Specific Concept Plans
  - Site Selection Criteria
- Park Carrying Capacity

1.3.3 Program Environmental Impact Report

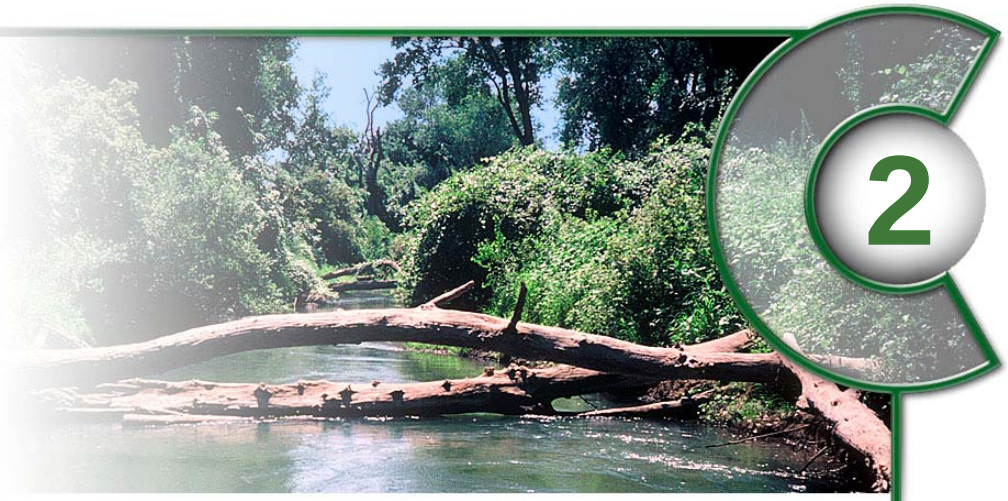
The program EIR contained in the General Plan (Chapter 4) includes the following components:

- Introduction to the Environmental Analysis
- EIR Summary
- Project Description
- Environmental Setting
- Environmental Topics Eliminated from Further Consideration
- Environmental Impacts
- Other CEQA Considerations
- Alternatives to the Proposed Project

1.3.4 Other General Plan Chapters

In addition, the General Plan contains a list of the organizations and persons consulted during its preparation, the report preparers, a complete list of references, a glossary of terms, as well as technical appendices, figures and tables.

Volume II of the General Plan and EIR will contain all public comments received during the circulation of the draft EIR, responses to public comments, the mitigation monitoring plan, and additional appendices as applicable.



2

Existing Conditions and Issues

2 EXISTING CONDITIONS AND ISSUES

2.1 PARK SUMMARY

The following section summarizes the significant natural and cultural resources at Bidwell-Sacramento River State Park (Park), as well as surrounding land uses, recreational and aesthetic resources, and interpretive facilities that characterize the existing conditions at the Park. The evaluation of existing conditions focuses on the current boundaries of the Park, but may address a larger planning area for some issues, where data are readily available and important to the understanding of regional resource conditions affecting the Park; moreover, regional-oriented resource information also provides context to information collected for the Park itself. Information on existing conditions is based on the *Resources Inventory* and *Interpretive Prospectus* that were prepared for the Park, recent field work, and additional research conducted during the General Plan preparation process. This information provides the baseline data for developing the area plans and goals/guidelines that comprise the foundation of this document.

2.1.1 STATE PARK CLASSIFICATION

The State Park System is organized by a multi-level classification system. The classifications are described in Sections 5019.50 et seq. of Article 1.7 of the Public Resources Code. In 1990, the State Parks and Recreation Commission named and classified the Bidwell River Park Project and the Irvine Finch River Access area as Bidwell-Sacramento River *State Park*.

- **State Parks.** Units that consist of spacious areas having outstanding natural, cultural, and scenic resources. Preservation of these resources for present and future generations is the primary purpose of State Parks. Improvements may be undertaken in State Parks to make these resources and the recreational opportunities they provide available to the public.

2.1.2 LAND USE

REGIONAL LAND USE CONTEXT

The properties bordering the individual Park subunits are predominantly agricultural land owned by private landowners or open space that is owned and managed for conservation purposes by various federal/state agencies and conservation organizations. These land uses are reflective of the entire Sacramento River corridor, which is an important farming and natural resource conservation region throughout northern California.

Agricultural land uses are prevalent adjacent to the more stable subreaches of the river (i.e., stretches of the river protected by levees), but can also be found in proximity to native riparian woodland habitat. In the project area, orchard crops, mainly walnuts, almonds, prunes and plums, and row crops are the primary land uses adjacent to the Sacramento River. Orchards are intensively maintained and are generally devoid of native vegetation.

Conservation is the other key type of land use in the project area. Many properties adjacent to the Park are owned and managed by other public agencies, such as the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG); conservation activities are also undertaken by private non-profit organizations, such as The Nature Conservancy (TNC). These conservation lands are typically subject to separate planning processes, which are described in more detail in Section 2.2.2.

PARK-WIDE LAND USES

The Park currently consists of four distinct subunits: (1) Irvine Finch River Access Area, (2) Pine Creek Landing, (3) Indian Fishery, and (4) Big Chico Creek Riparian Area (Exhibit 2-1). These subunits range in size from just less than 5 acres (Pine Creek Landing) to roughly 100 acres (Indian Fishery), and each is characterized by unique land use environments, as described below. In addition, information on surrounding land uses is provided. Understanding the land uses surrounding the Park subunits is important to the planning process. Future land use decisions and management strategies must consider the land use context within which they are proposed to avoid potential land use incompatibilities and to promote consistency in the land use character of the local area. Table 2-1 summarizes the land use characteristics for each of the four subunits. Exhibits 2-1A to 2-1E illustrate existing land uses and facilities at these subunits.

Table 2-1
Park-Wide Land Uses

Subunit	Approx. Size (acres)	Existing Land Use & Activities
Irvine Finch River Access	5.2	▸ Developed recreation (boat launch that facilitates motor-boating, kayaking, canoeing, tubing, and fishing; picnicking; and en-route camping)
Pine Creek Landing	4.8	▸ Developed recreation (boat launch that facilitates motor-boating, kayaking, canoeing and fishing, and picnicking); ▸ Dispersed recreation (nature viewing); ▸ Interpretation (interpretive panel)
Indian Fishery	100.9	▸ Developed recreation (picnicking); ▸ Dispersed recreation (trail use, nature viewing, hiking, and bank fishing); ▸ Interpretation and Education (trail with interpretive/educational stations, local school group visits) ▸ Park administration
Big Chico Creek Riparian Area	96.7	▸ Dispersed recreation (bank fishing, trail use, nature viewing, sunbathing, and small boat take-out); ▸ Conservation/restoration
Total	207.6 acres	--

Source: Department of Parks and Recreation (DPR) 2003, EDAW 2003

Bidwell-Sacramento River State Park

EXHIBIT 2-1
OVERVIEW OF PARK SUBUNITS

Irvine Finch River Access Area
SR 32
Sunset Ranch Addition
Beard Addition
Pine Creek Landing
River Road
Kusal Slough
Mud Creek
Meridian Road
E Burg Dr
Sacramento River
West Sacramento Ave
Indian Fishery
Big Chico Creek
Singh Orchard Addition
Big Chico Creek Riparian Area

LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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Bidwell-Sacramento River State Park

EXHIBIT 2-1A
IRVINE FINCH RIVER ACCESS AREA AND SUNSET RANCH ADDITION

Sacramento River

SR 32

Irvine Finch River Access Area

Sunset Ranch Addition

Beard Addition

LEGEND

- Irvine Finch Subunit Boundary
- Potential Property Additions (In discussion with landowners)
- Parking Area
- Major Roads
- Roads

Facilities

- B Bathroom
- [Boat Launch
- ! Campsite
- > Day-Use Area
- Entrance Kiosk
- Building

N

0 350 700

Feet

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-1A_Irvine_Sunset.mxd

Bidwell-Sacramento River State Park

EXHIBIT 2-1B
PINE CREEK LANDING

LEGEND

- Pine Creek Landing Subunit Boundary
- Informal Trail
- Trail
- Major Roads
- Roads

Facilities

- [Boat Ramp
- > Day-Use Area
- m Pullout (Parking)
- n Interpretive Panel

N

0 350 700
Feet

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-1B_PineCreek.mxd

Bidwell-Sacramento River State Park

EXHIBIT 2-1C
INDIAN FISHERY

River Road
Kusal Slough
West Sacramento Ave
Hurd Creek
Sacramento River
Abandoned Boat Launch

LEGEND

- Indian Fishery Subunit Boundary
- Informal Trail
- Trail
- Major Roads
- Roads
- Parking Area

Facilities

- T Administrative Center
- [Boat Launch
- > Day-Use Area
- Building

N

0 800 1,600
Feet

Sources: GIC 2003, DPR 2003

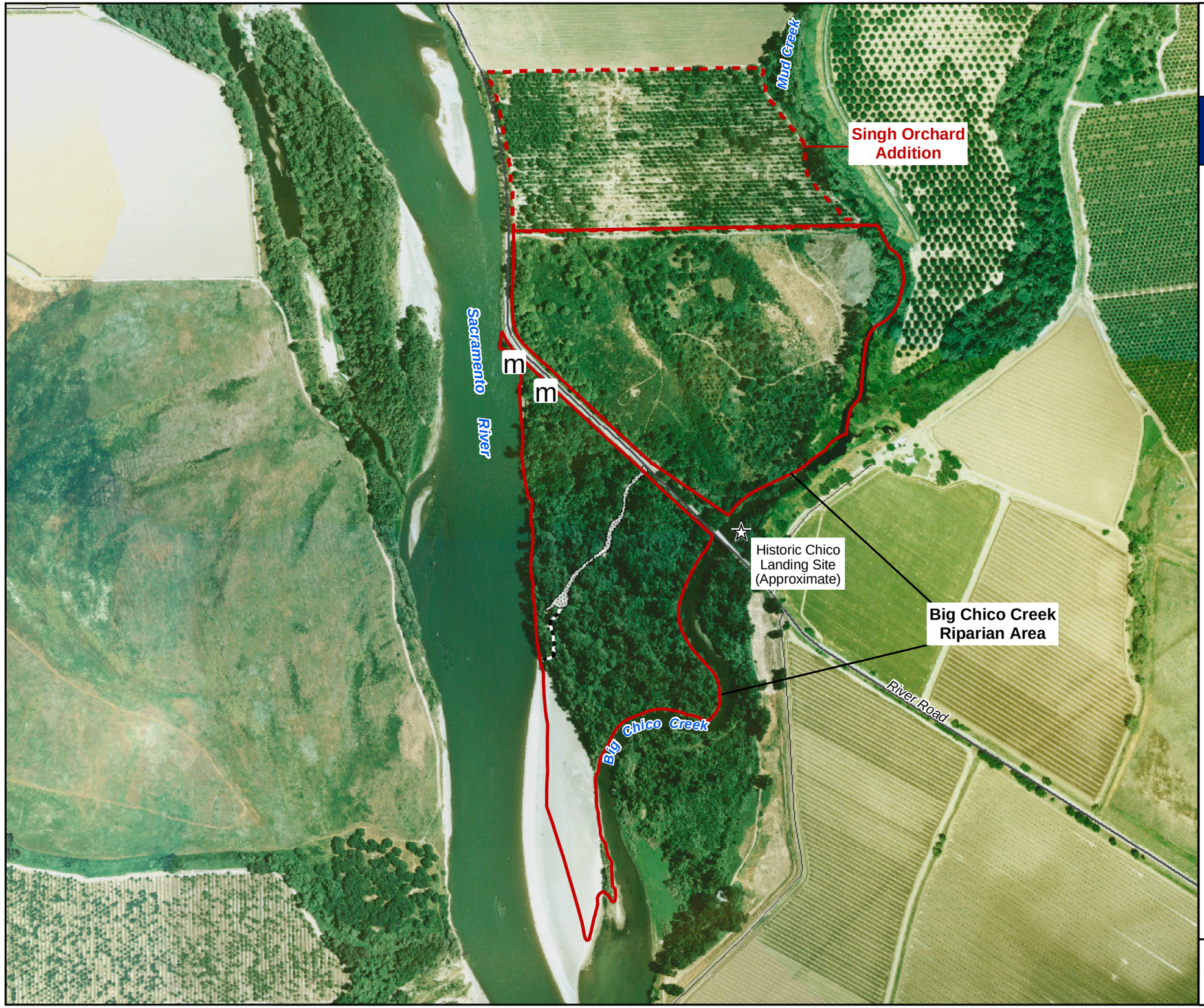
Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-1C_IndianFishery.mxd

Bidwell-Sacramento River State Park

EXHIBIT 2-1D
BIG CHICO CREEK RIPARIAN AREA



LEGEND

- Big Chico Creek Riparian Area Subunit Boundary
- Potential Property Additions (In discussion with landowners)
- Trail
- Entrance Road

Facilities

- m Pullout (Parking)

N

0 550 1,100

Feet

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-1D_ChicoCrk.mxd

Irvine Finch River Access

Irvine Finch River Access – Entrance Station

The Irvine Finch River Access area is a small subunit representing the northernmost extension of the Park (Exhibit 2-1A). It is the only subunit located on the west side of the Sacramento River in Glenn County. It represents the most developed recreation area of the Park. It includes an entrance station/information kiosk, boat launch, picnic tables, permanent restroom facilities, water well, pump house, and an approximate 250-space paved parking area for automobiles, boat trailers, and recreation vehicles (RVs). Recreational opportunities available at Irvine Finch include boating (i.e., motor-boating, kayaking, canoeing, inner-tubing), fishing (facilitated by boat launching opportunities), en-route camping (it is the only subunit that permits overnight camping), and picnicking. Many visitors use the facilities at Irvine Finch to begin their sport-fishing and river-floating experience.

Irvine-Finch River Access – Picnic Area

Agricultural and conservation uses surround Irvine Finch. It is located directly adjacent to a walnut orchard to the south and a walnut/almond orchard to the west. The Sacramento River borders the property to the east, with the Sunset Ranch property located across the river; this property is presently owned by The Nature Conservancy (TNC) (the eastern portion of this property was transferred to the USFWS in 2003). State Route (SR) 32 borders the property on the north, with agricultural land located north of the highway.

Irvine Finch River Access – Boat Ramp

Irvine Finch River Access – Parking Area

Pine Creek Landing

Pine Creek Landing – Boat Ramp

The Pine Creek Landing subunit is two long and narrow non-contiguous properties located along Pine Creek, a tributary to the Sacramento River, and is the northern-most property on the east side of the Sacramento River in Butte County (Exhibit 2-1B). It is served by several access points off of River Road. The main facility is a joint boat launch and day-use area. This area contains a concrete boat launch, a recently paved parking area with approximately 22 parking spaces for boats and trailers, and three concrete picnic tables located on concrete pads (one is American Disabilities Act accessible); there are plans to construct shade ramadas at the picnic sites and install a vault toilet at this facility. . The area of Pine Creek Landing at the north end of the parking lot is the site of the historic Sea Scout Station. To the south of the boat launch facility, there are three additional pull-out areas on the west side of River Road. These are basically undeveloped areas, which are fenced and marked as State Park property. The pull-out immediately to the south contains a small picnic area and a short informal trail along the bank of Pine Creek that connects to the boat ramp area to the north. Continuing south, the next pull-out contains an interpretive panel that represents the approximate location of the Bidwell Ferry site. Recreation uses at Pine Creek Landing include boating (includes motor-boating and kayaking/canoeing), fishing, picnicking, hiking/walking, and nature viewing.

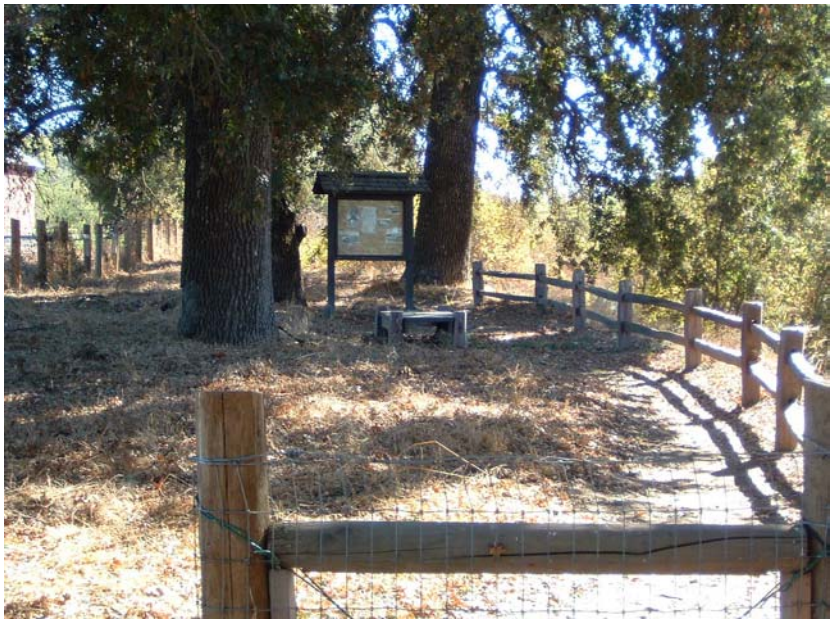
Pine Creek Landing – Parking Area

The area west of Pine Creek Landing is owned mainly by

Pine Creek Landing – Picnic Area Near Boat Ramp

CDFG as part of the Pine Creek unit of the Sacramento River Wildlife Area. This area is managed primarily for conservation and restoration, but limited nature-oriented recreation uses, including hunting, are also allowed. Also west of Pine Creek Landing, north of the CDFG property are other public lands, including the Pine Creek Unit of the Sacramento River National Wildlife Refuge (USFWS) and Reclamation Board property (Department of Water Resources). These lands, also managed primarily for conservation purposes, are either characterized by natural vegetation or are planned for restoration. Recreation activities on USFWS lands are similar to those allowed by CDFG, except hunting is currently prohibited.

A large red barn opposite (east) of the southern-most portion of Pine Creek may be of historical significance. It is described as having been a "hop barn," but is in the approximate location in old maps for the Bidwell Ferry site boathouse. Also located east of Pine Creek Landing, across River Road, is an active dairy operation.



Pine Creek Landing – Interpretive Panel

Scotty's Boat Landing is located to the south. Scotty's Boat Landing is a commercial facility that includes a private boat ramp, restaurant/bar, and a mobile home park.

Indian Fishery

Indian Fishery – Day-Use Area with Picnic Tables

The Indian Fishery subunit is characterized by native riparian habitat, and is located, in part, adjacent to an ox-bow lake formed by the river's meander. This area contains the Park's most prominent picnic area (8 concrete picnic tables and an unpaved parking area) and a small self-guided loop trail (0.75 mile) that provides opportunities for hiking, walking, nature and wildlife viewing, bank fishing at the ox-bow lake, and other passive recreation activities. Although not located directly on the river, this subunit provides river access via volunteer trails, and thus, indirectly provides bank fishing opportunities on the Sacramento River. In addition, the Park's administration facilities, which consist of several mobile and permanent buildings, are located here.

The Indian Fishery subunit contains the Old Chico Landing area, located on the southern portion of the property. The Old Chico Landing area is undeveloped, with no facilities, but does include an abandoned boat launch. Access to this area is provided by another small pull-out parking area off of River Road. Historically, this area served as a boat launch and landing for watercraft accessing the Sacramento River.

Active agricultural operations surround the Indian Fishery subunit to the northwest, east, and south. These areas are mainly in walnut production. The property directly to the west (Old Allinger Ranch), is owned and managed by CDFG, and represents a buffer between this subunit and the Sacramento River; nature study and wildlife observation are common activities on this property, and hunting is allowed as well.

Indian Fishery – Administrative Center

Indian Fishery – Nature Trail

Indian Fishery – Old Chico Landing Area

Big Chico Creek Riparian Area

The Big Chico Creek subunit is located at the southern-most extension of the Park (Exhibit 2-1D). This area is characterized mainly by native riparian vegetation, but includes portions of a gravel bar created by the meander of the Sacramento River. River Road is a county roadway that physically divides this subunit. The portion of this subunit on the east side of River Road has historically been agricultural land, and is currently being managed for conservation/open space (subject to active restoration activities); no developed facilities are available. On the west side of River Road, the gravel bar area is a popular location for bank fishing and non-motorized boat or inner-tube take out. Other recreation uses available on the west side of the Big Chico Creek subunit include trail use, nature viewing, sunbathing, swimming, and picnicking (at undeveloped locations). Access to the gravel bar area is controlled by a gate which is locked during the winter months (due to flooding) and when necessary to control unauthorized use and vandalism. The Big Chico Creek subunit is bordered by the Sacramento River to the west, and to the south and east by Big Chico Creek, Mud Creek (a tributary to Big Chico Creek), and private properties. To the north is undeveloped private property, which is in agricultural production (walnut/almond orchards) and is characterized by historic channel topography. Private properties and county-owned land separate the Big Chico Creek Riparian Area from the Indian Fishery subunit to the north.

Big Chico Creek Riparian Area – Gravel Bar

Big Chico Creek Riparian Area – Entrance Road to Gravel Bar Area

Big Chico Creek Riparian Area – Pull-Out Access From River Road

Big Chico Creek Riparian Area – Restoration of Riparian Habitat East of River Road

2.1.3 Park Access and Circulation

Access to and From the Park

Several public roadways provide access to and from the Park. SR 32 is an east-west oriented highway that borders the Park to the north. It provides direct access to the Irvine Finch subunit in Glenn County. River Road is a north-south oriented county roadway that provides access to the subunits on the east side of the river. It also serves as the eastern boundary for the Indian Fishery and Pine Creek Landing subunits, and bisects the Big Chico Creek Riparian Area subunit, physically separating the river frontage property to the west and the active restoration area to the east. West Sacramento Avenue is another county roadway that runs east-west, connecting the community of Chico to the Park via River Road.

Circulation

Roads

There is no paved roadway system on lands administered by the Department. Linkage between the Park subunits is provided by public roadways, including River Road serving the subunits on the east side of the river and SR 32 serving the Irvine Finch subunit on the west side of the river. SR 32 provides regional access to the Park, while West Sacramento Avenue and Chico River Road provide local connections between the Park and City of Chico and other nearby areas in Butte County. Other major roadways that provide indirect access to the Park include SR 45 and the Hamilton Nord Cana Highway.

SR 32 is a two-lane conventional highway that is maintained by the California Department of Transportation (Caltrans). It is a considered a regional highway that provides primary access through Glenn and Butte counties. SR 32 carries relatively high truck traffic and provides the primary connection between Interstate 5 at Orland and SR 99 at Chico. In 1995, the average annual daily trip (AADT) volume was 10,400 vehicular trips on the segment of SR 32

adjacent to the Park, and by 2002, the AADT volume on this segment increased to 11,800 trips (Caltrans 1997, 2003). In terms of projections, it is estimated that by 2005, the projected AADT volume on SR 32 would increase to 13,400 trips, and to 16,400 trips by 2015 (Caltrans 1997, 2003). Due to this growth in inter-regional traffic volume, the level of service (LOS)[1], which is a measure of delay experienced by drivers on the road, is projected to decline from LOS D to LOS E by 2015 if no roadway improvements are developed. Caltrans has recommended improvements, including roadway widening to four lanes and the addition of left-turn channelization, which would maintain the existing LOS D through 2015, but beyond 2015, additional roadway improvements would be required (Caltrans 1997, 2003). According to the Butte County 2001 Regional Transportation Plan, Caltrans would be adding a left turn lane to the T-intersection on the segment of SR 32 at River Road between Sacramento River and Rock Creek (BCAG 2001).

River Road is a two-lane rural collector road, maintained by Butte County, that connects Chico River Road to the south with SR 32 in the north. No traffic counts are available for River Road. However, roadway conditions may be inferred by accident rates. Based on data provided by the California Highway Patrol (CHP), there were 76 accidents on River Road during the two-year period of 1988 to 1990, making it the sixth most accident-prone street in Butte County (Butte County 1996); these accidents are commonly attributed to fog in the region. The intersection of River Road and West Sacramento Avenue, adjacent to the Park, is the fourth most-accident-prone intersection in Butte County during the two-year period. The intersection of River Road and Chico River Road, to the south of the Park, is the eighth most accident-prone intersection in Butte County. The majority of the accidents were single-vehicle accidents, indicating that River Road may be due for roadway safety improvements (Butte County 1996). Due to its close proximity to the Sacramento River, portions of the roadway, particularly near the Big Chico Creek Riparian Area subunit, are submerged during flood events. Bank erosion is another maintenance problem associated with this roadway, with roadway realignment a potential solution.

West Sacramento Avenue is a two-lane arterial road, maintained by Butte County, that directly connects the City of Chico to the Park. West Sacramento Avenue intersects River Road at a point adjacent to the Indian Fishery subunit. The AADT volume was 540 (LOS A) on the segment of this roadway adjacent to the Park, indicating little to no congestion (Caltrans 1997, 2003).

Chico River Road, a two-lane arterial road maintained by Butte County, does not provide direct access to the Park, but it is one of the three primary roadways that provide access to River Road from Chico. On the roadway segment east of River Road, the AADT volume was 970 (LOS A) (Caltrans 1997, 2003).

Hamilton Nord Cana Highway, maintained by Butte County, connects to SR 32 near the Park and provides regional access to the Park from Tehama County and the northern portion of

[1] LOS ranges from LOS A (free flow conditions with little to no delay) to LOS F (highest level of delay and congestion).

Butte County. The AADT volume in 1995 was 890 trips (LOS A) for the segment of this roadway just north of SR 32 (Caltrans 1997, 2003).

SR 45 is a two-lane roadway that connects to SR 32 at Hamilton City and provides regional access to the Park from the southern portion of Glenn County. It is a Caltrans-maintained roadway and experiences AADT volume of 2,300 trips (LOS B) in 2002 (Caltrans 1997, 2003). Travelers on this roadway segment experience reasonably free-flow conditions.

Parking

Although limited, parking at the Park is available at all subunits. Irvine Finch River Access, Pine Creek Landing, and the abandoned boat launch at Indian Fishery provide the only paved parking areas in the Park. At Irvine Finch, there is approximately 250 parking spaces, including six ADA-accessible parking spaces, three of which are located near the boat launch, as well as RV parking facilities. The Pine Creek Landing boat launch area has recently been paved, providing 22 boat/trailer and vehicle parking spaces, one of which is ADA accessible. At Indian Fishery, there is a small paved lot off of River Road near the abandoned Old Chico Landing boat ramp that has limited capacity. The other parking areas throughout the Park are gravel or dirt lots; there are currently no parking facilities on the east side of the Big Chico Creek Riparian Area.

During the peak holiday periods (i.e., Fourth of July and Labor Day weekends) when up to 20,000 people congregate at Irvine Finch for inner tubing gatherings, vehicles quickly fill all available parking capacity, and then park along SR 32 and on the Sunset Ranch property (as allowed by TNC), which serves as overflow parking for peak-period special events. Because of the lack of available parking during these two weekends, vehicles typically park illegally along roads creating public safety issues and are subject to citation and towing.

Sacramento River

The Sacramento River and its tributaries, which can be accessed by boat from all of the Park subunits except Indian Fishery, represent another mode of circulation in the Park. Based on the configuration of the Park, the river system provides connection between the Park subunits. In fact, recreational tubers often float the river between the Irvine Finch River Access area and the Big Chico Creek gravel bar.

2.1.4 Significant Resource Values

Natural Environment

Climate

The climate at the Park is categorized as Mediterranean, with hot, dry summers and cool, wet winters. The average annual temperature is 61 degrees Fahrenheit, average humidity is 37%, and average precipitation is 26.04 inches per year (Key to the City 2003). According to the Chico Chamber of Commerce, weather in the vicinity of Chico experiences an average of 219 clear days, 57 partly cloudy days, and 89 cloudy days. Summer temperatures average

in the 90-100°F range, although there are some days where temperatures are in excess of 110°F. Temperatures generally fall to or below freezing during 32 days of the year. Tule fog, which can be dense at times, occurs during the winter months of November through January. Table 2-2 summarizes the climate conditions in the project area.

Table 2-2
Average Climate Conditions

Season	Average Temperature			Rain (Inches)	Humidity (%) [1]
	Min.	Mean	Max.		
Winter	36	45	54	5.32	59
Spring	45	58	73	1.87	35
Summer	60	78	97	0.02	18
Fall	47	61	79	1.35	31
Year	47	61	75	26.04	37

[1] Humidity readings were taken at 4 p.m.
Source: Key to the City 2003

Air Quality

Air quality in the State Park is regulated by several jurisdictions including the U.S. Environmental Protection Agency (U.S. EPA), California Air Resources Board (ARB), and the Butte County Air Quality Management District (BCAQMD) and Glenn County Air Pollution Control District (GCAPCD). (Note: Because the Park is located predominantly in Butte County, the subsequent environmental setting discussion focuses on information pertaining to the BCAQMD). The U.S. EPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead, which are referred to as criteria air pollutants. The primary standards protect the public health and the secondary standards protect the public welfare. The California ARB has established California Ambient Air Quality Standards (CAAQS) for these same pollutants, as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particulates, which in most cases are more stringent than the NAAQS. The BCAQMD is the agency primarily responsible for assuring that national and state ambient air quality standards are not exceeded and that air quality conditions are maintained in Butte County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. Butte County is classified non-attainment for the state 1-hour ozone and PM_{10}. The County recently attained the federal 1-hour ozone standard and, as a result, is currently designated "transitional nonattainment" for the federal 1-hour ozone standard. The County is in attainment or designated unclassified for all remaining CAAQS and NAAQS. Attainment status designations for the recently adopted federal 8-hour ozone and $PM_{2.5}$ standards have not yet been assigned (BCAQMD 2003).

In an attempt to achieve state ambient air quality standards and maintain the air quality, the BCAQMD, in coordination with the air districts in the Northern Sacramento Valley Air Basin (NSVAB), has completed the 2000 Air Quality Attainment Plan. The purpose of the plan is to achieve and maintain healthful air quality throughout the air basin. The plan evaluates the progress made in achieving previous goals and includes proposed modifications to the strategies necessary to attain the California ozone standard at the earliest practicable date.

Ambient Air Quality

The primary pollutants of regional concern within the Sacramento Valley Air Basin (SVAB) are ozone precursors (i.e., Reactive Organic Gasses [ROG] and NO_x) and airborne particulates. Over the last 5 years, ozone emissions in the SVAB, including Butte County, have been trending downward. The decreases in ozone precursors are largely due to increased motor vehicle controls and reductions in evaporative emissions. On August 25, 1999, Butte County experienced peak smoke impacts due to local wildfires, ozone levels at the local monitoring station reached 0.135 parts per million (ppm), well above the federal standard of 0.12 ppm. Prior to this exceptional event, Butte County exceeded the federal 1-hour standard only once in the past 20 years (BCAQMD 2003).

In contrast to ozone, emissions of PM_{10} have increased in the SVAB. This increase is due to growth in emissions from area-wide sources, primarily fugitive dust sources. Directly emitted PM_{10} from mobile sources and stationary sources have remained relatively steady. The national 24-hour PM_{10} standard has not been exceeded in Butte County (BCAQMD 2003).

Topography

Located on the Sacramento Valley floor, elevation at the Park is fairly low, ranging between 108 to 150 feet above mean sea level (msl). Topography, on the other hand, varies by subunit, ranging from relatively flat land areas and gravel bars to steep, heavily vegetated river banks. Elevation tends to decrease traveling away from the riverbank, creating low floodplain areas. The Irvine Finch River Access area, with elevation ranging from 125 to 150 feet, is the only subunit within the Park that is located outside the designated 100-year floodplain; it is protected by a private levee. The remaining subunits, the elevations of which range from 108 to 145 feet above sea level, are highly prone to flooding.

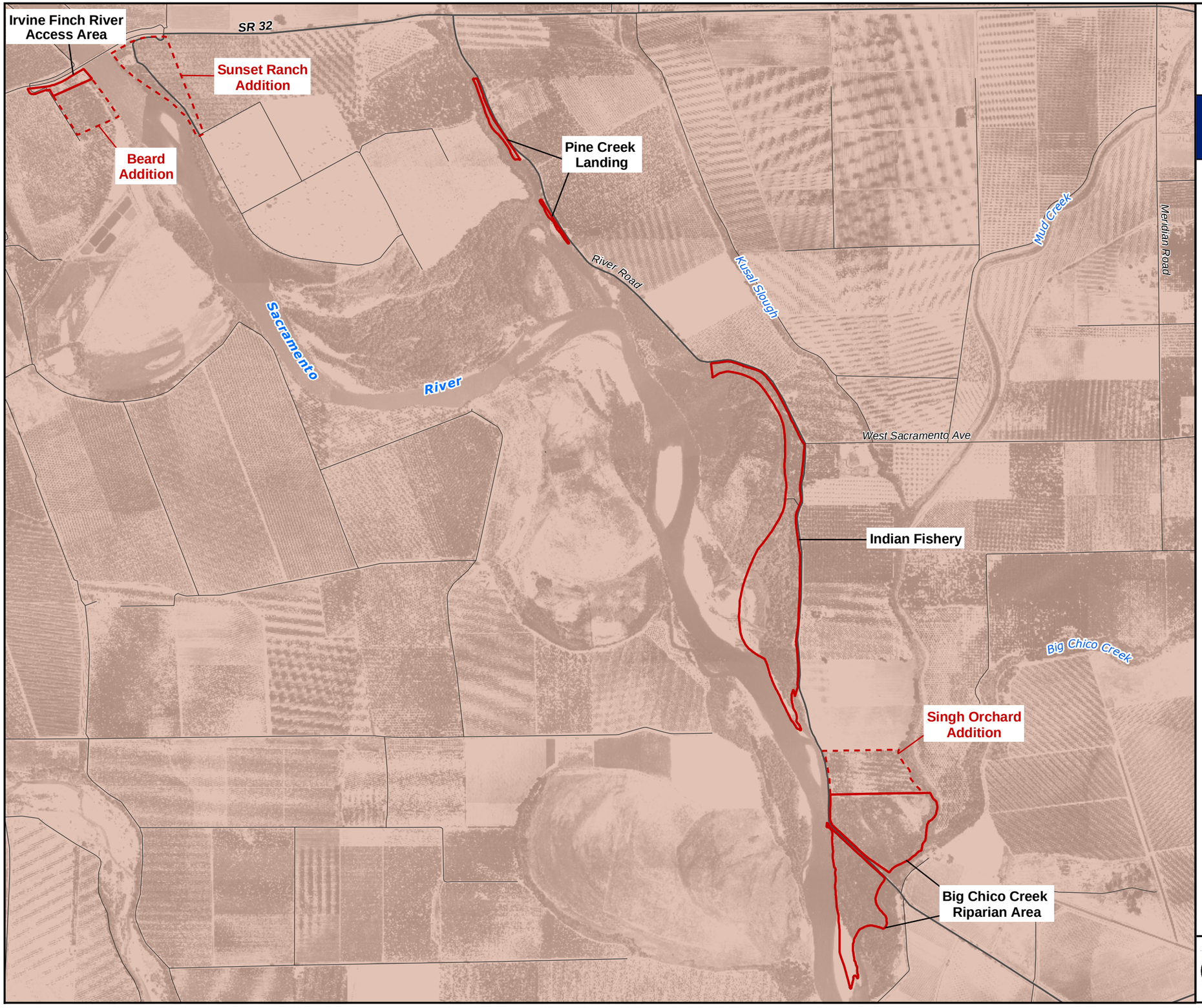
Geology

The geology of the project area is characterized by its geologic history, a set of lithologic and structural features, geologic hazards, and mineral resources. The geologic characteristics of the Park, including fault systems, are described below and identified in Exhibit 2-2.

Three geomorphic provinces of California fall within the Chico Region. These are: the Sacramento Valley (Valley, which is the northern part of the great Central Valley, the Cascade Plateau, and the Sierra Nevada. In terms of geology, the Chico area is in a region characterized as a zone of transition, located between the fragmental volcanic rock and lava cap of the Sierra Nevada foothills and the deep, well-drained agricultural soils of the Valley.

Bidwell-Sacramento River State Park

EXHIBIT 2-2
REGIONAL GEOLOGY



LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads
- Sedimentary Rock (Alluvium/Quaternary Nonmarine/Quaternary Marine)

Note: There are no fault zones located in the immediate project area.

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Sources: Dept. of Conservation, Division of Mines and Geology, 2000; GIC 2003; DPR 2003

Dec. 3, 2003

EDAW

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The Valley is a huge basin filled with marine and non-marine sediments plus some extensive volcanic materials. These materials are an accumulation of sediments, which on the western side of the valley have been measured at depths of up to 35,000 feet, but along the eastern side (Chico), the sediments thin out, forming only a thin cover over the Sierra basement rocks below. The Valley is low (generally 200 feet above sea level) and flat, with a gentle slope toward the Sacramento River.

Geologic History

During the long history of the Sacramento Valley it has undergone many changes. One important feature to note is that the valley rocks have been bent downward to produce a geosyncline.

During drillings for natural gas south of Chico it was discovered that a great gorge was eroded in underlying rocks of the valley many millions of years ago and later filled with younger sediments. These underlying rocks were formed when the ocean occupied the Valley. The older marine sediments are not exposed in the Chico area, but can be identified through the use of borings penetrated to a sufficient depth.

The distribution and very nature of these deposits indicate a Mediterranean Sea once existed between the Sierra-Cascade and the Coast Ranges. This sea extended from Redding in the north to Bakersfield in the south. The Valley sediments, which form the surface of the Valley, were deposited by rivers originating in the mountains.

Lithologic and Structural Features

The Chico area is underlain with a sequence of volcanic mudflows, known as the Tuscan Formation. Most of the layers consist of poorly-sorted breccia composed of large and small fragments of volcanic rocks mixed with sand, silt, and mud-sized material, much of which is also of volcanic origin. The fine-sized material was originally mixed with water to form mud, which as it flowed downslope to the west, carried gravel and boulders along with it. Many of these mudflows accumulated one-above-the-other to form the Tuscan Formation. All of this occurred near the end of the Tertiary Period (Pliocene Epoch, about four million years ago).

Since the time that Tuscan mudflows flowed and came to rest they have become lithified by compaction and cementation. They are mainly composed of basalt and andesite. Overlying these layers of mudflow are younger sediments deposited here by Big Chico Creek. The sediment originated by weathering and erosion of the Tuscan Formation. They are formed as part of a large alluvial fan that Big Chico Creek has built, known as the Chico Fan.

The only identifiable geologic resources within or adjacent to the Park are the gravel bars created by the meander of the Sacramento River.

Geologic Hazards

Geologic hazards in the project area consist of slope and/or foundation instability, volcanic hazards, land subsidence, and seismicity hazards (including liquefaction).

Slopes in the project area are generally less than 2%; therefore landslides are determined not to be a hazard at the Park.

Volcanic activity poses little or no hazard in this area. Mount Lassen is considered to be an active volcano and is 50 miles northeast of Chico. As a result of the last eruption in 1917, the area experienced temporary impacts on air quality and sizeable amounts of ash and mud were deposited about the point of eruption, but no substantial effects were noted in the greater Chico area. It is believed that if another eruption occurs ash and mud flows probably would not have any significant effect beyond the confines of Lassen Park, and unless it were accompanied by major seismic events, would not present a serious hazard to the project area. The nearest hotsprings activity is at Richardson Springs, located northeast of the Park.

The entire Chico-Durham area has a high potential for land subsidence due to the heavy withdrawal of groundwater between Nord and Nelson. The area of heaviest withdrawal includes the Chico area. The groundwater underlying the Chico area was carried there from the foothills of the Sierra Nevada, east of Chico. The westerly tilt of the underlying Tuscan layers permits pumping of water out of the ground that fell years ago on the hills east of Chico. The Tuscan mudflows extend west under Chico where they are buried under younger sediment that has been deposited in the Sacramento Valley. Wells drilled through the younger valley sediments into the Tuscan Formation intercept this flow of water which can then be pumped to the surface for agricultural and domestic use. In general, the upper (eastern) part of an alluvial fan ought to subside less than the lower part, because of changes in the gravel/sand/clay ratio.

There are no known surface faults within the area, but the region of the Sierra Nevada foothills to the east of the Chico area is notorious for seismic activity. The Chico Tuscan Monocline, an area of complex faulting but undetermined activity, is located to the north and east. The nearest active fault to the project area is the Cleveland Hills Fault, which runs in a north-south direction, roughly 20 miles to the southeast of the Park. This fault resulted in the most recent significant earthquake recorded in Butte County, which occurred at Oroville in 1975 and measured 5.7 on the Richter Scale. Several other major fault systems outside Butte County are capable of producing earthquakes which could cause moderate to severe ground shaking within the County.

Ground acceleration and a generally moderate potential for soil liquefaction are two seismic hazards which must be given consideration on all projects throughout the Greater Chico Area.

Mineral Resources

There are no known mineral deposits located within the study area of sufficient grade to be of commercial value

Soils

Generally, soil in the region is a deep alluvial loam, deposited over thousands of years of river meandering. Soils within the Park consist primarily of silt loams or sandy loams that are composed of river deposits. The location of soil types reflect the different routes the river has traveled. The soil types located in the Park are summarized in Table 2-3 and illustrated in Exhibit 2-3.

Table 2-3
Soil Types

Subunit	Soil Type	Extent (acres)	Characteristics
Irvine Finch River Access	Columbia silt loam	5.0	0-2% slopes; very deep; moderately well drained;
	Not mapped (river channel)	0.2	--
Pine Creek Landing	Horst silt loam (occasionally flooded)	3.9	0-2% slopes; well-drained, very deep flood plain soils formed of alluvium from mixed sources deposited by the Sacramento River.
	Riverwash	0.7	Unstabilized, recent alluvial deposits of stratified sandy, silty, gravelly or cobbly sediments that are reworked by water almost every year. No permanent vegetation exists here because of flooding and churning of the components.
	Not mapped (river channel)	0.2	--
Indian Fishery	Horst silt loam (occasionally flooded)	65.0	*See above*
	Columbia soils	19.2	0-10% slopes; channeled
	Gianella loam (occasionally flooded)	9.8	0 to 2% slopes; well-drained, very deep flood plain soils formed of alluvium from mixed sources deposited by the Sacramento River and located along the meander belt.
	Riverwash	3.6	*See above*
	Not mapped (river channel)	3.3	--

Table 2-3 Soil Types (cont.)			
Subunit	Soil Type	Extent (acres)	Characteristics
	Kusal silty clay loam (occasionally flooded)	*<0.1*	0 to 2% slopes; somewhat poorly drained, very deep flood plain soils formed of alluvium derived from mixed sources deposited by the Sacramento River. Kusal soils are on flood plains and lack intersecting slickensides, do not crack, and formed from flood deposits deposited over basin materials.
Big Chico Creek Riparian Area	Maywood fine sandy loam (frequently flooded)	36.1	0 to 2% slopes; well-drained, very deep flood plain soils formed from alluvium deposited by the Sacramento River.
	Gianella fine sandy loam (occasionally flooded)	19.6	0 to 2% slopes; well-drained, very deep flood plain soils formed of alluvium from mixed sources deposited by the Sacramento River.
	Gianella loam	18.5	*See above*
	Horst silt loam (frequently flooded)	13.0	0 to 2% slopes; well-drained, very deep flood plain soils formed of alluvium from mixed sources deposited by the Sacramento River.
	Not mapped (river channel)	5.2	--
	Water	4.3	Water
Source: GIC 2003, EDAW 2003			

Much of the soil in the region is considered prime agricultural soil, which is why substantial amounts of native riparian vegetation have been cleared for agriculture. Prime soils are reflected in the mapping of "Important Farmland" by the California Department of Conservation (DOC) (Exhibit 2-4). *Important Farmland* is defined as "Prime Farmland," "Farmland of Statewide Importance," "Unique Farmland," or "Farmland of Local Importance" as mapped by the DOC; it also includes "Irrigated Farmland" for areas where modern soil survey information does not exist as is the case in Butte County. Approximately 2.8% of the Park area is considered to be *Important Farmland*, virtually all of which is represented by "Prime Farmland" at the Irvine Finch River Access area (DOC 2000). However, this subunit has been developed, including paved parking areas, which render it more urban/developed rather than agricultural-based in nature. The subunits on the east side of the river are classified primarily as "Other", which is intended to represent land not included in any other mapping category and includes riparian areas not suitable for livestock grazing.

Bidwell-Sacramento River State Park

EXHIBIT 2-3
SOILS

Irvine Finch River Access Area
SR 32
Sunset Ranch Addition
Beard Addition
Pine Creek Landing
River Road
Meridian Road
West Sacramento Ave
Indian Fishery
Singh Ranch Addition
Big Chico Creek Riparian Area

LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

Soil Types

- Bosquejo clay, 0 to 2 percent slopes
- Bosquejo silt loam, 0 to 2 percent slopes,overwash, occasionally flooded
- Busacca clay loam, 0 to 1 percent
- Columbia fine sandy loam, 0 to 2 percent slopes
- Columbia fine sandy loam, moderately deep over sand and gravel, 0 to 2 percent slopes
- Columbia loamy fine sand, coarse variant, 0 to 2 percent slopes
- Columbia loamy fine sand, coarse variant, 2 to 8 percent slopes
- Columbia silt loam, 0 to 2 percent slopes
- Columbia silt loam, 2 to 8 percent slopes
- Columbia silt loam, moderately deep over clay loam, 0 to 1 percent slopes
- Columbia silt loam, moderately deep over claypan, 0 to 1 percent slopes
- Columbia silt loam, moderately deep over gravel, 0 to 2 percent slopes
- Columbia silt loam, water table, 1 to 8 percent slopes
- Columbia soils, channelled, 0 to 10 percent slopes
- Conejo Clay Loam, 0 to 2 percent slopes
- Conejo Fine Sandy Loam, 0 to 2 percent slopes, overwash
- Conejo Loam, 0 to 2 percent slopes
- Farwell clay loam, 0 to 2 percent slopes
- Galt Clay, 0 to 1 percent slopes
- Gianella fine sandy loam, 0 to 2 percent slopes, occasionally flooded
- Gianella loam, 0 to 2 percent slopes, occasionally flooded
- Horst silt loam, 0 to 2 percent slopes, frequently flooded
- Horst silt loam, 0 to 2 percent slopes, occasionally flooded
- Horst-Laugenour taxajuner complex, 0 to 2 percent slopes, frequently flooded
- Ignord fine sandy loam, 0 to 2 percent slopes
- Kusal silty clay loam, 0 to 2 percent slopes, occasionally flooded
- Maywood Fine Sandy Loam, 0 to 2 percent slopes, occasionally flooded
- Maywood fine sandy loam, 0 to 2 percent slopes, frequently flooded
- Orland loam, moderately deep over gravel
- Orland loam, shallow over gravel
- Riverwash
- Water
- Wyo loam, deep over gracel, 0 to 2 percent slopes
- Wyo silt loam, 0 to 2 percent slopes
- Wyo silt loam, deep over claypan, 0 to 1 percent slopes
- Wyo silt loam, slightly saline-alkali

N

0 2,000 4,000
Feet

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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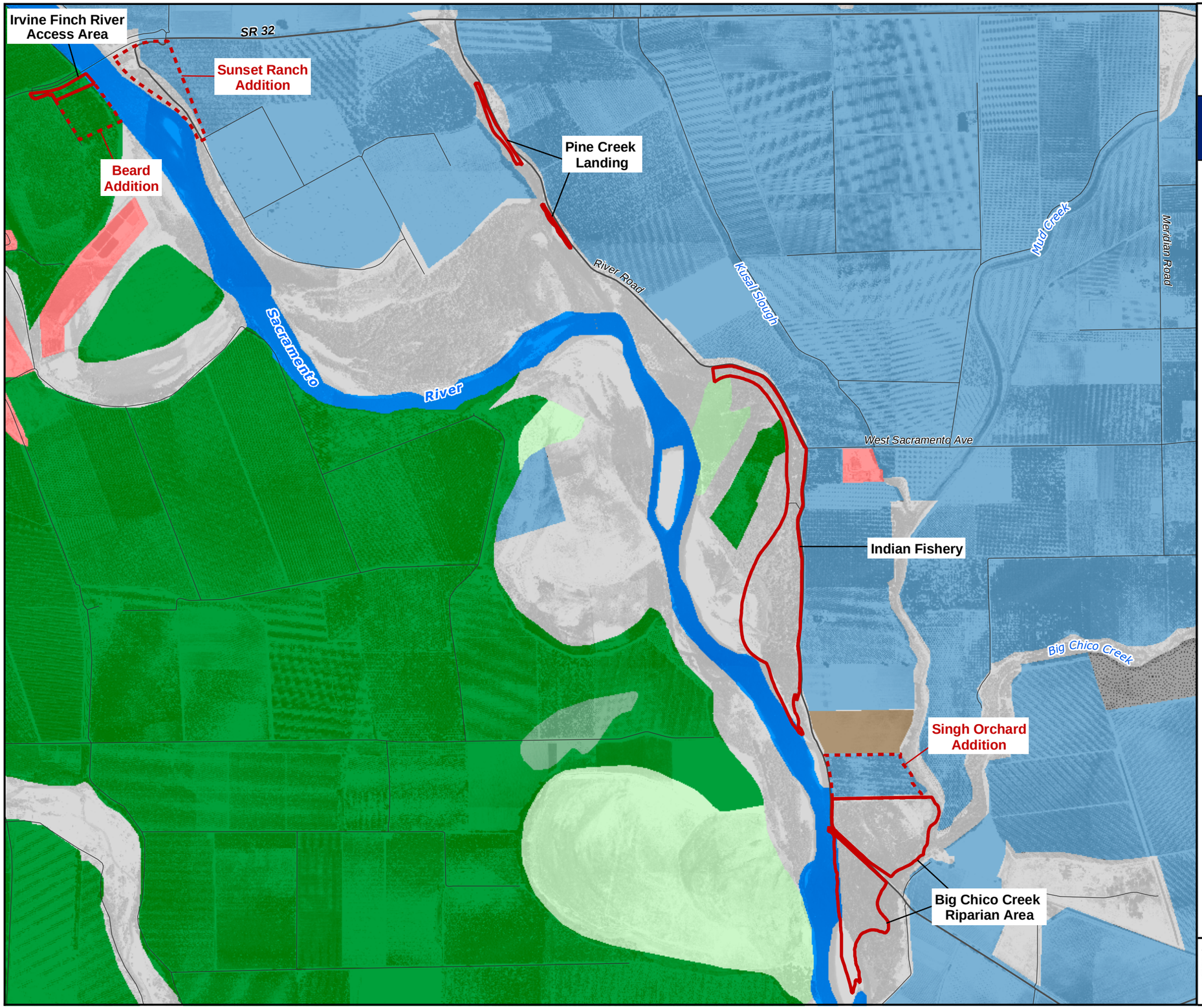
Bidwell-Sacramento River State Park

EXHIBIT 2-4
DESIGNATED FARMLAND



LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

Farmland Classifications (Dept. of Conservation)

- Prime Farmland
- Farmland of Statewide Importance
- Farmland of Local Potential
- Grazing Land
- Urban and Built-Up Land
- Other Land
- Water

Interim Farmland Classifications (Butte County)

- Irrigated Farmland
- Non-Irrigated Farmland

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Sources: FMMP 2000, GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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Hydrology and Floodplain

The Sacramento River is a large, dynamic alluvial river that drains the northern portion of the Central Valley. The natural dynamics of intermittent flooding, river meander, and sediment deposition help to maintain a healthy riparian ecosystem that provides crucial habitat for resident and migratory birds, fish and wildlife species. It also provides a rich bed load of fine soil and nutrients in the floodplain that have enabled productive farming of lands along the river.

A river system consists of two major components: the river channel and the associated floodplain. The river channel is the deeper part of a river where water normally flows. In the project area, the extent of the river channel is represented by the "Inner River Zone," which is defined as the estimated portion of river system that has experienced river channel migration in the past 100 years and is likely to experience channel movement over the next 50 years (Sacramento River Conservation Area Forum [SRCAF] 2002).

Generally, the Sacramento River is classified as a meandering river, where "relatively stable, straight subreaches alternate with more sinuous, dynamic subreaches" (SRCAF 2002). The subreach of the river within the project area consists of a river channel that is relatively straight with the exception of two major bends. However, the presence of oxbow lakes, which are a result of dynamic erosion and deposition processes, is evidence of the constant shifting of the river channel.

The "floodplain" component of the river system refers to that part of the system that shows evidence of sediment deposition from flooding; however, boundaries of potential inundation areas in the floodplain may be altered by flood control features, such as levees, weirs, and dams. The extent of potential flood events is typically measured by the probability of flooding of an area during a single flood event based on a pre-defined historical period, as defined by the Federal Emergency Management Agency (FEMA). For planning purposes, the designated 100-year floodplain, which defines the area having a 1% chance of being inundated in any given year, is considered. Most major river systems contain areas subject to areas associated with the 100-year floodplain. However, some minor and intermittent streams do not have 100-year floodplain areas.

Flooding is a major concern in the project area. All of the subunits on the east side of the river are located within the 100-year floodplain; the only subunit located outside the 100-year floodplain is the Irvine Finch River Access Area, which is protected by a private levee (Exhibit 2-5). Flooding poses significant concerns related to the availability of existing facilities, new facility development, and visitor safety.

The close proximity and relatively flat topography define the subsurface hydrology in the Park. The water table in the Park is shallow. During the wet season, the water table on the east side of the Big Chico Creek Riparian Area is estimated to be within 10 feet of the ground surface (Sacramento River Partners 2000).

Biotic Resources

This section discusses the significant biological resources present in the project area. Information on these resources was obtained through a review of existing documentation, consultation with State Park resource staff, and observations made during reconnaissance-level field surveys. Documents and databases reviewed are referenced as appropriate throughout this section.

Regulatory Background

Many biological resources in California are protected because of their rarity or substantial recent declines in populations and/or habitat. The primary laws and regulations that protect biological resources and are applicable to implementation of the General Plan are listed below. Descriptions of these and other pertinent regulations are provided in Appendix A.

- Federal Endangered Species Act (ESA)
- Clean Water Act (CWA)
- Migratory Bird Treaty Act
- California Endangered Species Act (CESA)
- Section 1600 of the California Fish and Game Code
- Section 3503.5 of the California Fish and Game Code

Special-status species include plants and animals that are listed or proposed for listing as Threatened or Endangered under the FESA or CESA, species considered as candidates for such listing, animals identified by CDFG as California Species of Special Concern and by USFWS as Federal Species of Concern, and animals that are Fully Protected under the California Fish and Game Code.

Special-status species with potential to occur in the plan area were identified through searches of the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2002) and the California Natural Diversity Database (CNDDB 2002) (USGS 7.5-minute quadrangles: Ord Ferry, Hamilton City, Foster Island, and Nord), consultation with State Park resource ecologist Woody Elliot, and a review of prior biological studies conducted in the vicinity of the plan area. A discussion of special-status plants, terrestrial wildlife and fish is shown in the following sections.

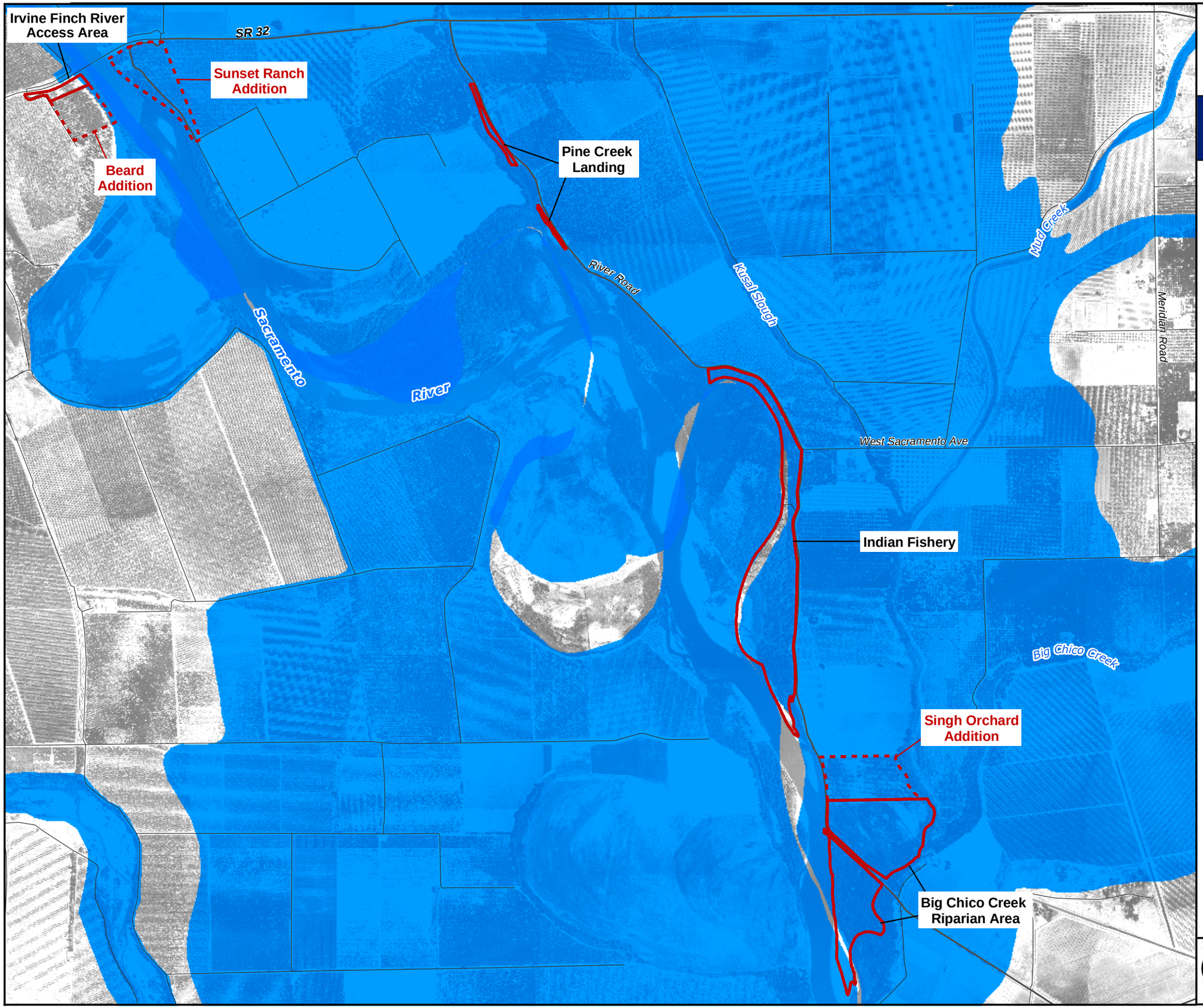
Plants and Natural Communities

This section contains information on the significant and common botanical resources and natural communities in the project area.

Significant botanical resource values and/or issues of concern at the Park include the dynamic riparian ecosystem, sensitive plant communities, non-native invasive plant species, and special-status plant species. Sensitive botanical resources and issues of concern are discussed in the following sections, along with a description of sensitive and common natural

Bidwell-Sacramento River State Park

EXHIBIT 2-5
FLOODPLAINS



LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads
- 100-Year Floodplain

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Sources: FEMA Q3 Flood Data 1996, Butte County 2000, GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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communities present in the plan area. Lands owned by other state and federal agencies located in the project area are not part of this study and are excluded from the following discussion. Management of resources on those lands are discussed in planning documents by the respective state or federal agencies that own them. Appendix B contains a floristic inventory for the Park, including plant families, scientific names and common names. Information provided in this section and the floristic inventory is based on the following resources:

- Vegetation Assessment (GIC 2003)
- CalFlora database (DPR 2003)
- Sacramento River Public Recreation Access Study (EDAW 2003)
- Resources Inventory of the Park, Chico Landing California, North Valley Area
- Species List for Big Chico Creek Riparian Area and Peterson property (GIC 1998a)
- Partial List of Plant Species at Big Chico Creek Riparian Area, (GIC 1998b)
- The Jepson Manual (Hickman 1993)
- Flora of Butte County (Oswald & Ahart 1994)
- Personal Communications with Department staff
- Vegetation Management Plan for the Peterson property (Sacramento River Partners 2000)

In addition to the resources listed above, a survey of the plan area was conducted by botanist, John Dittes of Dittes and Guardino Consulting during the spring and summer of 2003 and Misa Ward of EDAW on July 17, 2003. The survey was conducted by walking through the Park subunits. All habitat types were surveyed and a floristic inventory was developed. Unknown species were compared with plant specimens housed at the Chico State Herbarium. John Dittes also reviewed the previous species lists for accuracy (please refer to species lists described above). Appendix B contains the comprehensive floristic inventory for the Park compiled by Dittes and Guardino Consulting (2003) and enhanced with personal communications with Department staff (Elliott 2003, Dempsey 2003). A query of the Chico State University Herbarium was performed by John Dittes to identify additional plant and lichen species present in the plan area. Appendix C contains the information on the species recovered in the database search.

Dynamic Riparian Ecosystem

The biotic resources of the project area are shaped and supported by the physical and hydrological patterns of the river system. The geology of the project area is characterized by sedimentary features associated with the river. As is characteristic of the middle reaches of the Sacramento River corridor between Red Bluff and Colusa, major physiographic features of the plan area include floodplains, basins, terraces, active and remnant channels, and oxbow sloughs. These features, together with the historic and current hydrology and dynamic meander pattern of the Sacramento River, provide for a diverse array of riparian plant communities along the river channel, intermixed in a broad arable floodplain. Most of these habitats are currently fragmented remnants accounting for about 11% of a historically extensive, often 4-mile wide, riparian forest (SRCAF 2002). The majority of the historic

riparian forest habitat had been converted over the past 150 years to vital agricultural, urban, and rangeland uses and the river is now bounded by levees and agricultural development in numerous locations. However, for much of the project area, the river remains unconstrained with meanders forming freely and flooding occurring on a nearly annual basis in a broad floodplain.

The dynamic riparian corridor is characterized by a heterogeneous mix of vegetation types with varying composition and age structures. Early seral stage (i.e., pioneer) communities characterized by willows, young cottonwoods, and other small trees and shrubs typically form on recently deposited sand bars and along channel edges. Under natural conditions, these communities may get scoured away by fast moving water or may transition over time into a mature mixed riparian forest growing on low to middle floodplain terraces and valley oak woodland occurring on higher floodplain terraces.

Mature forest and woodlands often persist until removed by an active meander bend progressively moving downstream, or by an avulsion cut-off event in which a new channel is carved through existing woodland and an oxbow lake or slough is created out of a newly abandoned meander bend. In the vicinity of the Park, the Sacramento River is classified as a meandering river where "relatively stable, straight subreaches alternate with more sinuous, dynamic subreaches" (SRCAF 2002). The erosion and cut-off events result in the recommencement of seral development and community maturation. The natural dynamics of intermittent flooding, meander migration and sediment deposition help to maintain a healthy riparian ecosystem supporting numerous plant and wildlife species.

Because of land conversions to agricultural and urban uses, most of the mature valley oak woodland and savannah and other mature riparian forest community types further from the river's edge are now absent from most of the Sacramento River corridor. Most of the remaining forest is restricted to areas closest to the river. While much of the existing forest is in early to middle seral stages, the hydrology and soil conditions in the project area still exist to support mature riparian forest habitat, where feasible, based on land uses.

Sensitive Natural Communities

Sensitive natural communities are communities that are of special concern to resource agencies such as CDFG and the USFWS, government agencies such as counties or cities, or conservation organizations such as the California Native Plant Society. Sensitive natural communities are considered important because they provide habitat for numerous wildlife and plant species, including special-status species. Sensitive communities also include those considered rare or uncommon locally, regionally, or statewide because of natural conditions or conversions to other land uses, and those protected by state and federal laws and regulations, such as CEQA, Section 1600 et al. of the Fish and Game Code and Section 404 of the CWA. Sensitive natural communities that occur in the project area include open water, wetland, arroyo willow series, box elder, Fremont cottonwood series, and valley oak series. Descriptions of these communities are provided in the following section.

Community Descriptions and Characterizations of Park Subunits

Plant and natural communities of the Park were mapped using nomenclature primarily derived from the vegetation classification of California Manual of Vegetation of Sawyer and Keeler-Wolf (1995) (Exhibit 2-6). In some cases, plant communities (e.g., box elder, California walnut) or other natural communities (e.g., open water) that were mapped are not described in Sawyer and Keeler-Wolf classifications.

Lands located outside the State Park boundary, are primarily privately-owned agricultural land or publicly owned (CDFG and USFWS) land and for the most part, were not mapped. However, natural communities do occur in many locations beyond the State Park boundary. Most of their locations are along the edge of river and slough channels that flood too frequently to be farmed. Though not a part of this study, it is important to note that USFWS and CDFG properties located near the project area are also characterized primarily by natural communities, adding important habitat and wildlife movement corridor value to the area.

The natural plant communities are confined almost entirely to areas immediately adjacent to the river or where historic channels occurred. The following community descriptions are based on the work prepared by the Geographic Information Center (GIC) at California State University, Chico (2003), Sawyer and Keeler-Wolf (1995), and the Sacramento River Public Recreation Access Study (EDAW 2003). Those without the word "series" following the name are vegetation types or communities that are not described in Sawyer and Keeler-Wolf. Communities present in the project area include:

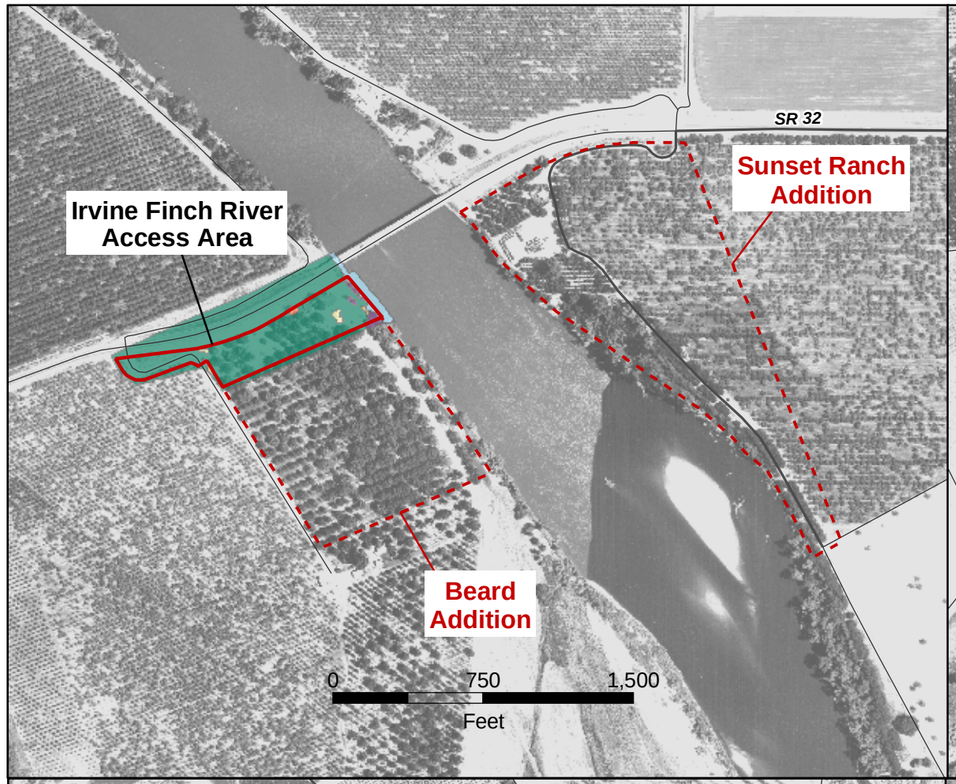
- Agricultural land
- Almond
- Arroyo willow series
- Blackberry scrub
- Box elder
- California annual grassland series
- California walnut
- Fremont cottonwood series
- Valley oak series
- Wetland
- Open water
- Sediment/Gravel Bar

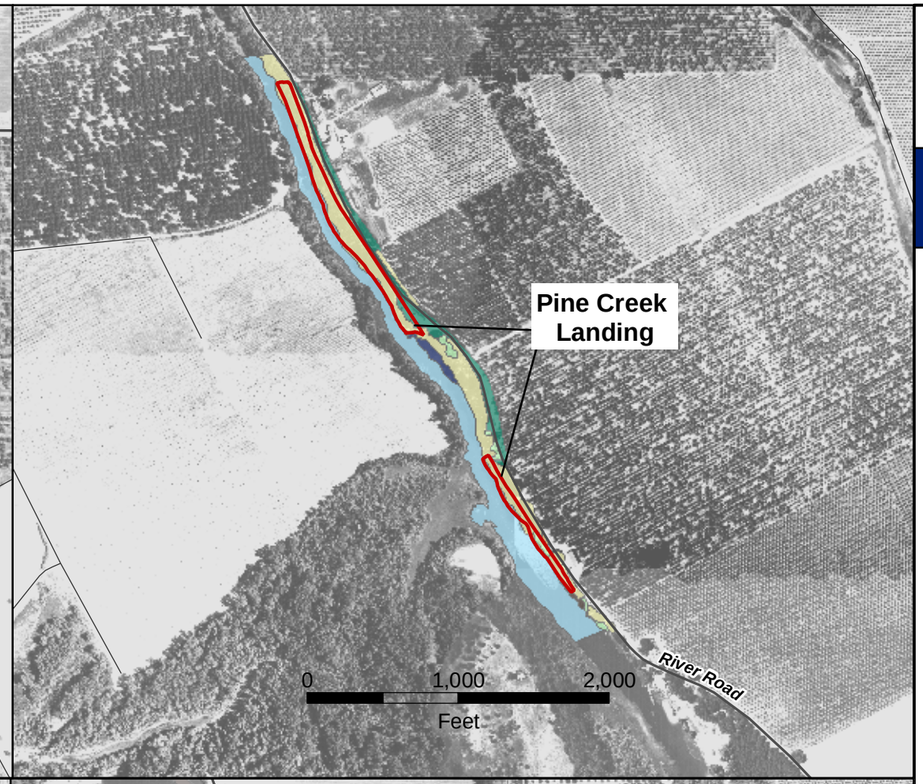
Exhibit 2-6 depicts the mapped communities in the State Park units. Table 2-4 provides a summary of acreages of the mapped communities. The majority of privately owned non-Park lands within the plan area are used for agriculture. Natural community types exist outside the Parks as well, primarily along the edges of the river and slough channels. Most state Park units are characterized by natural communities with the exception of the largely developed Irvine Finch River Access area.

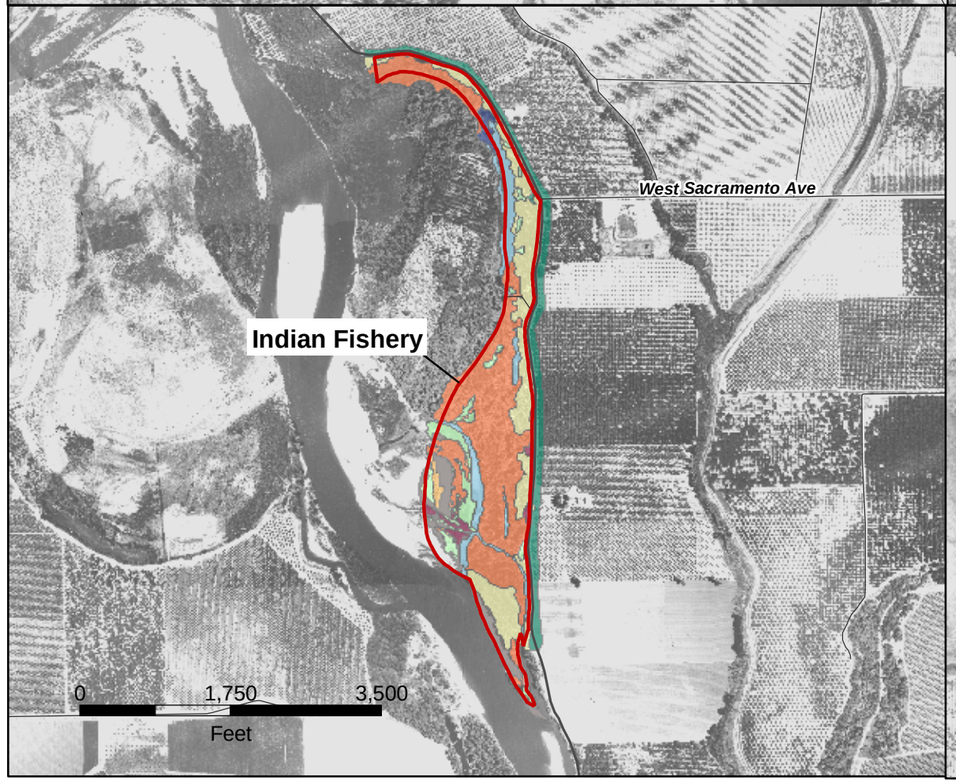
Table 2-4 Plant Communities		
Park Unit	**Community Type**	**Acreage**
Irvine Finch River Access	Agriculture/Developed	4.8
	Box Elder	0.2
	Open Water	0.1
	Valley Oak	0.1
	Arroyo Willow	< 0.1
	Fremont Cottonwood	< 0.1
	Total	**5.2**
Pine Creek Landing	Valley Oak	4.0
	Open Water	0.3
	Agriculture/Developed	0.2
	California Annual Grassland	0.2
	Arroyo Willow	0.1
	California Walnut	< 0.1
	Wetland	< 0.1
	Total	**4.8**
Indian Fishery	Fremont Cottonwood	46.1
	Valley Oak	26.2
	Open Water	8.5
	California Annual Grassland	7.9
	Gravel (river wash)	5.8
	Blackberry Scrub	2.4
	Arroyo Willow	1.4
	Not Mapped	1.3
	Wetland	0.8
	California Walnut	0.3
	Agriculture/Developed	0.2
	Total	**100.9**
Big Chico Creek Riparian Area	Fremont Cottonwood	32.0
	California Annual Grassland	20.9
	Box Elder	10.7
	Valley Oak	10.0
	Blackberry Scrub	8.7
	Gravel (river wash)	6.4
	Agriculture/Developed	4.3
	California Walnut	1.1
	Open Water	1.1
	Almond	1.0
	Arroyo Willow	0.5
	Agriculture/Developed	< 0.1
	Total	**96.7**
Source: GIC 2003, EDAW 2003		

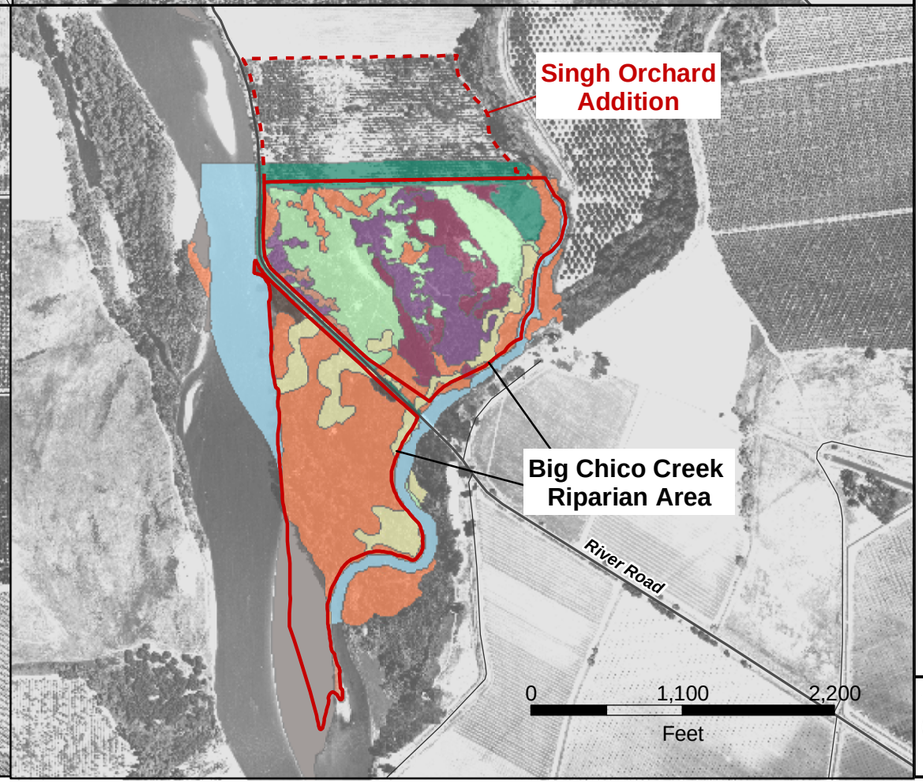
Bidwell-Sacramento River State Park

EXHIBIT 2-6
VEGETATION









LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

Vegetation Type

- Almond
- Arroyo Willow
- Blackberry Scrub
- Box Elder
- California Annual Grassland
- California Walnut
- Fremont Cottonwood
- Gravel (river wash)
- Open Water
- Agriculture, Urban, or Other Human Use
- Valley Oak
- Wetland

N

Note: Vegetation mapping has not been developed for potential property additions.

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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The Irvine Finch River Access area is primarily characterized by a remnant walnut orchard and parking lot with small amounts of box elder, valley oak, open water, arroyo willow, and Freemont cottonwood communities.

This Pine Creek Landing subunit is primarily characterized by valley oak woodland, but also includes lesser amounts of open water, California annual grassland, arroyo willow, and wetland communities, as well as agriculture/developed areas.

The Indian Fishery subunit is dominated by Fremont cottonwood and valley oak woodland and also contains a substantial amount of open water and California annual grassland. Other community types consist of gravel bar, blackberry scrub, arroyo willow, wetland, California walnut, in addition to limited agricultural/developed areas.

The portion of the Big Chico Creek Riparian Area west of River Road is dominated by Fremont cottonwood, and also contains a substantial amount of valley oak woodland and gravel bar. Other community types include California walnut, arroyo willow, open water, and to a lesser extent, California annual grassland and agriculture/developed areas. The portion of this subunit east of River Road is dominated by California annual grassland, but is also characterized by a substantial quantity of box elder, blackberry scrub, Fremont cottonwood, valley oak woodland and agriculture/developed areas. Other community types east of River Road include almond and open water.

Following are descriptions of the sensitive and common plant and natural communities that characterize the project area.

Agricultural Land. Orchards and row crops are the primary land use on privately owned lands adjacent to the Sacramento River within the plan area boundary. Agricultural land is commonly located on terraces adjacent to the Sacramento River where rich sediments have deposited fertile soils now used for agricultural production. Most orchards are currently planted with almonds, walnuts, and prunes and are generally devoid of native vegetation.

Almond. This community is dominated by almonds that are remnants from abandoned orchards or that have colonized wild lands adjacent to orchards. The almond community is co-dominated by valley oak, with lesser amounts of Oregon ash and California black walnut. Associated species include blue elderberry, pecan, red gum, box elder, California wild grape, California wild rose, arroyo willow, Himalayan blackberry, California blackberry and virgin's bower.

Arroyo Willow Series. The arroyo willow community is often found in strips along the lower banks of the Sacramento River and other streams as well as the edges of backwater sloughs or oxbow lakes. This community type is typically characterized by a dense willow shrub or tree canopy. The series is characterized by arroyo willow as the dominant shrub or tree in the canopy, sometimes forming monotypic stands. Less dominant, but prominent associated species typically include red willow, shining willow, sandbar willow and box elder. Other species that may occur include young Fremont cottonwood, valley oak, box elder, California

wild rose, California black walnut, Himalayan and California blackberry, blue elderberry, and wild grape. The understory often includes native herbaceous species such as mugwort and willow-weed, as well as, non-native species such as sharp and curly dock interspersed with other grasses and herbs.

CDFG considers riparian woodland communities, including arroyo willow series, sensitive because of their value as wildlife habitat and the historic loss of these communities. This riparian community type is seasonally flooded or periodically saturated. Some riparian habitats qualify as wetlands, which are protected as Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA.

Blackberry Scrub. The blackberry scrub community in the plan area is characterized by Himalayan and/or California blackberry as the dominant species. Himalayan blackberry is a vigorous non-native invasive weed that often forms dense thickets. It often hinders recruitment of native trees and shrubs, but it also can provide habitat for wildlife. Subdominant tree species can include box elder, valley oak, California black walnut, almond, Fremont cottonwood, Goodding's willow, and arroyo willow.

Box Elder. The box elder community is characterized by box elder as the dominant species in the tree canopy along with less dominant species, including Fremont cottonwood and Oregon ash. The box elder community typically occurs in riparian floodplain areas subject to intermittent or seasonal flooding. Other species occurring in this community type include California black walnut, arroyo willow, and Himalayan blackberry.

CDFG considers riparian woodland communities, including box elder, sensitive because of their importance as wildlife habitat and the historic loss of these communities. Some areas designated as this community type may qualify as wetlands protected as Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA.

California Annual Grassland Series. California Annual Grassland Series is frequently found in upland areas adjacent to the river channel, including some terraces along river banks. Grassland often forms in previously disturbed areas. The composition of this series is greatly influenced by fall temperatures and precipitation, along with light intensity and variable microtopography (Sawyer and Keeler-Wolf 1995). This series is characterized primarily by non-native annual grasses and forbs including bromes, ryegrasses, oats, mustards, yellow-star thistle, clovers, lupines and filaree.

California Walnut. This plant community is characterized by the predominance of California walnut hybrids (*Juglans hindsii*, a.k.a. *Juglans californica* var. *hindsii*), along with less dominant species, including blue elderberry, box elder, and valley oak. The *Juglans hindsii/Sambucus mexicana* Forest Association is typical of the type found within the plan area (Sawyer and Keeler-Wolf 2003 draft MS, in Vaghi 2003). In the plan area, *Juglans hindsii* occurs as a naturalized bygrid of agricultural origin which includes parentage from *J. major* and perhaps *J. californica*, but not *J. regia* nor *J. nigra* (Kirk 2003). Native stands of California black walnut remain in only Napa and Contra Costa Counties and are considered

rare (CNPS 2003, CNDDB 2003). The hybrids may be invasive and appear to take over valley oak and other riparian forest communities (R. Unger, personal observation). More research is needed to clarify the taxonomy, ecology, and hybridization frequency of walnut trees present in the plan area. This community type is often found in riparian corridors and river floodplains as well as along stream margins and banks. It typically forms on river terraces and in upland valley bottoms with alluvial soils (Sawyer and Keeler-Wolf 1995). Other species occurring in this community include blue elderberry, arroyo willow, Fremont cottonwood, mugwort, California pipevine, California manroot, California wild grape, California blackberry, Himalayan blackberry, and Oregon ash.

Fremont Cottonwood Series. The most common natural community within the plan area is Fremont cottonwood series. While this series is locally abundant, it was historically much more extensive within the region. Most Fremont cottonwood forests within the region had been converted to agricultural land over the past 150 years because of the presence of fertile alluvial soils. Fremont cottonwood forests are found within the Sacramento River riparian corridor in areas that are intermittently or seasonally flooded, including floodplains, terraces, and banks. The community type is characterized by a multi-story canopy with Fremont cottonwood as the dominant upper story species interspersed with lesser quantities of box elder and Northern California black walnut. Mid-story trees include English walnut, Goodding's willow, arroyo willow, edible fig, and Oregon ash. California pipevine, California manroot, and lianas of California wild grape vines, such as California and Himalayan blackberry may be present in the shrub canopy.

This community type is considered sensitive riparian habitat by CDFG. In addition, the Fremont cottonwood series may be seasonally flooded or periodically saturated. As such, some areas designated as this community type may qualify as wetlands protected as Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA.

Valley Oak Series. Valley oak riparian vegetation is found within the riparian corridor along river banks and terraces, typically in areas that are intermittently or seasonally flooded, or in upland valley bottoms with gentle slopes. The valley oak riparian woodland is characterized by a multi-story canopy and a species composition similar to the Fremont cottonwood series. The primary distinction is dominance by valley oaks and typically lower quantities of tree species such as arroyo willow, walnut species, almond, box elder, and Oregon ash. A shrub layer including California and Himalayan blackberry, and blue elderberry is sometimes present. The canopy of the valley oak community is typically more open than the Fremont cottonwood series, enabling the development of a dense grass or graminoid (grass-like) understory. In addition to grasses and graminoids, some broadleaf species found in the understory include hoary creek nettle, curly dock, and pokeweed.

Some valley oak woodlands may qualify as wetlands protected as Waters of the United States and subject to USACE jurisdiction under Section 404 of the Clean Water Act (CWA). Valley oak woodland has generally suffered the highest proportion of loss among riparian community types because of its historic presence in high floodplain areas. Over 90% of valley oak woodland has been lost statewide because of the conversion of this community to

other land uses (Barbour et al. 1993). As a result, valley oak woodland is considered a sensitive community by the California Native Plant Society and CDFG, and many counties and municipalities have ordinances protecting valley oak trees. Butte County is working on Formal Voluntary County Guidelines for the protection of their 230,000 acres of oak woodland (IHRMP 2000).

Wetland. Wetland communities develop in permanently or seasonally flooded areas within the site, such as along river and slough channels and oxbow lakes. Hydrophytic (water-loving) vegetation that typically characterizes wetlands in the plan area include Santa Barbara sedge, tall cyperus, yellow nutsedge, spreading rush, shield-bracted monkeyflower, and seep monkeyflower.

Wetlands are protected as Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA. Wetland habitat has been dramatically affected by conversion of land for urban and agricultural uses and water that filled the wetlands has been diverted for other uses. Estimates of wetlands that historically existed in California range from 3 to 5 million acres. The current estimate of wetland acreage in California is approximately 450,000 acres; this represents an 85 to 90% reduction; the greatest percentage loss in the nation (Ceres 1995). Wetland habitat is highly productive, important for protecting water quality, and supports numerous wildlife species.

Open Water. Open water habitat within the plan area includes the Sacramento River, backwater sloughs and oxbow lakes, and tributary stream channels. The river system is composed of various features including gravel riffles, runs, and pools. Sediment deposition from eroding banks and downed large woody debris are important inputs to the river system. Open water is considered a Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA.

Sediment/Gravel Bar. There are several areas within the Sacramento River channel where point bars have developed. Point bars form on the inside of river bends where slower flows result in the deposition of gravel and sand. The coarser sediments are deposited near the base of the point bar while finer grains settle out as the water moves toward the top of the point bar. Sediment/gravel bars may serve as nurseries for the early seral stages of riparian plant community development depending on the sediment type and the timing of river flooding and drawdown during periods when riparian trees and shrubs dispense their seeds.

Sediment/gravel bars typically form below the ordinary high water mark, the approximate river stage during high flow periods that occur once every 2 years on average. They are generally considered to be part of Waters of the United States and subject to USACE jurisdiction under Section 404 of the CWA.

Non-native Invasive Plant Species

Non-native (exotic, alien, non-indigenous) species are those that have been introduced through human activities, either incidentally or deliberately. Many non-native plant species

are not invasive and do not have adverse effects on natural plant and animal communities. However, some non-native species have resulted in the transformation of native habitats to a non-native plant community with resultant reduction of native plants and degradation of wildlife habitat. Table 2-5 contains a list of invasive species known to occur within the project area.

Table 2-5
Invasive Weeds Known to Occur in the Project Area

Scientific Name	Common Name	CalEPPC/State Status [1]
Ailanthus altissima	Tree-of-heaven	A-2/P
Arundo donax	Giant reed	A-1/P
Catalpa speciosa	Northern catalpa	--/--
Celtis occidentalis	Hackberry	--/--
Centaurea solstitialis	Yellow-star thistle	A-1/C
Eucalyptus camaldulensis, E. sp.	Red Gum, Eucalyptus	A-1/-- (*E. globulus*)
Ficus carica	Edible fig	A-2/--
Juglans californica (orchard rootstock or other hybrids[2]	California walnut	--/--
Lepidium latifolium	Perennial pepperweed	A-1/B
Morus alba	Mulberry	--/--
Parthenocissus cinquefolia	Virginia creeper	--/--
Platanus x acerifolia	London plane tree	--/--
Prunus dulcis, P. sp.	Almond, prune (orchard rootstock)	--/--
Robinia pseudoacacia	Black locust	B/--
Rubus discolor	Himalayan blackberry	A-1/--
Tamarix parviflora	Tamarisk, salt cedar	A-1/P
Vinca major	Periwinkle	B/--

[1] CalEPPC Status:
A-1 = most invasive wildland pest plants, widespread
A-2 = most invasive wildland pest plants, regional
B = wildland pest plants of lesser invasiveness

State (CDFA) Status:
B = Eradication, containment, control or other holding action at the discretion of the commissioner.
C = State endorsed holding action and eradication only when found in a nursery, action to retard spread outside of nurseries at the discretion of the commissioner, reject only when found in a crop seed for planting, or at the discretion of the commissioner.
P = Proposed additions to the CDFA Noxious Weed List in the California Code of Regulations

[2] The ecology and taxonomy of this species as well as the extent of hybridization between native and non-native walnut species needs study. It may be considered an invasive plant after further research and evaluation.

Source: CalEPPC 1999

The state and federal government both have laws and regulations protecting commerce and environmental lands from damages caused by invasive weeds. The California Department of Food and Agriculture and federal government each maintain lists of noxious weeds for the purpose of eradication or control.

The California Exotic Pest Plant Council (CalEPPC) has developed a list of non-native plants that pose serious problems in native ecosystems and rangelands (CalEPPC 1999). These species are classified based on the level of threat and invasiveness. Plants on List A-1 (most invasive wildland pest plants; widespread) that were found within the project area include giant reed, yellow-star thistle, Himalayan blackberry, tamarisk, and perennial pepperweed. These species have been documented as aggressive invaders that displace natives and transforms or disrupt natural habitats. Plants on List A-2 (most invasive wildland pest plants; regional) found within the project area include tree-of-heaven and edible fig. Plants in the project area that are on List B (wildland pest plants of lesser invasiveness) include English ivy, black locust, periwinkle, black mustard, bull thistle, poison hemlock, and Klamathweed.

Special-Status Plant Species

Seven special-status plant species have potential to occur in the project area, based on presence of suitable habitat. Table 2-6 lists these species and provides information on their listing status, habitat, and blooming period. Exhibit 2-7 shows locations of special-status species occurrences in the plan area. A description of each special-status plant is provided below.

Table 2-6
Special-status Plants with Potential to Occur in the Project Area

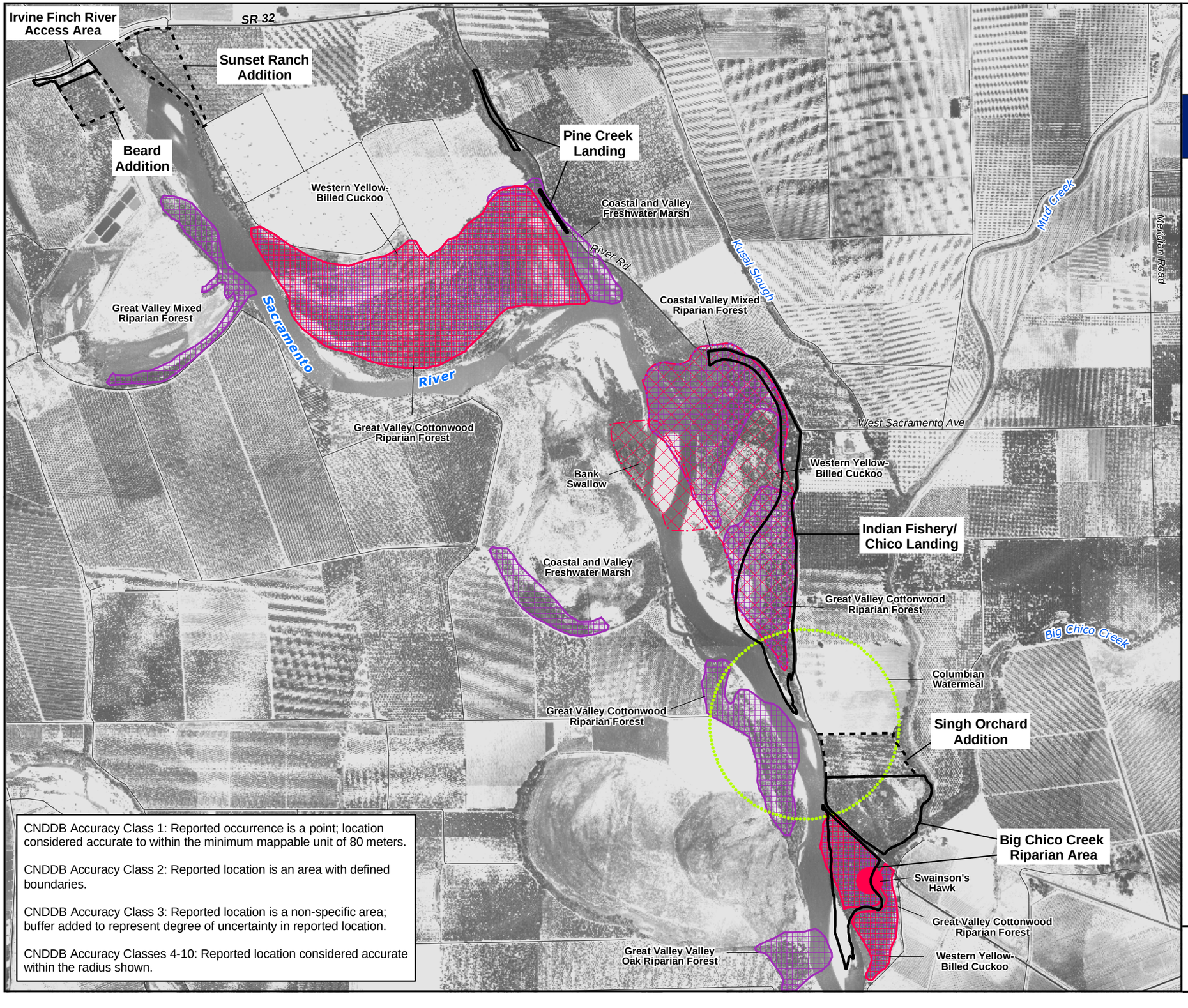
Species	CNPS	CDFG	USFWS	Habitat and Blooming Period
Ferris's milk-vetch *Astragalus tener* var. *ferrisiae*	1B	--	--	Vernally mesic meadows and seeps, subalkaline flats within valley and foothill grasslands; blooms April-May
Fox sedge *Carex vulpinoidea*	2	--	--	Riparian woodlands, freshwater swamps and marshes, blooms May-June
Four-angled spikerush *Eleocharis quadrangulata*	2	--	--	Freshwater swamps and marshes, blooms May-September
Adobe-lily *Fritillaria pluriflora*	1B	--	--	Cismontane woodland, chaparral, valley and foothill grasslands; often adobe substrate; blooms February-April
Rose-mallow *Hibiscus lasiocarpus*	2	--	--	Freshwater swamps and marshes, blooms June-September
Sanford's sagittaria *Sagittaria sanfordii*	1B	--	--	Shallow freshwater marshes and swamps, blooms May-October
Columbian watermeal *Wolffia brasiliensis*	2	--	--	Shallow freshwater marshes and swamps, blooms April-December

California Native Plant Society (CNPS) Listing Categories:
1B = Plants rare, threatened, or endangered in California and elsewhere
2 = Plants rare, threatened, or endangered in California but more common elsewhere

Source: CNPS 2002, CNDDB 2003

Bidwell-Sacramento River State Park

EXHIBIT 2-7
SPECIAL-STATUS SPECIES



CNDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.

CNDDB Accuracy Class 2: Reported location is an area with defined boundaries.

CNDDB Accuracy Class 3: Reported location is a non-specific area; buffer added to represent degree of uncertainty in reported location.

CNDDB Accuracy Classes 4-10: Reported location considered accurate within the radius shown.

LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

Special-Status Species Occurrences

- Plant - Accuracy Class 4-9
- Animal - Accuracy Class 1
- Animal - Accuracy Class 2
- Animal - Accuracy Class 3
- Terrestrial Community - Accuracy Class 2

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Note: The CNDDB data shown represent only those sightings that have been reported; a lack of data for species in specific areas does not indicate absence of species in that area.

Undocumented occurrences of special-status species not shown on the map have been noted at the Park. These occurrences are described in the text of the General Plan.

Sources: DFG 2003, GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-7_SpecStatSpec.mxd

Ferris's Milk-vetch. Ferris's milk-vetch is considered a CNPS List 1B species (plants rare, threatened, or endangered in California and elsewhere). This annual herbaceous member of the bean family (Fabaceae) produces purple and white flowers from April to May. Suitable habitat consists of vernally mesic meadows and seeps as well as subalkaline flats in valley grasslands.

Fox Sedge. Fox sedge is a perennial herb in the sedge family (Cyperaceae). It is a CNPS List 2 species (plants rare, threatened, or endangered in California but more common elsewhere). This species produces small, inconspicuous flowers from May to June. Suitable habitat consists of riparian woodland and freshwater marshes and swamps. Fox sedge has been reported in the plan area, east of the Sacramento River, just north of Golden State Island and between lower Foster Island and the southern end of Dicus Slough (CNDDB 2002).

Four-angled Spikerush. Four-angled spikerush is also a CNPS List 2 species and member of the sedge family. As its common name suggests, the stem of this perennial herb is strongly four-sided. It blooms from May to September and grows in freshwater marshes and swamps as well as along pond and lake margins.

Adobe-lily. Adobe-lily is a perennial herbaceous member of the lily family (Liliaceae) that produces nodding pink flowers from February to April. It is a CNPS List 1B species that grows on adobe soil in chaparral, cismontane woodland, and grassland habitats.

Rose-mallow. Rose-mallow is an emergent perennial herb in the mallow family (Malvaceae) that produces large white or pink flowers. This CNPS List 2 species blooms from June to September and grows in freshwater marshes and swamps. Rose-mallow has been reported to occur in an oxbow north of Golden State Island and east of the Sacramento River within the plan area (CNDDB 2002).

Sanford's Sagittaria. Sanford's sagittaria is a CNPS List 1B species in the water-plantain family (Alismataceae). This emergent perennial herb produces white flowers from May to October. Unlike other sagittaria species, it does not have arrow-shaped leaves. Suitable habitat typically consists of shallow, standing fresh water associated with marshes and swamps. Sanford's sagittaria can also occur within slow-moving water bodies such as ponds, lakes, sloughs, ditches, canals, streams, and rivers (Nakamura and Nelson 2001).

Columbian Watermeal. Columbian watermeal is a CNPS List 2 species in the duckweed family (Lemnaceae). It is a perennial aquatic herb that produces inconspicuous flowers from April to December. Columbian watermeal produces a transparent green, spheric plant body that is less than 1.5 mm. This species grows in colonies on the water surface within shallow freshwater marshes. Columbian watermeal has been reported within the Park in the sloughs near Chico Landing (CNDDB 2002).

Terrestrial Wildlife

This section describes terrestrial wildlife habitats and associated species present in the Park and elsewhere in the project area. This includes a brief discussion of species that are associated with the primary habitat types and a more detailed discussion of sensitive species with potential to occur in the project area.

General Wildlife Habitats

The primary terrestrial wildlife habitat types in the project area include riparian, agricultural, and developed habitats. Of these, riparian is the dominant habitat type in the Park, while agricultural habitat dominates the project area as a whole.

Riparian vegetation along the Sacramento River is a dominant feature of the Park. This habitat includes the following plant communities that are previously described: arroyo willow, blackberry scrub, Northern California black walnut, Fremont cottonwood, valley oak, and wetland. Riparian habitat is expected to support the highest wildlife diversity and serve as an important wildlife corridor. Surveys conducted in the Park and nearby areas (PRBO 2002, Manolis 1998) have documented a variety of breeding bird species, such as western wood pewee, common yellowthroat, black headed grosbeak, and spotted towhee. Areas dominated by valley oak riparian forest, such as Indian Fishery, support a large number of cavity-nesting birds and other species typically associated with oak woodland, including acorn woodpecker, ash-throated flycatcher, oak titmouse, and white-breasted nuthatch. The European starling has recently become common at the Park. Starling is a non-native species that is known to adversely affect native birds by taking over nesting sites. Riparian habitat in the project area is also expected to support common reptiles and amphibians, such as Pacific tree frog, bullfrog, and western aquatic garter snake, and common mammals, such as beaver, gray fox, and raccoon.

In contrast to riparian habitat, grassland, agricultural, and ruderal habitats are of relatively low value to most native wildlife species. However, they can nevertheless be used by large numbers of common species, such as yellow-billed magpie, house finch, and California ground squirrel. In addition, grasslands, fallow fields, and some crops (e.g., alfalfa) can support a variety of small mammals and provide high-quality foraging habitat for many species of raptors.

Special-Status Species

Table 2-7 lists the 24 special-status terrestrial wildlife species known or expected to occur in the plan area. Exhibit 2-7 shows locations map of special-status species occurrences in the plan area. Eight of these are state-listed and/or federally listed (i.e., Threatened or Endangered) species: valley elderberry longhorn beetle, giant garter snake, bald eagle, Swainson's hawk, greater sandhill crane, western yellow-billed cuckoo, willow flycatcher, and bank swallow. All special-status wildlife species with potential to occur in the Park are discussed below.

Table 2-7 Special-Status Terrestrial Wildlife with Potential to Occur in the Project Area			
Species	CDFG	USFWS	Habitat
Invertebrates			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	--	T	Elderberry shrubs, usually in streamside habitats below 3,000 feet through the Central Valley
Reptiles and Amphibians			
Giant garter snake *Thamnophis gigas*	T	T	Freshwater marsh, low gradient streams, drainage canals and irrigation ditches
Western pond turtle *Clemmys marmorata*	CSC	FSC	Slow-moving streams or ponds with aquatic vegetation, and adjacent upland habitat
Birds			
American white pelican *Pelecanus erythrorhynchos*	CSC	--	Marshes and other aquatic habitats
Double-crested cormorant *Phalacrocorax auritus*	CSC	--	Isolated islets or tall lakeside trees near fish-bearing waters
White-faced ibis Plegadis chihi	CSC	FSC	Forage and roost in shallow water and flooded fields; nest in freshwater marshes
Osprey *Pandion haliaetus*	CSC	--	Fish-producing waters of bays, estuaries, reservoirs, and large streams or rivers
White-tailed kite *Elanus leucurus*	CSC FP	--	Forage in grasslands and agricultural fields; nest in isolated trees or small woodland patches
Bald eagle *Haliaeetus leucocephalus*	E FP	PD	Forages in large bodies of water or rivers with adjacent snags or other perches; nests in large, tall trees near permanent water source
Northern harrier *Circus cyaneus*	CSC	--	Grasslands and freshwater marsh
Cooper's hawk *Accipter cooperii*	CSC	--	Open woodlands and woodland margins
Sharp-shinned hawk *Accipiter striatus*	CSC	--	Dense coniferous and riparian forest
Swainson's hawk *Buteo swainsoni*	T	--	Forages in open meadows, grasslands, and agricultural fields; nests in tall trees (20-30 feet)

Table 2-7 Special-Status Terrestrial Wildlife with Potential to Occur in the Project Area			
Species	**CDFG**	**USFWS**	**Habitat**
Greater sandhill crane *Grus canadensis tabida*	T FP	--	Grasslands, irrigated pastures and crops, and fallow fields
Long-billed curlew *Numenius americanus*	CSC	--	Marshes, grasslands, irrigated, pastures, alfalfa, and fallow fields
Western-yellow billed cuckoo *Coccyzus americanus occidentalis*	E	--	Large patches of mature riparian forest
Western burrowing owl *Athene cunicularia hypugea*	CSC	FSC	Grasslands and agricultural areas
Willow flycatcher *Empidonax traillii*	E	--	Willow and alder patches associated with wet meadows
Bank swallow *Riparia riparia*	T	--	Riparian woodland; nests in vertical banks and cliffs with fine or sandy soils
Loggerhead shrike *Lanius ludovicianus*	CSC	FSC	Forages in grasslands, and agricultural fields; nests in scattered shrubs and trees
Yellow warbler *Dendroica petechia bewersterii*	CSC	--	Dense riparian vegetation, particularly willows and cottonwoods
Yellow-breasted chat *Icteria virens*	CSC	--	Dense riparian thickets of willow and other brushy tangles near watercourses
Tricolored blackbird *Agelaius tricolor*	CSC	--	Forages in grasslands and agricultural fields; nests in freshwater marsh with cattails, tules, or dense shrubs
Mammals			
Ringtail *Bassariscus astutus*	FP	--	Riparian and other forest and shrublands
USFWS Federal Listing Categories: T Federal Threatened PD Proposed for Delisting FSC Federal Species of Concern CDFG State Listing Categories: E California Endangered T California Threatened FP Fully Protected CSC California Species of Concern Source: CNDDB 2003			

Invertebrates. The valley elderberry longhorn beetle is federally listed as Threatened. This beetle requires blue elderberry shrubs for reproduction and survival. Elderberry shrubs are abundant in some areas of the Park and are expected to occur elsewhere in the project area. Valley elderberry longhorn beetle is not known to occur in the project area, but because suitable habitat is present, there is potential for this species to occur there.

Reptiles and Amphibians. Giant garter snake is federally and state-listed as a Threatened species. Giant garter snakes inhabit a variety of aquatic habitats, such as agricultural canals, marshes, sloughs, and ponds, but are typically absent from larger rivers and from wetlands with sand, gravel, or rock substrates (USFWS 1999). They also require adjacent upland habitat for basking and burrows for wintering that provide sufficient cover and are at high enough elevations to function as refuges from flood waters during the snakes' inactive season (October–May). Historically, the northern extent of the giant garter snake range is thought to have been Gridley, which is approximately 30 miles southeast of the Park, but there is some evidence the range extended to the vicinity of Chico in the 1970s (USFWS 1999). Currently, the northernmost known populations occur in the rice production zones of Butte and Glenn counties (USFWS 1999). Although the Park is located north of these rice production areas and reported occurrences from the Chico area are from several decades ago, giant garter snakes may occur at the Park. A 4-½ foot giant garter snake was believed to have been observed at planting site 1 of the Giant Garter Snake Habitat Restoration and Replacement Project at the Pine Creek Unit of the Park on April 20, 2002 during the Earth Day event (McGaugh, pers. comm., 2003).

Western pond turtle is a federal Species of Concern and a California Species of Special Concern. Pond turtles generally occur in streams, ponds, freshwater marshes, and lakes. They require still or slow-moving water with instream emergent woody debris, rocks, or other similar features for basking sites. Nests are typically located on unshaded upland slopes in dry substrates with clay or silt soils. Western pond turtles could occur in sloughs and oxbow lakes adjacent to the Park and elsewhere in the project area. Many undocumented occurrences of turtles have been observed to nest along the Indian Fishery nature trail (McGaugh, pers. comm., 2003).

Birds. Bald eagle is state listed as an Endangered species. It is also federally listed as a Threatened species. In California, bald eagles nest along the shores of large rivers and lakes and forage in such waterbodies. They do not nest in the Central Valley but wintering and non-breeding individuals are known to occur along the Sacramento River and could utilize the project area.

Swainson's hawk is state listed as a Threatened species. Swainson's hawks typically nest in scattered riparian or woodland trees adjacent to grasslands and/or agricultural fields that provide suitable foraging habitat. Agricultural fields in the plan area provide suitable foraging habitat, and Swainson's hawks are known to nest on the Big Chico Creek subunit (CNDDB 2002; Elliott, pers. comm., 2002). Riparian habitat and large trees at other Park units and elsewhere in project area also provide suitable nest sites.

Greater sandhill crane is federally listed as Threatened. Sandhill cranes depend on cereal grains as winter foraging habitat (e.g., rice and corn), and typically roost in irrigated pastures (CDFG 2000). Primary wintering areas include the Butte Sink to the south. Though not within a major wintering area, agricultural fields in the project area could provide foraging habitat.

Western yellow-billed cuckoo is state listed as Endangered. These cuckoos require large blocks (greater than 40 hectares) of riparian forest vegetation for nesting (Laymon et al. 1997). Historically, yellow-billed cuckoos were common and widespread in river bottom riparian habitat throughout California, but numbers have declined dramatically as a result of converting habitat for agriculture and other human land uses, cutting forest for fuel, and habitat alteration from flood control projects (Small 1994). Cuckoos have recently been documented nesting at Phelan Island, several miles downstream of the Park (Small et al. 2000), and they were detected in the Park in 1998 (Manolis 1998) and 2002 (Gilchrist 2002). Undocumented occurrences of cuckoos have also been noted at Allinger Ranch and along Pine Creek (McGaugh, pers. comm., 2003). Western yellow-billed cuckoo is not known to nest in the Park, but riparian vegetation on and adjacent to the Park could provide suitable nesting habitat.

Willow flycatcher is state listed as an Endangered species. This species has been eliminated from much of its former range in California, and breeding populations are now primarily restricted to montane meadows in the Sierra Nevada. Willow flycatchers nest in shrubby riparian vegetation, typically in areas with at least some surface water (Bombay et al. 2000). Willow flycatchers are expected to occur in riparian habitats in the project area during migration, but are not known to nest anywhere in the Central Valley.

Bank swallow is state listed as a Threatened species. Bank swallows nest colonially in vertical banks and cliffs with fine-textured sandy soils. An undocumented occurrence of a nesting colony has been noted in the river bank opposite the Big Chico Creek subunit (Elliott, pers. comm., 2002) and the bank at the upper end of the gravel bar at the Big Chico Creek Riparian Area (McGaugh, pers. comm., 2003). Additional colonies have become established in other suitable river locations in the project area (McGaugh, pers., comm. 2003).

Several non-listed special-status raptors could occur in the project area, including osprey, white-tailed kite, northern harrier, Cooper's hawk, sharp-shinned hawk, and burrowing owl. All of these are state and/or federal species of concern and are protected under the California Fish and Game Code. In general these raptors nest in trees in or near riparian habitat, with the exception of northern harrier and burrowing owl, which nest in grasslands and agricultural fields. Osprey are known to nest in the project area (Elliott, pers. comm., 2002). The remaining species could also nest in the project area, though burrowing owls are not known to occur nearby and may only be present on occasion.

Double-crested cormorant, American white pelican, white-faced ibis, and long-billed curlew could occur in the project area. All of these waterbirds are California Species of Special Concern, and white-faced ibis is also a federal Species of Concern. Double-crested cormorant is the only one of these species with the potential to nest in the project area, though no known nesting colonies are present. A colony is unlikely to become established on any of the Park units, but trees and snags in less disturbed locations along the river could provide suitable nest sites. Undocumented occurrences of American white pelicans have been noted in the project area for several months at the end of winter (McGaugh, pers.

comm., 2003). The remaining waterbirds are only expected to forage and roost in the plan area, because it is not within their current breeding range.

Loggerhead shrike, yellow warbler, yellow-breasted chat, and tricolored blackbird could also use the project area. All of these are California Species of Special Concern, and loggerhead shrike and tricolored blackbird are also federal Species of Concern. Loggerhead shrikes occur in open areas with scattered shrubs and trees for nesting. Yellow warblers typically nest in willow thickets, and yellow-breasted chats typically nest in riparian habitats with a dense shrub layer. Tricolored blackbirds nest colonially in dense patches of marsh and shrubby vegetation, such as cattails and blackberry. All of these species could occur in the project area, and all of them except for tricolored blackbird could also nest in the area. Yellow warblers are relatively uncommon breeders in the Central Valley, but a breeding territory was recently documented in the Park (Manolis 1998). Tricolored blackbird is not expected to nest there, because the nearest known nesting colony is approximately 30 miles southeast (Humple 2002), and only marginally suitable nesting habitat is present in the project area.

Mammals. Ringtail is a Fully Protected Species under the California Fish and Game Code. Ringtails occur in mixed riparian and other forest and shrubby habitats, in close association with permanent water and rocky areas. They nest in rock crevices, hollow trees, logs, snags, abandoned burrows, or woodrat nests, with young typically born in May and June (CDFG 1983). Riparian vegetation in the project area provides suitable habitat for ringtail. Undocumented occurrences of ringtail has been noted emerging from nest trees in the oak woodland near the Park office and service yard at Indian Fishery (McGaugh, pers. comm., 2003).

Aquatic Life

This section describes significant aquatic resources of the Park units and larger plan area. The dominant aquatic feature of the project area is the Sacramento River, though Big Chico Creek, sloughs, oxbow lakes, and marshes also provide important aquatic habitat.

General Aquatic Life

The aquatic habitats of the Sacramento River and Big Chico Creek are vital fish spawning, rearing, and/or migratory pathway for a variety of common and special-status fish species. The heterogeneity of habitats, including gravel riffles, runs, and pools, and sediment deposition from eroding banks are critical features. Shaded riverine aquatic vegetation and in-stream tree and shrub debris provide important fish habitat. A variety of aquatic invertebrates and common native fish, such as suckers, hardheads, and squawfish occur in aquatic habitats in the project area. Introduced fish, such as smallmouth bass and green sunfish are also present (Big Chico Creek Watershed Project 2000).

Special-Status Species

A total of 5 special-status fish have potential to occur in the project area (Table 2-8). Three of these are state-listed and/or federally listed as Threatened or Endangered: Central Valley

winter-run and spring-run chinook salmon, and Central Valley steelhead. In addition, fall/late-fall-run chinook salmon is a federal Candidate for listing as Threatened or Endangered. Sacramento splittail is a California Species of Special concern. It was federally listed as a Threatened species, but USFWS recently published a "notice of removal" determination to remove Sacramento splittail from the list of threatened and endangered species.

Table 2-8
Special-Status Fish with Potential to Occur in the Project Area

Species	CDFG	USFWS	Habitat
Chinook salmon - Central Valley winter run Oncorhynchus tshawytscha	E	E	Rivers and streams, including the Sacramento River and Big Chico Creek.
Chinook salmon - Central Valley spring run *Oncorhynchus tshawytscha*	T	T	Rivers and streams, including the Sacramento River and Big Chico Creek.
Chinook salmon - Central Valley fall/late fall run *Oncorhynchus tshawytscha*	CSC	C	Rivers and streams, including the Sacramento River and Big Chico Creek.
Central Valley steelhead *Oncorhynchus mykiss*	---	T	Rivers and streams, including the Sacramento River and Big Chico Creek.
Sacramento splittail *Pogonichthys macrolepidotus*	CSC	---	San Francisco Bay Delta and associated rivers and streams, including the Sacramento River and Big Chico Creek.

Source: CNDDB 2003

Chinook salmon and Central Valley steelhead are anadramous fish that spend their adult lives in the ocean and return to freshwater to spawn. The three runs of chinook salmon correspond to when the adults enter freshwater to begin their spawning migration. Chinook salmon and steelhead spawn in streams where females deposit eggs in depressions in gravel spawning beds. All three chinook salmon runs and Central Valley steelhead are known to migrate through the project area to spawning habitat upstream. Aquatic habitats in the project area can also provide important rearing habitat for juveniles (Big Chico Creek Watershed Project 2000).

Critical habitat for winter-run chinook salmon, designated in 1993, includes the Sacramento River and its tributaries (58 FR 33212-33219). In 2000, Critical Habitat was also designated for spring-run chinook salmon and Central Valley steelhead (65 FR 7764-7787). However, the U.S. District Court of Columbia approved a consent decree withdrawing this designation in 2002. The decree was in response to litigation challenging the process by which the National Oceanic and Atmospheric Administration (NOAA) Fisheries, previously known as

National Marine Fisheries Service, established critical habitat. This Critical Habitat designation had included all river reaches accessible to the species in the Sacramento River and its tributaries. On September 29, 2003, NOAA Fisheries published the Final Rule amending the Code of Federal Regulations to withdraw the critical habitat designations that had been vacated by the court order.

Sacramento splittail were historically widely distributed throughout much of the Central Valley, but dams and diversions have prevented them from many upstream reaches, and current population is concentrated in the Delta region. However, during wet years, they migrate further upstream, and several adults were observed in Mud Creek and Kusal Slough in 1996 and 1997 (Maslin et al. 1997). Sacramento splittail require flooded vegetation for spawning and rearing and are typically found in areas subject to regular flooding. Riparian vegetation in the project area that is prone to flooding provides potential splittail spawning and rearing habitat.

Cultural Resources

Bidwell-Sacramento River State Park and its vicinity have been occupied and used by diverse peoples for thousands of years. The varied natural setting and accessibility to other areas of the valley, the Sierra Nevada foothills, and the coastal regions have attracted a wide range of native and immigrant cultural groups. Evidence for prehistoric and historic patterns of land use, however, are not frequently encountered within the Park and few systematic cultural resource investigations have been conducted within Park boundaries. Topography, vegetation, water sources, and the ease of waterway and overland transportation to a much wider geographic region make it likely that the area was heavily utilized throughout prehistoric and early historic times. Given such a landscape, it is almost certain that undocumented archaeological sites, features, and artifacts are present within and in the immediate vicinity of the Park. As such, encountering such resources during ongoing and future development and utilization of the Park needs to be addressed if these resources are to be preserved for future generations.

Patterns of historic and prehistoric land-use and activities within the Park and the surrounding area have been dictated to a great extent by the nature of the area's geomorphology and the biotic resources that are found in this unique and dynamic setting. The Sacramento River and its associated tributary creeks, while constituting a great attraction for settlement and resulting in the deposition of many cultural remains, has also affected those very same sites through heavy erosion and the meandering of river and stream courses over centuries. Consequently, it is not possible to discuss the nature of cultural resources in the area without first examining the very nature of the river system itself.

Three Sacramento Valley geomorphic regions (i.e., floodplains and natural levees, flood basins, and low alluvial plains and fans) are located within and in the area of the park (Bryan 1923; Hinds 1952:145-157; Poland and Evenson 1966:239). Prior to the heavy placer gold mining operations of the 19th and 20th centuries and large-scale reclamation projects, several of the perennial and intermittent streams (e.g., Butte and Big Chico creeks) were

prevented from flowing into the Sacramento River by natural levees that bordered the river. These water courses drained into the valley floor, eventually dispersing in tule marshlands bordering the main river or in the flood basins (Thompson 1961:299; Warner and Hendrix 1985:5.8-5.9 in Bayham and Johnson 1990:20). It was the rich and diverse floral and faunal species fostered by these marshland environments that attracted both Native American and early historic populations.

Historic aerial photographs coupled with sediment analysis of the Sacramento River floodplain provide evidence of a dynamic system in a state of constant change. The area west of Pine Creek, and the west side of the Sacramento River opposite Mud and Big Chico creeks has seen numerous changes in the river channel over the last 120 years (Larsen et al. 2002:14-16) (please refer to Exhibits 2-8A to 2-8C). Some of these channel shifts resulted in prominent landforms that are visible today within the park and the surrounding area. Pine Creek Bend (Dunning Slough) in particular, can be seen changing and steadily migrating downstream throughout the late 1800s and well into the 20th century. Between 1870 and 1920, the Jenny Lind Bend, located between Pine and Big Chico creeks, also migrated downstream and during the late 1800s the ever-shifting river channel formed the area known as the Indian Fishery. Coupled with heavy historic mining and reclamation impacts to the river channel and the surrounding floodplain areas, the constant channel migrations of the Sacramento River and nearby creeks have likely obliterated many historic and prehistoric sites.

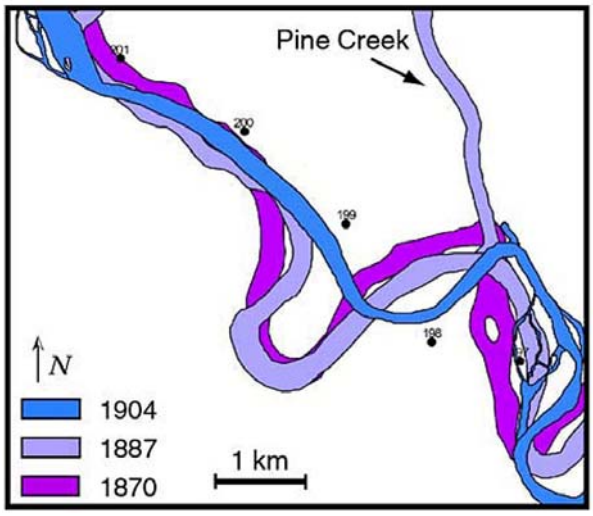
Cultural Setting

In order to place the prehistoric and historic resources of Bidwell-Sacramento River State Park into a broader context, they need to be discussed within a larger cultural framework. The presence of a variety of natural resources, topography, and proximity to important transportation routes made the area an ideal location for prehistoric and historic settlement. Consequently, although few sites, features or artifacts have been formally recorded within the Park, many such resources are likely present within and in the vicinity of the Park.

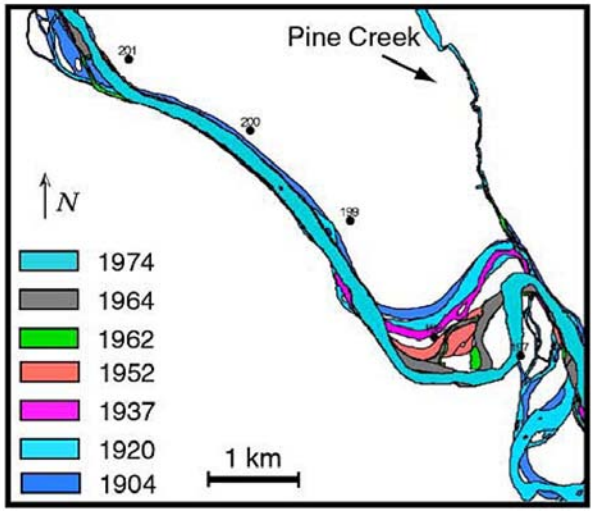
Prehistoric Archaeological Context

Archaeological investigations within the Park and in the general area have been limited and as a result, the prehistory of the region is somewhat poorly understood. The first scientific studies relevant to the Park and the general region occurred in 1907 when the University of California, Berkeley conducted reconnaissance projects in the Tehama and Red Bluff areas (Nelson 1907). Little else in the way of academic research was conducted in the region until the 1950s when various large-scale water projects began construction. The River Basin Survey resulted in a considerable body of research prior to the construction of a number of large water projects. One of the most important portions of this study included extensive inventories and excavations of prehistoric sites for the Oroville Dam (Treganza 1954). Treganza also conducted salvage excavations at prehistoric sites prior to the construction of the Redbank Reservoir in nearby Tehama County (Treganza 1954). Investigations by Chartkoff and Chartkoff (1983); at the Patrick Site (4-But-1), east of the park, built upon the

A.



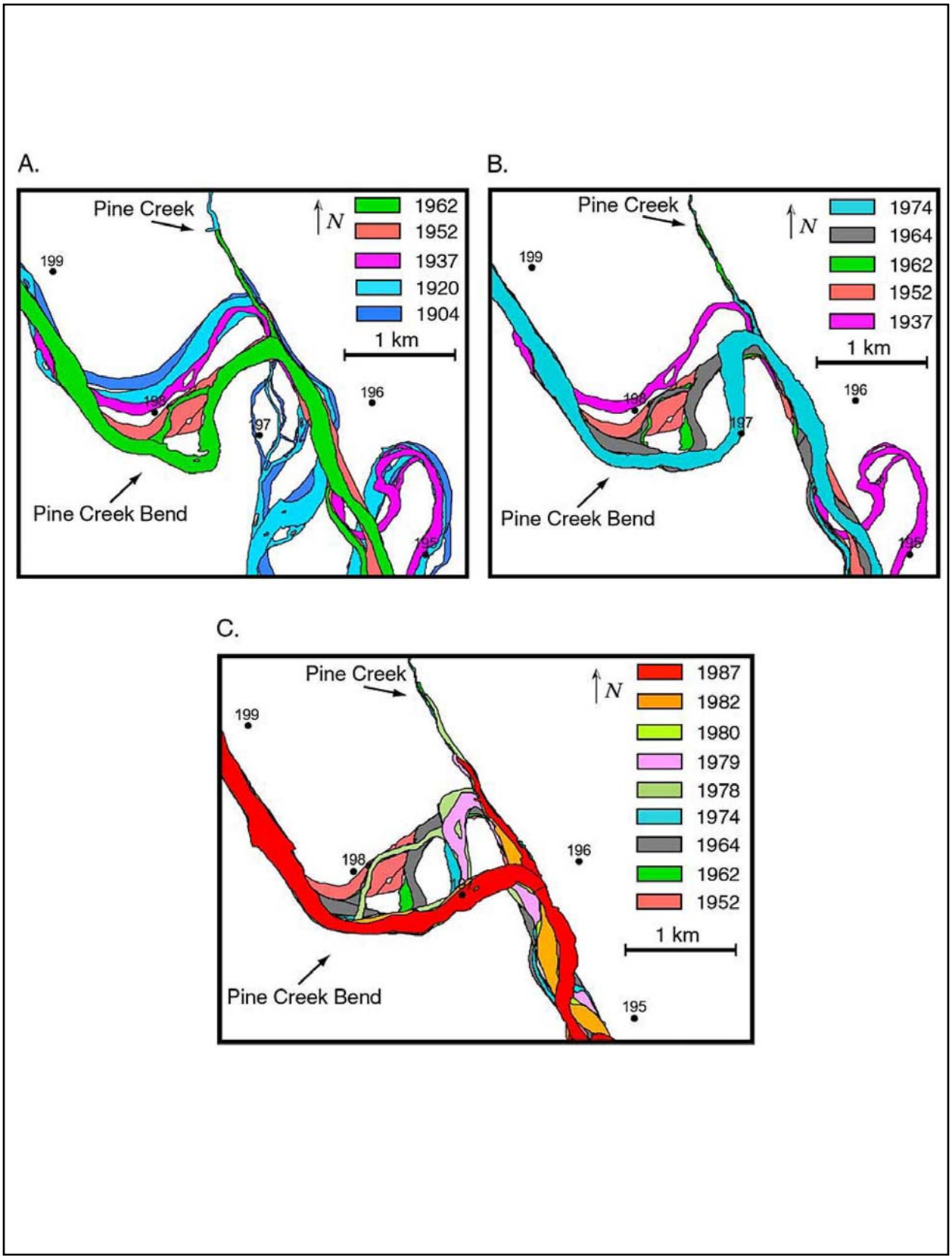
B.



Source: Adapted from Larsen et al. 2002

Historic Change in the Sacramento River Channel
Pine Creek

EXHIBIT 2-8A



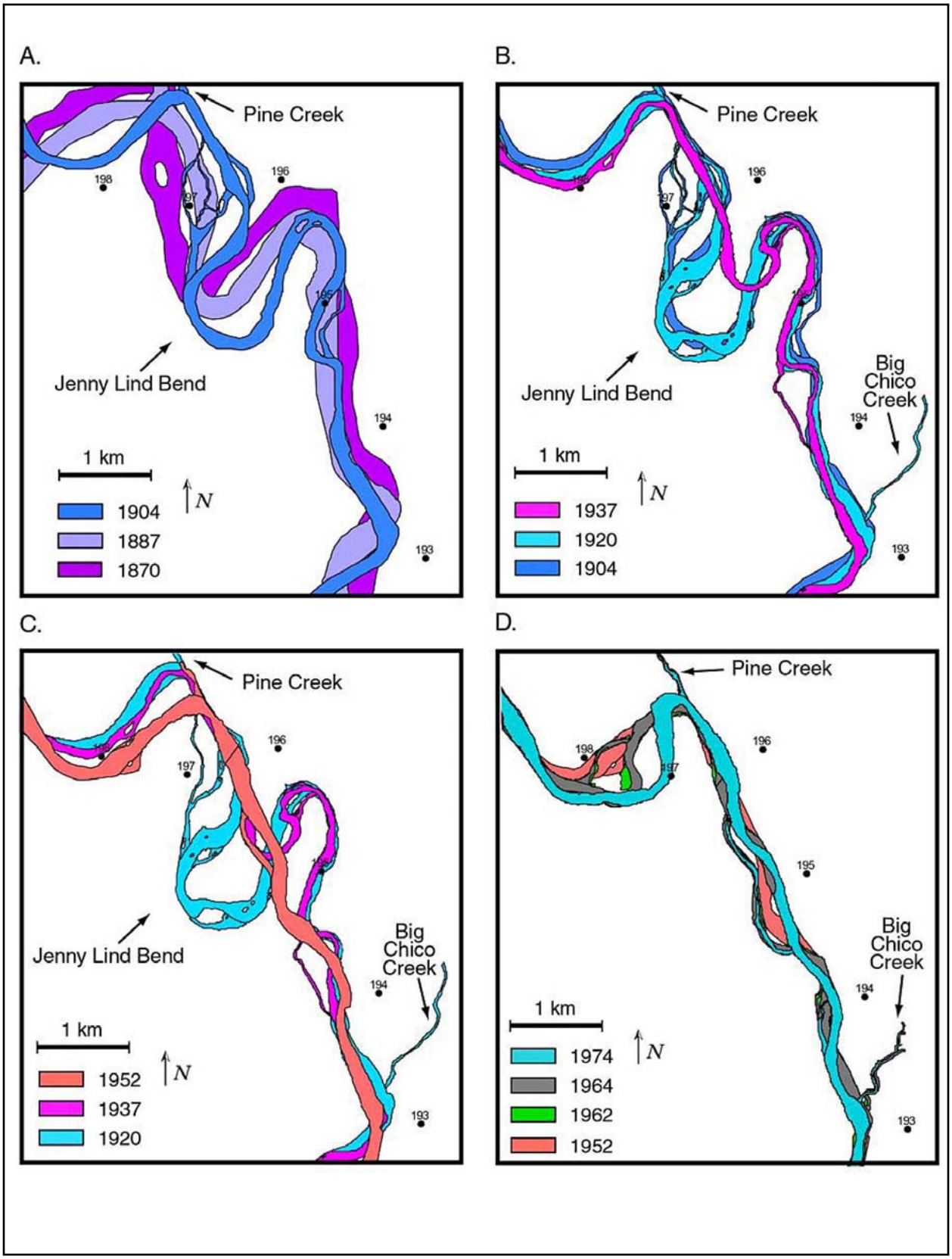
Source: Adapted from Larsen et al. 2002

Historic Change in the Sacramento River Channel
Pine Creek Bend

EXHIBIT 2-8B

Bidwell-Sacramento River State Park
Existing Conditions
P 2T054.01 05/03

EDAW



Source: Adapted from Larsen et al. 2002

Historic Change in the Sacramento River Channel
Big Chico Creek

EXHIBIT 2-8C

prehistoric cultural sequence developed for the Oroville vicinity first proposed by Olsen and Riddell (1963) (based in part of Treganza's 1953 work) which was further updated and expanded by Ritter (1970) and Kowta (1988).

Apart from the more broad-based findings of the work of Treganza, Charkoff and Chartkoff, Riddell and Olsen, Ritter and Kowta, more locally focused archaeological investigations have occurred in the immediate vicinity of Bidwell-Sacramento River State Park. These include the excavations conducted by Bayham and Johnson (1990) at the CA-Gle-105; the remains of a small summer camp occupied during the Early/Middle Horizon (ca. 3000 years before present [BP]), and again following a hiatus around 2000–2500 years ago. Deal (1987), reported on research on the site of CA-But-288, east of the Sacramento River and west of Pine Creek that revealed evidence for shifting subsistence strategies over time.

Along with numerous cultural resource management studies that have been performed in the general area, the results of these investigations constitute the bulk of what is known regarding early Native American cultural sequences in the region. However, while relatively little may be known about specific variations in early Native American subsistence, technological, and ritual practices, broad patterns of material culture have been documented over large geographic regions in California, including the area around Bidwell-Sacramento River State Park.

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (12,000-8000 BP). Social units are thought to have been small and highly mobile. Known sites have been identified within the contexts of ancient pluvial lake shores and coast lines evidenced by such characteristic hunting implements as fluted projectile points and flaked stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) Moratto (1984) and White (2003).

Beardsley (1948) and Lillard, Heizer and Fenenga (1939) and others conducted numerous studies that form the core of our early understanding of upper Central Valley archaeology. Little has been found archaeologically which dates to the Paleo-Indian or the subsequent Lower Archaic time periods (White 2003:11-12). The lack of sites from these earlier periods may be due to high sedimentation rates, which have left the earliest sites deeply buried and inaccessible. However, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic period (5000-3000 BP). During this time, the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (3000-1500 BP). Archaeological evidence suggests exchange systems became more complex and formalized

and evidence of regular, sustained trade between groups was seen for the first time (White 2003:Fig. 4).

Several technological and social changes characterized the Emergent Period (1500-150 BP) when the bow and arrow were introduced, ultimately replacing the dart and atl-atl. Territorial boundaries between groups became well established and were recorded in early historic and ethnographic accounts. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (500-200 BP), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances just prior to large-scale European settlement of California (White 2003:13-14).

Ethnographic Context

Ethnographically, the Sacramento River area in the vicinity of Bidwell-Sacramento River State Park was inhabited primarily by the Maidu (also referred to as the Konkow or the Mechoopda in the vicinity of the Park) who controlled extensive territory in the region, particularly on the east side of the Sacramento River (Dreyer 1984:41, 43, White 2003:21). The most extensive documentation of the Maidu was compiled by Dixon (1905), with other works by Hill (1978), Kroeber (1925, 1932), Riddell (1978), and Voegelin (1942).

The name Konkow, derived from the anglicized version of the native term koyo-mkawi, meaning "meadow land," refers to peoples whose territory included sections of the Sacramento Valley floor and portions of the Sierra foothills east of the present-day cities of Chico and Oroville (White 2003:21, Fig. 11). Formal delineations of the territory may have included prominent physiographic features and landforms although any certainty as to the early historic-period boundaries have been lost through the decimation of the tribe through disease and the removal of the people from their traditional lands during the 19th century. In general, such boundaries may not have been as hard and fast as reported in ethnographic accounts as extensive trail systems existed within the valley and foothill regions that connected the Konkow with the Maidu and other tribes throughout northern and central California.

With a few notable exceptions, the lifeways of the Konkow differed little from their neighbors in the valley and in the Sierra foothills to the east. Probably the main difference, other than linguistic variation occurred in the spiritual realm as the Konkow adhered to the ritual and belief systems associated with the Kuksu cult involving the impersonation of deity figures (White 2003:21). Many other groups in the area did not practice these rituals although the Nisenan and other non-Maiduan central California peoples did (Dixon 1905:322).

Konkow settlement conformed to a "village community" pattern which served as the only formal political structure of the tribe (Kroeber 1925:398). Village communities, which consisted of several closely spaced small settlements and a larger village containing a semi-subterranean earth-covered ceremonial lodge, were autonomous and self-sufficient units

(White 2003:21. Individual communities probably numbered around 200 inhabitants and "owned" or controlled specific territories in which hunting, gathering, and fishing areas were considered common property. The most politically influential man of each community lived in the central village. The head-man acted as an advisor and spokesman for his group although he possessed little in the way of concrete power. This individual was not selected by members of the village community nor was the position hereditary. Rather, the head-man was chosen by the village shaman with the aid of various messenger spirits who could also remove him as they saw fit (Dixon 1905:223-224).

Konkow economic and subsistence patterns were largely based on a seasonal cycle that involved residence in winter village sites in the valley and summer journeys into the mountains for hunting. In the spring, various types of roots, stems, leaves, seeds, and fruits were gathered in large quantities to be dried for winter consumption (Dixon 1905:187). As with many Native American groups in California, the acorn, gathered from a variety of oak species, formed the staple food of the Konkow diet.

In general, Konkow and Maidu life remained unchanged for generations until a disease epidemic, possibly malaria, in 1833 decimated tribes throughout central California. The Konkow population and cultural systems probably never fully recovered from effects of the epidemic by the Gold Rush period starting in 1849. These two factors combined to thoroughly disrupt their social, spiritual, economic, and subsistence patterns that the Konkow and Maidu were quickly reduced to a marginal existence in the region. Most illustrative of the impact these events had on the Konkow and the Nisenan neighbors are population estimates: in 1846, approximately 8,000 people from these groups were recorded. By 1910, that population had been reduced to less than 1,000 (Riddell 1978:386).

Historic Context

A detailed overview of history pertinent to the Bidwell-Sacramento River State Park area can be found largely in Hood and McGuire (1981). The historic context presented below, unless specified, summarizes this work and includes additional information provided by Rick McGaugh (DPR).

The earliest documented European entry into the region around the Park occurred in 1808. That year, Gabriel Moraga led an expedition that eventually traveled up the Feather River and then proceeded north along the banks of the Sacramento River, possibly to the current location of Butte City (Beck and Haase 1974). The purpose of Moraga's travels was largely to search for suitable locations for new missions and to further establish Spanish rule in the face of increasing foreign pressure, from the Russians in particular. Thirteen years would pass before another formal exploratory expedition into the region was launched. In 1821, Mexican governor Pablo Vicente de Sola sent Captain Luis Arguello with 55 soldiers to drive out reported American and Russian intruders from the areas north and east of San Francisco. Although Arguello's route is somewhat speculative, it appears he and his party may have eventually followed the Sacramento River north towards the general region of the Park.

While Hudson Bay trappers probably visited the Park area during the early decades of the nineteenth century (Mansfield 1918:36), the next major exploratory or emigrant group to venture into the area of the Park was the Charles Wilkes expedition, led by Lieutenant George Emmons. This party led a group of emigrants into California from the Columbia River, passing south along the west bank of the Sacramento River in October of 1841 (Bancroft 1886:Vol. XXI:243-45). Lansford W. Hastings, (best known for his scouting of the "Hastings Cut-off" in Utah that eventually doomed the Donner Party) and Joseph B. Chiles, led an emigrant party into California, passing by the Park in 1843. This was the same year that John Bidwell, who would have a dramatic impact on the area, first viewed the area surrounding Chico Creek.

One of the most important series of events in shaping the economic and cultural landscape in the area of the Park during the nineteenth century was the formation of Mexican land grant ranchos. In 1844 three such grants were issued and led to the establishment of several prominent ranchos. Rancho de Farwell, granted to Edward A. Farwell, was located to the south of the Park; Rancho Arroyo Chico, which included some lands now occupied by the Park, was awarded to William Dickey; and Rancho Capay to the west of the Park was granted to Josefa Sotao. John Bidwell, who had supervised some gold mining operations for William Dickey, purchased Rancho Arroyo Chico in 1849 and by 1852 he had 200 to 300 acres under cultivation.

While wheat was the primary crop during the early agricultural period, the crop was slowly replaced with orchards between 1883 and 1900. The prominence of agriculture in the region and the profitability of the large-scale operations was soon reflected in transportation improvements and innovations in the area that continued to be established well into the 20th century. One notable example of the mutually supporting industries can be seen in David Reavis, who acquired some 12,000 acres of the Farwell Grant and soon had over 7,000 acres sown in wheat in the 1870s. In part to aid in the transportation of goods to and from his property, he established Reavis Ferry, which crossed the Sacramento River just north of Chico Landing. Later river crossings included the Chico Free Bridge which was first erected in 1882. Flooding destroyed the bridge at least once in 1889, but it was quickly rebuilt and subsequent replacements occurred in 1894, 1901, and 1913.

While various ferries and river crossings facilitated local commerce and transportation, bringing the vast agricultural output of the region to market relied chiefly on river-borne, and eventually railroad transit. By the late 19th century, river navigation contributed to the viability of the vast rancho holdings, and it was during this time that Chico Landing situated near the confluence of Big Chico Creek and the Sacramento River became a substantial link in the shipment of agricultural products from the Bidwell and Richard J Walsh ranches in particular. As competition to serve these and other large ranch and farm enterprises increased, the principal steamboat owners formed the California Steam Navigation Company in 1854, which basically controlled navigation on the river north of Sacramento.

With completion of the California and Oregon Railroad to Chico in July of 1870, a faster and more efficient means of bringing produce and cattle to market came with it. Although

railroads were being built in the Central Valley of California during the 1850s and 1860s, rail lines were not built into the vicinity of the Park until the early 1870s. The California and Oregon Railroad (a subsidiary of the Central Pacific) finally extended its lines from Marysville to Chico in the summer of 1870 (White 2003:50-51). As the area became more connected by rail to Sacramento, commercial river traffic soon decreased. One of the more notable lines in the area was the Northern Electric Rail, which connected Chico directly with Sacramento. This line ceased to exist as a separate company in 1921 when it was absorbed by the Southern Pacific Railroad, which still operates in the area today as the Union Pacific Railroad.

Regulatory Context

The California Environmental Quality Act (CEQA) offers guidelines regarding impacts on historic and prehistoric cultural resources. CEQA states that if implementation of a project would result in significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources need to be addressed. State CEQA Guidelines define a significant historical resource as "a resource listed or eligible for listing on the California Register of Historical Resources" (CRHR) (Public Resources Code §5024.1). A historical resource may be eligible for inclusion on the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
- is associated with the lives of persons important in our past; or
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the State CEQA Guidelines §15064.5 require consideration of unique archaeological sites. If an archaeological site does not meet the criteria for inclusion on the CRHR but does meet the definition of a unique archeological resource as outlined in the Public Resource Code (§21083.2), it may be treated as a significant historical resource. Treatment options under §21083.2 of CEQA include a project that preserves such resources in place in an undisturbed state. Other acceptable methods of mitigation under §21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Public Resources Code §15064.5(e) of the State CEQA Guidelines requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. State CEQA Guidelines §15064.5(d) directs the lead agency to consult with the

appropriate Native Americans as identified by the Native American Heritage Commission and directs the lead agency (or applicant) to develop an agreement with the Native Americans for the treatment and disposition of the remains.

For historic structures, State CEQA Guidelines §15064.5(b)(3) indicates that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall mitigate impacts to a level of less than significant.

Significant Resource Values

Numerous sources were contacted and consulted in order to gather information regarding the existing conditions and cultural resources that may be located within the Park. These included State Parks files and library resources located at the Chico District Office, Resources Department in Sacramento, and the West Sacramento Library. A records search was conducted at the Northeast Information Center at CSU Chico in February of 2003. Historic maps consisted of GLO plat maps, including Sacramento Valley 1844, Rancho Capay 1858, Rancho Arroyo Chico 1859, and historic Butte County maps dated 1886, 1894, 1901, and 1913. Rick McGaugh, with Bidwell-Sacramento State Park, also shared information regarding resources within or which are suspected to be within the Park.

Input to the General Plan was solicited from the Native American Heritage Commission, and the Mechoopda Indian Tribe of Chico. A review of the Sacred Land files by the Native American Heritage Commission did not reveal the presence of sensitive resources within Bidwell-Sacramento River Park. In a response to the General Plan survey by the Mechoopda Indian Tribe of Chico, their representative expressed several concerns regarding the management direction of the park. They would like to see fewer restrictions on cultural activities that include, but are not limited to, increased access to plant resources and cultural sites, particularly basketry materials, and the preservation of archaeological sites.

A small number of cultural resource inventories have been conducted within the park but have met with only limited success in identifying archaeological resources associated with the prehistoric and early historic eras. Archival research, however, indicates a rich historic relationship between early agriculture, and development within the region and sites, features, and artifacts associated with these periods and activities likely exist within the Park and the immediate vicinity.

Inventories conducted thus far have primarily been limited to those associated with transportation, reclamation, and recreation projects. While a large portion of the plan area has not been inventoried, studies have been conducted within approximately 50% of the Park, as currently defined. These investigations are summarized in Table 2-9, and are illustrated in Exhibit 2-9. The entire Irvine Finch River Access was inventoried by the Department of

Transportation as part of an assessment for a proposed bridge replacement on SR 32. Small portions of the Indian Fishery, Pine Creek Landing, and Big Chico Creek Areas were inventoried for various projects (Jones and Stokes 1996, Hood and McGuire 1981, Johnson 1975).

Table 2-9
Previous Cultural Resource Investigations Conducted Within and Near Bidwell-Sacramento River State Park

Report	Author / Date	NEIC No.
Cultural Resources Survey for the US Sprint Fiber Optic Cable Project, Oroville, California to Eugene, Oregon	Minor and Underwood (1987)	827
Cultural Resources Inventory Report for the M&T Ranch/Parrott Pumping Plant and Fish Screen Project, Butte County, California	Jones and Stokes (1996)	B-L-633
No Title	Manning (1983)	B-L-574
Archaeological Evaluation of a Proposed Bridge Replacement and Approach Realignment on SR 32, Glenn and Butte counties, California	Department of Transportation (1978)	B-168
Archaeological Reconnaissance of 26 Erosion Sites along the Sacramento River, Chico Landing to Red Bluff, Butte, Glenn, and Tehama counties, California	Johnson (1975)	B-150
Bidwell River Park Project (Chico Landing)	Hood and McGuire (1981)	--
Archaeological Reconnaissance of the Bidwell River Park	Hetherington (1980)	--
Cultural Resource Study for the Bidwell-Sacramento River Restoration Project, Butte County, California	Atchley (2000)	

Source: EDAW 2003

While more than 50% of the Park as currently defined has been inventoried for cultural resources, very little is known about the archaeology of the Park and the surrounding area. These investigations have failed to identify resources within the current Park boundaries, but have located six prehistoric sites (CA-But-12, CA-But-189, CA-But-191, CA-But-300, CA-But-402, CA-But-717) and an historic water transmission facility (CA-But-1352) within one-mile of the Park.

Bidwell-Sacramento River State Park

EXHIBIT 2-9
ARCHAEOLOGICAL SURVEY COVERAGE

LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads
- Survey Route
- Survey Area (# - Refer to Table below)

Number	Source Information
1	Jones and Stokes 1996
2	Manning 1983
3	Johnson 1975
4	Dept. of Transportation 1978
5	Minor and Underwood 1987
6	Hood and McGuire 1981
7	Atchley 2000

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Sources: Northeast Information Center, CSU Chico, 2003; GIC 2003; DPR 2003

Dec. 3, 2003

EDAW

x:/projects/bidwell sp/2-9_ArchSurvey.mxd

Historic data indicates that the course of the river has changed dramatically since the middle and latter decades of the 19th century, most likely resulting in complete loss of integrity of the historic resources mentioned in previous documents (e.g. Bidwell Ferry, Chico Landing, Reavis Ferry, Chico Free Bridge). Archives suggest that the Bidwell Ferry was located just south of the confluence of the Sacramento River and Pine Creek. Because this confluence has been migrating south, it seems reasonable that any archaeological remains of this crossing, if present, would be situated north of the current confluence. Likewise, through time the course of the river has moved slightly west from the Chico Landing and Big Chico Creek Areas, suggesting that any remains of Chico Landing, Reavis Ferry, and Chico Free Bridge may be found slightly east of the current river channel.

Over the last 140 years, historic agriculture has resulted in the leveling and re-contouring of large portions of the Park and the region east and west of the river. Of the documented prehistoric archaeological sites near the Park, CA-But-189 appeared to have been severely affected by leveling in 1973 (Manning 1983). The site of CA-But-1353, a sparse scatter of flaked stone, and a late prehistoric/early historic era Konkow/Maidu occupation site (CA-But-717), may remain relatively intact with only minor disturbance. A record of recent visits assessing the condition of CA-But-12, CA-But-191, CA-But-300 and CA-But-402 was not on file at the Northeast Information Center. The single historic site recorded within the vicinity of the Park consists of the remains of a water pumping and intake structure, pump house, and small residence located on Big Chico Creek. This site is still extant and appears largely undisturbed from the time of its original documentation.

Additional resources, not formerly documented within the current Park boundaries include the location of the Giannelli Bridge; a rotating draw bridge, situated at the Sacramento River-SR 32 crossing. Remains of a Sea Scout station related to the World War II home defense effort is situated at the Pine Creek Landing. Another site that may be located near the current Park includes the remains of the Tyler Dance Hall, dating to the early 1900s (McGaugh, pers. comm., 2002; McGaugh et al. 1997).

Aesthetic Resources

The aesthetic character of the Park is based on a set of physical resources that define the landscape, viewing opportunities the Park provides to visitors, and the existing noise environment.

Visual Resources and Scenic Characteristics

The Park is a fragmented sample of riverine landscape, which is a diminishing natural and visual resource in California. Only isolated or fragmented remnants of this resource remain today. At the Park, viewers are reminded of a beautiful and important part of the state's natural heritage. The visual resources that define the scenic character of the Park are described below.

- Oak-Woodland at Indian Fishery. The oak woodland at the Indian Fishery area is a rare example of a climax river community, representing the final stages of succession of the river's floodplain. Most of this habitat in California has been replaced with agriculture.
- Oxbow Lake at Indian Fishery. The isolated oxbow lake at the Indian Fishery area was originally part of the main river channel. The surrounding plant communities continue to encroach upon the lake and could eventually take over. This lake supports a wide variety of plant and wildlife and is an educational example of river dynamics and plant community succession. Herons, ducks, hawks, owls, otter, beaver, muskrat, and the western pond turtle can all be viewed here by the casual visitor. This area also provides an excellent setting for photographers and artists.
- Riparian Forest at Indian Fishery. The lush, dense vegetative cover along the river in the Indian Fishery subunit is typical natural growth along banks of undisturbed watercourses. This vegetation provides visual buffer from neighboring agricultural, industrial, and urban activities, maintaining an uninterrupted visual experience of the natural scenery.
- Big Chico Creek Confluence. The confluence of Big Chico Creek and the Sacramento River provides an aesthetically pleasing riparian setting. In addition, the Big Chico Creek area has heavy riparian forest vegetation, similar to Indian Fishery subunit, and a large open gravel bar, which illustrates the successive stages of riparian forest formation.

Viewsheds

Views of the river and the visual resources along the river may be viewed by boaters on the river and by visitors on river banks. Because of the thick vegetation along the river and the relative flatness of the subunits, views from within the subunits are generally limited to the river and the riparian vegetation along it. Expansive views of the river are limited by its meandering nature.

The area between the Big Chico Creek Riparian Area and the Chico Landing area of Indian Fishery is generally known as the "washout" area. This is the portion of River Road that was washed out in a flood event and remains gravel today. Views from this area provide a unique panorama of the Sacramento River looking upstream. Herons, egrets, kingfishers, osprey, pelicans, cormorants, and other birds generally associated with watercourses can be seen from this location.

Designated Scenic Areas and Routes

None of the roadways providing direct access to the Park are designated state scenic highways. Only one highway segment in Butte County, SR 70 to the east, is an eligible state scenic highway, but it is not officially designated at this point (Caltrans 2003). Similarly, no roadways in the project area are classified as a National Scenic Byway (DOT 2003).

The Sacramento River is not designated as wild and scenic river under the federal and state Wild and Scenic Rivers acts (Public Law 90-542, as amended, 16 U.S.C. 1271-1287 and California Public Resources Code, Section 5093.50 – 5093.70, respectively).

NOISE

Noise is generally defined as sound that is loud, unpleasant, unexpected, or disagreeable. Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. The federal government regulates noise levels in the work place, near aircraft, and for certain products. The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land use compatibility criteria. Local communities generally regulate land use/noise level compatibility by establishing allowable noise levels on private property and levels associated with the use of certain types of sources.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are L_{eq}, L_{dn}, and CNEL. The energy equivalent noise level, L_{eq}, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night average noise level, L_{dn}, is the 24-hour average of the noise intensity, with a 10 A-weighted decibels (dBA) "penalty" added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to L_{dn} but includes an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.). Regarding increases in noise levels, knowledge of the following relationships will be helpful in understanding this report (EPA 1971):

- Except in carefully controlled laboratory experiments, a change of 1 decibel (dB) cannot be perceived by humans.
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10-dB change is subjectively heard as approximately a doubling in loudness and would almost certainly cause an adverse change in community response.

Noise can be generated by a number of sources, including mobile sources, such as boats, automobiles, and trucks, and stationary sources, such as construction sites, and parking lots. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3.0 to 4.5 dB per doubling of distance; whereas, stationary source noise typically attenuates at a rate of approximately 6 dB per doubling of distance. The rate generally depends on the

atmospheric conditions, types of ground surface, as well as the number or type of objects located between the noise source and the receiver.

The Park is located in a rural setting and is known for its serene and generally quiet nature. Typical noises heard at the Park include vehicular traffic along River Road and State Route (SR) 32 and in parking areas serving the Park, which contribute to the ambient noise environment. In addition, there are intermittent noises associated with recreation activities, namely engine noise from motorcraft, and from nearby agricultural operations.

VISITOR USE AND OPPORTUNITIES

Visitor use and opportunities refer to those resource values at the Park pertaining to recreation and interpretation/education. As a State Park, these values are important considerations in future Park planning.

Recreational Resources

The river is the primary recreational resource in the Park. The riparian vegetation and trail system also provides for nature-oriented viewing. Developed facilities at the Park, such as day-use areas and boat launches, provide for additional land-based recreational activities (e.g., picnicking) and facilitate water-based activities (e.g., boating, fishing). Currently, only day-use facilities are available in the subunits on the east side of the river, with limited, en-route overnight camping opportunities at Irvine Finch on the west side. With limited overnight facilities, recreation use at the Park is generally oriented towards day–use activities. A description of existing recreational activities and facilities at the Park is provided below.

Recreational Activities

Based on its proximity to the Sacramento River, recreation activities at the Park are generally water-oriented, although significant land-based activities, such as nature walks, sunbathing, bicycling, picnicking, hiking, camping, and wildlife viewing, are available on the lands adjacent to the river. The most common recreation activity at the Park is fishing, which visitors enjoy year-round. In fact, based on anecdotal data, fishing attracts approximately 60% of all Park visitors. Fish species in the river generally targeted by fisherman include king or chinook salmon, rainbow/steelhead trout, striped bass, shad, largemouth bass, smallmouth bass, white catfish, channel catfish, sturgeon, carp, and Sacramento pikeminnow, depending on the season. In the oxbow lake, bluegill, crappie, largemouth bass, and catfish are popular species for fishing. Fishing activity is heaviest during the salmon season, from July through December. The second most popular activity is recreational paddling and floating on the river, including the use of kayaks, canoes, rafts, and inner tubes. The tubing run between the Irvine Finch River Access area and the Big Chico Creek gravel bar attracts thousands of visitors during peak holiday periods (i.e., Fourth of July and Labor Day). Ski-boating is also popular activity and supports related activities such as water-skiing and wakeboarding. During the summer season, swimming is another popular activity at the Park. Other recreational activities include picnicking, nature viewing, biking, hiking, camping, and

sunbathing. Hunting is not allowed in the Park, although it is a permitted use on nearby lands managed by the CDFG.

Recreation Facilities

As described above, the facilities at the Park are geared toward day-use activities, although there are limited overnight camping facilities available. Developed recreational facilities at the Park are shown in Table 2-10.

In summary, two subunits in the Park have boat launching facilities (i.e., Irvine Finch and Pine Creek Landing) and three subunits contain picnic facilities (i.e., Irvine Finch, Pine Creek Landing, and Indian Fishery). There is a self-guided nature trail (approximately ¾-mile loop) with a printed trail guide handout at Indian Fishery. The Irvine Finch River Access area provides an en-route style camping that accommodates recreational vehicle (RV) use at the existing parking area. There are currently no other developed camping sites at the Park.

Patterns and Levels of Recreational Use

Attendance Levels

Table 2-11 demonstrates historic attendance levels at the Park. The Park received a total of 141,826 visitors during the 2000-2001 fiscal year. Nearly all of the visitors were day users, and most of them were non-paying visitors. The attendance data has shown a steadily growing trend in the number of visitors to the Park, with exceptions during the period 1997-1998. Low attendance during this period was likely caused by extreme flood conditions that affected Park accessibility and quality of recreation activities.

Recreation Use Patterns

The California State Parks Visitor Survey system, which includes nearly 35,000 surveys since 1996, is the primary tool used to collect information on recreational use levels and patterns for units in the State Park system. However, the Park is not included in the Visitor Survey system process, because the Park has no central location for disseminating surveys. As a result, the details regarding the visitors and the recreational use levels and patterns at the Park are based on observations by Park staff.

Up to 60% of visitors come to the Park to fish for salmon, shad, and other popular game fish during the fishing seasons. Non-motorized boaters who use inner tubes, rafts, canoes, and kayaks, make up the second largest group; most boaters come during the holiday weekends, although boaters may be found during all of the warmer months. Other activities include biking, hiking, picnicking, and nature viewing.

The Park is most heavily used during the salmon and shad fishing seasons between April and December. The single best attended days occur during the Fourth of July and Labor Day weekends, when up to 20,000 people may gather in the Park for inner tubing and associated activities.

Table 2-10
Existing Recreational Facilities

Subunit	Boat Ramps/ Launches	Picnic Areas	Trails	River Access	Camping	Fishing
Irvine Finch River Access	Yes (Concrete boat ramp served by approximately 250 parking spaces)	Yes (4 picnic tables, including 2 ramada-covered sites and 1 ADA accessible site)	No	Yes	Yes (6 en-route camp sites with BBQ grills)	Yes (boat fishing only)
Pine Creek Landing	Yes (Concrete boat ramp served by approximately 20 boat trailer parking spaces)	Yes (6 picnic tables at two separate locations, 3 are planned to be ramada-covered sites and 1 ADA accessible site)	Yes (Short trail along Pine Creek)	Yes	No	Yes (boat and bank fishing)
Indian Fishery	No (abandoned boat launch at Chico Landing)	Yes (8 concrete picnic tables)	Yes (Self-guided loop trail [3/4-mile] served by numbered posts and trail guide)	No (access is available to the ox-bow lake)	No	Yes (bank fishing only)
Big Chico Creek Riparian Area	No	No	Yes (From parking area to gravel bar)	Yes	No	Yes (bank fishing only)

Source: McGaugh et al.1997

Table 2-11 Attendance Levels						
Visitor Type	1996	1997	1998	1999	2000	2001
Paid Day Use	16,197	10,081	0	12,189	17,529	20,739
Free Day Use	105,453	9,942	1,384	73,777	115,231	119,081
Overnight	0	0	766	0	0	5
Total	123,646	22,020	4,148	87,965	134,760	141,826
Note: Based on fiscal years (i.e., 1995-1996 fiscal year shown as 1996) Source: Sullivan 2003						

Concessions

Concession opportunities are often associated with recreation developments at State Park units. Because existing recreation opportunities are limited in the Park and are focused on day-use activities, there are no concession services at the Park, although short-term concessions have been used at the Park in the past to rent water-oriented floating gear. As the Park develops, there may be opportunities to use concession services in the future.

Interpretative and Educational Resources

There are substantial opportunities for interpretation and education at Bidwell-Sacramento River State Park. In an effort to plan for these opportunities, an *Interpretive Prospectus* (1997) for the significant natural, cultural, and recreational resources has been developed for the Park; a description of the main features (i.e., topics and themes) of the *Interpretive Prospectus* is presented in Chapter 3 (Park Plan) and is summarized in Table 2-12 below.

Implementation of the prospectus has involved only minor improvements to enhance or develop interpretative displays, tours or other such facilities or programs.

Existing Interpretive and Educational Facilities

The development of proposals included in the Interpretive Prospectus has been minimal to date. Existing interpretive/educational facilities consist of a notice/ interpretive panel for park rules at Irvine Finch, an interpretive display at Pine Creek Landing featuring the Bidwell Ferry site, interpretive fishing panels, and a printed trail guide available at the trailhead near the Indian Fishery day-use area.

Programs and Special Events

Currently, the Park serves as field lab for local schools. Two to three field trips per week are conducted by a Park aid. Natural science classes from California State University, Chico also visit the Park on a regular basis (McGaugh, pers. comm., 2003).

Table 2-12 Interpretive Themes and Recommended Facilities [1]			
Subunit	**Primary Theme**	**Secondary Theme**	**Recommended Facilities and Programs**
Irvine Finch River Access	Access to Recreation	▸ Safety in Recreation ▸ History of the River banks	▸ Interpretive Panels ▸ Special Events
Pine Creek Landing	Riparian Tributaries	▸ Habitat Flows into Habitat	▸ Interpretive Trail ▸ Interpretive Panels ▸ Brochures ▸ Canoe Interpretive Trail ▸ Interpretive Programs
Indian Fishery	Ox-bow Lakes are Dynamic	▸ Oak Woodlands ▸ The Indian Fishery Weir ▸ Steamboats and Dances	▸ Interpretive Trail ▸ Interpretive Panels ▸ Special Events ▸ Interpretive Programs
Chico Landing [2]	The River is the Laboratory	None	▸ Interpretive Trail ▸ Interpretive Panels ▸ Brochures ▸ Primitive Camp/ Teaching Laboratory
Big Chico Creek Riparian Area	Changing Face of the River	▸ The River Requires Stewardship ▸ Recreation and the Gravel Bar ▸ Safety in Recreation	▸ Interpretive Trail ▸ Interpretive Panels ▸ Interpretive Programs

[1] From Interpretive Prospectus (1997).
[2] Although not a separate subunit, interpretive considerations were developed for the Chico Landing area at Indian Fishery

Source: DPR 1997

2.1.5 Administration and Operations

It is also important to understand the administration and operations of the Park in developing future management strategies as part of the General Plan. Important considerations include, but are not limited to existing approaches to facility development, infrastructure, and Park and emergency service support.

Facilities and Infrastructure

Non-recreation facilities at the Park consist of various buildings/structures, signage, and utility appurtenances. Each of these categories is described in more detail below. Table 2-13 summarizes the existing non-recreation facilities at the Park.

Table 2-13 Non-Recreation/Interpretive Facilities				
Subunit	Administration	Restrooms	Information Signage	Other
Irvine Finch	No	Yes (One comfort station building with 4 flush restrooms)	Yes (Entrance station, entrance sign, park rules, interpretive fishing signs)	Yes (Concrete storage building, onsite septic system)
Pine Creek Landing	No	Yes (Portable restrooms and vault toilet being planned)	Yes (interpretive fishing signs)	No
Indian Fishery	Yes (Park office complex-modular structures)	Yes (Portable restrooms)	Yes (Entrance sign, Park rules, interpretive fishing signs)	Yes (Onsite septic system)
Big Chico Creek Riparian Area	No	Yes (Portable restroom)	Yes (Park rules, interpretive fishing signs)	Yes (entrance gate)
Source: EDAW 2003				

Buildings

Existing buildings at the Park are limited to administrative facilities at Indian Fishery and visitor-support facilities located at the Irvine Finch River Access area. There is no visitor center or employee housing at the Park.

Administrative Buildings

The Park is served by one administrative building complex located between the Indian Fishery day-use area and Chico Landing area. The administrative complex includes the Park office and a service yard for storing maintenance equipment and materials. The Park office consists of a small modular building and some small outbuildings. This area has historically been subjected to repeat flooding, and consequently the Park office has been elevated on cinder block supports in an attempt to avoid further damage.

Entrance Stations

There is one visitor entrance station at the Park, serving the Irvine Finch River Access area only. The entrance station monitors visitation to the Irvine Finch facility and serves as a fee-collection station, but it does not provide any interpretative or other visitor services. Because

it is located on the west side of the Sacramento River, it does not control or monitor access to the other subunits on the east side of the river.

Restrooms

There is a restroom building with four flush toilets located at the Irvine Finch facility. There are also flush restroom facilities at the administrative center at Indian Fishery. The rest of the subunits (i.e., Pine Creek Landing, Indian Fishery, and Big Chico Creek Riparian Area) are all served by portable restrooms (note: there are no restrooms or portable toilets located at the on the east side of the Big Chico Creek area). A vault restroom is currently planned at Pine Creek Landing.

Utilities and Services

Sewage and Water Treatment

The wastewater generated at the existing administrative center is treated by an onsite septic tank. Because the administrative center is located within the floodplain, this septic tank is designed to prevent accidental release during flood events. Similarly, wastewater generated at Irvine Finch is treated by a separate septic system, which was installed in 1988. This system has sufficient capacity so that the septic tanks have never needed to be pumped out. Wastewater generated at the portable toilets elsewhere in the Park is collected in holding tanks and disposed of at offsite locations. There are no public sewer connections or sewer lines at the Park.

Water Supply

The Park operates two water wells with pumps in order to provide water to the administrative center and to the facilities at Irvine Finch. The water provided at Irvine Finch meets standards for potable water, whereas the water provided at the administrative center is not required to meet such standards. There are two small bladder tanks at Irvine Finch and one at the administrative center, approximately 40 gallons each, that are used for water storage. There are no large water storage tanks in the Park.

High Voltage Power Lines

Electricity service is provided to the Park by Pacific Gas and Electric Company (PG&E). There are no known high-voltage power lines in the Park. The nearest power lines are located along River Road and on an adjacent Caltrans property. Underground telephone and electricity lines supply electricity to the Irvine Finch subunit and the administrative center at Indian Fishery. A pre-existing power line is also located on the Big Chico Creek Riparian Area, east of River Road.

Other Utilities

Propane is provided to the administrative center by contract vendors and is stored in an onsite propane tank. Telephone service is provided by SBC. An underground telephone line connects the administrative center to River Road.

PARK SUPPORT AND EMERGENCY SERVICES

There are no emergency service facilities at the Park. Emergency services for the Park are provided by local agencies as described below.

Fire Protection

The Park has experienced only two fire incidents since 1980. A fire incident in 1980 at Indian Fishery burned one-quarter acre of land prior to being extinguished by the Park Ranger. Another fire incident occurred at the parking lot at Pine Creek Landing; approximately 300 square feet of land were burned.

The Butte County Fire Department contracts with the California Department of Forestry and Fire Protection (CDF) to administer fire prevention and suppression in Butte County. The program includes full-time firefighters as well as a capably-trained contingent of volunteers who respond to every type of emergency. The CDF Butte County Unit, Station #43 is located in west Chico at 2544 SR 32 and would likely be the first to respond to a call for fire prevention or protection at the four subunits in Butte County.

The Hamilton City Volunteer Fire District provides fire protection and emergency medical services to the Irvine Finch subunit, which is located in Glenn County. The Hamilton City Volunteer Fire District can respond to fire emergencies at the Park within minutes.

Law Enforcement

Law enforcement services are provided concurrently by the Department and local law enforcement agencies, namely the Butte County Sheriff Department for all subunits located in Butte County and the Glenn County Sheriff Department for the Irvine Finch subunit in Glenn County. Park security is the primary responsibility of the Park Ranger serving the Park.

Medical Aid

Medical aid at the Park is provided first by the Park Ranger, who is required to be the emergency medical responder and is equipped with oxygen tanks, splints, and other basic medical devices. If necessary, paramedics may also be called upon to provide emergency medical services; paramedics can generally arrive at the Park within 8 to 10 minutes. There are no medical facilities in or adjacent to the Park. Patients requiring additional medical attention are transported by ambulances to the 24-hour emergency room at the Enloe Memorial Hospital in the City of Chico. Alternatively, patients may be transported by Enloe Flightcare helicopters.

MULTI-AGENCY COORDINATION

The Department relies on multi-agency coordination in overall operations and resource management efforts at the Park. This coordination is formalized in a Memorandum of Understanding (MOU) between the Department, U.S. Fish and Wildlife Service, and the California Department of Fish and Game established in 2001 (see Appendix E). It applies to lands within the Sacramento River National Wildlife Refuge (USFWS), Sacramento River Wildlife Area (CDFG) and State Parks, and includes future property acquisitions.

The purpose of the MOU is to is to formally document an agreement between these public land management agencies to manage, monitor, restore and enhance lands managed for fish, wildlife and plants along the Sacramento River in Tehama, Butte, Glenn, and Colusa counties. A secondary purpose is to prevent duplicative land management and property acquisition efforts.

2.2 PLANNING INFLUENCES

2.2.1 SYSTEM-WIDE PLANNING

System-wide planning deals with long-range, management level planning beyond the scope and scale of a single unit or District. System-wide planning will typically address issues and trends, needs and deficiencies, roles and responsibilities, or actions and opportunities for the entire State Park System. The Declaration of Purpose, Vision Statement, management goals and guidelines for each unit must be within the context of the Department Mission Statement and the state-wide directives described below.

CALIFORNIA STATE PARKS MISSION STATEMENT

The Mission of California State Parks is to:

> "Provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation."

STATEWIDE TRAILS PLAN

The California Recreational Trails Plan addresses the mission of the Department as it relates to the provision of high-quality recreation opportunities. It provides guidelines for future actions of the Statewide Trails Office Coordinator. The mission and vision pertaining to trails of the Department is as follows:

> Establish and maintain a system of trails and greenways that serves California's diverse population while respecting and protecting the integrity of its equally diverse natural and cultural resources. The system should be accessible to all Californians for improving their physical and mental well-being by presenting opportunities for

recreation, transportation and education, each of which provides enhanced environmental and societal benefits.

The trails plan serves as a guideline for establishing and maintaining Parks in California and integrates the State Parks trail programs with the local and private organizations that operate and maintain the trails. Moreover, it will serve as a planning and maintenance guide for pathways and bicycle trails in the Park.

Natural Communities Conservation Program

The Natural Communities Conservation Program (NCCP) developed by CDFG in 1991, is a unique California effort. NCCP provides regional planning strategies for the protection of plants, animals, and their habitats, while allowing suitable economic development. The primary objective of NCCP is to conserve natural communities at the ecosystem scale while accommodating compatible land use. There are no designed NCCP areas in the Park; however, this General Plan adheres to the principles established in the NCCP regarding the protection of biodiversity.

Americans with Disabilities Act

The Americans with Disabilities Act (ADA), the federal law that prohibits discrimination on the basis of disability, is applicable to all actions by the states, including the preparation of state park general plans. In compliance with the ADA, the Department published the Access to Parks Guidelines, which were first issued in 1994 and last revised in 2001. The Access to Parks Guidelines details the procedure to make state parks universally accessible while maintaining the quality of park resources. Also included in the guidelines are recommendations and regulations for complying with the standards for accessibility. The Department has also published the *All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities* (2003), which provides guidance on developing accessible interpretive programs and facilities.

California Heritage Task Force

Established in 1981 by the California State Legislature, the California Heritage Task Force (CHTF) was established to develop a set of policies and programs for the state's cultural heritage resources. In 1984, the CHTF Report was published as a guide to cultural resource management legislation writing.

Public Resources Code

California Public Resources Code Section 5019.50-5019.80, Classification of Units of the State Park System, provides guidelines for the designation of State Park units and guiding principles for State Park improvements. The Public Resources Code classifies different types of State Park units and provides guidelines for the upkeep and improvements of Park units. This code will be used as a reference to plan appropriate improvements within the Park.

2.2.2 Regional Planning Influences

Regional planning within the Department may encompass several units, an entire District or parts of two or more Districts. By focusing on the relationship among units, regional plans facilitate coordination, provide for greater consistency, create economic efficiencies, and allow for greater effectiveness of management of the State Park System. Regional planning creates greater effectiveness in general planning by considering priorities between and among units, such as coordination of interpretive media for several units that are linked thematically or geographically.

Other federal, state, and local agencies, as well as private and non-profit entities, are involved in regional planning efforts that are pertinent to the Park. The upper Sacramento River is subject to complex public ownership patterns, and consequently, diverse planning and management systems. Exhibit 2-10 shows public and non-profit land ownership in the project area. Public landowners in the vicinity of the Park include CDFG, USFWS, and the Reclamation Board. Other nearby properties are held by TNC and River Partners, which often transfer properties into public ownership.

Local and Regional Conservation Planning

Sacramento River Conservation Area

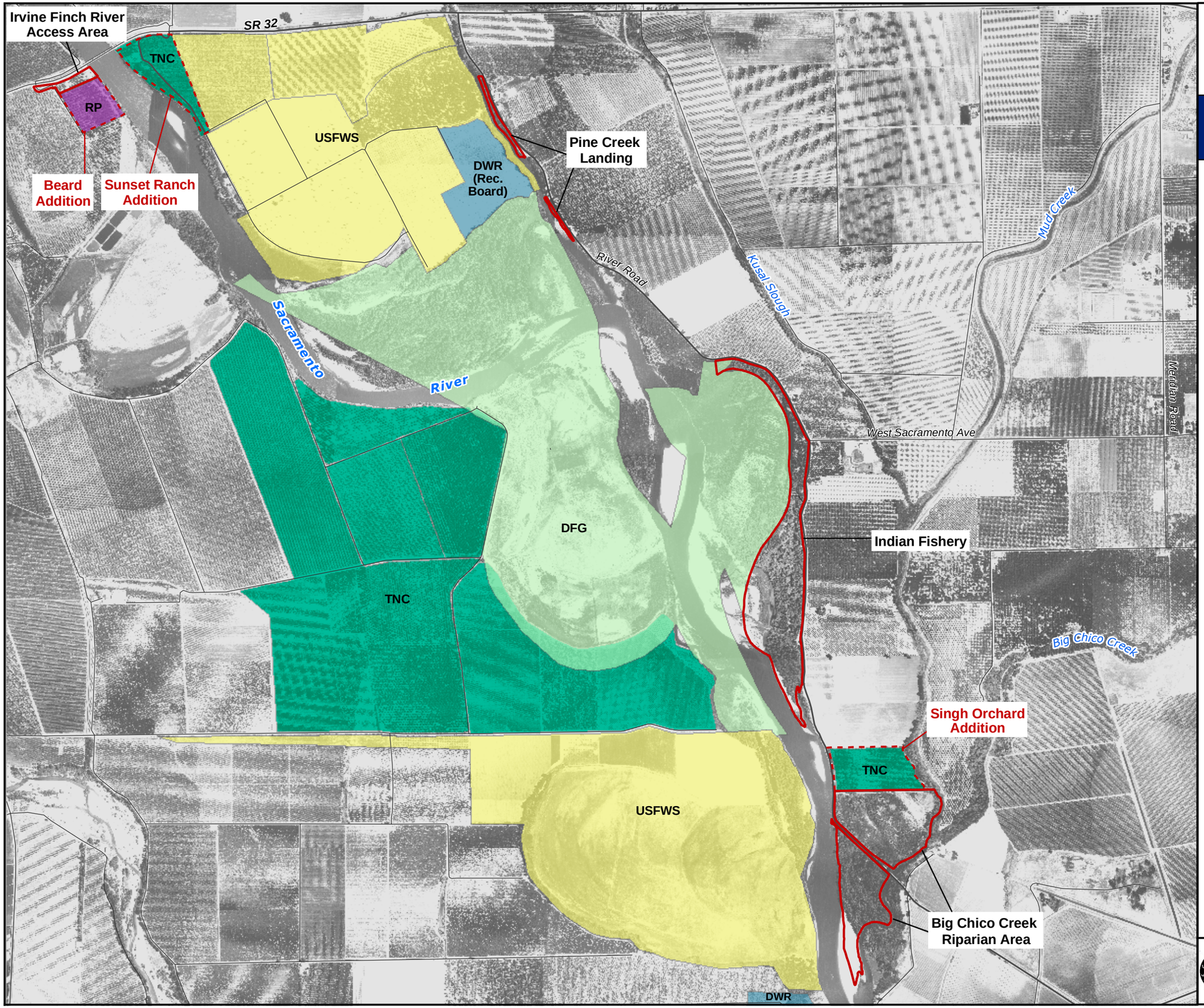
In 1986, the California State Legislature passed Senate Bill 1086, which calls for the development of a management plan for the Sacramento River and its tributaries to protect, restore, and enhance both fisheries and riparian habitat. The result of this effort was the Upper Sacramento River Fisheries and Riparian Habitat Management Plan published by the State of California Resources Agency in 1989. This management plan addresses a 222-mile stretch of the Sacramento River from Keswick Dam (north) to Verona (south), which is referred to as the Sacramento River Conservation Area (SRCA). The goal of the SRCA is to "*preserve remaining riparian habitat and reestablish a continuous riparian ecosystem along the Sacramento River between Redding and Chico and reestablish riparian vegetation along the river from Chico to Verona*." The Sacramento River Conservation Area Forum (SRCAF) is a conglomeration of local, state, federal, and private organizations aimed at implementing the actions necessary to achieve the goal of the SRCA. The guiding principles for the SRCA include: ecosystem management, flood management, voluntary participation, local concerns, bank protection, and information and education. The Park is located within the SRCA; therefore, planning for the Park's future needs to consider the management strategies developed for the SRCA.

Sacramento Wildlife Area Management Plan

In August 2002, CDFG initiated the development of a Comprehensive Management Plan for the Sacramento River Wildlife Area, portions of which are located adjacent to the Park, namely the Indian Fishery and the Pine Creek Landing subunits. The management plan, which will update CDFG's management strategy for the Wildlife Area, involves detailed inventory and analysis of the 13 units, extensive public outreach, and coordination with other

Bidwell-Sacramento River State Park

EXHIBIT 2-10
PUBLIC LANDS



LEGEND

- Bidwell-Sacramento River State Park
- Potential Property Additions (In discussion with landowners)
- Major Roads
- Roads

Land Ownership

Public (In addition to State Park lands)

- CA Department of Fish and Game (DFG)
- Reclamation Board (DWR)
- US Fish and Wildlife Service (USFWS)

Private (Non-Profit)

- The Nature Conservancy (TNC)
- River Partners (RP)

N

0 2,000 4,000
Feet

0 0.5 1
Miles

Note: Property boundaries are approximate and should not be considered legal descriptions.

Sources: GIC 2003, DPR 2003

Dec. 3, 2003

EDAW

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management agencies active in the plan area, including the Department. Upon finalization of the plan, it is expected that there would be no substantial changes in land use at the Wildlife Area and no new facilities are planned. This area would continue to be focused on conservation, allowing appropriate recreational opportunities, including hunting, fishing, hiking, wildlife observation, environmental education, and nature interpretation. The Sacramento River Wildlife Area is currently open to the public and recreation and public use is a major consideration in the planning effort.

Comprehensive Conservation Plan

The USFWS is in the process of developing a Comprehensive Conservation Plan (CCP) for the Sacramento River National Wildlife Refuge (SRNWR), a portion of which is located in proximity to the Park, between Irvine Finch and Pine Creek Landing. Public meetings were conducted during 2001 to gather information and to discuss ideas for the CCP. The CCP is expected to be completed in the Spring 2004 and will be available for public comment. It will guide management of the SRNWR for the next 15 years. Recreation uses being considered would need to be consistent with the SRNWR's mission to preserve, restore, and enhance riparian habitat for threatened and endangered species, and other wildlife and vegetation. Compatible recreation opportunities that will be considered in the SRNWR include hunting, fishing, hiking, wildlife observation, environmental education, and nature interpretation. Hunting may be restricted at the Pine Creek Unit of the SRNWR, based on potential land use incompatibilities; this issue will be open for public comment. Upon completion of the CCP, portions of the SRNWR may become accessible to the public, while other areas may need to remain restricted in terms of public access.

The Nature Conservancy

Recently, TNC, in conjunction with the USFWS, the California Wildlife Conservation Board and the California Department of Fish and Game, conducted a study to assess existing and potential public recreation uses, access, needs, and opportunities along a 100-mile stretch of the Sacramento River between Red Bluff and Colusa. The goals of the *Sacramento River Public Recreation Access Study* (2003) were: (1) to identify and characterize existing public access opportunities and needs associated with public recreation facilities and infrastructure throughout the study area, and (2) to identify and make recommendations for future public recreation access opportunities and management programs in the study area.

The results of this study and analysis of previous studies indicate substantial public interest in natural areas. Potentially attractive recreation uses along the Sacramento River include trail hiking, walking, hunting and fishing, camping, wildlife viewing, nature study, picnicking, boating, beach activities, attending outdoor cultural events, and visiting museums and historic sites. Regional trends indicate a continued interest in the traditional recreation activities of boating, fishing, and hunting. Additionally, other uses such as bird watching, wildlife viewing, and other nature observation activities are expected to increase 65% over the next 40 years. Some of the key suggestions and needs identified during the course of this study focused on the need to:

- improve the condition of boat ramps and other access points;
- provide more outreach, including handouts, kiosks, and visitor centers;
- provide maps and signage to assist in finding river access and services and to reduce trespassing;
- increase the number of facilities and amenities such as trails, picnicking and camping facilities, especially in the southern portion of the study area;
- provide recreation opportunities for the diversity of ethnic groups (primarily Caucasian and Hispanic) and interests in the study area;
- minimize conflicts between different recreation uses (e.g., boating vs. bird watching, hunting vs. hiking or fishing);
- increase coordination among land managers to improve the value of the recreation opportunities within the study area by planning together and sharing resources and expertise;
- improve coordination among law enforcement and resource agencies with regard to public safety services, including coordination for large annual recreation events;
- plan for the expected substantial population growth in the study area and region over the next decades; and
- coordinate public recreation access planning among the resource agencies, non-profit land trusts, private entities, local landowners, recreation users and other stakeholders in the study area to optimize results and minimize conflicts.

A number of recommendations came out of this study, including the proposed establishment of a "Pine Creek Preserve," which would consist of over 3,800 acres of conservation land held by federal and state agencies and non-profit land trusts in the Pine Creek/Hamilton City area. As such, it would involve management considerations at Bidwell-Sacramento River State Park. The Pine Creek Preserve could include a nature/visitor center and a river research center. The area is now a nearly contiguous dynamic river system complex of exceptional riparian forest, scrub, grassland and riverine wetland habitats, along with lands undergoing restoration. The area offers the opportunity to spotlight the compatibility of conservation and recreation uses in a highly visible and easily accessible location.

Local General Plans and Bicycle Plans

The Park is located in unincorporated portions of Butte and Glenn counties. While the Park is state-owned and thus not subject to the authority of the local jurisdictions, local jurisdictions have land use planning authority over some adjacent and nearby properties. As such, the proposed General Plan and the county general plans have indirect planning influence over

one another. The counties' bicycle plans are also pertinent to roadways that provide bicycle access to the Park.

Butte County General Plan

The Butte County General Plan was adopted over a period of several years, most elements being adopted in the 1970s. Elements in the General Plan that are most applicable to the Park include Land Use, Conservation, Open Space, Recreation, and Agriculture. The General Plan Land Use Element contains goals and policies for recreation facilities, open space, scenic areas, biological habitat, natural areas, archaeological resources, and flood hazards. The Conservation Element includes a discussion of flood control, soils and soil erosion, wildlife and fisheries. The Open Space Element addresses agricultural lands, timber land, water resource areas, wildlife habitat, and open space for outdoor recreation. State and Federal Recreational areas are discussed in the Recreation Element, and there is also an Agricultural Element, which would apply to surrounding and adjacent properties to the Park.

Butte County Bikeway Master Plan

The Butte County Area Governments, in coordination with the Butte County Public Works Department, prepared a Bikeway Master Plan for Butte County, which was adopted in September 1998. This document focuses on countywide bikeway connections, and it incorporates the proposed bike plans for each of the cities within the county. In the vicinity of the Park, the Bikeway Master Plan identified the need for Class II bike lanes on Chico River Road from the City of Chico to River Road (high funding priority), on River Road from Ord Ferry Road to SR 32 (high funding priority), and on SR 32 to the county line (medium funding priority). Class II bike lanes provide for a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted. Caltrans standards generally require a 4-foot (1.2-meter) bike lane with a 6-inch (150-mm) white stripe separating the roadway from the bike lane.

While these roadways are currently used by bicyclists, none of these bike lanes have been developed and no funding has been identified for these proposed bike lanes. Because the Bikeway Master Plan is more than 3 years old, a new plan must be adopted to qualify for funding. Currently, no update has been proposed by the Butte County Public Works Department, which is responsible for the update (Peplow, pers. comm., 2003).

Glenn County General Plan

The Glenn County General Plan was adopted in 1993. Unlike the traditional general plan, the Glenn County General Plan is divided into three major subject headings rather than elements. The General Plan contains land use classifications and goals and policies for each of the major subject headings: Natural Resources, Public Safety, and Community Development. The subject subheadings in the General Plan that are most applicable to the Park include Water Resources, Biological Resources, Cultural Resources, Flood Hazards,

Water Quality, Land Use/Growth, Transportation/Circulation, and Public Services and Facilities.

GLENN COUNTY BICYCLE PLAN

The Glenn County Bicycle Plan was adopted in 1997 to provide a safe, effective, and efficient use of a countywide bicycle system. In the vicinity of the Park, a Class III bike route has been proposed for SR 32 from the county line to SR 45 (low funding priority), a Class III bike route on County Road 9 from SR 32 towards the City of Orland (low funding priority), and a Class II bike lane on SR 45 from SR 32 to the Colusa county line (high funding priority). Class II bike routes have no delineation showing bicycle right-of-way. While Caltrans has not assigned minimum widths for Class III bike routes, 3 feet of additional pavement is desirable. Class III bike routes are generally identified by signs designating a roadway as part of a bikeway system. None of these bike lanes and routes have been developed or have been funded for future development.

OTHER PLANNING PROJECTS

Hamilton City Flood Damage Reduction and Ecosystem Restoration Project

The USACE and The Reclamation Board are in the process of developing and evaluating potential alternative plans to reduce flood damages and restore the ecosystem along the Sacramento River near Hamilton City. The project study area is bounded by the Sacramento River to the east and the Glenn Colusa Canal to the west and extends about 2 miles north and 6 miles south of Hamilton City; this area includes portions of the Park, namely the Irvine Finch subunit. The following description is based on the fact sheet prepared for the project (USACE 2003).An existing private levee ("J" levee) provides some flood protection to Hamilton City and surrounding area. However, it is not constructed to current engineering standards and is largely made of silty sand soil, and thus, is extremely susceptible to erosion and additional flood control measures are necessary to prevent flooding when river levels rise. Currently, the Sacramento River is actively eroding into the toe of the levee at the northern end of the study area. In addition, native habitat and the natural river function in the study area have been altered by construction of the "J" levee, including the conversion of the floodplain to agriculture and rural development. Further, construction of the "J" levee and hardening of the river bank and levee in several locations through the years (typically with rock) have constrained the ability of the river to engage in its natural processes.

An array of alternative plans to reduce flood damages and restore the ecosystem is currently being developed. Potential measures that comprise the alternatives, include, but are not limited to, flood proofing and/or relocating structures, constructing a new levee along an alignment setback from the river, and restoration of native vegetation and habitats. To date, a final preferred alternative has not been selected.

2.2.3 Demographics

Target Populations

The target population for the Park consists of the residents of the Butte and Glenn counties, which includes residents of the City of Chico, the largest population center in the immediate vicinity of the Park. However, the Park has the potential to draw visitors from other nearby counties, including, but not limited to Colusa County and Tehama County. These four counties represent the focus of the demographic profile shown here.

Existing Demographic Characteristics

The existing demographic characteristics of the region are shown in Table 2-14. In total, the current (2002) population in the four-county area is approximately 310,000 people. The median age of the plan area residents ranges 31.5–37.8years. The majority of the plan area is white, which includes the Hispanic/Latino population, the largest ethnic group in this area. Of the four counties, Butte County has the lowest Hispanic/Latino population. The median household income is in the low- to mid-$30,000s, which translates into a poverty rate of roughly 16 to 20%.

Table 2-14
Demographic Profile

County	Population (2002)	Median Age (2000)	% White (2000)	% Hispanic / Latino (2000)	Median HH Income (1999)	% Below Poverty Level (1999)
Butte	207,000 (0.8%)	35.8	84.5	10.5	31,924	19.8
Colusa	19,450 (1.6%)	31.5	64.3	46.5	35,062	16.1
Glenn	26,800 (0.0%)	33.7	71.8	29.6	32,107	18.1
Tehama	56,900 (1.4%)	37.8	84.8	15.8	31,206	17.3
Total	**310,150 (0.9%)**	--	--	--	--	--

Source: EDAW 2003

Table 2-15 shows projected population levels in the four-county regional area. The four local counties together are projected to experience average annual population growth of roughly 3.9% in the short-term (between 2000 and 2005). Population growth is expected to slow, in relative terms, between 2005 and 2020.

Table 2-15 Population Projections [1,2]					
County	2002	2005	2010	2015	2020
Butte	207,000 (0.8%)	235,000 (4.3%)	259,800 (2.0%)	281,200 (1.6%)	308,900 (1.9%)
Colusa	19,450 (1.6%)	24,200 (7.5%)[3]	29,200 (3.8%)[3]	33,900 (3.0%)[3]	39,200 (2.9%)[3]
Glenn	26,800 (0.0%)	31,800 (5.8%)	36,700 (2.9%)	41,300 (2.4%)	46,500 (2.4%)
Tehama	56,900 (1.4%)	56,700 (-0.1%)	71,500 (4.7%)	78,200 (1.8%)	85,100 (1.7%)
Total	**310,150**	**347,700 (3.9%)**	**397,200 (2.7%)**	**434,600 (1.8%)**	**479,700 (2.0%)**

[1] DOF, Interim County Population Projections.
[2] Figures in parenthesis show average annual compound growth rate from the previous period.
Source: EDAW 2003, DOF 2001

VISITOR PROFILE

Demographic characteristics of the visitors to the Park may be organized based on the recreational activities pursued at the Park, such as fishing, paddling, floating, picnicking, biking, and nature viewing. Based on anecdotal data provided by the Park Ranger, fishing attracts approximately 60% of all visitors, including both local and regional residents; most of the anglers are thought to be individuals or small groups of white males aged 25–45 who fish from boats. A few Asian families, of up to 20 persons, have been observed to fish from the riverbanks. Aside from the anglers, most of the visitors who kayak, canoe, or float on inner tubes and rafts are college-aged visitors who come to the Park primarily during the holiday weekends, with a growing percentage of slightly older individuals and parents with young children. The latter group is thought to have started visiting the Park when they were college-age inner-tubers. Latinos, who make up a small percentage of total Park visitors, primarily come to picnic at the Park (McGaugh, pers. comm., 2003).

Visitor origin also differs based on recreation activity. Because the Park has limited camping facilities, nearly all of the attendance is attributable to day-use visitors who live within a few hours' drive from the Park. Most of the visitors are local residents originating from Butte County, with up to 90% of all visitors coming from the City of Chico, the largest population center within the county. Visitors are also drawn from Glenn, Tehama, and Colusa counties. While more regional-based visitors pursue water-based recreational activities in the Park, namely sport-fishing, local residents comprise the bulk of the people pursuing land-based recreational activities, such as picnicking, biking, and hiking.

Visitors from outside Butte and Glenn counties are thought to come to the Park for specific recreational activities and during specific time periods. During the fishing seasons (i.e.,

salmon season between July and December; steelhead season between October and November; and shad season between April and early July), the Park attracts many anglers from other parts of northern California, particularly the Bay Area, the largest metropolitan area in northern California. Visitors from the Bay Area travel approximately 2.5 hours to reach the Park. Fewer anglers are thought to come from the Sacramento area because similar salmon fishing opportunities on the Sacramento, American, and Consumnes rivers are available to Sacramento area residents. In addition to the local residents and anglers, thousands of inner tube and rafting enthusiasts from all over the state congregate in the Park during the Fourth of July and Labor Day holiday weekends (McGaugh, pers. comm., 2003).

2.3 Potential Property Additions Considered in the General Plan

There are ongoing property acquisition negotiations by the Department that pertain to the Park. Based on the dynamic nature of these efforts, the Department felt that it was appropriate to include several potential property acquisitions in the General Plan process. They include the Beard Property, Sunset Ranch, and Singh Orchard. These properties have not been inventoried and evaluated to the same degree as the existing Park subunits; however, sufficient information has been collected to adequately evaluate their inclusion in the proposed General Plan. These property additions would increase the size of the Park by roughly 30% to nearly 275 acres.

2.3.1 Beard Property

The Beard Property is currently owned by the River Partners, who purchased this property with State Wildlife Conservation Board funds for habitat restoration, river access, and possible recreation uses, including an overnight campground and day-use area. The property is being considered by River Partners as a gift to the Department as an addition to Bidwell-Sacramento River State Park.

Beard Property – View of Walnut Orchard from Irvine Finch River Access Area

This property is approximately 20 acres in size and located directly south of the Irvine Finch River Access area. It is currently being used for agricultural purposes, namely walnut orchards. There are no developed facilities on the property, but it is served by irrigation water. Based on its proximity, if this property is added to the Park, it would be integrated with the Irvine Finch facility to provide expanded recreational opportunities to park visitors.

2.3.2 SUNSET RANCH

Sunset Ranch – View of Sacramento River

Sunset Ranch – Existing Residence and Barn

Sunset Ranch is currently owned by TNC, which is considering donating the property to the Department or other land management agency or selling it to private interest. The Department is considering whether to accept the donation and add the property to the Park as a new subunit. This property was split from larger parcel, the remainder of which has been transferred to the USFWS.

The portion of the Sunset Ranch property that is being considered for addition to the Park is roughly 13.6 acres, and is located directly across the Sacramento River from the Irvine Finch subunit, south of SR 32. Although situated directly on the river, river access is limited, but high-quality views are available. The property is served by a paved access road with gate, which also provides access to private landowners located further south on the river. There are several structures on the property, including a residence, several barns, and other miscellaneous buildings. Utilities, including a water well and utility lines, already serve the property. For the most part, vegetation on the property is sparse and disturbed, particularly on the east side of the access road; there is riparian vegetation located along the riverbank on the west side of the property. If added to the Park, this property would likely become its own subunit.

2.3.3 SINGH ORCHARD

Singh Orchard is currently owned by TNC and 'is planned for purchase by the Department with Proposition 40 bond funds for the explicit purpose of adding it to the Park. The property is currently in the State's appraisal process.

Singh Orchard – Walnut Production

Singh Orchard is located directly north of the Big Chico Creek Riparian Area on the east side of River Road and is roughly 34 acres in size. Similar to the Beard Property, Singh Orchard is currently being used for orchard production and walnut trees represent the main vegetation type on the property. There are no developed facilities on the property, except for irrigation water facilities. If this property is added to the Park, it would represent an expansion of the Big Chico Creek Riparian Area, and would have a focus of conservation and habitat restoration similar to the ongoing efforts at the Park to the south.

2.4 ISSUES ANALYSIS

This section summarizes key issues to be addressed in this General Plan and EIR. These issues were identified during the planning process, which include public and agency scoping comments and the administration of visitor surveys. The following issues are described in detail below:

- Definition of Unit Purpose and Vision
- Re-Naming of the Park
- Resource Protection and Management
- Recreational Opportunity / Visitor Service Enhancement
- Interpretation
- Facility Development
- Operational Improvements
- Property Acquisition / Park Expansion

2.4.1 DEFINITION OF UNIT PURPOSE AND VISION

The Park's *Declaration of Purpose* and *Vision Statement* is an important component of the Park planning process. The purpose statement must be defined to balance the natural, cultural, and recreational resources at the Park, and the vision for the Park should reflect how

the Park is intended to look and be perceived by Park visitors. The Park is currently operating under a Declaration of Purpose that was developed for the Park when it was classified into the State Park system over a decade ago. A revised Declaration of Purpose is proposed in this General Plan to more clearly describe the current purpose of the Park, considering the significant resource values and recreational opportunities that characterize the Park. A Vision Statement has never been developed for the Park. The development of appropriate purpose and vision for the Park will allow the Department to effectively evaluate planning ideas and make decisions during the development and future implementation of the General Plan.

2.4.2 Re-Naming of the Park

The current name, Bidwell-Sacramento River State Park, is difficult and often gets confused with Bidwell Mansion State Historic Park and Bidwell Park, both of which are located nearby in the community of Chico. Park staff regularly receives phone calls and inquiries from the public seeking these other facilities. The planning process considered the prospect for changing the name of the Park; however, the decision was made to evaluate the Park name change separate from the General Plan process.

2.4.3 Resource Protection and Management

Bidwell-Sacramento River State Park supports a variety of environmental resources. These include biological resources, such as sensitive vegetative communities and habitat for special-status species, as well as watershed features, including the Sacramento River and tributaries and the oxbow lake at Indian Fishery. The Park also contains important cultural resource areas, and provides aesthetically pleasing vistas of aquatic and riparian habitat. These resources must be protected, restored, and enhanced.

Riparian vegetation along the Sacramento River is the dominant natural feature of the Park. It supports maximum ecosystem diversity and serves as an important wildlife corridor. The sensitive riparian native plant communities were identified as one of the most important resources within the Park that should be restored and protected in its various successive stages.

Other plant communities, including grassland, agriculture, and ruderal habitats are of relatively low value to most native wildlife species; however, they support common species and provide high-quality foraging habitat for many species of raptors. Preservation of these other plant communities is an important consideration in the planning process.

The Park contains a number of mature oak trees, which were identified as an important natural and visual resource. Threats to mature oak trees include tree removal for new development and diseases.

The control of invasive or noxious weeds can threaten the Park ecosystem. Techniques to control invasive weed species within the Park, including the use of herbicides, has been considered in Park planning.

Impacts to special-status species and other sensitive resources resulting from recreational activities proposed at the Park has been considered in the planning process. In addition, the need for continued enforcement of resource protection laws and educating Park visitors regarding the protection and management of special-status species have been identified as important issues.

Several other factors that influence ecosystem health were identified during the public scoping process. These include the restoration of the Big Chico Creek Watershed and monitoring of non-native animals in conjunction with an assessment of impacts on native wildlife and plant communities. Consideration of these factors in the planning process will enhance the viability of special status species and sensitive habitats.

In terms of cultural resources, preservation and protection of archaeological sites within the Park are important considerations in the planning process. Specific measures, such as site identification, documentation and formal assessment for historic significance, have been considered. In addition, the concept of providing access for cultural activities, such as gathering of plant materials for basket-making, was identified during the scoping process. The extent and types of cultural activities has been evaluated and future efforts should be based on consultation with Native American organizations.

2.4.4 Recreational Opportunity / Visitor Service Enhancement

Bidwell-Sacramento River State Park, located just 5 miles from downtown Chico, provides opportunities for a range of recreational activities. However, improvements are needed to existing facilities and the opportunity for new recreation facilities needs consideration to enhance the quality of the overall recreational experience at the Park.

Currently, the Park has no camping facilities aside from parking spaces for recreational vehicles and trailers (i.e., en-route camping). Due to the lack of facilities, there is a substantial demand for overnight camping opportunities in the project area and the region.

Access to the Sacramento River and its tributaries is an important feature for Park visitors. In terms of boat launch opportunities, several issues need to be considered. The existing facility at Irvine Finch was identified for improvements. There is an expressed need for non-motorized boat launching opportunities (e.g., canoes, kayaks) at the Park, including access to Big Chico Creek. Tubing access, including associated public safety and parking issues, needs to be considered in the planning process. Further, improved river and shoreline access would facilitate fishing opportunities at the Park.

General sight-seeing and wildlife viewing opportunities, including birding, were identified as important recreational activities at the Park. Developing areas or promoting conditions that would be conducive to these activities has been considered in the planning process.

Expansion of day-use areas, including picnic tables and group use areas, is another important recreation-related issue. The demand for day-use areas stems from existing and future demographic characteristics of the Park's visitor base.

The Park does not currently provide concession services. The potential to provide equipment rentals and other recreation support services was identified in the scoping process. Such opportunities have been considered in the context of proposed recreational developments at the Park.

Trails are another important recreation feature at the Park, and their expansion and improvement could enhance the Park's recreational value. Multiple trail uses have been considered, including bicycling, hiking, and horseback riding. Providing a range of trail types and alignments, including connections between subunits and between the Park and the community of Chico was raised during the scoping process. The planning process needs to allow flexibility in the exact alignment of the trail system, which should be based on coordination with appropriate agencies, organizations, and private landowners.

In providing access to recreation opportunities at the Park, it is essential to plan for access to all Park visitors, regardless of physical ability or limitations. Proposed facility developments need to integrate Americans with Disabilities Act (ADA)-accessible features into the project siting and design.

In order to promote recreation opportunities, it is important to accommodate access to and from the Park. The adequacy of existing roadways and the necessity of new roads or parking areas has been considered in promoting use of the Park. It has also been suggested that public transportation be provided to the Park. In addition, the Department and Butte County have expressed interest in the realignment of River Road in order to accommodate additional parking and access to the river.

2.4.5 Interpretation and Education

An interpretive prospectus for Bidwell-Sacramento River State Park was developed in 1997, and should will be updated, as necessary, to reflect the current interpretive vision for the Park. The area's history is fascinating, being on a main river thoroughfare, frequented by both Native Americans and early settlers, and also being closely linked to the agricultural development of the greater Chico area. The Park does not currently have a visitor center, and opportunities for developing one is an important planning concept, which will be coordinated with other public landowners in the project area. Such a visitor center may be developed in conjunction with USFWS and CDFG, and thereby could represent a joint-use facility. Other interpretive facilities will need to be integrated with the Park's existing and proposed trail system. In addition, the Park is regularly used by university and grade school classes for nature study. Opportunities to expand the educational program at the Park has been evaluated in this General Plan.

2.4.6 Facility Development

Recreation and administrative facilities at Bidwell-Sacramento River State Park are minimal. The project area is prone to severe flooding, requiring relocation of certain facilities. The General Plan has evaluated existing facilities in terms of their adequacy and location and if

improvements or additional facilities and placement are needed. Also, general areas for siting facilities determined appropriate for the Park have been identified.

The feasibility of designing facilities to accommodate changes in the river channel is an important consideration in the General Plan. The feasibility of development within the floodplain has also be considered.

The use of kiosks and signs to identify Park boundaries (to reduce trespassing into private property), locations of recreational opportunities (e.g., fishing access), and to disseminate interpretive themes and messages are important to the visitor experience and in operation of the Park.

The adequacy, type, and location of ancillary facilities, including restrooms, has been evaluated.

The design of future developments at the Park could benefit from the use of uniform design standards and guidelines. Potential guidelines may include clustering of facilities to minimize disturbance to natural riparian habitat.

2.4.7 Operational Improvements

Operational improvements may be recommended to increase public safety, improve visitor services, and enhance resource management. Currently, tubers by the thousands travel downstream from Irvine Finch River Access area on Memorial Day, the Fourth of July, and Labor Day, and public safety can be compromised during these events. In addition, adequate staffing in all areas at the Park, including visitor services, maintenance, and natural resources needs to be considered. Moreover, operational improvements can benefit visitor services and resource stewardship of the Park. Improved coordination with other stakeholders, including public agencies, is another important operational consideration.

One issue includes the need to reduce littering and another is the maintenance of existing facilities. New developments need to be reviewed in the context of available staffing and funding for the proposed development.

Improved marketing of the Park and information dissemination were additional issues raised during the scoping process. Recommendations include the development of Park maps and brochures, and/or website. The development of an advertising program has been considered in the planning process.

All operations should be consistent with the General Plan and should consider local and regional plans. Relevant local and regional plans include Upper Sacramento River Fisheries and Riparian Habitat Management Plan, Butte County General Plan, Bikeway Master Plan for Butte County, Glenn County General Plan, and the Glenn County Bicycle Plan.

Park operations need to be coordinated with other local and regional planning efforts, such as those for the Comprehensive Management Plan for the Sacramento River Wildlife Area

and the Comprehensive Conservation Plan (CCP) for the Sacramento River National Wildlife Refuge. Mutual assistance agreements or memoranda of understanding need to be considered. The use of regular meetings between agencies, consolidation of efforts, and the formation of volunteer committees to assist in coordination has been considered.

2.4.8 Property Acquisition / Park Expansion

Expanding and creating linkages between the Park's subunits to provide for natural riverine, riparian, and oak woodland/savannah functions deserve consideration. The concept of adding land outside the flood zone also has been considered to provide more permanent facilities.

The four subunits that comprise the Park are discontiguous and disjointed. The General Plan considers the need for physical connection between the subunits and propose potential future property/easement acquisition strategies.

The existing carrying capacity of the Park has been evaluated in the context of population forecasts and demographic changes. This type of evaluation would help determine the adequacy of existing Park size and the number and variety of facilities.

3

Park Plan

3 PARK PLAN

3.1 PURPOSE AND VISION

The purpose and vision of a State Park serve as the framework for future management of the Park. They are related, yet distinct, planning concepts that provide a context and direction for future planning efforts for the Park. These concepts are described in more detail below.

3.1.1 DECLARATION OF PURPOSE

The Declaration of Purpose describes the purpose of the Park and is the broadest statement of management goals designed to fulfill the vision for the Park. A Declaration of Purpose is required by the Public Resources Code, Section 5002.2(b), "setting forth specific long-range management objectives for the Park consistent with the Park's classification…"

The California Department of Parks and Recreation (Department) General Plan Policy Committee adopted the Park's current Declaration of Purpose in October 2000 in the absence of a formal General Plan that provides the framework for future Park management. It reads as follows:

> Existing Declaration of Purpose
>
> *"The purpose of Bidwell-Sacramento River State Park, in Butte and Glenn Counties, is to preserve and protect a variety of sites which collectively display various stages of the evolving hydrologic conditions and the shifting types of associated riparian ecosystems which occur in the middle reaches of the Sacramento River. The unit features high terrace riparian vegetation with mature oak woodland and an under-story of mixed grasslands. The unit provides important regional access for a wide range of recreational uses of the Sacramento River and certain of its local tributaries.*
>
> *California State Parks will preserve, protect, restore, interpret and manage the unit's natural, cultural, aesthetic and scenic resources, features and values, making them available to the public for their educational, inspirational and recreational benefits."*

During the General Plan planning process, it was evident that the existing purpose statement needed modification to more clearly and succinctly reflect the Park's current purpose as defined by this General Plan. The new purpose statement is intended to reflect current conditions, including knowledge of the resources at the Park, planning actions being undertaken in the project area, and the understood significance and value of the Park with respect to California and the State Park system. The Park's purpose has also been defined to balance the natural, cultural, and recreational resources in a manner that sustains these resources for the people of California. The proposed Declaration of Purpose for Bidwell-Sacramento River State Park reads as follows:

Proposed Declaration of Purpose

"The purpose of Bidwell-Sacramento River State Park is to preserve, protect, and restore a variety of sites which collectively display various stages of the evolving hydrologic conditions and the successional riparian ecosystems which occur in the middle reaches of the Sacramento River, while providing important public access for a wide range of recreational, interpretive, and educational uses of the Sacramento River and its local tributaries."

3.1.2 Vision Statement

The Vision Statement for Bidwell-Sacramento River State Park is a description of what the Park should ultimately look like in the future. Prior to this General Plan, no vision had been developed for the Park. As part of the General Plan process, a vision for the Park has been developed based on the shared vision of the Department and coordination with local stakeholders. The Vision Statement for Bidwell-Sacramento River State Park reads as follows:

"The Park will provide quality recreational and educational opportunities, afforded by the dynamic riverine environment of the middle reaches of the Sacramento River and the history of the area. Public access to the river will be provided to all visitors who enjoy boating, rafting, floating, swimming, wading, fishing, viewing, and learning experiences at the Park. The Park will also offer biking, hiking, and camping opportunities, in connection with surrounding public lands. The Park and its recreational and educational facilities will be developed and expanded sustainably and safely, in consideration of the Park's resources and capacity to accommodate the needs of the diverse stakeholders.

State Park staff will preserve and enhance the outstanding recreational and educational values of the Park. Recognizing its ecological and historical importance, the natural and cultural resources will be restored and protected, considering the expressed desires of the public and in accordance with established laws and regulations. The Park will provide interpretation of its resources and their significance in concert with the nearby Bidwell Mansion State Historic Park. Visitors will also have the opportunity to learn about the relationship between the river and the agricultural tradition of the region.

The Park is one of the last remnants of the historically extensive Sacramento River riparian system. The successional riparian forest and its abundant biodiversity will be maintained in their natural and native state. The river will be allowed to meander, to the extent compatible with existing land uses. Developments in the Park will be designed to accommodate naturally occurring floods. Through the Park's interpretive and educational facilities and programs, visitors, such as school groups, will learn about the dynamic nature of the Sacramento River and the way it shapes the ever-changing landscape and the surrounding land uses.

3.2 PARK-WIDE MANAGEMENT GOALS AND GUIDELINES

Park-wide management goals and guidelines, which are applicable to the entire Park regardless of subunit purpose and/or location, are management approaches for achieving the Declaration of Purpose and Vision Statement described above. Goals and guidelines are defined in the California State Parks Planning Handbook (2002):

- **Goal:** General, overall, and ultimate purpose, aim or intent toward which management will direct effort. Goals are not necessarily measurable except in terms of the achievement of component objectives which attainment of the goal involves.

- **Guidelines:** General set of parameters that provide directions toward accomplishing goals.

The goals and guidelines for Bidwell-Sacramento River State Park are organized into three main categories: (1) environmental resource management, (2) visitor use and opportunities, and (3) administration and operations. These components must be integrated with one another for successful implementation of the General Plan. Because of the broad nature of these categories, they are further organized into issue and sub-issue areas addressing specific aspects of the planning process.

3.2.1 ENVIRONMENTAL RESOURCES

The abundance of environmental resources was one key consideration for establishing the Park into the State Park system, and wise stewardship of the Park's resources is crucial in retaining and sustaining its biological, historic, aesthetic, educational, and recreational values. In balancing the needs of the dynamic ecosystem with those of Park visitors and Department staff, the complex natural processes that occur within the Park demand that a wide range of environmental resources be considered in future management decisions. For purposes of this Plan, the management of environmental resources at the Park refers to four main resource topics: (1) ecosystem (plant and wildlife) management, (2) cultural resources, (3) watershed management, and (4) scenic resources.

PARK-WIDE GOALS AND GUIDELINES FOR ECOSYSTEM MANAGEMENT

The natural resources of the Park are shaped and supported by the physical and hydrological patterns of the Sacramento River and Big Chico Creek. This relationship between physical features and patterns and biological resources is a dynamic system with complex, interdependent relationships. In a natural system, these processes are allowed to occur without interference, but they are often altered or interrupted by human influence. The following natural resource management approach is designed to perpetuate the natural processes and patterns at work in the Park and to restore such processes to optimal levels in areas where they have been disrupted by human alteration and non-compatible uses.

Overall Goal ER-1: Preserve, maintain and, where necessary, rehabilitate the Park's ecosystems to protect natural features and processes and perpetuate biological resource functions.

- **Guideline ER-1-1:** Inventory and monitor the condition of the Park's natural resources and identify appropriate management measures for their preservation and opportunities for enhancement and restoration.
- **Guideline ER-1-2:** Conduct scientific research with as little manipulation and/or disturbance as possible, with the intent of gaining a better understanding of methods for conserving sensitive species and ecosystems.

Sensitive Riparian Habitat and Other Plant Communities

Sensitive natural communities include communities that are of special concern to government agencies and private conservation organizations. Sensitive natural communities are considered important because they provide habitat for numerous wildlife and plant species including special-status species. Sensitive natural communities also include those considered rare or uncommon locally, regionally, or statewide, and those protected by state and federal laws and regulations. Sensitive natural communities that occur in the plan area include open water, wetland, and successional woodland communities, such as arroyo willow series, box elder, Fremont cottonwood series, and valley oak series.

Goal ER-1.1: Protect and restore sensitive natural communities, including wetland, valley oak woodland, and other successional riparian woodland plant communities that support the Park's abundant natural resources and function in the evolving hydrological and geomorphologic conditions of the middle reaches of the Sacramento River.

- **Guideline ER-1.1-1:** Restore natural processes and functions to parcels acquired for habitat values based on a comprehensive Natural Resource Management Plan.
- **Guideline ER-1.1-2:** Landscape developed areas with plants native to local area.
- **Guideline ER-1.1-3:** Protect natural and dynamic hydrological, physical, and biological processes and conditions of the river corridor to enable continued succession of plant community types.
- **Guideline ER-1.1-4:** Maintain riparian habitat areas that are representative of the major successional stages.
- **Guideline ER-1.1-5:** Protect mature oak trees and oak stands from direct or indirect damage by avoiding their removal for new facilities and implementing practices to prevent disease, such as sudden oak death syndrome.
- **Guideline ER-1.1-6:** Avoid sensitive riparian habitat when siting and designing proposed facilities to the extent feasible. Where development occurs in sensitive

riparian habitat, minimize impacts to the extent feasible and seek opportunities for habitat restoration elsewhere at the Park.

- **Guideline ER-1.1-7:** Support efforts to restore the Big Chico Creek Watershed such that ecosystem functions at the Park are improved, thereby enhancing special-status species and sensitive habitats that occur at the Park.

Special-Status Plant, Terrestrial Wildlife, and Aquatic Species

Special-status species include plant, terrestrial wildlife, and aquatic species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include species that are state and/or federally listed as Rare, Threatened, or Endangered; those considered as candidates or proposed for listing; species identified by CDFG and/or USFWS as species of concern; and plants considered by the California Native Plant Society to be rare, threatened, or endangered. A number of special-status species are known, or have potential, to occur in the Park (please refer to Section 2: Existing Conditions).

Goal ER-1.2: Manage for the perpetuation of special-status plant, terrestrial wildlife, and aquatic species within the Park, in accordance with state and federal laws.

- **Guideline ER-1.2-1:** Monitor the distribution, extent, and condition of special-status species populations within the Park.

- **Guideline ER-1.2-2:** Protect special-status species to the degree necessary to maintain or enhance their populations within the Park.

- **Guideline ER-1.2-3:** Enhance and/or restore special-status species habitat where feasible and compatible with established Park uses.

- **Guideline ER-1.2-4:** Provide special protection for federally and state-listed threatened and endangered species as required by state and federal laws and regulations.

- **Guideline ER-1.2-5:** Implement appropriate measures to avoid or minimize impacts to special-status species from maintenance activities, facility development, visitor use, and other Park actions, as required by state and federal resource protection laws and regulations. These may include, but not be limited to, avoidance of construction activities and vegetation removal during bird nesting seasons; alignment of trails to minimize vegetation removal; implementation of buffer areas around sensitive resources; and timing restrictions for in-water construction to avoid disruption of fish migration, spawning, and rearing periods.

- **Guideline ER-1.2-6:** Educate Park visitors regarding special-status species protection and management activities.

Non-Native Invasive Species

Non-native invasive plant species (i.e., invasive weeds) can dominate native plant communities or open water areas and degrade fish and wildlife habitat, resulting in a decline in native species diversity and abundance. Invasive weeds can further threaten natural resources and developed areas by damaging adjacent farm crops, causing increased fire incidence and intensity, or increasing flooding and erosion. Feral cats and other non-native mammals (e.g., black rats) can have a substantial negative effect on native wildlife populations. Feral cats prey heavily on native wildlife, particularly small and medium sized birds and mammals. Black rats have been documented as the primary predators of bird nests in some riparian habitats in northern California. The numbers of invasive or problematic plant and wildlife species can be increased by incompatible management actions and visitor uses.

Goal ER-1.3: Reduce the presence of invasive non-native plant species.

- **Guideline ER- 1.3-1:** Control or eliminate federally and state-listed noxious weeds, noxious weeds listed on California Invasive Plant Council's list: "Exotic Pest Plants of Greatest Ecological Concern in California," and other invasive weeds that can result in degradation to native plant and wildlife habitat in the Park.

- **Guideline ER-1.3-2:** Reduce the extent and prevent the spread of all invasive weeds to obtain maximum habitat diversity where feasible.

Goal ER-1.4: Reduce the numbers of feral and other problematic non-native animals, particularly those that have a negative effect on the populations of native special-status species.

- **Guideline ER-1.4-1:** Monitor the presence of feral and other potentially problematic, non-native animals (e.g., domestic cats, black rats, starlings, and cowbirds).

- **Guideline ER-1.4-2:** Where appropriate and feasible, develop a control plan to reduce the numbers of non-native and feral animals that have a negative effect on populations of sensitive species.

- **Guideline ER-1.4-3:** Inform Park visitors about the negative effects of releasing and/or feeding animals in the Park. Consider including this information in interpretive and educational programs at the Park.

Habitat Corridors

Habitat corridors connect areas of habitat that may otherwise be isolated. Such corridors facilitate movement of animals, including dispersal and migration. They may also facilitate dispersal of seeds. The Sacramento River, its tributaries, and their associated habitats, serve as habitat corridors. The river is used as a migratory pathway by a variety of aquatic species, including anadramous fish. Migratory birds are also dependent upon the river, Big Chico Creek, and their riparian and oak woodland habitats.

Goal ER-1.5: Preserve and enhance, as appropriate, habitat corridors provided by the Park and between the Park and other areas of similar habitats to maintain or increase their usage by native plant and animal species.

- **Guideline ER-1.5-1:** Coordinate with adjacent landowners to ensure preservation and enhancement, as appropriate, of existing habitat corridors.

- **Guideline ER-1.5-2:** Consider establishment of corridors linking existing but isolated parcels through acquisition or easements, as appropriate.

PARK-WIDE GOALS AND GUIDELINES FOR CULTURAL RESOURCES

Recorded and unrecorded cultural resources within the Park and in the surrounding areas are an important component of the cultural heritage of the region. These include prehistoric and historic sites, features, and artifacts, and include those linked to the prominent Bidwell family who donated much of the Park's land to the Department for the use and inspiration of the people of California. Preservation and interpretation of cultural resource features would be crucial in understanding early Native American and historic land use patterns in the vicinity of the Sacramento River.

Overall Goal ER-2: Protect the cultural resources within the Park, providing interpretive and educational opportunities, where feasible.

Archeological (Prehistoric) and Historic Resources

Because no comprehensive archaeological survey has been conducted, the extent and significance of cultural resources (includes prehistoric and historic resources) in the Park is not fully understood at this time. Approximate locations of some important cultural resources in the general vicinity of the Park are known (e.g., Chico Landing, Bidwell Ferry, Reavis Ferry, and Chico Free Bridge), but because of the dynamic nature of the adjacent river system, many of these resources have not been formally documented or assessed for significance. The locations of other potential cultural features (e.g., Giannelli Bridge, Sea Scout station, Tyler Dance Hall) are more well-defined, but again, they have not been fully documented.

Given the present lack of a comprehensive assessment of prehistoric and historic resource locations within and in the vicinity of the Park, the compilation of a cultural resources data base is critical. As the most important step in the preservation of cultural resources is detailed information on their locations, conditions, and cultural and temporal associations, the development of this data is an integral component to the protection of cultural resources in the Park, and associated interpretive efforts.

Goal ER-2.1: Locate and assess the significance of cultural resources within the Park.

- **Guideline ER-2.1-1:** Develop a Cultural Resource Management Plan (CRMP) for the Park. As part of the development of a CRMP, a comprehensive survey of the Park is necessary to survey, assess, and record known archaeological and historical resources

within the Park. In addition, the CRMP will provide recommendations for the protection, preservation, and interpretation of significant cultural resources.

- **Guideline ER-2.1-2:** Perform cultural resource investigations of development sites prior to the construction of facility developments. If significant cultural resources are found, implement protective measures in compliance with federal and state laws and regulations.

- **Guideline ER-2.1-3:** Investigate the presence of cultural resources on nearby properties in collaboration with other stakeholders, where feasible.

Park-wide Goals and Guidelines for Watershed Management

The Park's primary natural feature is the Sacramento River system. The various subunits are either located directly along the main river channel or at the confluence of the river and several of its tributaries, including Big Chico Creek and Pine Creek. These waterways are important for navigation, recreation, agricultural and urban water supply, and wildlife habitat. In consideration of these purposes, water quality and river dynamics are major issues in the Park planning process.

Overall Goal ER-3: Operate the Park within the context of natural watershed functions, and promote watershed health, wherever possible.

River Dynamics and Flooding

The natural dynamics of intermittent flooding, meander migration, and sediment deposition help to maintain a healthy riparian ecosystem that provides crucial habitat for hundreds of resident and migratory birds, fish and wildlife species. It also provides a rich bed load of fine soil and nutrients in the floodplain that have enabled productive farming along the river.

Goal ER-3.1: Allow for the natural meander of the Sacramento River where the river course and the associated flood events would be compatible with public safety, environmental protection considerations, and principles of the Sacramento River Conservation Area Handbook (SRCAF 2002).

- **Guideline ER-3.1-1:** Monitor river course changes and areas of excessive erosion caused by the river.

- **Guideline ER-3.1-2:** Minimize locating new facilities and bank stabilization features in areas likely to be within the river channel or sensitive habitats except where such facilities and features are necessary to maintain public safety or protection of sensitive habitat for special-status species.

Water Quality

The stretch of Sacramento River adjacent to the Park is a "water quality limited segment" of the Sacramento River as listed by the RWQCB on its Clean Water Act Section 303(d) List

(RWQCB 2003). Land uses in the Park and the surrounding areas may contribute runoff with pollutants and sediments that can degrade water quality, while the natural vegetation that characterizes the majority of the Park may improve water quality by filtering the water and trapping sediments. Sound planning decisions can help improve water quality, which is crucial in sustaining healthy aquatic habitats and migration corridors, maintaining safe conditions for visitors, and providing agricultural and urban water supplies to the region.

Goal ER-3.2: Operate Park facilities and manage resources in a manner that does not contribute to degradation in water quality of the watershed.

- **Guideline ER-3.2-1:** Implement Best Management Practices (BMPs) during construction, including the development of erosion control plans for projects involving excavation or other ground surface disturbances that would increase the potential for generating sediment-carrying runoff.
- **Guideline ER-3.2-2:** Establish, maintain, and preserve riparian vegetation buffers along riverbanks wherever feasible.
- **Guideline ER-3.2-3:** Design, maintain, and monitor use of trails so as to minimize erosion and soil compaction that contributes to erosion.

PARK-WIDE GOALS AND GUIDELINES FOR SCENIC RESOURCES

The aesthetic quality of the Park is based on its proximity to the Sacramento River and associated natural environment. As such, the Park exhibits a riverine landscape that can be appreciated by Park visitors, as well as casual "passers-by" that travel by the Park. In managing for the aesthetic quality of the Park, three key issues must be considered – the physical resources that influence the scenic quality of the Park, public viewpoints that provide access to the views of these scenic resources, and the integration of management proposals, such as facility development, into the existing landscape.

Overall Goal ER-4: Preserve, perpetuate, and provide access to the distinctive landscape qualities that reinforce the general character of Bidwell-Sacramento River State Park.

Scenic Resource Protection

The scenic quality of the Sacramento River and the surrounding natural and agricultural environment is a significant attraction of the Park. While views are generally limited within the Park by the flat topography and dense vegetation, some viewpoints from the Park, namely along the river, offer expansive views of the river and its surroundings. Moreover, visitors boating on the river also have uninterrupted views of the river and the adjacent woodland. Preservation of the natural appearance of the river-based viewshed is facilitated by the preponderance of public land ownership along this stretch of the Sacramento River.

Goal ER-4.1: Preserve the natural landscape appearance of the Sacramento River corridor and its tributaries.

- **Guideline ER-4.1-1:** Protect riparian woodland for its aesthetic value, as well as its natural processes and functions.

- **Guideline ER-4.1-2:** Establish visual screening of existing and proposed facility developments that are visible from the river or shoreline using natural vegetation wherever possible.

- **Guideline ER-4.1-3:** Consider the natural aesthetics of the Sacramento River when siting and designing signage in support of the Park and its facilities.

- **Guideline ER-4.1-4:** Shield light sources wherever possible to reduce light pollution that can degrade nighttime views.

- **Guideline ER-4.1-5:** Support activities that promote debris clean-up in and along the Sacramento River and its tributaries.

- **Guideline ER-4.1-6:** Review proposed development projects in proximity to the Park and provide input to local jurisdictions and public agencies regarding the visual impacts of developments along the Sacramento River that are visible from the Park.

Public Viewpoints

Public viewpoints are locations at which clearings in the vegetation give way to expansive views of the waterways in the foreground and the riparian vegetation or the surrounding agricultural uses in the background. Public access to these viewpoints, through trails or roadways, enhances the visitor's appreciation of the Park and the riparian environment.

Goal ER-4.2: Develop public viewpoints serving the Park's scenic resources, focusing on views of the Sacramento River and its tributaries from different vantage points throughout the Park.

- **Guideline ER-4.2-1:** Designate public viewpoints within the Park (e.g., along trails) where views of the waterways are unobstructed by existing vegetation or other natural features.

- **Guideline ER-4.2-2:** Coordinate with federal, state, and local jurisdictions to develop vehicle "pull-out" areas along public roadways serving the Park, where appropriate in consideration of traffic safety and other environmental concerns. Consider integrating interpretive signs or panels with road-side viewpoints as appropriate.

Design Standards and Guidelines

Facilities and signage with standardized design help to orient visitors to the location and boundaries of the Park. This is particularly important given the multitude of public lands in the vicinity that are owned and managed by various agencies and organizations with varying

operational policies. Design guidelines can also help to ensure visual and environmental compatibility of future development with the established land use pattern and existing natural setting.

Goal ER-4.3: Establish a uniform and consistent appearance of facilities and landscapes within the Park that are aesthetically pleasing and compatible with the landscape setting.

- **Guideline ER-4.3-1:** Develop and implement design standards and guidelines for all permanent Park facilities, such as signs, interpretive panels, trails, day-use areas, campgrounds, etc.
- **Guideline ER-4.3-2:** Develop and implement design standards and guidelines for landscaping plans that can be implemented in conjunction with facility development.
- **Guideline ER-4.3-3:** Replace existing (older) signs as needed using updated design standards and guidelines to ensure uniformly designed signs.
- **Guideline ER-4.3-4:** Support the development of comprehensive design standards and guidelines for the entire upper Sacramento River system that establishes standard signage (i.e., symbology) for facilities and other features along the river.

3.2.2 Visitor use and Opportunities

Establishing or maintaining public access and high-quality use of Bidwell-Sacramento River State Park is one the primary considerations in developing this Plan and will be used as a gauge in evaluating its ultimate success. The development of visitor use and opportunities parallels the efforts for resource protection, as both are management directives of the State Parks system. Opportunities to integrate visitor use and resource protection are particularly beneficial from a public and land stewardship perspective. Three main aspects of planning for visitor use and opportunities are considered in this Plan: (1) recreation, (2) interpretation and education, and (3) circulation and access

Park-wide Goals and Guidelines for Recreation

The Park is an important recreational resource for the greater Chico area and the surrounding region, as it is the primary point of access to the Sacramento River for the local residents of Butte and Glenn counties. Furthermore, of the various state and federal agencies owning land in the region, the Department is the only one with a mission to provide recreational opportunities.

The Park supports a large variety of recreational activities for different visitor types, and at times it accommodates a large number of visitors. A variety of facilities and programs are needed to fully accommodate the multitude of recreational needs of existing and future visitors. These facilities and programs must be compatible with the resource values of the Park if it is to remain a popular recreational attraction for the region.

Overall Goal VU-1: Provide recreational opportunities associated with the unique resources of the Sacramento River and its riparian and Oak Woodland environments.

River Access

The primary recreational attraction of the Park is the access it provides to the Sacramento River. Popular activities in the river include boating, fishing, tubing, kayaking, swimming, and wading. The Park features two boat ramps for both motorized and non-motorized (cartop) boat launching, as well as a number of undeveloped areas, such as gravel bars, that provide additional launching opportunities for non-motorized boats. The continuing growth in the demand for recreational boating opportunities and law enforcement needs on the river, intensified by the relative shortage of functional boat ramps in the area, may be accommodated by new or expanded facilities at the Park. Coordination between the agencies that operate boat launch facilities is an important key to providing sufficient and appropriate boating access in the region.

Goal VU-1.1: Expand boat launching opportunities serving motorized and non-motorized boating activity based on availability of appropriate sites.

- **Guideline VU-1.1-1:** Evaluate improvements to the existing boat launch areas (i.e., Irvine Finch and Pine Creek Landing) to accommodate larger vehicles and vessels, and repair deficiencies in existing ramps.
- **Guideline VU-1.1-2:** Provide expanded parking capacity, including boat trailer parking, at existing boat launch areas, based on local and regional demand and the availability of land.
- **Guideline VU-1.1-3:** Consider the development of a non-motorized (cartop) boat launch facility at appropriate locations at the Park.
- **Guideline VU-1.1-4:** Collaborate with other public agencies and organizations in identifying appropriate locations for motorized boat launch facilities in the region. Support the development of additional motorized boat facilities in the region (outside Bidwell-Sacramento River State Park) as demand warrants.
- **Guideline VU-1.1-5:** Explore cost-sharing opportunities for maintaining existing and developing new boat launch facilities with other public agencies, namely the U.S. Army Corps of Engineers and the California Department of Boating and Waterways.

Goal VU-1.2: Accommodate recreational access to the Sacramento River, while promoting the safety of Park visitors.

- **Guideline VU-1.2-1:** As appropriate, provide information regarding safe water-based recreation at appropriate river access points throughout the Park.

- **Guideline VU-1.2-2:** Control access to the river, as necessary, during peak-period recreation periods in coordination with other public land managers and law enforcement agencies.

Day-Use Areas

While day-use areas are used as staging for hiking, birding, and other recreational activities, the most traditional use of day-use areas is picnicking, an activity that may be enjoyed by people of all ages and abilities. Picnicking is one of the most popular recreation activities in the region, with demand increasing as population in the area grows. Facilities for picnicking can vary widely from simple benches located where one can enjoy the scenery, to individual picnic tables located in the shade of trees, to large covered structures with many tables and benches for larger groups. Amenities that may be considered for day-use areas include shade ramadas, barbecues, drinking fountains, restrooms, and trash receptacles. The demand for the different types of picnic facilities and other amenities vary by user group, with the large, growing and diverse population in the project area tending to favor large picnic facilities with sufficient parking that can accommodate large family and group events.

Goal VU-1.3: Develop additional day-use facilities near recreational or aesthetic amenities based on availability of appropriate sites.

- **Guideline VU-1.3-1:** Develop new day-use areas at appropriate locations throughout the Park, based on local and regional demand and in consideration of environmental constraints.

- **Guideline VU-1.3-2:** Maintain or expand existing day-use areas throughout the Park as demand warrants. Assess opportunities for linkage of existing and proposed day-use areas and other facilities proposed as part of this Plan where appropriate.

- **Guideline VU-1.3-3:** Design new and expanded day-use facilities to accommodate a range of user groups, including en-route visitors, families, and small and large groups to the extent feasible depending on the characteristics of the site. Consider the integration of at least one reservable group day-use area catering to special events into proposals for new or expanded day-use facilities.

- **Guideline VU-1.3-4:** Provide appropriate amenities at new or expanded day-use facilities that may include entrance kiosks for controlled entry, shade ramadas, flush restroom facilities, potable water, and trailhead access to Park and regional trail systems where available.

Camping

Overnight camping facilities are in high demand in the region. There are no developed campgrounds from the Park south to Colusa, a stretch of approximately 50 river miles. Opportunities for environmental boat-in camping are generally more available, but are limited to gravel bars below the ordinary high-water mark on the river. Both developed and

environmental (or primitive) camping opportunities have been identified by Park users as a desired feature of future Park development, with greater emphasis and need for developed campgrounds relative to environmental campsites.

Goal VU-1.4: Develop a range of overnight camping opportunities in the Park based on availability of appropriate sites.

- **Guideline VU-1.4-1:** Consider the development of a walk-in or boat-in environmental campground at an appropriate location within the Park, incorporating features of habitat restoration, where feasible.

- **Guideline VU-1.4-2:** Consider the development of a developed overnight campground at an appropriate location within the Park, which could include both family and group campsites. Incorporate provisions to address flood events (e.g., raise restrooms, concrete tables/pads) if the site is located within the designated floodplain.

- **Guideline VU-1.4-3:** Explore cost-sharing opportunities for the development of campground facilities with the U.S. Army Corps of Engineers as part of their Hamilton City flood control project.

Fishing Access

The Park is recognized for the high-quality fishing opportunities it provides. Bank fishing occurs at a number of locations throughout the Park, and boat fishing is accommodated through the Park's boat launch facilities. As fish spawning and rearing habitat is improved in the Sacramento River watershed, fish populations can be expected to increase, creating more opportunities for fishing. For visitors without boat access, sufficient fishing access along the riverbank is crucial in encouraging and enhancing fishing activity.

Goal VU-1.5: Expand and improve fishing access along the Sacramento River and its tributaries, including access for riverbank fishing.

- **Guideline VU-1.5-1:** Improve existing roads throughout the Park that provide access to established bank fishing opportunities, where feasible, to allow for additional parking opportunities and improved circulation.

- **Guideline VU-1.5-2:** Work with local jurisdictions to identify, sign, and improve locations that provide access to established bank fishing locations at the Park, where appropriate, based on public safety and environmental constraints.

- **Guideline VU-1.5-3:** Consider opportunities to develop additional parking areas on Park property that could facilitate access to established bank fishing locations along the Sacramento River and its tributaries.

Wildlife Observation

Public interest in wildlife observation, including bird watching and photography, is expected to increase substantially in the future as bird and wildlife populations increase in response to habitat improvements on established and recently acquired conservation lands in the surrounding area. Wildlife observation, especially bird watching, typically occurs on trails located in the Park. Hunting on adjacent lands and the use of motorized boats and jet skis limit bird watching and wildlife viewing because of public safety concerns and noise impacts that interfere with hearing bird calls or cause wildlife to move away.

Goal VU-1.6: Provide high quality wildlife observation opportunities throughout the Park.

- **Guideline VU-1.6-1:** Locate and design trails to provide access to high-quality wildlife-viewing areas within the Park where feasible.
- **Guideline VU-1.6-2:** Facilitate high-quality wildlife viewing opportunities through the use of appurtenances, such as bird boxes, that attract wildlife to the Park without encouraging unnatural wildlife behavior.
- **Guideline VU-1.6-3:** Provide amenities, such as interpretive displays and published bird lists, at day-use areas and along trails that enhance wildlife viewing opportunities.

Concessions

There are currently no concession services at the Park, although seasonal concessions have been used at the Park in the past. Looking to the future, the use of concession services may be considered appropriate when evaluated in the context of proposed recreational development proposed in this plan. Concession services could improve recreational opportunities at the Park by providing supplies and services that facilitate a high-quality recreational experience.

Overall Goal VU-1.7: Incorporate concession services serving recreational facilities at the Park.

- **Guideline VU-1.7-1:** Explore opportunities for temporary and permanent concession services as part of facility development proposals.
- **Guidelines VU-1.7-2:** Consider the provision of temporary concession services during peak recreation periods and special events.

Park-wide Goals and Guidelines for Interpretation and Education

Interpretation of the Park's natural and cultural resources can increase visitor appreciation of the diverse history of the region, including Native American practices and the rich agricultural influence of early settlers, and may promote public support for preserving, protecting, and restoring sensitive resources. Moreover, providing opportunities for public education can promote public safety, facilitate understanding of the riparian ecosystem and agricultural uses

of the area, and enhance the overall recreational experience for Park visitors. A successful interpretive and educational program can increase operational efficiency of the Park and foster a culture of ecologically sound Park stewardship for future generations.

An Interpretive Prospectus (1997) has been developed for the Park (please refer to Appendix E). It provides guidance for immediate interpretive development at the Park, but is flexible to allow modifications as part of future planning actions, including the development of a General Plan for the Park.

Overall Goal VU-2: Provide educational and interpretive opportunities associated with the unique natural and cultural resources of the Sacramento River and its riparian and Oak Woodland environments.

Interpretive Themes and Periods

The Interpretive Prospectus includes a set of interpretive themes for the Park (see Appendix D). It includes one unifying theme and a set of primary and secondary themes for each Park area, which define the use and meaning of that area and reflect its contribution to the whole Park. The unifying theme for the Park is:

> *The Riparian/Riverine Habitat is Dynamic and Critically Important to the Health of the Sacramento River and All Life Associated with It.*

In addition, a set of interpretive periods have been developed for the Park, which dictate the time period within which interpretive efforts are focused. The primary interpretive period for the Park is the Present, and secondary periods include *Prehistoric Origins*, *Human Prehistory*, *Early History and General & Annie Bidwell*, and *Annie's Gift Up to the Present*. .

Goal VU-2.1: Communicate a consistent set of meaningful and interesting interpretive and educational messages to the public via interpretive programs at the Park.

- **Guideline VU-2.1-1:** Implement the Interpretive Prospectus (1997) adopted for the Park. All new interpretative/educational programs and facilities should conform to the primary and secondary interpretive themes and periods in the prospectus.
- **Guideline VU-2.1-2:** Review and update the Interpretive Prospectus as appropriate to reflect current understanding of the natural and cultural resources and emerging use patterns at the Park.
- **Guideline VU-2.1-3:** Update the Interpretive Prospectus when new properties are added to the Park to reflect new interpretive opportunities associated with these new properties.

Events and Programs

Active public outreach events and programs, such as school group tours, community events, one-day classes, and educational camps, are an opportunity to provide in-depth education opportunities tailored for special groups, families, tourists, and other people with specialized interest or needs, as well as the community as a whole. Because the educational and community programs allow Park staff to engage the public in an interactive format, the relationship between the Park and the community can be enhanced.

Goal VU-2.2: Provide educational and recreational public outreach events and programs to various community groups.

- **Guideline VU-2.2-1:** Develop curriculum-based study guides for school outreach.
- **Guideline VU-2.2-2:** Operate staff/volunteer-guided tours for community groups.
- **Guideline VU-2.2-3:** Collaborate with community groups to identify opportunities to provide new educational programs that are consistent with the themes in the Interpretive Prospectus.

Interpretive Signage and Kiosks

Interpretive panels, kiosks, and other permanent displays can serve as a low-impact and low-maintenance method to transmit interpretive and educational messages to Park visitors if they are planned in consideration of the natural aesthetics of the Park. They can be used in conjunction with other informational signage that informs visitors regarding Park rules and guidance on public safety. While interpretive panels and kiosks allow only limited interactive opportunities with visitors, the permanent displays are an efficient way of conveying information to Park visitors.

Goal VU-2.3: Disseminate interpretive and educational information to Park visitors and the local community via non-staffed facilities.

- **Guideline VU-2.3-1:** Install interpretive signage, kiosks, and map displays throughout the Park and in the surrounding communities, focusing primarily on areas along existing and proposed trail systems, parking areas, and public viewpoints.
- **Guideline VU-2.3-2:** Develop interpretive facilities and school outreach programs that provide connections between the Bidwell Mansion State Historic Park and the Park.
- **Guideline VU-2.3-3:** Consider the natural aesthetics of the Park when siting and designing interpretive facilities, such as signs, panels, and kiosks.

Visitor Center

A visitor center can serve as a centralized location for a multitude of visitor and other services, including the dissemination of information regarding Park facilities and services, special events, recreational opportunities and restrictions, interpretive and educational opportunities, the mission of the Park, resource values and sensitivities, and basic contact and emergency reporting information. It can also potentially support features, such as theme-based exhibits and a cooperative gift-shop facility, which accentuate the overall purpose of the Park. The Park's close proximity to other state and federal public lands presents an opportunity for collaboration to develop a regional visitor center at an optimum location that can serve multiple public planning and outreach efforts.

Goal VU-2.4: Evaluate opportunities to develop a visitor center to provide multiple visitor services at an easily accessible location that serves local and regional residents.

- **Guideline VU-2.4-1:** Consider the development of a new visitor center that would serve the Park and potentially other public lands in the region. The size and amenities at the visitor center would be dependent on potential for multi-agency teaming opportunities.
- **Guideline VU-2.4-2:** Provide for a multitude of visitor services at the visitor center in an effort to provide a consolidated recreational and interpretive/educational experience.
- **Guideline VU-2.4-3:** Consider opportunities to integrate scientific research center in conjunction with the proposed visitor center.

Park-wide Goals and Guidelines for Circulation and Access

Parks that provide facilities for multiple modes of transportation increase accessibility for different user groups. Circulation facilities should be designed for safety (e.g., turning lanes, no sharp turns, sufficient width), convenience (e.g., parking, directional signage), and connectivity (e.g., connection between Park areas, points of interest, and the roadway system). Because of the discontiguous nature of the Park subunits, regional cooperation would be crucial in developing a well-designed and user-friendly circulation network.

Overall Goal VU-3: Provide safe, convenient, and well-connected facilities for multiple modes of transportation within and between the Park's subunits.

Visitor Access

Visitor access to the Park is an important consideration in future Park planning efforts. Visitors typically access the Park via River Road on the east side of the river and via SR 32 on the west side of the river. Because access to the Park is restricted to these two public roadways, it is imperative that the alignment, physical condition, and traffic along these roadways are conducive to the visitor access. In addition, there is no single entrance point to the Park and

entrance signs at the various subunits, where present, are not prominent, resulting in low recognition of Park facilities.

Public transportation, including alternative transportation methods, can facilitate visitation by students or others who cannot or choose not to drive to the Park. Currently, Glenn County provides bus service on SR 32 between Hamilton City and Chico; however, this bus route does not stop at the Park. Bus service that would connect the Park and the communities of Chico and Hamilton City, particularly on weekends or special occasions, has the opportunity to substantially increase accessibility to the Park; however, feasibility of providing bus service would depend on the expected level of existing and future use.

Roadway safety is another consideration in Park access. Because the Park is located along two major roadways in a rural area, vehicular traffic often travels at excessive speeds. Intersections with driveways, trail crossings, and other roadways should be designed to avoid collisions and other accidents involving vehicles, pedestrians, and bicyclists.

Goal VU-3.1: Provide for safe and readily available access to the Park from the local roadway system serving the Park.

- **Guideline VU-3.1-1**: Work with local jurisdictions to install directional signage along major roadways that direct Park visitors to the Park.
- **Guideline VU-3.1-2**: Install Park entrance signs at all subunit entrance points consistent with design standards and guidelines developed for the Park.
- **Guideline VU-3.1-3**: Coordinate with local jurisdictions and Caltrans to maintain and, where necessary, improve roadway conditions serving the Park, including providing review for development projects that could affect visitor access to the Park.
- **Guideline VU-3.1-4**: Work with Butte County in exploring opportunities for the realignment of River Road near the Big Chico Creek Riparian Area complex to facilitate visitor access.
- **Guideline VU-3.1-5**: Conduct traffic analyses for all major facility development projects when required. Comply with applicable circulation design standards and guidelines for all proposed facility developments that may affect the public roadway system.

Goal VU-3.2: Encourage the use of public transportation to the Park.

- **Guideline VU-3.2-1**: Coordinate with Butte and Glenn counties to establish seasonal bus service to the Park, and consider permanent service as demand warrants.
- **Guideline VU-3.2-2**: Provide auxiliary facilities in support of public transportation, such as public bus stops and turn-around space.

Parking

Availability of parking is a constraint on the number of people that can visit the Park by automobiles and buses. Because the Park is not within short walking distance from nearby communities (it is located approximately 6 miles from the City of Chico) and visitors commonly drive to the Park, there is the need to provide sufficient parking capacity at each major point of interest, particularly at boat launch areas, throughout the Park.

Goal VU-3.3: Provide car and bus parking spaces for points of interest where environmentally compatible and as space allows.

- **Guideline VU-3.3-1:** Accommodate bus access to the Park, where feasible, via bus parking and turnaround areas. Such facilities would serve organized groups utilizing the interpretive and educational resources at the Park.

- **Guideline VU-3.3-2:** Incorporate sufficient parking capacity, serving a range of vehicle types, into proposed facility development plans.

Internal Circulation and Access

Once visitors arrive at the Park, it is equally important to facilitate efficient circulation within and between Park subunits. The predominant mode of internal circulation at the Park is and will continue to be the Park's trail system, as there are no major vehicular roadways that promote internal circulation. Trails can serve a wide range of non-motorized activities. They provide footpaths to fishing access areas that are located away from major roadways, access to high-quality wildlife observation and sight-seeing opportunities, and can accommodate multiple modes of transportation, including walking/hiking, bicycling, horseback riding, and even water-based transportation such as kayaks and canoes. As trail development in the region progresses and as populations grow, it is anticipated that the Park will experience an increased demand for multi-use trail systems, particularly along the river corridor. Issues that must be considered in the development of a sound internal circulation plan include the types of trail systems proposed, impacts to vegetation and wildlife, and the need for directional signage and maps as appropriate. By informing visitors of their location and adjacent land ownership patterns, directional signage and maps can orient Park visitors and assist them to avoid trespassing on private lands.

Another consideration in promoting internal circulation throughout the Park and access to recreational opportunities is Americans with Disabilities Act (ADA) accessibility. Visitors with disabilities may be precluded from gaining access to and/or participating in certain recreational activities. There needs to be a concerted effort to promote the accessibility of Park facilities to people with varying abilities. As technologies and legal requirements established by the ADA evolve, the approach to ADA accessibility within the Park will also change.

Goal VU-3.4: Provide for an interconnecting trail network within the Park where feasible and consider linkages to regional trail systems where appropriate.

- **Guideline VU-3.4-1**: Consider the development of new and expanded internal loop trails and associated trailheads at appropriate subunits of the Park in an effort to link Park properties.

- **Guideline VU-3.4-2**: Coordinate with state and federal agencies to develop a regional loop trail system that would connect the Park with other nearby public land holdings.

- **Guideline VU-3.4-3**: Incorporate provisions for safe road crossings, where applicable, in the development of proposed trail systems.

- **Guideline VU-3.4-4**: Evaluate the suitability of existing and proposed trail systems for multiple uses in consideration of public safety and environmental factors.

- **Guideline VU-3.4-5**: Provide amenities, such as drinking fountains, restroom facilities, and interpretive panels, along trails where appropriate.

- **Guideline VU-3.4-6**: Coordinate with local jurisdictions and organizations to incorporate connections between bicycle trails within the Park and the regional bicycle trails system.

Goal VU-3.5: Connect and integrate the Park's subunits through the establishment of a canoe trail along the Sacramento River system.

- **Guideline VU-3.5-1**: Coordinate with federal and state agencies and local jurisdictions to develop a local canoe trail that would connect the existing and proposed boat launch areas throughout the Park, as well as providing access to other nearby public lands as appropriate.

- **Guideline VU-3.5-2**: Support the development of a comprehensive Sacramento River canoe trail that would be integrated with the proposed canoe trail at the Park.

- **Guideline VU-3.5-3**: Provide informational and interpretive signage along the Park canoe trail, while preserving the aesthetic qualities of the river corridor. Public information may include safety guidelines, rules of use, and location and alignment of canoe trail. Interpretive information may focus on interpretation of the waterway and associated resources. Coordinate with local private and public property owners in determining the appropriate placement of signage and developed facilities (e.g., camping areas) as appropriate.

- **Guideline VU-3.5-4**: Explore opportunities for integration of seasonal boating and equipment concessionaire that would serve canoe trail users.

Goal VU-3.6: Provide access to recreational opportunities to all people regardless of physical limitations.

- **Guideline VU-3.6-1**: Comply with existing and future requirements for ADA accessibility.

Goal VU-3.7: Develop a system of signage that directs, orients, and educates visitors within the Park.

- **Guideline VU-3.7-1**: Install Park maps selectively throughout the Park, including "you are here" identifiers, as appropriate.
- **Guideline VU-3.7-2**: Clearly delineate Park boundaries through the use of coordinated informational signage or other techniques.
- **Guideline VU-3.7-3**: Encourage delineation of adjacent public land boundaries.
- **Guideline VU-3.7-4**: Integrate information regarding Park rules and public safety, including the risk of wildfire, into directional and informational signage.
- **Guideline VU-3.7-5**: Install river view/access signs that direct visitors to appropriate locations along the river for safe access and high-quality views along the Sacramento River, implementing uniform design standards as they are developed for the Sacramento River corridor.

Goal VU-3.8: Provide for the safety of Park visitors while circulating within the Park.

- **Guideline VU-3.8-1**: Separate vehicle traffic from pedestrians, bicyclists, and equestrians wherever feasible.
- **Guideline VU-3.8-2**: Install signage that encourages safe driving practices for vehicles entering the Park that are compatible with pedestrians, bicyclists, and equestrians use (e.g., speed limits, "share the road," pedestrians ahead).

3.2.3 Administration and Operations

The administration and operation of Bidwell-Sacramento River State Park is an important component of overall Park management. Not only does it affect internal Park resources, such as staffing and funding, it indirectly affects the visitor experience by influencing the environment within which people are recreating or otherwise using the Park.

As used here, the term "administration and operation" refers to a broad category of management actions that are, for the most part, separate from direct management of the Park's natural resources or recreational facilities at the Park; instead, administration and operation reflects day-to-day operation of the Park as a whole, which is often linked to management approaches for integrating operations of the Park within the larger physical and planning environment within which the Park functions. While this section proposes broad guidance on the administration and operation of the Park, it is not intended to constitute a formal Operations Plan for the Park.

For the purposes of this plan, administration and operation of the Park can be organized into four components: (1) Park boundaries, (2) day-to-day operations, (3) facility development, and (4) local and regional coordination.

Park-wide Goals and Guidelines for Park Boundaries

As it exists today, the current extent of Bidwell-Sacramento River State Park is relatively small for a State Park unit, totaling just over 200 acres in size. In addition, the Park is a conglomeration of several discrete properties that function separately in providing recreational opportunities to the public and enhancing resource values in the Park. Although the approximate location of these properties (or subunits) is known, there exists some degree of uncertainty regarding their precise boundaries. Because of the fragmented nature of the Park's subunits, which is not visitor-friendly and can result in operational inefficiency, there is the desire to expand the Park, where feasible, to promote connectivity between the Park's subunits, as well as with other public land in the region, and to establish logical Park boundaries based on existing geographic features.

Overall Goal AO-1: Establishment of well-defined Park boundaries that can serve as base for future expansion in accordance with the vision and goals for the Park.

Delineation of Existing Park Boundaries

The delineation of existing Park boundaries is an important first step in planning for the future of the Park. Park boundary issues are prevalent mainly on the east side of the Sacramento River in Butte County. Discrepancies have arisen because of the lack of surveyed boundary information, and have been further compounded by the meandering nature of the river.

Goal AO-1.1: Attain a clear understanding of existing Park boundaries.

- **Guideline AO-1.1-1:** Work with Butte and Glenn counties to survey existing Park boundaries. Areas of concern include: (1) Big Chico Creek bridge overpass, (2) north end of Big Chico Creek Riparian Area along west side of River Road, (3) south end of Indian Fishery property near Old Chico Landing, and (4) Pine Creek Landing subunit.
- **Guideline AO-1.1-2:** Clearly delineate Park boundaries through the use of fencing or signage so staff and visitors understand the extent of State Park land.

Future Property Additions

Bidwell-Sacramento River State Park has the potential to grow over time through property additions. By increasing the size and diversifying the characteristics of the Park, land acquisitions can provide added recreational opportunities and natural and cultural resources to the Park for visitors' enjoyment as well as for the preservation and management of these resources.

Goal AO-1.2: Expand the Park to promote consolidated management of natural resources and recreational opportunities.

- **Guideline AO-1.2-1:** Acquire properties from willing-sellers as opportunities arise in order to achieve Park-wide goals.
- **Guideline AO-1.2-2:** Explore opportunities for funding of property acquisitions, including grant and bond funding sources.
- **Guideline AO-1.2-3:** Explore opportunities for land exchanges and Memorandums of Understanding (MOUs) with other public agencies that could improve operational efficiency at the Park.

Park-wide Goals and Guidelines for Ongoing Operation of the Park

The proposed General Plan entails major changes for Park resources and facilities. As a result, there is the need to reconsider existing Park operations at both the planning and ground level. This component of the plan characterizes broad-level goals and guidelines for day-to-day operations of the Park and its relationship to the visitor experience and management of important natural resources. It does not address specific changes to staffing and organization, which will be adjusted as necessary for successful implementation of the Plan.

Overall Goal AO-2: Manage, maintain, and operate Park facilities to meet visitor needs.

Administrative Center

The location of the existing Park administrative center at the Indian Fishery is not well-suited for such a facility. The administrative center has been repeatedly subject to flood events, thus requiring an elevated modular office. There is also a lack of storage space for maintenance and other equipment, which must be re-located offsite to avoid damage during flood events. Lastly, the existing facility is located on the east side of the river, and therefore, does not represent a centralized location relative to the properties and facilities considered in this Plan.

Goal AO-2.1: Establish a centralized location for administrative facilities that promotes efficient management of the Park's resources.

- **Guideline AO-2.1-1:** Relocate the existing administrative center at Indian Fishery to a more appropriate location that meets the needs of the Park, as well as other State Park units in the Valley Sector, allowing for centralized operations and equipment storage. The siting of such a facility will consider the elevation of seasonal flood events to minimize potential property damage and opportunities for multi-agency use.

Park Maintenance

Maintenance of Park facilities has the potential to affect the visitor experience. Benefits of properly and regularly maintained facilities include, but are not limited to, an improved aesthetic character of the Park and increased utilization of recreational facilities.

Goal AO-2.2: Maintain Park facilities to meet visitor needs.

- **Guideline AO-2.2-1:** Establish standardized procedures for Park maintenance that addresses issues including, but not limited to, routine waste disposal and recycling, removal of silt and debris from developed facilities after flood events, and regular trail maintenance and clearing.

Emergency Services and Visitor Safety

Because of the nature of existing and proposed recreational opportunities and location along the Sacramento River, there exists the potential for emergency service needs for Park visitors.

Goal AO-2.3: Provide a safe environment for visitors to the Park.

- **Guideline AO-2.3-1:** Coordinate with local law enforcement agencies and emergency response providers in promoting the safety of Park visitors.
- **Guideline AO-2.3-2:** Work cooperatively with local jurisdictions and public agencies in providing a safe environment for Park visitors during special events, including safe access to and from the Park.
- **Guideline AO-2.3-3:** Accommodate access for emergency vehicles where appropriate throughout the Park, including emergency access during peak recreation periods and events.

Park-wide Goals and Guidelines for Facility Development

Adequate facilities, such as administrative office space, recreational amenities, trails, and roads, are critical for efficient management of the Park. Planning for the development of such facilities within the Park involves consideration of natural and physical factors. The Park is subject to a fluctuating natural environment, namely the dynamic nature of the Sacramento River, which must be considered in facility planning. In addition, the majority of the Park is located within the designated floodplain, which places additional constraints on development. Physical factors, including public infrastructure, which vary throughout the Park, also are an important consideration in facility planning.

Overall Goal AO-3: Develop facilities within the parameters of the Park's natural and physical environment, and in consideration of the safety of Park visitors.

Facility Siting and Design

One unique feature of the Park is that it operates within a dynamic river system that subjects Park facilities to natural river events, including meandering and flooding. These phenomena must be considered when planning for and designing new facilities, especially because the purpose and vision of the Park highlight the natural river system, one of the key features of the Park.

Goal AO-3.1: Site and design appropriate Park facilities to embrace natural river processes.

- **Guideline AO-3.1-1:** Allow appropriate facility development within the 100-year floodplain and designated Inner River Zone, incorporating site and facility design features to minimize potential damage from flood events, to the extent feasible.
- **Guideline AO-3.1-2:** Re-design existing facilities within the 100-year floodplain that are subject to repeated flooding to withstand flood events.

Utilities and Infrastructure

Sound facility planning must also consider the existing infrastructure serving the Park. Currently, Park properties on the east side of the river, except for portions of Indian Fishery, are not served by public water or wastewater disposal systems. These systems represent the opportunities for drinking water and flush restroom facilities, which are an important component of many of the recreational amenities proposed for the Park in this Plan.

Goal AO-3.2: Develop facilities that are supported by established infrastructure systems.

- **Guideline AO-3.2-1:** Connect new facilities to existing potable water and wastewater disposal systems wherever possible.
- **Guideline AO-3.2-2:** Coordinate with local jurisdictions to extend utilities and other infrastructure to the Park where it does not exist when determined necessary.
- **Guideline AO-3.2-3:** Where new utility infrastructure or facilities associated with public services are needed to serve the Park, implement measures that would minimize adverse impacts to the environmental quality at the Park to the extent feasible.

Air Quality and Noise Considerations in Facility Planning

In planning for the development of facilities at the Park, the Department needs to consider potential effects on the environment, including adverse impacts on local and regional air quality and the noise environment at the Park. Potential impacts related to air quality and noise are most prevalent during the construction phase of new developments, but can also be attributed to common recreation uses.

Goal AO-3.3: Develop facilities that do not conflict with ambient air quality and noise standards.

- **Guideline AO-3.3-1:** Consult with applicable air pollution control districts (APCDs) and/or air quality management districts (AQMDs) prior to any major facility development projects at the Park, and implement all rules and regulations as required by these agencies.

- **Guideline AO-3.3-2:** Establish appropriate campfire restrictions, through coordination with the local APCD/AQMD, to promote air quality in the region, in conjunction with the development of an overnight campground at the Park.

- **Guideline AO-3.3-3:** Ensure new facility development and site improvement projects, including associated construction activities and vehicular traffic, conform with applicable noise standards.

Visitor Safety

Another consideration during facility planning is visitor safety. It is important that adequate levels of staff and necessary services are planned for when considering the development of new facilities and/or property acquisitions. Such resources are integral in providing a safe environment for park visitors.

Goal AO-3.4: Ensure the safety of Park visitors during the planning and development of new Park facilities.

- **Guideline AO-3.4-1:** When planning new facility development or property acquisitions, include consideration of the needs for public safety personnel, equipment, and communication systems.

- **Guideline AO-3.4-2:** When reviewing potential new facility development or property acquisitions, assess the ability to provide for adequate public safety as part of the environmental review.

Sustainability

A widely used definition of sustainable development is a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Sustainability is integrated as a basic tenet of this Preliminary General Plan, as illustrated in the management guidelines and recommendations for facility locations based on a natural and cultural resource–based opportunity and constraints analysis. This Preliminary General Plan also encourages adaptive management techniques to monitor and adjust approaches to resource and visitor management with long-term benefits for each. Sustainable design practices can also be incorporated into future area-specific projects during the planning and design phases. The benefits of sustainable design concepts and practices include:

- Increasing environmental benefits (conservation of natural resources and reduced waste)

- Reducing operating costs through less energy consumption
- Promoting better health for park visitors (for example, through use of fewer toxic and low-emitting materials and interior climate control)
- Increasing operations and maintenance efficiency (more durable products, less maintenance of toxic substances, lower maintenance costs from resource and energy conservation
- Using adaptive management techniques to monitor and adjust approaches to resource and visitor management for long-term benefits to each

Goal AO-3.5: Incorporate principles and practices of sustainability into the Park's design, improvements, and maintenance and operations, and utilize adaptive management principles, to the extent feasible.

- **Guideline AO-3.5-1:** To the extent feasible, consider sustainable practices in site design, construction, maintenance, and operations. Sustainable principles used in design and management emphasize environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

- **Guideline AO-3.5-2:** Programs such as LEEDs (Leadership in Energy and Environmental Design)[1] should be consulted for development of facilities and site-related construction.

Park-wide Goals and Guidelines for Local and Regional Coordination

Bidwell-Sacramento River State Park represents one component of an extensive network of public lands in the region. Locally, these public lands are located in close proximity to the greater Chico area located east of the Park. In addition, there are private land holdings located throughout the immediate vicinity of the Park. Based on the extent of local private and public landowners and the Park's unique location to a growing urban area, it is critical that this Plan provides for goals and guidelines pertaining to local and regional coordination efforts.

Overall Goal AO-4: Cooperate with local landowners, communities, and public agencies to foster coordinated management of public lands along the Sacramento River.

Community Involvement

Based on its proximity to the greater Chico area, which represents a large visitor and volunteer base, the Park appears to be under-used from a community involvement

[1] LEEDs is a program of the U.S. Green Building Coalition.

perspective. There is an active local community that can serve as an important resource in both Park planning and program implementation. Fostering the relationship between the Park and the community can promote use of the Park so that more people can experience its unique natural and recreational resources and can result in improved land stewardship.

Goal AO-4.1: Allow local communities the opportunity to provide input into Park planning and environmental review processes.

- **Guideline AO-4.1-1:** Consider soliciting public input on important Park management issues.
- **Guideline AO-4.1-2:** Consider the use of visitor survey programs to solicit suggestions on techniques to improve management of the Park.

Goal AO-4.2: Provide opportunities for volunteers to participate in Park-wide programs.

- **Guideline AO-4.2-1:** Consider developing a Volunteer-in-Parks program for interpretive program involvement and support.
- **Guideline AO-4.2-2:** Consider establishing regularly scheduled Park clean-up days where the public can participate, especially after peak-period special events.

Goal AO-4.3: Improve the recognition of Bidwell-Sacramento River State Park in the local and regional community.

- **Guideline AO-4.3-1:** Develop a public outreach program that focuses on dissemination of information regarding the Park, including maps and special events.
- **Guideline AO-4.3-2:** Improve the signage at Park entrances.
- **Guideline AO-4.3-3:** Represent the Park by participating in local community events.

Coordination with Private Landowners

There are substantial private land holdings interspersed with the network of public lands in the vicinity of the Park. The resulting mixed land ownership pattern between private and public interests often leads to compatibility and access issues that affect local landowners and Park visitors.

Goal AO-4.4: Work with private landowners in proximity to the Park to minimize conflicts associated with the mixed public and private land ownership pattern in the area.

- **Guideline AO-4.4-1:** Delineate boundaries between public and private land interfaces using techniques such as fencing or signage.

- **Guideline AO-4.4-2:** Review future facility development proposals in the context of land uses on adjacent private property such that potential land use incompatibilities may be minimized through design features (e.g., buffers) or other means.

- **Guideline AO-4.4-3:** Implement habitat management and resource enhancement programs in a manner that takes into consideration adjacent land uses, such as agriculture.

Coordination with Public and Public-interest Landowners

The network of public lands in the vicinity of the Park includes properties that are part of the Sacramento River National Wildlife Refuge (USFWS) and the Sacramento River Wildlife Area (CDFG). In addition, The Nature Conservancy (TNC) owns substantial land holdings in the project area, as do other non-profit groups, such as River Partners. Based on location and often-related management objectives, it is critical that the proposed plan work in concert with the planning processes currently being undertaken by these other agencies and non-profit groups. A regional approach to resource protection and recreation opportunities will result in efficient management of all public lands in the area.

Goal AO-4.5: Establish a multi-agency approach to regional public lands management where practical and feasible.

- **Guideline AO-4.5-1:** Support the concept of a multi-organization task-force consisting of representatives from USFWS, CDFG, and interested non-profit groups to address local planning and resource management issues.

- **Guideline AO-4.5-2:** Coordinate with public land managers in planning for recreational developments throughout the Park, including exploring opportunities for cost-sharing agreements.

- **Guideline AO-4.5-3:** Integrate habitat management and resource protection efforts with other public agencies to maximize resource values throughout the Sacramento River corridor.

- **Guideline AO-4.5-4:** Evaluate existing MOU between the Department, CDFG, and USFWS, and consider revisions, as necessary, to meet Park-wide goals.

3.3 Area-Specific Management and Development

The previous sections of this General Plan focus on goals and guidelines specific to issues or topics common to the management of state Parks. Although that approach is useful in understanding the desired management approach for particular issues, it does not provide the spatial dimension to Park planning that is also a valuable tool for successful Park management. In other words, it is important to understand what type of management approaches and facilities are being considered for different areas of a Park unit. This section

describes potential area-specific management and facility prescriptions for the various subunits that comprise Bidwell-Sacramento River State Park.

3.3.1 Overview of Management Area Zoning

One tool that has been used to address area-specific management in other State Parks is management area zoning. The concept of management zones has been commonly used as a guide for systemizing land use and resource management in areas of a Park unit that have common characteristics and would be managed similarly. This tool is especially applicable to large parks that have a range of resources and/or other physical characteristics that vary across the park.

The concept of management zoning was considered for implementation in this General Plan; however, there was consensus that because Bidwell-Sacramento River State Park is relatively small in size, and for the most part, homogenous in terms of resources and recreational uses, the Park would not be conducive to the use of management zones. Instead, the planning process uses area concept planning that focuses on facility-specific development at different subunits of the Park as described below.

3.3.2 Area Concept Planning

Because this General Plan focuses on facility-specific planning for different subunits of the Park, it was critical to understand the need for and most appropriate placement of various types of recreational facilities and uses within the Park. The need for facilities within the Park was based on current levels of recreational uses, capacity of existing facilities, and recreational and demographic trends (see Chapter 2, Existing Conditions). The conceptual siting of facilities being considered for development within the Park was based on a range of factors including location of existing recreational uses, resource constraints, administrative and operational constraints, site access, etc. In considering the needs of the Park, existing facilities, and future trends, a proposed land use and facility plan has been developed as part of this General Plan (see Exhibit 3-1). The land use and facility plan shows the potential location of proposed facilities at the Park in terms of which facilities are being considered for each subunit of the Park; however, it is not intended to represent site-specific facility planning in terms of actual siting and design of facilities. In other words, the land use and facility plan will only serve as a guide for the development of proposed facilities, which will require site-specific review at the time a particular project is proposed. By virtue of the fact that the facility map locates certain facilities throughout the Park, and therefore indirectly prescribes allowable recreational uses on particular subunits, it does set the foundation for the area-specific vision and management approach at each of the subunits considered in this plan. With this foundation, the Department can implement the issue-specific management goals and guidelines presented in Section 3.2 to the most appropriate locations to ensure consistency between facilities, land uses, and resource management.

It should be noted again that the proposed land use and facility plan includes properties that are not currently under the jurisdiction of the Department. These properties have been

included in the planning process based on their anticipated addition to the Park. If any of these properties are not added to the Park, the establishment of land uses and/or the development of facilities proposed on these properties may be developed on other existing subunits or future property additions that are considered appropriate based on the site-selection criteria described in Section 3.3.3.

Below is a description of the vision for each subunit of the Park, in terms of potential facilities and management approaches.

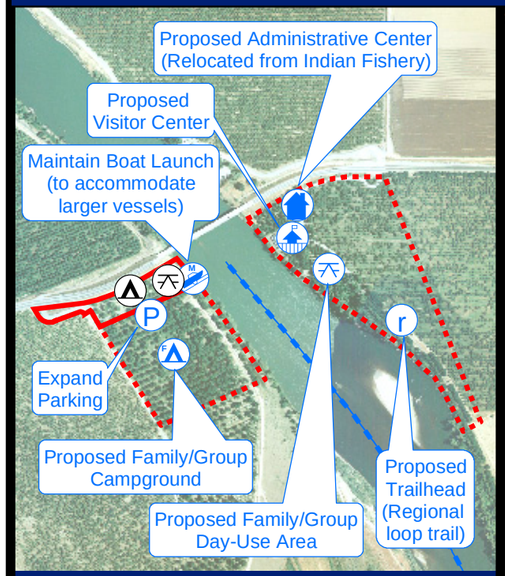
IRVINE FINCH RECREATION AREA

The Irvine Finch Recreation Area refers to the existing Irvine Finch River Access subunit and the potential addition of the Beard property located just south of Irvine Finch. The addition of the Beard property could allow for the expansion of the popular Irvine Finch facility into an integrated day- and overnight-use facility. This area is envisioned as the primary point of river access at the Park that could be served by improved day-use and new overnight camping facilities. Its current visitor base could be expanded from serving primarily day-use boat anglers to serving the demand for camping generated by anglers, local residents from the Chico and Hamilton City areas, as well as non-local visitors to the region. Proposed facilities and improvements being considered at the Irvine Finch Recreation Area include improvements to the existing boat launch ramp to accommodate vessels of various sizes, expanding parking for both vehicles and boat trailers, and the development of a moderate-scale overnight campground.

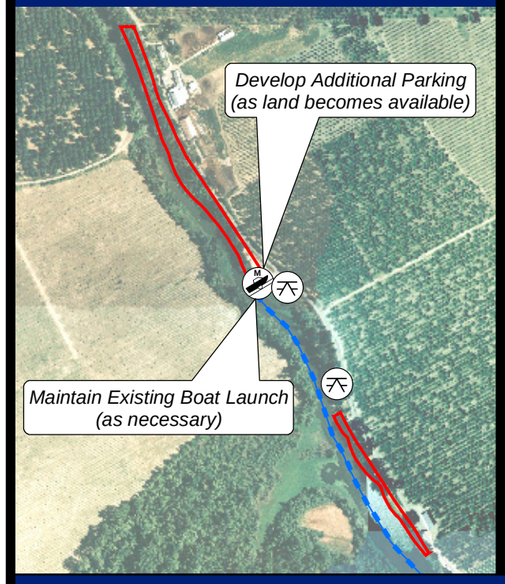
Considerations for an expanded day-use and overnight facilities at Irvine Finch are based on existing use patterns and the need to meet the demand for local camping opportunities. Currently, the Irvine Finch facility experiences substantial use during seasonal fish "runs," such as the salmon run that takes place during late summer and early fall. During these peak fishing periods, this facility commonly operates at full capacity. High use levels result in delays in boat launching and difficulty finding parking. By expanding capacity at this facility, these capacity issues could be resolved. In addition, there is a substantial demand for overnight camping facilities in the local area because of the lack of existing facilities in the greater Chico area. Overnight camping facilities could primarily serve anglers and other recreational boaters that use the boat launch facility, as well as family and small group campers from the local Chico area that do not currently have local access to camping opportunities.

In addition, improvements to the existing boat launch ramp at Irvine Finch are being considered as part of this plan. The existing launch facility was originally developed for non-motorized boat access, namely inner tubes, for floats down the river. Subsequently, improvements have been made to the boat ramp to accommodate standard motorized boats. However, based on its current dimensions and configuration, the boat launch cannot accommodate larger vessels because of sedimentation at the bottom of the ramp. By implementing regularly scheduled maintenance and dredging, this boat ramp can be used by

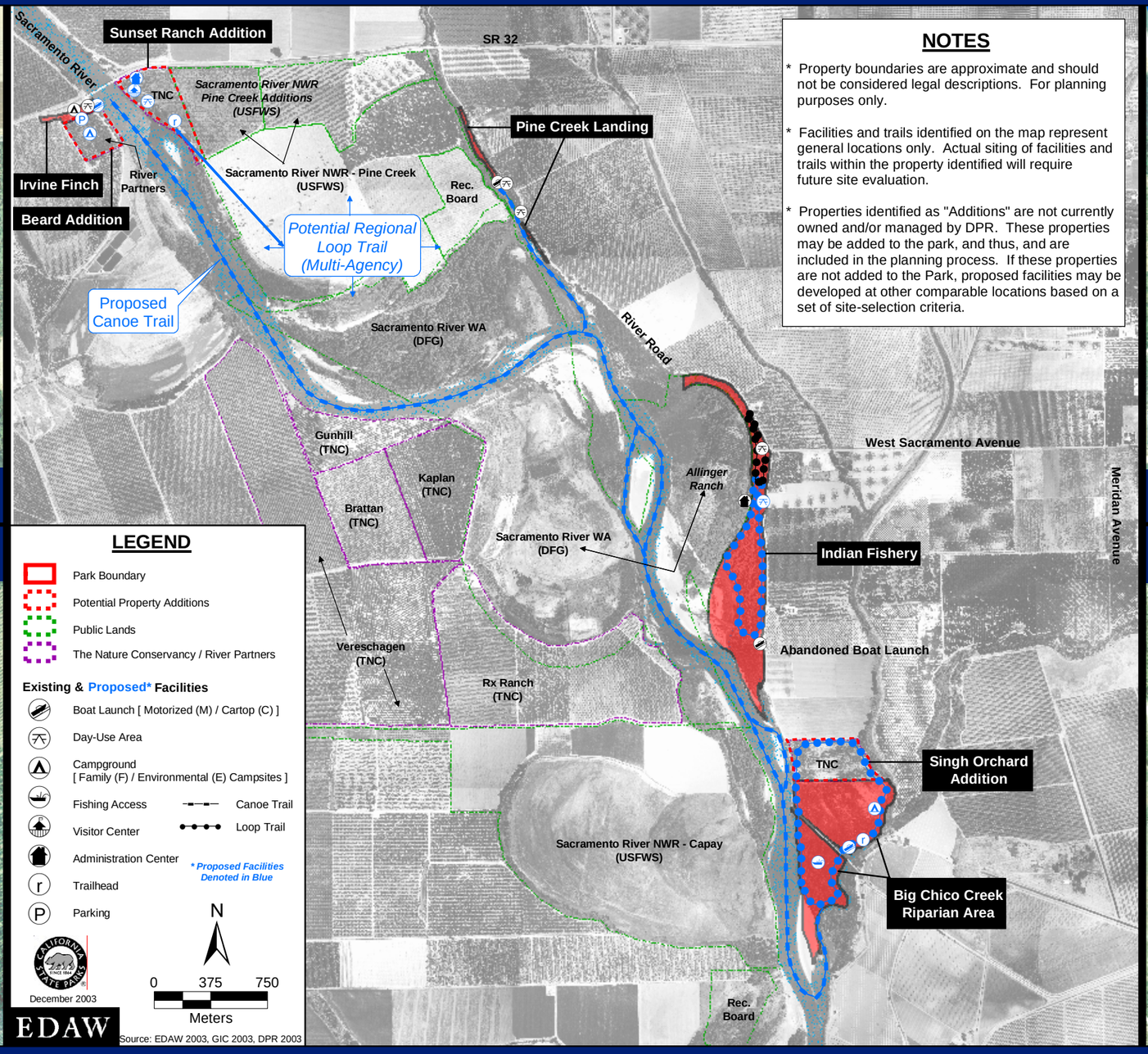
BIDWELL-SACRAMENTO RIVER STATE PARK



Irvine Finch Recreation Area & Sunset Ranch Addition



Pine Creek Landing



NOTES

* Property boundaries are approximate and should not be considered legal descriptions. For planning purposes only.
* Facilities and trails identified on the map represent general locations only. Actual siting of facilities and trails within the property identified will require future site evaluation.
* Properties identified as "Additions" are not currently owned and/or managed by DPR. These properties may be added to the park, and thus, and are included in the planning process. If these properties are not added to the Park, proposed facilities may be developed at other comparable locations based on a set of site-selection criteria.

LEGEND

- Park Boundary
- Potential Property Additions
- Public Lands
- The Nature Conservancy / River Partners

Existing & Proposed* Facilities

- Boat Launch [Motorized (M) / Cartop (C)]
- Day-Use Area
- Campground [Family (F) / Environmental (E) Campsites]
- Fishing Access
- Canoe Trail
- Visitor Center
- Loop Trail
- Administration Center
- Trailhead
- Parking

Proposed Facilities Denoted in Blue

N

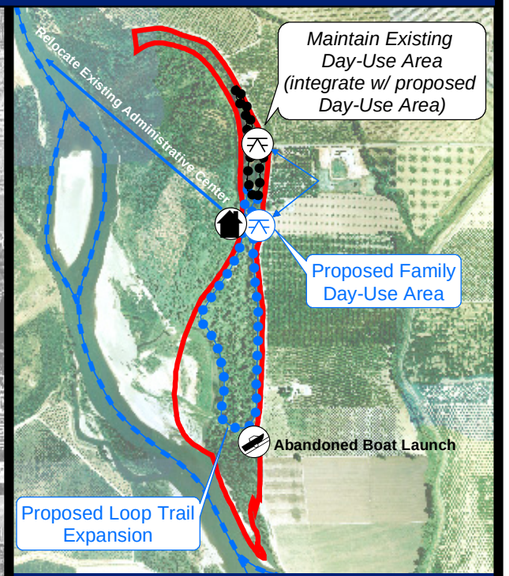
0 375 750

Meters

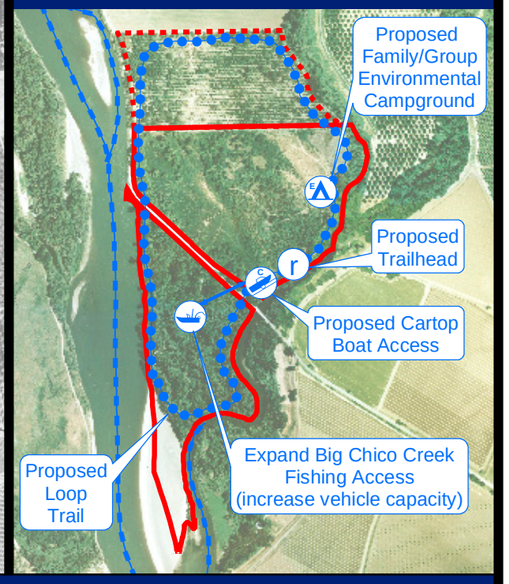
December 2003

EDAW

Source: EDAW 2003, GIC 2003, DPR 2003



Indian Fishery



Big Chico Creek Riparian Area

GENERAL PLAN

EXHIBIT 3-1
LAND USE AND FACILITIES

additional users, namely those boat owners that cannot currently launch their boats at this facility.

The existing parking area may be expanded to accommodate existing and projected use levels at Irvine Finch. The parking expansion could be located on the Beard addition, adjacent to the existing parking lot to the south. This parking area could serve day-users, boaters, and overnight campers. The size of the expansion would be dependent on the level of campground development and existing use levels at the time of development; at this time, it is estimated that a parking expansion may be roughly double the existing parking capacity at Irvine Finch.

A new overnight campground is also being considered for development on the Beard Addition south of the existing Irvine Finch facility. The campground could include family and group campsites, and is envisioned to be a moderate-scale facility (e.g., roughly 50 family and 3 group campsites). The precise size and layout of the campground would be determined during project-specific planning. Campsites would likely include standard amenities, such as concrete picnic tables, fire pits, food lockers, and parking. This facility could be developed in conjunction with the existing day-use area and boat launch facility to offer an integrated, multi-use, recreational destination for Park visitors.

One additional feature of the Irvine Finch facility is that it could serve as the start point for a potential canoe trail that would link the various discontiguous Park subunits. The canoe trail would follow the meander of the Sacramento River, ultimately ending at the Big Chico Creek Riparian Area. Because the canoe trail would technically be located entirely on Park property, it is intended to represent a concept that visitors can choose to experience and could be facilitated by designated put-in and take-out facilities offered on Park property. It is envisioned that the canoe trail could include interpretive and informational signage along the Sacramento River that describes the history and resources associated with the river, guidance on watershed stewardship, and identification of public properties along the river; the siting and design of signage would consider the natural aesthetics of the river corridor and would need to be designed to withstand seasonal flooding and other physical factors. Because the river transects various public and private properties, this effort would require close coordination with local public and private landowners.

Based on the types of recreational facilities being considered at Irvine Finch, there may also be opportunities for concessions to provide products and services that would facilitate the recreational experience. Products offered could include firewood and other camping supplies serving overnight visitors. Services may include kayak/canoe or inner-tube rentals during peak river events. The establishment of concessionaires would be evaluated as facilities are developed and as demand warrants.

Summary of Potential Facilities Considered for the Irvine Finch Recreation Area

- Regular maintenance of the Irvine Finch boat ramp to accommodate larger vessels.
- New overnight campground, including family and group campsites, at the Beard Addition.
- Parking expansion to serve day-users, boaters, and overnight campers.

SUNSET RANCH ADDITION

As described in Section 2.3, the Department is currently considering the addition of the Sunset Ranch property located just east of the Sacramento River, south of SR 32, and as such, it has been included in the General Plan planning process. The characteristics of this property, namely its proximity to SR 32 and the Sacramento River, as well as the fact that it contains predominantly non-native vegetation, lends this property to exceptional opportunities for new recreational and interpretive facilities. This property is envisioned as the primary day-use destination for the northern portion of the Park, potentially serving a broad range of visitor-types and catering to both planned destination and en-route visitors traveling in the region. Facilities being considered at Sunset Ranch include a visitor center, day-use area, and trailhead to multi-agency trail system; it could also serve as the administrative headquarters for the Park and other units in the Valley Sector.

The facilities being considered at Sunset Ranch are based on the need to provide a centralized access point to the Park from SR 32. Because this property is located adjacent to other public lands managed by the USFWS and CDFG, it also offers opportunities for multi-agency teaming efforts, in terms of development of facilities, which are consistent with the mission of all three agencies. Its location on the Sacramento River also allows for potential additional riverbank access that would supplement access provided by the boat ramp found at the Irvine Finch subunit on the west side of the river.

A visitor center could serve as the focal point of the Sunset Ranch property. The type of visitor center that would be developed is dependent on potential multi-agency teaming opportunities that could be implemented to develop such a facility. At a minimum, the visitor center could take the form of a small-scale, permanent facility that serves as the point of information distribution and would consist of a range of interpretive displays focusing on the history of the Park and the region. On the other end of the spectrum, a multi-agency visitor center could take the form of a large-scale destination center in and of itself, serving the interests of the Department, USFWS and CDFG, and could include theme-based exhibits and a gift shop. A recent study in the project area has also explored the opportunities for a research center that could also be integrated into the visitor center concept that would aid in the research objectives of the agencies involved.

A new day-use area could also be developed at Sunset Ranch in conjunction with a visitor center. This moderately sized day-use area is foreseen to be the most intensely developed of the Park's day-use areas (e.g., approximately 10–15 family picnic areas and one large group area that can be reserved for special events). This facility could also offer additional

recreational amenities such as shade ramadas, lawn/play areas for children, etc. In addition, flush restroom facilities could be installed that connect to an onsite wastewater treatment and disposal system.

The Sunset Ranch property would also likely serve as the trailhead location for a potential multi-agency trail that connects the Park to the Pine Creek Unit of the Sacramento National Wildlife Refuge operated by the USFWS and the Sacramento River Wildlife Area operated by CDFG. Based on its location and potential integration with other proposed facilities (i.e., visitor center and day-use area), the Sunset Ranch property could serve as an ideal staging area for visitors to explore the different land management approaches and recreational opportunities offered by the substantial amount of public land in the project area. The precise alignment of the multi-agency trail would need to be coordinated with the other public land managers prior to development in order to avoid potential land use conflicts.

Finally, the Sunset Ranch property would be considered for the location of a new administrative headquarters for Bidwell-Sacramento River State Park (the existing administrative facilities at Indian Fishery would be removed). Day-to-day Park operations could be based out of the existing residence on the property, which would be converted to a Park office. Maintenance equipment could be stored at the barn adjacent to the proposed office location. There is another barn structure adjacent to the river at the Sunset Ranch property, which based on its age and composition, may be historically significant. There may be opportunities to restore this barn to interpret the agricultural significance of the region.

Summary of Potential Facilities Considered for the Sunset Ranch Addition

- New administrative center (relocated from Indian Fishery).
- New day-use area.
- New visitor center that could serve multiple public land agencies.
- Potential for new multi-agency loop trail and associated trailhead.

Pine Creek Landing

The Pine Creek Landing subunit, which provides motorized boat access and limited day-use facilities, is currently operating at full capacity. The existing boat ramp has been recently expanded and improved; however, ongoing maintenance of this facility is critical for optimal use. In addition, there is the need to expand parking facilities at Pine Creek, but based on the extent of current property boundaries, there is insufficient room to provide additional access at this time. As a result, no new facilities are proposed at Pine Creek Landing as part of this General Plan. If new properties are added to the Park in the future that are in proximity to this subunit, potential opportunities for additional parking and other ancillary facilities will be explored.

Summary of Potential Facilities Considered at Pine Creek Landing

- Ongoing maintenance of existing boat launch facility.
- Provision of additional parking as demand warrants based on the availability of land.

INDIAN FISHERY

The Indian Fishery subunit consists of the contiguous area that has historically been referred to as Indian Fishery to the north and Old Chico Landing to the south. For the most part, Indian Fishery is located further inland, providing access to an oxbow lake, but it does not provide direct access to the Sacramento River (although informal trails do connect this subunit to the river at certain locations). This subunit is envisioned to serve as a centralized access point for visitors accessing the Park on the east side of the river. It could offer both developed and passive recreational opportunities at one location, thereby appealing to a range of potential visitors. Facilities being considered at this location include a new family/group day-use area and the expansion of the existing loop trail that could be implemented in conjunction with the existing day-use area and potential relocation of the existing administrative facilities.

The potential new day-use area could be located at the location of the existing administrative center, which consists of several modular office buildings, which are being considered for relocation. A new day-use area would augment existing day-use facilities located north of the administrative center, and therefore, would be small to moderate in size (e.g., approximately 7–10 family picnic areas) with standard amenities, such as picnic tables, and barbeques. This facility could also be served by flush restroom facilities that could be connected to an onsite wastewater disposal system already developed at the site. In an effort to develop this area as a central point of access to the Park, a developed entrance may be constructed that could potentially consist of an entrance kiosk and/or signage that could be used to better track visitation and provide current information to visitors about the Park and special events. In addition, the existing day-use area located to the north of the proposed facility would be maintained at its current size in an effort to enhance the prominence of a new day-use area. As the central access point, a new day-use area could serve as the gathering point for interpretive and educational programs and could be developed to accommodate bus parking and turn-around space.

More passive recreational opportunities could also be provided at Indian Fishery through the expansion of the existing trail system. The trail system could be expanded to the south of the existing alignment, thereby providing access to the dense riparian vegetation that characterizes the essence of the Park. Such a trail system could be designed in a loop fashion to expose trail users to the unique resources that vary across the periphery of the property, including the abundant wildlife and scenic vistas that would serve visitors participating in wildlife viewing and other sight-seeing activities. It may also serve as the connector to the informal trails that provide access to the Sacramento River.

Summary of Potential Facilities Considered at Indian Fishery

- Relocation of existing administrative center to a more centralized location.
- New family/group day-use area at the location of the existing administrative center.
- Ongoing operation and use of existing day-use area.
- Expansion of existing loop trail system to the southern portion of the subunit.

Big Chico Creek Riparian Area

The Big Chico Creek Riparian Area consists of the western and eastern properties of the existing Big Chico Creek Riparian Area (divided by River Road), and the proposed Singh Orchard addition. For planning purposes, these properties are considered one subunit based on their location, proximity to each other, and similar physical characteristics. This subunit, located partially on the banks of the Sacramento River, is envisioned as a place for visitors to experience the vast riparian resources that are native to this stretch of the Sacramento River, while engaging in active restoration and protection of these resources so that they can be enjoyed in perpetuity.

The facilities being considered at the Big Chico Creek Riparian Area are based on the need to improve and expand access to this area, while balancing the sensitive nature of the resources present. There are limited opportunities for visitors to gain access to this area, with only one developed entrance road serving the property west of River Road, which provides access to the Sacramento River. No formal access exists to the property east of River Road or the proposed Singh Orchard addition. The Department is considering proposals to provide increased public access through a variety of low-impact improvements and facilities that would serve the entire Big Chico Creek Riparian Area, including the expansion of the existing entrance road on the property west of River Road, a non-motorized boat launch and environmental (or primitive) campsites on the property east of River Road, and a loop trail that would connect all three properties.

The potential expansion of the existing access road at the Big Chico Creek property may entail two components: (1) widening the road to allow for parallel parking along the road shoulder, and (2) developing formal parking spaces in conjunction with the existing turn-around at the end of the entrance road. By allowing for additional vehicles in this popular fishing and day-use area, this area could provide additional capacity for anglers and other visitors utilizing the resources associated with the Sacramento River. An improved entrance road could also facilitate emergency vehicle access as needed during peak recreation periods. The entrance road would continue to be subject to closure during the winter season.

A non-motorized boat launch area could be developed along Big Chico Creek on the east side of River Road. The boat launch area would likely be developed along the southern border of the property, in the vicinity of the area under the existing River Road bridge. This facility would be intended to serve primarily kayakers/canoers, as well as those visitors with other car-top boats; it would not be intended to serve motorized vessels based on the shallow

nature of Big Chico Creek at this location. To provide access to the boat launch facility, a road and a path would need to be installed and a small to moderate parking area developed (e.g., approximately 10–25 parking spaces) that could serve the entire Big Chico Creek Riparian Area. The size and configuration of such a parking area would be dependent on a range of factors, including which facilities would be served and the availability of other parking areas serving this area.

Further upstream from the proposed boat launch area, the property east of River Road is also conducive to the development of a small-scale environmental campground (e.g., approximately 10 family/group campsites). The defining characteristics of environmental (or primitive) campsites are that they result in little to no impact to physical resources of the area and offer greater solitude to visitors than standard developed campsites, which is accomplished mainly by prohibiting motor vehicle access to the campground. Other features of an environmental campground could include small picnic tables, chemical restrooms, prohibiting the gathering of firewood or campfires, and prohibiting pets on site. Access to the campground could be provided by a short walk from the proposed boat launch area and/or directly from Big Chico Creek.

In an effort to integrate the Big Chico Creek area, a proposed loop trail would also be considered that would connect existing and proposed facilities into one functional subunit. The trailhead would likely be developed in proximity to the proposed parking area on the east side of River Road. The alignment of the loop trail would be such that it provides access to all three properties that comprise the complex, allows visitors to access proposed facilities, and exposes visitors to various types of vegetation and other physical resources, including the Big Chico Creek and the Sacramento River. Consideration must be given to safe access across River Road in connecting the properties. Trail amenities may include interpretive panels and other informational signage as directed by the interpretive element of the General Plan.

Summary of Potential Facilities Considered at the Big Chico Creek Riparian Area

- Car-top boat access area along Big Chico Creek.
- Environmental (or primitive) campground on the property east of River Road.
- Expansion of fishing access through improvements to existing entrance road.
- Loop trail system and trailhead that would connect all properties.

3.3.3 Site-Selection Criteria

The proposed Facilities Plan for Bidwell-Sacramento River State Park recommends the development of recreational and administrative facilities throughout the Park, including potential property additions. Although these three potential property additions have been identified by the Department as appropriate for inclusion in the General Plan, there is some degree of uncertainty whether these properties will ultimately be transferred to the Department because no formal agreements are in place. In addition, circumstances may change on

existing Park properties that may result in situations that do not lend themselves to facility development as envisioned in the General Plan. Therefore, the potential exists that facilities that are proposed throughout the Park may not be constructed at these particular locations. Because many of these facilities and/or improvements have been identified by the Department as being integral to the future development of the Park in terms of meeting visitor needs and promoting the vision of the Park, a set of site-selection criteria has been developed that will allow the Department to evaluate other potential property additions for their appropriateness for certain types of recreational facilities if they are not developed on the properties considered in this General Plan. These criteria have been developed such that if other properties are acquired and developed with comparable facilities, proposed developments would result in comparable levels of environmental effects as the proposals identified in this plan.

The site-selection criteria vary based on the type of facility or improvement proposed. Criteria have been established for the following facilities: campgrounds, day-use areas, visitor center, administrative center, and trails.

Campgrounds and Day-use Areas

Properties that are added to the Park may generally be considered appropriate for campground and day-use facilities if the following criteria are met:

- Non-native vegetation.
- Located out of sensitive-species habitat.
- Close proximity to other Park subunits to offer opportunities for integration of facilities.
- Ability to provide water supply and wastewater disposal capabilities.
- Easy access from regional roadway network.

Visitor Center

Properties that are added to the Park may generally be considered appropriate for a visitor center if the following criteria are met:

- *Same as criteria for campgrounds and day-use areas, plus*
- Subject to minimal flooding.
- Proximity to other public lands in the region to allow for multi-agency teaming opportunities.

Administrative Center

Properties that are added to the Park may generally be considered appropriate for an administrative center if the following criteria are met:

- Subject to minimal flooding.

- Existing facilities that would allow storage of maintenance equipment.
- Centralized location that would allow for comparable travel times to the various Park subunits.

TRAILS

Properties that are added to the Park may generally be considered appropriate for trails facilities if the following criteria are met:

- *All properties would be considered appropriate for trail facilities.*

3.4 MANAGEMENT OF VISITOR USE IMPACTS (CARRYING CAPACITY)

Public Resources Code Sections 5001.96 and 5019.5 require that the land carrying capacity shall be determined before any Park development plan is adopted, and that attendance at State Park System units shall be held within the limits established by this capacity. A definition of carrying capacity by the code, however, is not provided.

3.4.1 CHARACTERIZATION OF CARRYING CAPACITY

The carrying capacity of land is developed by evaluating the interaction between land uses and natural systems and determining how these interactions will affect, over time, the land's integrity and sustainability. Maximum capacity is the point where land regeneration is exceeded by demands made on natural systems and there is resulting degradation or destruction of the systems. Carrying capacity not only relates to the area's environmental resources but also the quality of the visitor experience.

In terms of Park and recreation planning, carrying capacity may be extended in meaning to suggest that no cumulative net losses will be permitted to occur in any of the unit's resource values (natural, cultural, aesthetic, or recreational) because of human use (activities or facility development). However, seemingly insignificant effects can have a permanent impact on resource values. Therefore, the intent of the Public Resource Code is to avoid degradation of resource-based Park systems. The great variety of factors involved in damage to natural resources and the complexity of the interactions among the factors makes establishing a carrying capacity number difficult. Visitation, individual or group usage, time, and types and patterns of recreational use all contribute to the impact on resource systems. To aid in impact minimization, management can regulate capacity limits and land use, enact mitigation measures, educate and interpret for the public, and ensure proper design. Determination of resource location and significance allows management to create future guidelines for public use of a Park and access to it.

3.4.2 ADAPTIVE MANAGEMENT

Adaptive management is a tool to address carrying capacity (or allowable use intensity) issues and is included in the guidelines within this Plan. Adaptive management is an ongoing, intensive process of determining desired conditions, selecting and monitoring indicators and

standards that reflect these desired conditions, and taking management action when the desired conditions are not being realized.

The desired conditions for the Park are reflected in the goals presented in Section 3.2, particularly those pertaining to visitor experience and resource protection. If the Department determines that the entire Park or a specific area of the Park is not meeting the goals, then desired conditions would not have been realized and management action would be initiated. Management action could determine that the violation was caused by natural variation (e.g., increased bank erosion caused by meandering river) or by human-induced variables (e.g., trampling associated with increasing hiking activities). Actions to manage or limit visitor use would be implemented when the desired condition was not met because of impacts associated with visitor use. Management actions could include, but are not limited to, the following:

- Site management (e.g., facility design, barriers, site hardening, area/facility closure, redirection of visitors to suitable sites),
- Regulation (e.g., the number of people, the location or time of visits, permitted activities, or allowable equipment),
- Enforcement of regulations (e.g., patrols, notification, citations),
- Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups), and
- Altering access (e.g., parking in proximity to sensitive resources, bike access, etc.).

Following the implementation of the management action, monitoring would be conducted to determine if the desired outcome is being achieved. If it is, then the Park is being operated within its carrying capacity. If the desired outcome is not being achieved, then alternative management actions would be carried out until the desired outcome is achieved.

3.4.3 Environmental Quality Indicators at the Park

Desired conditions, which are reflected in the goals and guidelines in this Plan, may be measured by assessing whether environmental quality indicators have been achieved. Successful results would be attained if the monitoring process is not too demanding of staff time and resources. For example, if the environmental quality indicators are physical conditions that are observable during the day-to-day operational activities of Park personnel, then the monitoring process would occur continuously with minimum administrative burden. Qualitative standards are preferred if quantitative monitoring and analyses are time- and resource-consuming, but may not produce necessary data. In all cases, however, the environmental quality indicators should be good predictors of the desired outcome. Thus, for some desired outcomes (e.g., sustainable populations of special-status species), the indicator monitoring processes may require field surveys undertaken by specialized staff.

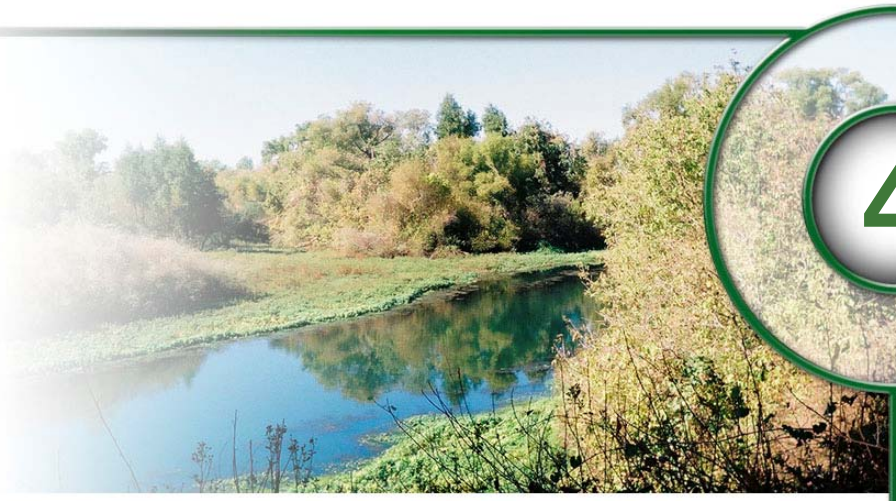
Table 3-1 contains environmental quality indicators based on some of the goals in this Plan and their associated desired outcomes. Environmental quality indictors may be refined

occasionally, based on site-specific knowledge, recent observations in the field, and updates in scientific understandings, if it is discovered that the existing environmental quality indicators are not the best predictors of the desired outcome. For example, it may be that reported increases in catches of salmon are a result of increasing fishing activities rather than an increase in salmon population. If this is discovered to be the case, then a new indicator would be developed for monitoring purposes.

Table 3-1
Carrying Capacity

Goal	Desired Outcome / Standard	Environmental Quality Indicators[1]
Goal ER-1.2: Manage for the perpetuation of special-status plant, terrestrial wildlife, and aquatic species within the Park, in accordance with state and federal laws.	Sustainable populations of special-status plant and wildlife species	✓ Increased occurrence of special-status plants species. ✓ Active nest sites. ✓ Presence of suitable habitat. ✓ Abundance of prey species. ✓ Report of increased fish catches.
Overall Goal ER-2: Protect the cultural and historical resources within the Park, providing interpretive and educational opportunities, where feasible.	Retention of the integrity and value of cultural resources.	✓ Lack of disturbance to known archaeological sites. ✓ Retention of historic building facades.
Goal ER-3.2: Operate Park facilities and manage resources in a manner that does not contribute to degradation in water quality of the watershed.	Water quality in adjacent water bodies that meets established standards.	✓ Lack of bank erosion where foot or bicycle traffic are known to occur. ✓ Proper functioning of water quality control devices such as grassy swales and grease traps after storm events.
Goal ER-4.2: Develop public viewpoints serving the Park's scenic resources, focusing on views of the Sacramento River from different locations throughout the Park.	Viewpoints available to the public that offer views of the river and its other natural riparian features.	✓ Views that are unhindered by growing vegetation in the foreground. ✓ Lack of new buildings or other major structures within the viewshed. ✓ Lack of overcrowding at the viewpoints on a regular basis.
Goal VU-1.1: Expand boat launching facilities serving motorized and non-motorized boating activity based on availability of appropriate sites.	Boat launch facilities that are sufficient for the types of boats used by visitors in the Sacramento River. Boat launch areas that can accommodate all visitors who come to the Park for its boat launching opportunities.	✓ Sufficient parking spaces to accommodate all visitors who come to use the boat launches. ✓ Wear and tear that is consistent with the expected life of the structure. ✓ Lack of visitor comments that the boat launches are insufficient for their boats.

[1] Environmental Quality Indicators may be updated by Park staff based on field observations, new scientific knowledge, etc.



4

Environmental Analysis

4 ENVIRONMENTAL ANALYSIS

4.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

4.1.1 PURPOSE OF THE EIR

This section of the General Plan for Bidwell-Sacramento River State Park constitutes an environmental impact report (EIR), as required by Public Resources Code Sections 5002.2 and 21000 et seq., and is subject to approval by the California Parks and Recreation Commission (Commission). The Commission has sole authority for the Plan's approval and adoption. Following certification of the EIR and approval of the Plan, the Department will prepare facility development and resource management proposals (or comprehensive plans) that implement provisions of the General Plan as staff and funding allow. Future projects, based on the provisions in this General Plan, may be subject to permitting requirements and approval by other public agencies that have resource protection authority over the activities in the project area.

4.1.2 FOCUS OF THE EIR

The Notice of Preparation for this General Plan was circulated to the appropriate federal, state, and local planning agencies. Based on comments received during the NOP comment period and the planning process to date, this Draft EIR was prepared to analyze potential environmental impacts that may result from the implementation of the management goals and guidelines, as well as area-specific management and facility prescriptions, that constitute the proposed General Plan. Environmental resources or topics that would not likely be affected by the General Plan are briefly addressed in Section 4.5, Environmental Topics Eliminated from Further Analysis. Those topics or issues that warrant further environmental analysis are analyzed in detail in Section 4.6, Environmental Impacts.

4.1.3 SUBSEQUENT ENVIRONMENTAL REVIEW PROCESS

The tiering process of environmental review is incorporated into this EIR. Tiering in an EIR, particularly for a program-level project such as a general plan, allows agencies to consider broad environmental issues at the general planning stage. These environmental considerations will be analyzed in greater detail in subsequent environmental documents at the time specific development projects and management programs are proposed. It should be noted that subsequent environmental documents incorporate, by reference, the general analysis from the program-level EIR included here and will concentrate on the issues specific to the characteristics of subsequent projects (Public Resources Code §21093; California Environmental Quality Act (CEQA) Guidelines §15152). This EIR represents the first tier of environmental review.

Future second-tier environmental review will be based on more detailed information on proposed actions, including facility size, location, and capacity. Therefore, the environmental analysis will be more specific and focused, identifying any significant environmental impacts

and mitigation measures that are applicable to future projects. In addition, future actions will also be evaluated to determine if they are consistent with the proposed General Plan.

Because future environmental review will be more specific and focused, and the characteristics of future projects will be better defined, it will be possible to develop appropriate project-level mitigation measures that address potentially significant adverse impacts to the environment. Developing appropriate mitigation measures generally requires resource specialists to evaluate the scope of work, identify specific causes of impacts, and to specify measures that avoid or maintain impacts at a less-than-significant level. This information will be available once specific projects or actions are defined.

4.1.4 Contents of the EIR

The program EIR contained in this General Plan includes the following sections:

Introduction to the Environmental Analysis: This section includes a brief overview of the environmental review process, legal requirements, and approach to the environmental analysis.

EIR Summary: The EIR summary represents a summary of environmental impacts associated with the proposed General Plan and proposed mitigation measures to address the impacts identified, an overview of the environmental effects of alternatives considered to the preferred General Plan, and a description of any areas of controversy and/or issues that need to be resolved.

Project Description: This section provides an overview of the proposed General Plan, which is the focus of the program EIR.

Environmental Setting: This section notes the fact that the existing (baseline) conditions for environmental issues or resources that may be potentially affected by implementation of the General Plan are addressed in Chapter 2, Existing Conditions, which represents the environmental setting for this EIR.

Environmental Topics Eliminated from Further Consideration: This section describes those environmental topics that did not warrant detailed environmental analysis and the supporting rationale.

Environmental Impact Analysis: This section describes the level of environmental impact associated with implementation of the proposed General Plan, including goals and guidelines that address effects on the environment.

Other CEQA Considerations: This section contains information on other CEQA-mandated topics, including cumulative impacts, growth-inducing impacts, significant and unavoidable impacts, and significant irreversible environmental changes.

Alternatives to the Proposed Project: The alternatives analysis describes the various alternatives to the proposed General Plan (including the No Project Alternative) that are considered in this EIR and the associated environmental effects of these alternatives relative to the proposed project.

4.2 EIR Summary

4.2.1 Summary of Impacts and Mitigation

For the most part, implementation of the General Plan is not expected to result in significant impacts on the environment. Implementation of the goals and guidelines contained in Chapter 3, in conjunction with compliance with federal, state, and local laws and regulations, avoids potential significant environmental effects or maintains them at a less-than-significant levels. Additional mitigation measures, therefore, are not necessary.

Conversion of designated Important Farmland to non-agricultural uses is the one exception. Several of the proposed property additions are designated as Important Farmland, and if they are added to the Park, they would be removed from agricultural production. This represents a significant environmental impact, and because no feasible mitigation measures are available, it is considered significant and unavoidable.

4.2.2 Summary of Alternatives Considered

Several alternatives were considered during the planning process and an additional alternative was developed as part of the development of this EIR. The three planning alternatives represent a range of management treatments (i.e., minimum, moderate, and maximum) for natural and recreational resources at the Park. Features of each of these alternatives were used to develop the preferred General Plan alternative, which is the focus of this EIR. An additional alternative, which represents maximum restoration of the Park, is also considered in this EIR. This alternative is solely aimed at promoting ecological diversity and health of the Park, providing only limited recreation opportunities. And, as required by CEQA, the No Project alternative has also been considered here. It was concluded that the Maximum Restoration Alternative is the environmentally superior alternative among the alternatives considered here; however, it fails to meet one of the Department's fundamental objectives-providing high-quality recreational opportunities to residents of the state. As a result, it was excluded from further consideration in the planning process.

4.2.3 Areas of Controversy and Issues to be Resolved

Generally, there have been very few areas of controversy associated with implementation of the General Plan expressed at various public meeting held during preparation of the plan. There appears to be consensus between the Department and the public that the recreational value of the Park is not being realized and that future recreational development would improve the Park. However, there are different visions of the extent of recreation development, ranging from a focus on passive recreation and minimal facilities to developed recreation that is supported by a well-planned and integrated facility system. The proposed

General Plan is intended to balance these two directions and includes goals and guidelines that promote good stewardship of the land and resources, which addresses concerns regarding development-induced impacts on the environment. Other related issues pertain to the addition of Park properties and coordination with other public lands in the region, both of which are addressed in the General Plan.

4.3 PROJECT DESCRIPTION

The Plan section of this General Plan represents the project description for this EIR (see Chapter 3). The General Plan establishes the long-range purpose and vision for Bidwell-Sacramento River State Park, outlines a set of goals and guidelines that guides future management of environmental resources, recreational opportunities and operational considerations, and includes a discussion of area-specific planning concepts that focus on facility development at the various subunits of the Park. Please refer to Chapter 3, Park Plan, for specific details on the proposed General Plan (Project), which is the focus of this EIR.

4.4 ENVIRONMENTAL SETTING

Existing conditions that characterize the Park, including descriptions of important resource values and local and regional planning efforts, are described in Chapter 2, Existing Conditions and Issues. Information presented in Chapter 2 constitutes the CEQA environmental setting description for the following topics: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology, hazards and hazardous materials, hydrology and water quality, noise, public services, traffic and transportation and utilities. Please refer to Chapter 2 for detailed information on these topics.

4.5 ENVIRONMENTAL TOPICS ELIMINATED FROM FURTHER ANALYSIS

Based on a preliminary review of the proposed project, several environmental topics do not warrant comprehensive analysis in this EIR because there is no potential for significant environmental effects resulting from the implementation of the General Plan. These topics include Land Use and Planning; Mineral Resources; Population and Housing; and Recreation. A brief description of these topics and information supporting the decision to eliminate these topics from further analysis is provided below.

4.5.1 LAND USE AND PLANNING

The Park is located in a rural area of Butte and Glenn counties, outside of any established communities; the City of Chico is located approximately 6 miles to the west of the Park. Because the Park is owned and managed by the state, it is not subject to local land use planning (e.g., county general plans or zoning). In addition, there are no federal or state land use plans applicable to the Park. Management plans are currently being developed on adjacent public lands managed by the U. S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), but these do not directly affect Park properties. As a result, no further analysis of this topic is necessary.

4.5.2 Mineral Resources

The Park is not located within an area with known mineral resources, and as such, it is not designated as an important mineral resource area by the California Department of Conservation under the Mineral Resource Zone (MRZ) classification System. Further, the Park does not contain any energy production or mineral extraction land uses. In the project area, there have been efforts in the past to extract gravel from the river channel to minimize interference with water pumping activities downstream of the Park, but these efforts are attributed to facility maintenance rather than commodity production. As such, no significant effects to energy and mineral resources would occur and no further analysis is necessary.

4.5.3 Population and Housing

The Park primarily serves visitors from the City of Chico, located 6 miles west of the Park. However, it also represents a regional destination for particular user groups, most notably anglers that use the Park as an access point to the Sacramento River during peak fishing seasons. Based on the characteristics of the Park, it is surmised that the primary visitor base comes from the four nearest counties (i.e., Butte, Glenn, Colusa, and Tehama counties). The population of this four-county area is projected to grow by roughly 2 to 4% annually through 2020 (DOF 2001). There are no features of the proposed General Plan that would directly induce regional population growth. However, additional recreational facilities proposed under the General Plan could result in additional visitation to the area, thereby potentially resulting in a limited indirect increase in the employment base of the local area, primarily in Chico. Recent demographic data show that the unemployment rate (2000) in Glenn County was at 11.9% and 7.0% in Butte County, and the housing vacancy rate in Glenn County was 8.1% and 6.9% in Butte County (DOF 2002). Given these data, it is expected that any increase in the demand for labor would be met by the existing local population, and therefore, no increase in population or the need for additional housing is expected. As a result, no significant effects to population and housing would occur, and no further analysis is necessary.

4.5.4 Recreation

The proposed General Plan focuses on the development of recreational facilities and implementation of management approaches that facilitate recreation use of the Park. The environmental effects of proposed facility development and resource management are analyzed as part of this EIR. Because the proposed General Plan would provide additional recreational opportunities in the region, it would not increase the use of other existing recreation facilities that could potentially result in physical degradation of those facilities, nor would it necessitate the construction of new facilities outside the Park. Therefore, no significant adverse effects to recreation would occur and no further analysis is necessary.

4.6 Environmental Impacts

4.6.1 Aesthetics

This section analyzes the aesthetic impacts that would result from the implementation of the proposed General Plan. The analysis is based on the general location of proposed facility developments within the aesthetic setting of the Park, as well as the goals and guidelines of the Plan.

Thresholds of Significance

The thresholds of significance for the analysis of aesthetic resources are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to aesthetics if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impact Analysis

Impact AES

Degradation of Viewshed and Night-time Views. Proposed facility development within the Park, namely within the riparian-based viewshed, could affect the natural appearance of the project area, including views available throughout the Park and from the Sacramento River. These developments may also introduce new nighttime light sources, which could affect nighttime views around the Park. Implementation of Goal ER-4.1 and associated Guidelines ER-4.1-1 through ER-4.1-6 would avoid or minimize potential adverse impacts to scenic resources and the aesthetic quality of the Park. As a result, this impact would be **less than significant**.

Implementation of the General Plan would result in the development of recreational and operational facilities and improvements that would be visible to Park visitors, including those people recreating along the Sacramento River and its tributaries. Such developments could potentially degrade the natural landscape of the river corridor and interfere with views of and from the Park. However, goals and guidelines have been included in the Plan to address potential adverse effects to visual resources. Goal ER-4.1, which calls for the preservation of the natural appearance of the Sacramento River corridor, is supported by a range of guidelines, including those that call for the retention of riparian woodland for aesthetic values (see Guideline ER-4.1-1), establishment of appropriate vegetative screening for new facilities

(see Guideline ER-4.1-2), and consideration of the natural aesthetics of the river when siting and designing Park signage (see Guideline ER-4.1-3). In addition, new facilities, such as the proposed visitor center, may require nighttime lighting and may introduce a new source of light/glare to the area, which could adversely affect nighttime views within the Park. Guideline ER-4.1-4 states that light/glare sources should be shielded, wherever possible, thus minimizing this impact. It is also the intent of the Department to support regular debris cleanup along the river, which would help maintain the aesthetic value of the river itself (see Guideline ER-4.1-5). With the implementation of the range of goals and guidelines in the Plan, the riparian appearance within the Park would be protected and the aesthetic values of the Park would be maintained; therefore, this impact would be less than significant and no additional mitigation measures are necessary.

4.6.2 Agricultural Resources

This section analyzes impacts related to agricultural resources that would result from the implementation of the General Plan. The analysis is based on a review of proposed facility development and resource management programs in the context of the designated Important Farmland in the region.

Thresholds of Significance

The thresholds of significance for the analysis of agricultural resources are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to agricultural resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland, to non-agricultural use.

Impact Analysis

Impact AG

Conversion of Important Farmland to Non-Agricultural Uses. Implementation of the General Plan may result in the conversion of lands designated as Important Farmland that are currently in agricultural production to non-agricultural uses. Because there are no measures available to avoid or minimize this conversion as properties are added to the State Park system, this would be a **significant and unavoidable impact**.

As shown in Exhibit 2-4, portions of the Park are designated as *Important Farmland*, under the Farmland Mapping and Monitoring Program. These areas include the Irvine Finch

subunit and the Beard Addition, both of which are classified as "Prime Farmland," and the Singh Orchard Addition, which is classified as "Irrigated Farmland" (an interim farmland map category that substitutes for the *Important Farmland* categories where a modern soil survey is not available). It should be noted, however, that the Irvine Finch subunit is a developed recreation facility that is predominantly paved, and thus, would not likely meet the criteria for Important Farmland classification if reviewed in the context of existing conditions; as such, it is excluded from further evaluation. The Beard and Singh orchards are currently in production. Neither of these, nor the other Park properties, are under a Williamson Act contract, and State lands are not subject to local agricultural zoning.

In terms of proposed project features, the Singh Orchard addition is not planned for development and would likely be restored to riparian habitat and linked with the other Big Chico Riparian Area properties through the development of a loop trail. The Beard addition may be developed with an overnight campground, which would be integrated with the Irvine Finch River Access area. Because the Department would not continue agricultural production on these properties, in both cases, *Important Farmland* would be converted from agricultural to non-agricultural land uses, which would be a significant effect according to Appendix G of the CEQA Guidelines. Because no mitigation measures are available to address this issue, it is considered a significant and unavoidable impact.

It should be noted that restoring farmland to non-agricultural uses represents a return to its original (or natural) condition. In addition, there are long-term natural process and function benefits of habitat restoration.

Native riparian habitat has been dramatically reduced because of its conversion to agricultural and flood protection uses (e.g., channelization of the river with rip-rap for bank protection and levees for flood control). Taking lands out of agricultural production and restoring riparian habitat along the Sacramento River would increase animal and plant biodiversity and preserve sensitive species, and these are an important part of the Department's mission. Restoration also creates open space, which improves the aesthetics of scenic vistas and affords recreational opportunities (e.g., hiking, nature viewing and interpretation). Moreover, agricultural lands converted for riparian restoration purposes are generally flood prone and thus of marginal economic value in terms of agricultural production; such conversion would lessen the capital costs of flood protection and recurring costs of debris clean up following flood events.

Changes in land uses pursuant to the proposed General Plan could also indirectly affect adjacent agricultural operations, including agricultural uses on *Important Farmland*, if proposed facility development and resource management efforts conflict with or interrupt surrounding agricultural-based land uses. Implementation of Goal AO-4.4 and supporting Guidelines AO-4.4-1 through AO-4.4-3 would avoid or minimize such land use conflicts or incompatibilities through the use of appropriate signage/fencing, and review of development and resource management projects in the context of surrounding land uses. Therefore, there would be no additional indirect impacts to agricultural resources.

4.6.3 AIR QUALITY

This section analyzes impacts related to air quality that would result from the implementation of the Preliminary General Plan. The analysis is based on ambient air quality conditions in the project area and is focused primarily on potential impacts associated with the construction of new facilities at the Park, as well as ongoing operations.

THRESHOLDS OF SIGNIFICANCE

The thresholds of significance for the analysis of air quality are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

IMPACT ANALYSIS

Impact AQ

Degradation of Air Quality. Construction and operations-related activities at the Park may generate criteria air pollutants, odors, and air toxics that could exceed federal, state, and local standards. Implementation of Goal AO-3.3 and Guidelines AO-3.3-1 and AO-3.3-2, which call for compliance with Butte County AQMD and Glenn County APCD rules and regulations, would avoid or minimize adverse effects on air quality. As a result, this impact would be **less than significant**.

Development projects at the Park could result in air emissions during construction, through the use of construction equipment and fugitive dust, and during operations, such as campfire emissions at the proposed overnight campground. These projects may be required to obtain "authorization to construct" and "permit to operate" from the Butte County AQMD and/or Glenn County APCD. As a part of this permitting process, projects are required to comply with the Districts' rules and regulations on fugitive dust emissions, architectural coating emissions, air toxics, odors, and other air pollutants during construction and operational activities. Pursuant to Goal AO-3.3 and Guidelines AO-3.3-1 and AO-3.3-2, implementation of air pollution control measures required by all applicable rules and

regulations would avoid or minimize the emission of criteria air pollutants from construction activities and stationary sources.

New recreational development proposed under the General Plan may generate additional vehicular traffic to and from the Park. The Transportation Project-Level Carbon Monoxide Protocol (Garza et al. 1997) states that signalized intersections at LOS E or F represent a potential for a CO violation. Due to the relatively low traffic volume on roadways in the area and the lack of intersections in the immediate vicinity of the Park, localized concentrations of vehicle-generated carbon monoxide would not be expected to exceed ambient air quality standards.

Typical recreational uses permitted in the State Parks system could potentially result in adverse effects on ambient air quality. Standard recreational uses are not known to generate odors that would be considered objectionable to most people, and the use of air toxics (e.g., regulated herbicides) would be in accordance with state and federal rules and regulations. However, the proposed General Plan includes provisions for the development of an overnight campground, with approximately 50 campsites and a group camp area, where the use of campfires would be expected to be standard. Based on the circumstances at the time such development is proposed, the applicable air district will be consulted and appropriate measures implemented to avoid or minimize this impact (see Guideline AO-3.3-2).

Based on the information presented above, any adverse effects on air quality would be less than significant. No mitigation measures are necessary.

4.6.4 Biological Resources

This section analyzes impacts related to biological resources that could result from the implementation of the proposed General Plan. A variety of documents and additional information were used to assess impacts on vegetation and wildlife from implementation of the proposed General Plan. These include biological studies previously conducted in the vicinity of the project site (see list of documents in Chapter 2, Existing Conditions, field surveys conducted during preparation of the Preliminary General Plan, aerial photographs, consultation with Park staff, and results of natural resource database searches.

Thresholds of Significance

The thresholds of significance for the analysis of biological resources are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to vegetation and wildlife if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.

IMPACT ANALYSIS

Impact VEG

Effects on Vegetation. Implementation of the Preliminary General Plan would result in the avoidance or minimization of disturbances or losses of sensitive plant communities or special-status plants through compliance with goals and guidelines that ensure protection of vegetative resources in the Park. This impact would be **less than significant**.

As discussed in Chapter 2, Existing Conditions, the dynamic riparian ecosystem of the Park contains a number of common and sensitive vegetation communities that are valuable habitat for plants and wildlife. Sensitive plant communities in the Park include wetland, valley oak woodland, and other successional riparian woodland plant communities. Proposed improvements, such as the development of new buildings/structures (e.g., visitor center) and other recreation facilities, including the car-top boat launch area, overnight campground, day-use areas, and trails, may be developed in proximity to areas containing sensitive vegetative resources. However, these developments would avoid or minimize impacts to wetlands and other sensitive plant communities based on the protective measures included in the goals and guidelines contained in the Preliminary General Plan. These include Goal ER-1.1 and associated Guidelines ER-1.1-3 through ER-1.1-6, which focus on avoidance of sensitive resources and onsite restoration where avoidance is not feasible; and Goal ER-3.2 and Guideline ER-3.2-2, which address the establishment and maintenance of riparian vegetation along riverbanks. In addition, implementation of Goal ER-1.3 and Guidelines ER-1.3-1 and ER-1.3-2 would control and possibly reduce the presence of invasive weeds at the Park, thus limiting the effect from invasive weeds and animals on native habitats and species.

Seven special-status plant species have the potential to occur in plant communities present at the Park. Based on the CNDDB and the presence of suitable habitat, three of these species, fox sedge, rose-mallow and Columbian watermeal, can occur within the Park. However, the

presence, locations and extent of populations of these plant species can vary because they grow in aquatic habitats, which are dynamic. Undocumented occurrences of these and other special-status plant species may be present in the Park; thus, focused surveys would be necessary to accurately determine the distribution and extent of special-status plant species in the Park. Direct impacts, such as direct removal or damage of special-status plant occurrences, would not occur as a result of implementation of the General Plan because development or expansion of facilities and other ground disturbance activities, including invasive weed abatement activities, would be conducted in accordance with Goal ER-1.2 and Guidelines ER-1.2-1 through ER-1.2-6, which focus on the protection of special-status plant and wildlife species, and all previously mentioned goals and guidelines. In addition, consistent with Guidelines ER-1.1-1 and ER-1.1-6, restoration could potentially increase the quality and extent of suitable habitat for special-status plant species.

Currently, no Habitat Conservation Plans or Natural Communities Conservation Plans have been approved in the region. Therefore, implementation of the Preliminary General Plan would not conflict with such plans.

Based on the information presented above, direct and indirect impacts to sensitive vegetation communities and special-status plants would be minimized or avoided, and as a result, this impact would be less than significant.

Impact WILD

Effects on Wildlife. Implementation of the proposed General Plan would result in the avoidance or minimization of disturbances or losses of special-status wildlife and wildlife corridors. The General Plan includes a range of goals and guidelines that ensure protection of natural resources, including wildlife, in the Park. These goals and guidelines maintain potential impacts at a **less-than-significant** level.

The Park supports a variety of terrestrial and aquatic wildlife species, primarily due to its position along the Sacramento River and Big Chico Creek. Many of the animals that occur in the Park are locally and regionally common, but as many as 24 terrestrial and 5 aquatic special-status species have been documented or have the potential to occur in the Park. Construction and maintenance of existing and proposed Park facilities could result in loss and/or disturbance of habitat and individuals of some of these special-status wildlife species. Potential direct impacts could result from development, re-location and/or expansion of facilities, such as trails, parking, campgrounds, picnic/day use areas, visitor center, administrative center, and boat launches. Potential secondary impacts on wildlife resulting from increased visitor use could include disturbance from visitor activities (e.g., hiking and boating), introduction/expansion of invasive species, and disturbance by domestic dogs.

However, impacts to special-status terrestrial and aquatic wildlife species would be avoided or minimized by implementation of the goals and guidelines contained in the proposed General Plan. These include Goal ER-1.2 and associated Guidelines ER-1.2-1 through ER-1.2-5, which would require monitoring of special-status species within the Park and development of specific measures to avoid and minimize adverse impacts that could result

from facility construction, maintenance activities, and visitor use. In addition, implementation of Goal ER-1.4 and Guidelines ER-1.4-1 through ER-1.4-3, would avoid or minimize potential impacts of non-native animals on wildlife in the Park, including impacts on special-status species, through monitoring efforts, development and implementation of a control plan, and public education to reduce release and feeding of non-native animals.

Wildlife movement is not expected to be substantially affected by construction and maintenance of proposed facilities. Relatively small patches of wildlife habitat would be disturbed and/or removed by facility development and such development would not substantially reduce opportunities for wildlife movement. In addition, habitat corridors would be protected and enhanced by implementation of Goal ER-1.5 and Guidelines ER-1.5-1, which promotes linkage with habitat areas that are currently isolated, and ER-1.5-2, which requires coordination with adjacent landowners to preserve habitat corridors in the vicinity. Potential impacts to the movement and/or migration of aquatic species would be minimized or avoided by implementation of Guideline ER-1.2-5, which restricts in-water construction during fish migration, spawning, and rearing periods.

4.6.5 Cultural Resources

This section analyzes impacts related to cultural resources that would result from the implementation of the Preliminary General Plan. The analysis is based on a review of known (and potentially significant) cultural resources at the Park and proposed land use developments and resource management efforts prescribed in the proposed General Plan.

Thresholds of Significance

The thresholds of significance for the analysis of cultural resources are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to aesthetics if it would:

- Cause a substantial adverse change in the significance of historical resources;
- Cause a substantial adverse change in the significance of an archaeological resource;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis

Impact CUL

Impacts to Cultural Resources. Implementation of the Preliminary General Plan would result in the avoidance or minimization of disturbances to the integrity of cultural resources located within the Park. The Preliminary General Plan includes goals and guidelines that ensure the protection and maintenance of prehistoric and historic sites, features, and landscapes documented within the Park. This impact is considered **less than significant**.

Although portions of Bidwell-Sacramento River State Park have been subjected to cultural resource surveys related to transportation, reclamation, and recreation projects, no prehistoric or historic sites, features or artifacts have been formally documented within the Park. However, several important sites are known to exist (e.g., Bidwell Ferry, Gianelli Bridge, Sea Scout station, Tyler Dance Hall, etc.), but these have not been recorded using standard archaeological techniques. In addition, based on the presence of significant cultural resources within and in the immediate vicinity of the Park, and the sensitive nature of the landforms present in the area, it is likely that important resources remain to be discovered within Park boundaries.

Although general statements can be made regarding the cultural resources sensitivity of particular landforms within the Park (e.g., stream terraces and riverbanks are typically more likely to exhibit evidence for prehistoric occupation and various activities), additional surveys are needed to locate cultural resources, document their distribution, and ensure that they are not adversely affected by Park development and maintenance proposals. The implementation of Goals ER-2 and ER-2.1 and associated Guidelines ER-2.1-1, ER-2.1-2, and ER-2.1-3 support future research regarding the presence of cultural resources at the Park, including the development of a Cultural Resource Management Plan, and would also require cultural resource surveys prior to any development project proposed at the Park. These goals and guidelines prescribed in the General Plan would add considerably to the levels of research and preservation of cultural resources currently occurring within the Park, and therefore, would reduce impacts to a less than significant level.

4.6.6 Geology, Soils, and Seismicity

This section analyzes impacts related to geology, soils, and seismicity that would result from the implementation of the General Plan. The analysis is based on a review of available geologic, seismic, and soils-related information for the project area in the context of development and resource management features included as part of the proposed General Plan.

Thresholds of Significance

The thresholds of significance for the analysis of geology, soils, and seismicity are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to geological resources if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and/or landslides;
- Result in substantial soil erosion or the loss of topsoil;

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

IMPACT ANALYSIS

Impact GEO

Risk of Geologic and Seismic Hazards. The recreational facilities and other structures developed in the Park could be potentially subject to geologic and seismic hazards and/or other adverse environmental effects based on geologic and soil-related conditions that exist at the Park. Compliance with the California Building Code (CBC) would maintain the risks of such hazards to an acceptable level; therefore, this impact would be **less than significant**.

The Park is located in a seismically active region, and potentially active faults in the area (e.g., Chico Monocline fault, Coastal Ranges thrust zone, and other faults in the Sierra foothills) may produce earthquakes with magnitudes of 6.5 or greater (Butte County 1996). However, there are no faults in the immediate project area, and the Park is not located in an Alquist-Priolo special study zone. As a result, although the potential for seismic activity in the region exists, the Park is not expected to be subject to fault rupture. Due to the relatively mild topography of the Park, only minor (if any) seismically-induced landslides along river banks could occur. In the event of a large earthquake, the Park could be subject to moderately-strong seismic ground shaking, which could result in potential structural damage to Park facilities. The risk of liquefaction, which is the transformation of soils from a solid state to a liquid state during ground shaking, is high at the Park due to the presence of saturated sandy soils (e.g., Columbia silt loam, Maywood fine sandy loam, Gianella fine sandy loam). Liquefaction can cause buildings to sink and could render them susceptible to major damage. By law, all structures developed within the Park would have to comply with the standards contained in California Code of Regulations, Title 24 (i.e., CBC). As such, future development and improvements would include structural reinforcements and other features, as required by the CBC, which avoid or minimize seismically induced structural damage.

In terms of soil-related impacts, the primary risks at the Park are soil erosion and subsidence. Erosion risk increases with increasing slope, precipitation, ground disturbance, and decreasing vegetative cover. Although the Park is relatively flat and is densely vegetated in most areas, ground-disturbing activities that would be occurring at the Park (e.g., trail use) coupled with loss of vegetation from facility and trail development and climatic factors (e.g., wind, precipitation, etc.) could result in erosion and the loss of topsoil at the Park. However, there are goals and guidelines in this Plan that would control erosion factors. Goal ER-1.1 and Guidelines ER-1.1-1 and ER-1.1-2 would generate additional vegetative cover within the

Park, which would generally aid in minimizing erosion. In addition, the construction of new facilities would require the use of best management practices, including measures specified in erosion-control plans, as prescribed in Goal ER-3.2 and Guideline ER-3.2-1. Further Guideline ER-3.2-2 would maintain vegetative buffers along the riverbank, which would avoid or minimize the potential for transport of sediment into water bodies during construction activities and visitor use at the Park. Guideline ER-3.2-3 requires trails be designed, maintained, and monitored to minimize adverse erosion effects. Given these goals and guidelines, the potential for soil erosion would be avoided or minimized.

Subsidence is a concern in the region due to natural gas and groundwater extraction. In the immediate vicinity of the Park, the primary cause of subsidence is groundwater extraction for agricultural purposes. Implementation of the General Plan would accommodate the conversion of agricultural uses to open space and recreational uses on several properties being considered for addition to the Park. While new wells may be needed to provide potable water at recreational facilities, the overall use of groundwater is expected to decrease because irrigation-dependent agricultural uses would be discontinued. As such, implementation of the General Plan would decrease the risk of subsidence. Moreover, facilities that would be developed at the Park would be required to comply with the CBC, which includes structural requirements for areas susceptible to subsidence.

It should also be noted that the characteristics of the soils within the Park are conducive to supporting specialized septic systems (i.e., septic tanks designed to prevent accidental release during flood events), such as those currently operating at the Irvine Finch and Indian Fishery subunits. As a result, future developments that may require the use of septic systems would not be limited by the soils in the project area.

Overall, because potential seismic-related impacts would be avoided or minimized through provisions in the CBC, erosion impacts would be addressed through goals and guidelines in the plan, and there are no soils-related limitations to the use of septic systems at the Park, implementation of the proposed General Plan would result in less-than-significant impacts to geology and soils. No mitigation measures are necessary.

4.6.7 Hazards and Hazardous Materials

This section analyzes impacts related to hazards and hazardous materials that would result from the implementation of the General Plan. The analysis considers the types of proposed uses at the Park and the standard equipment and materials used in operating and managing the Park in relation to proposed hazard that could affect Park visitors and staff.

Thresholds of Significance

The thresholds of significance for the analysis of hazards and hazardous materials are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact associated with hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACT ANALYSIS

Impact HAZ

Risk of Wildland Fire, Exposure to Hazardous Materials, and Other Hazards. While the General Plan would accommodate new developments and improvements that may increase fire incidents and the use of hazardous materials, implementation of the management goals and guidelines, as well as the compliance with existing codes, rules and regulations, would maintain this impact at a **less-than-significant** level.

The analysis of hazards and hazardous materials under CEQA is multi-faceted. It is intended to address the use of hazardous materials, emergency response, and wildland fire. Each of these topics is addressed below.

There are no documented hazardous materials sites within the Park (EPA 2003). Implementation of the General Plan would not result in a substantial increase in the use of hazardous materials (e.g., propane, herbicides) at the Park. Transport and storage of hazardous materials within the Park would continue to be conducted in accordance with all regulatory requirements. Day-to-day operation of the Park does not involve the disposal of hazardous materials, and the Department would continue to contract with licensed providers of propane and herbicides when transporting these materials to the Park, as needed. The

use, storage, and disposal of hazardous materials, as well as the development of new storage facilities, would comply with state and federal rules and regulations.

Implementation of the General Plan would not conflict with the emergency response plans of either Butte or Glenn counties. Implementation of Goal AO-2.3 and Guidelines AO-2.3.1 and AO-2.3-2 would promote coordination with emergency response agencies in planning for the safety of Park visitors, including the continuation of a coordinated emergency response to special events at the Park. No road closures are planned, and adequate emergency vehicle access would be maintained with implementation of Guideline AO-2.3-3 which would require all areas to accommodate adequate access for emergency vehicles.

The increase in interaction between Park visitors and wildland habitat, as well as introducing new recreational uses at the Park, would increase the risk of wildland fires at the Park. Implementation of the General Plan would result in additional native vegetation habitat through restoration opportunities (see Goal ER-1.1), which could increase the fuel load at the Park. Increases in fuel load combined with additional recreational facilities and trails that would increase human activity throughout the Park, including the use of campfires at the proposed overnight campground, would result in a higher risk for wildfires relative to baseline conditions. The threat of wildfire could threaten or otherwise adversely affect Park visitors, nearby establishments, private residences, and other nearby land uses such as agriculture. Implementation of Goal AO-2.3 and Guidelines AO-2.3.1 and AO-2.3.2 would facilitate monitoring and patrolling of the Park, which would provide the opportunity to respond to potential causes of wildfire (e.g., illegal fires). In addition, Guideline AO-3.3-2 would restrict the use of campfires, further minimizing potential wildfire ignition. And finally, Guideline VU-3.7-4 would ensure the provision of information to visitors on Park rules regarding fire safety. Given these goals and guidelines, the increase in the risk of wildland fire is not expected to be substantial. Further, all buildings would be designed in compliance with the CBC, which requires fire safety features.

The Park is not within 2 miles of an airport, and the General Plan would not accommodate the types of development that would be in conflict with the operation of the nearest airport in Chico.

Based on the information presented above, impacts related to wildland fires, risk of exposure to hazardous materials, and risks associated with airport operations are considered to be less than significant. No mitigation measures are necessary.

4.6.8 Hydrology and Water Quality

This section analyzes hydrology and water quality impacts that would result from the implementation of the General Plan. This analysis considers the proposed development and resource management efforts prescribed in the General Plan in the context of the hydrological conditions that currently characterize the Park.

THRESHOLDS OF SIGNIFICANCE

The thresholds of significance for the analysis of hydrology and water quality are based on criteria from Appendix G (Environmental Checklist)of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to hydrological resources if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Inundation by seiche, tsunami, or mudflow.

IMPACT ANALYSIS

Impact HYDRO

Flood Damage, Riverbank Erosion, and Water Quality Degradation. Implementation of the General Plan would allow for the development of facilities within the floodplain, the construction and operation of which could generate pollutants that may affect water quality. Compliance with goals and guidelines and existing rules and regulations would maintain these impacts at **less-than-significant** levels.

All of the Park's subunits, except Irvine Finch, are located within the 100-year floodplain. The General Plan would allow for the development of new facilities in the floodplain based on

incorporating site and facility design features (e.g., elevated building pads), as prescribed in Goal AO-3.1 and Guideline AO-3.1-1. Some proposed facilities, such as campgrounds, function with minimal problems in the floodplain, while other permanent structures may need to be designed with flood-related protective features. In addition, per Guideline AO-3.1-2, existing facilities at the Park would be re-designed to withstand flood events, as needed. As a result, potential adverse environmental effects associated with flooding, including structural damage and release of pollutants, is expected to be minimal.

Implementation of the General Plan would not result in the alteration of the Sacramento River or its tributaries. However, the General Plan would allow for the development of new facilities and operations of existing facilities within the designated floodplain and Inner River Zone (see Guideline AO-3.1-1). It should be noted that siting of appropriate facilities within the Inner River Zone would take into account historic flooding patterns and river meander, including known hard-points along the river channel. As a result, the potential conflicts between structural developments and the natural hydrology of the river channel is expected to be minimal.

Based on the existing drainage pattern of the Park, which often results in onsite flooding, there are no features of the General Plan that would result in localized flooding at offsite locations. Furthermore, given the channel volume of the Sacramento River, implementation of the General Plan would not impede or redirect flood flows.

Due to close proximity of the Park to the Sacramento River and its tributaries, additional runoff generated by new impervious surfaces associated with facility development may drain into nearby waterways, thereby adversely affecting water quality. By virtue of the location of facilities within the floodplain, onsite pollutants may be washed into nearby waterways during flood events, resulting in degradation of water quality. However, there are goals and guidelines in the proposed General Plan that address potential impairments to water quality. Goal ER-1.1 and Guidelines ER-1.1-1 and ER-1.1-2 would result in additional vegetative cover within the Park, which serves as a filter to pollutants entering nearby water bodies. Goal ER-3.2 and Guidelines ER-3.2-1 and ER-3.2-2 would require vegetative buffers and other erosion-control features that would avoid or minimize the potential for runoff to carry eroded soils into water bodies during construction and operational activities. Erosion-control and other water quality control features may also be required by the Central Valley RWQCB through the NPDES permit program. Site-specific best management practices (BMPs) to reduce the level of contaminants in discharges to surface waters (e.g., runoff, dewatering discharges) would be required for all construction and operational activities in the Park that could result in the generation of contaminants in discharges (e.g., all construction activities involving more than one acre of disturbed areas). Through the Section 401 certification program, water quality control features may be required to ensure that the placement of fill in the waters of the United States (e.g., wetlands, rivers and streams) is consistent with the State's water quality standards and criteria. These goals and guidelines, as well as RWQCB requirements, would avoid or minimize the contribution of sediments and other pollutants into waterways.

Based on the information presented above, the General Plan would result in less-than-significant impacts related to the hydrology and water quality at the Park. No mitigation measures are necessary.

4.6.9 Noise

This section analyzes noise impacts that would result from the implementation of the General Plan. The analysis is based on typical noise levels generated by recreation uses that would be accommodated at the Park and the relationship with established noise standards.

Thresholds of Significance

The thresholds of significance for the analysis of noise are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact associated with noise if it would:

- Expose persons to or generation of noise levels in excess of established standards;
- Expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis

Impact NOISE

Increase in Ambient Noise Level. Based on the proposed facility developments in the General Plan, there would likely be an increase in visitation to the Park that could result in increases in ambient noise primarily from vehicle access to and from the Park. However, visitor use at the Park is not expected to be such that ambient noise levels would result in adverse impacts to sensitive receptors. Further, compliance with goals and guidelines in the General Plan would ensure that future construction of facilities and other improvement efforts at the Park would not generate noise levels that exceed the State noise guidelines. Therefore, this impact would be **less than significant**.

The three primary sources of noise expected within the Park are construction activities, operations of facilities, and vehicular traffic. Based on the California Office of Planning and Research's General Plan Guidelines (State Guidelines), 60 dBA is the maximum acceptable noise level for the most noise-sensitive land uses (e.g., single-family residences). Recreation and agricultural uses have a maximally acceptable noise level of 75 dBA, and the standard for commercial businesses is 70 dBA. While areas conducive to wildlife and nature observation are not included in the State Guidelines, they would also be considered noise-sensitive uses.

Based on information provided by U.S. Environmental Protection Agency (EPA), outdoor receptors within approximately 1,600 feet of construction sites could experience maximum instantaneous noise levels of greater than 60 dBA when onsite construction-related noise levels exceed approximately 90 dBA at the boundary of the construction site. There are sensitive uses that exist near the Park, including private residences adjacent to the proposed Sunset Ranch Addition and Scotty's Bar and Grill located along Pine Creek.

In addition, potential stationary sources of noise within the Park include the operation of facilities (e.g., visitor center), which would generate occasional parking lot-related noise, and general recreation use, which would generate noise from the use of recreation equipment (e.g., motor boats) and casual conversation.

Finally, if future development and improvements would generate additional visitation to the Park, then traffic volumes and the associated noise volumes along roadways would increase.

Overall, there exists the potential for adverse noise effects to nearby sensitive receptors resulting from construction of activities, including the development of a visitor center at the Park; stationary source noise associated with typical recreation uses at the Park; and traffic-related noise associated with increased visitation to the Park. Based on the characteristics of the Park and expected use levels, noise associated with typical recreation uses and traffic is not expected to exceed State Guidelines. However, construction-related noise could adversely affect nearby residences on a short-term and periodic basis. Goal AO-3.3 and Guideline AO-3.3-3 would require proposed development projects conformance with applicable state noise standards. This may be achieved through implementation of noise-reducing measures (e.g., noise walls, site design changes, and limits on hours of operations) that would maintain appropriate construction noise levels near sensitive uses. Therefore, this impact would be less than significant, and no mitigation measures are necessary.

4.6.10 Transportation and Circulation

This section analyzes transportation and circulation impacts that would result from the implementation of the General Plan. This analysis considers potential increases in visitation that would result from the proposed General Plan and the related effects on traffic and circulation in the project area. It should be noted that recreation use projections have not been developed for the Plan, and therefore, the analysis represents a qualitative evaluation of this issue.

Thresholds of Significance

The thresholds of significance for the analysis of transportation and circulation are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to transportation and circulation if it would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the

number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

- Exceed, either individually or cumulatively, a level of service standard established by the congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

IMPACT ANALYSIS

Impact TRANS

Increase in Trips and the Effect on Local Traffic, Circulation, and Roadway Safety. Implementation of the General Plan may increase traffic volumes on local roadways serving the Park during noncommuter peak periods, but would not likely result in the degradation of traffic flows or the need for roadway expansion. Increased visitation to the Park may also affect internal circulation and parking, as well as roadway safety. Goals and guidelines in the General Plan avoid or minimize potential adverse affects related to the internal and local transportation system. As such, traffic-related impacts would be **less than significant**.

The General Plan would allow for new recreational developments that may attract additional visitation, which would increase vehicular trips along local roadways serving the Park. Most of the additional vehicular trips would occur during weekends, particularly during holiday weekends, and very few of the trips are expected during the peak commuter hours when LOS levels along SR 32 are of concern. Further, goals and guidelines in the General Plan would also facilitate the provision of public transportation to the Park (see Goal VU-3.2 and Guidelines VU-3.2-1 and VU-3.2-2), which would likely have a beneficial effect on traffic volumes in the area. There may be short-term traffic congestion during peak-period recreation events (e.g., Fourth of July, Labor Day), when thousands of visitors overwhelm the capacity of the local roadways. However, coordination and collaboration with Caltrans and other agencies, per Goal AO-2.3, which requires the provision of a safe environment for the visitors, and Guideline AO-2.3-2, would facilitate the safest and most expedient access to and from the Park possible. Overall, traffic conditions along local roadways are not expected to noticeably change as a result of the proposed General Plan.

In terms of roadway safety, intersection improvements or new intersections may be needed along SR 32, River Road, and other roadways where access roadways to new facility development connect with existing roadways. This is particularly applicable to proposed development areas that may need design features to provide safer access off the existing roadway system, which may be the case at the Sunset Ranch property. Goal VU-3.1 and

Guidelines VU-3.1-1 through VU-3.1-5 would provide for adequate roadway signage, preparation of traffic analyses for major development proposals, and coordination with Caltrans and local jurisdictions to implement roadway improvements, where necessary, to ensure safe access to and from the Park. Moreover, separation of vehicle traffic from pedestrians, bicyclists, and equestrians, and installation of roadway safety signage in the Park is prescribed under Guidelines VU-3.8-1 and VU-3.8-2, respectively. During peak-period recreation events, Goal AO-2.3 and Guidelines AO-2.3-2 would promote safe access to and from the Park along local roadways. In addition, implementation of Guideline AO-2.3-3 would ensure that the existing and new use areas be designed to maintain adequate access for emergency vehicles. Roadway visibility may be affected by nighttime campfire smoke from proposed overnight campgrounds; however, because these emissions would originate from proposed small- to moderate-scale facilities that are not located directly on the roadway system, they are not anticipated to result in safety hazards. With goals and guidelines prescribed in this plan, implementation of the General Plan would not be expected to adversely affect traffic safety in the project area.

With additional facilities, additional parking capacity would be needed at the Park. Implementation of Goal VU-3.3 and Guidelines VU-3.3-1 and VU-3.3-2 would provide for expanded parking capacity for vehicles and buses and private vehicles to meet visitor needs.

Overall, given the goals and policies related to traffic and circulation included in the Plan, as well as the compliance with applicable codes and regulations, impacts related to traffic and transportation would be less than significant.

4.6.11 Public Services and Utilities

This section analyzes impacts on utility and public service systems that would result from the implementation of the General Plan. The analysis based on the potential demands for public services and utilities as part of proposed facility developments included in the General Plan.

Thresholds of Significance

The thresholds of significance for the analysis of public services and utilities are based on criteria from Appendix G (Environmental Checklist) of the State CEQA Guidelines. According to these criteria, implementation of the General Plan would result in significant impact to public services and utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, and other public facilities;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

IMPACT ANALYSIS

Impact UTIL

Increased Demand for Utility and Public Services. The General Plan would allow for the development of new facilities and improvements that would generate an increase in the demand for utility and public services. Because existing service providers and resource capacities are expected to be sufficient, the impact would be **less than significant**.

The General Plan would allow for the development of new facilities and site improvements that would increase visitor use at the Park, and therefore, generate additional demand for water, wastewater, electricity, propane, solid waste, telephone, law enforcement, fire protection, emergency, and road maintenance services. Because the level of additional visitation is not expected to be substantial, the Department would continue to utilize existing sources of utility and other public services, which have sufficient capacity to accommodate increases in demands that would result from implementation of this plan.

For services provided by outside sources including, solid waste collection and disposal, road maintenance, fire protection, law enforcement, and emergency medical services, existing service providers would be utilized. There are no known capacity issues that would affect the provision of these services for the Park.

The Department would continue to provide potable water from its existing wells or from new wells as needed. Based on the types of facilities proposed and the ceasing of irrigation on potential property additions currently in agriculture, it is expected that the existing groundwater supply would be sufficient to serve the Park. New water and wastewater facilities (e.g., pipelines) may be needed for new developments and would be built in conjunction with specific facility developments, per Guidelines AO-3.2-1 and AO-3.2-2.

The construction and installation of new equipment and facilities that may be needed to serve the future development within the Park could result in adverse environmental effects. Because preference would be given to the use of existing infrastructure over the development of new infrastructure, in accordance with Goal AO-3.2 and Guidelines AO-3.2-1 and AO-3.2-2, which give preference to connection with existing infrastructure over the development of new infrastructure, the amount of new development, including ground-disturbing activities, required to provide utility and public services may be avoided or minimized.

While the exact nature of the infrastructure and service needs would not be determined until the development proposal is available, it is expected that any adverse effects would be mitigated to the extent feasible in accordance with Guideline AO-3.2-3. Construction and operations of any new equipment and facilities are expected to be in compliance with state and federal rules and regulations. In addition, new infrastructure and services are expected to be environmentally compatible with the Park's resources, and any degradation of environmental values is not expected to be substantial based on implementation of Guideline AO-3.2-3.

Based on the information provided above, overall impacts associated with the provision of utility and other public services is expected to be less than significant, and no mitigation measures are necessary.

4.7 Other CEQA Considerations

4.7.1 Unavoidable Significant Effects on the Environment

This first-tier environmental review indicates that the potential significant environmental effects from implementation of the General Plan can be maintained at a less-than-significant level with appropriate facility siting, implementation of goals and guidelines included in this Plan, and the development of specific mitigation measures during the project-level environmental review process. The one exception, as discussed below, is the unavoidable significant conversion of farmland to non-farmland uses.

At the programmatic level, it is generally difficult to identify unavoidable significant effects on the environment because the specific location and scope of proposed uses or management efforts are not known. However, there are features of the proposed General Plan that would likely result in unavoidable significant effects on the environment, as described below.

Implementation of the General Plan would likely result in a significant and unavoidable effect related to the conversion of *Important Farmland* to non-agricultural uses. By expanding the Park through property acquisition and either restoring or developing new properties that are or may be considered *Important Farmland* (i.e., Beard Addition, Singh Orchard), these properties would be converted from agricultural to non-agricultural uses. Because the Department would not continue agricultural operations on these properties and there are no measures that can be taken to mitigate this effect, it is considered an unavoidable and significant effect on the environment under CEQA (Appendix G Checklist, CEQA Guidelines).

It should be noted that the Department would restore native riparian habitat on this land and that restoration would result in long-term natural process and function benefits.

4.7.2 Significant Irreversible Environmental Changes

No significant irreversible changes to the physical environment are anticipated from the adoption and implementation of this General Plan. Facility development, including structures, roads and trails, may be considered a long-term commitment of resources; however, the impacts can be reversed through removal of the facilities and discontinued access and use. Ongoing adverse effects on the environment, if any, can be monitored by Park staff through their consideration of carrying capacity issues. The Department does remove, replace, or realign facilities, such as trails and campsites, where impacts have become unacceptable either from excessive use or from a change in environmental conditions.

The construction and operation of facilities may require the use of non-renewable resources. This impact is projected to be minor based on considerations of sustainable practices in site design, construction, maintenance, and operations that are generally practiced by the Department. Sustainable principals used in design, construction and management, such as the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency, emphasize environmental sensitivity.

4.7.3 Growth-Inducing Impacts

State CEQA Guidelines §15126.2(d) require that an EIR evaluate the growth-inducing impacts of a proposed project. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or by encouraging and/or facilitating other activities that would induce new growth. Growth inducement itself is not an environmental effect, but may lead to environmental effects. Such environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or wildlife habitats, or conversion of agricultural and open space land to urban uses.

If implemented completely, the General Plan may indirectly foster economic growth in the region. This economic growth would be associated with the development of new recreational and interpretive facilities, which could increase visitation to the Park. The anticipated increase in Park visitation is based on an increase in the overall capacity of the Park (i.e., Park expansion), interpretive potential at the proposed visitor center, the development of family and group day-use and overnight camping facilities, and improvements to the trail system, including additional new trails and linkages between the Park and regional trails. Additional directional and informational signage outside the Park should raise the Park's profile as a destination for recreation and historical interpretation.

If visitation to the Park increases, tourism-related spending would increase in adjacent communities and surrounding region, which would in turn support tourism- and recreation-related businesses and employment. The extent of such economic effects is unknown at this time, but could indirectly result in growth of local economic activity.

In addition, there will be the need to expand permanent and seasonal Park staff to address increases in Park visitation and to operate facilities, such as the proposed visitor center. Increases in employment opportunities in both the public and private sector could result in increases in local population growth, but this effect is expected to be minimal because the number of new jobs is not expected to be substantial and any new employees would likely be from the local area.

4.7.4 Cumulative Impacts

This EIR provides an analysis of cumulative impacts of the proposed General Plan, as required in State CEQA Guidelines §15130. Cumulative impacts are defined in State CEQA Guidelines §15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time (State CEQA Guidelines §15355[b]). By requiring an evaluation of cumulative impacts, CEQA attempts to ensure that large-scale environmental impacts will not be ignored.

To evaluate cumulative environmental impacts, other projects that could cumulatively contribute to the impacts described in this EIR need to be identified. In addition to substantial growth in the Chico region, several development and planning projects are being undertaken in close proximity to the Park by other public agencies, including the U.S. Army Corps of Engineers (USACE), USFWS, and CDFG. These projects are:

- Sacramento River Wildlife Area Management (CDFG).
- Comprehensive Conservation Plan – Sacramento River National Wildlife Refuge (USFWS).
- Hamilton City Flood Damage and Ecosystem Restoration Project (USACE)

Please refer to Chapter 2, Existing Conditions and Issues, for an overview and key features of these projects.

As described above, the facility development and resource management efforts proposed in the General Plan would not, except for conversion of farmland, result in significant adverse environmental impacts based on implementation of the goals and guidelines included in the Plan. Although not individually significant, those environmental topics that are not expected to be subject to significant adverse effects from the proposed development in the General Plan may result in cumulative impacts to the extent that they are occurring in the region, such

as water quality degradation and the loss of biological, cultural, and visual resources. However, features of the General Plan, including possible acquisitions and resource protection efforts, would act to protect existing Park resources, preserve viewsheds, and enhance plant and wildlife habitat by providing habitat linkages and buffers. As a result, cumulative impacts associated with these environmental topics are expected to be less than significant.

The General Plan would result in a significant and unavoidable impact related to the conversion of *Important Farmland* in the project area. This loss would cumulatively contribute to the loss of farmland and agricultural productivity that is affecting the region and the state, including losses associated with implementation of restoration and conservation uses on adjacent public lands. Therefore, this would be a significant and unavoidable cumulative impact, although restoration would return farmland to its original riparian habitat state, and provide environmental benefits to improved natural process and functions.

4.8 Alternatives to the Proposed Project

The guiding principles for the analysis of alternatives in this EIR are provided by the State CEQA Guidelines §15126.6, which indicate that the alternatives analysis must: (1) describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project; (2) consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives; and (3) evaluate the comparative merits of the alternatives. The State CEQA Guidelines §15126.6(d) permit the evaluation of alternatives to be conducted in less detail than is done for the proposed project. A description of the project alternatives, including the No Project Alternative, is provided in this EIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the proposed General Plan.

4.8.1 Description and Environmental Effects of the Alternatives

Alternatives 1A, 1B, and 1C: Project Planning Alternatives.

Description

A range of planning alternatives was developed and presented to the public during the General Plan process. These alternatives represented a menu of options in addressing the various issues identified at the Park, and were organized by the degree of management (or treatment) for a particular issue. As such, these alternatives do not just represent separate alternatives unto themselves, but also describe packages of management intensity, ranging from minimum to moderate to maximum treatment of natural and recreational resources. In addition, some of the integral key features are included in more than one planning alternative.

The *minimum* treatment of natural and recreational resources (Alternative 1A) includes the following key features:

- Monitoring approach to management of special-status plant/wildlife species and non-native/feral animals;
- Control of California Department of Food and Agriculture (CDFA) Class "A" and "B" noxious weeds;
- Use of native plants in facility landscaping;
- Focus on the protection of known cultural resources;
- Expand Irvine Finch boat launch area and develop small-scale car-top boat launch area at the Peterson property;
- Minor expansion of picnic amenities at existing day-use areas;
- Limited number of primitive, environmental campsites at the Big Chico Creek Riparian Area, east of River Road;
- New internal loop trail at Big Chico Creek Riparian Area and canoe trail;
- Small visitor center at Beard Addition using signs/panels;
- Relocation of existing administrative center to Sunset Ranch Addition; and
- Implement policies that foster community involvement and coordination with local and regional planning efforts.

The *moderate* treatment of natural and recreational resources (Alternative 1B) includes the following key features:

- Active approach to management of special-status plant/wildlife species, including restoration of threatened and endangered species habitat and control of animals affecting sensitive species;
- Prevent spread of all existing and establishment of new invasive weeds;
- Restore natural habitat of future property additions;
- Focus on the protection of known and potential cultural resources at the Park;
- Expand Irvine Finch and Pine Creek boat launch areas and develop moderate-scale car-top boat launch area on the east side of the Big Chico Creek Riparian Area;
- Small expansion of existing day-use areas and develop new day-use area at Indian Fishery;
- Limited number of primitive, environmental campsites in the eastern portion of the Big Chico Creek Riparian Area and in Indian Fishery (near Old Chico Landing) and small family campground at Indian Fishery;
- New internal loop trail at Big Chico Creek Riparian Area, expand existing loop trail at Indian Fishery, and canoe trail;
- Moderate-scale, mobile visitor center with working farm at Sunset Ranch Addition;
- Relocation of existing administrative center to Sunset Ranch Addition; and

- Implement policies that foster community involvement and coordination with local and regional planning efforts.

The *maximum* treatment of natural and recreational resources (Alternative 1C) includes the following features:

- Active approach to management of special-status plant/wildlife species, including restoration of all sensitive species habitat, control of animals affecting sensitive species, and monitoring of biodiversity;
- Reduce extent of and control all invasive weeds;
- Restore natural habitat of all degraded sites within the Park;
- Focus on the protection of known/potential cultural resources at the Park and develop Cultural Resource Management Plan;
- Expand Irvine Finch and Pine Creek boat launch areas and develop larger-scale boat launch area on the eastern portion of the Big Chico Creek Riparian Area providing car-top and motorized boat access;
- Small expansion of existing day-use areas and development of two new day-use areas;
- Limited number of primitive, environmental campsites on the eastern portion of the Big Chico Creek Riparian Area and Indian Fishery (near Old Chico Landing). Large family campground at Beard Addition;
- New internal loop trail at Big Chico Creek Riparian Area, expand existing loop trail at Indian Fishery, coordinate to develop multi-agency loop trail near Sunset Ranch, and canoe trail;
- Coordinate to develop permanent, large-scale visitor center with working farm at the Sunset Ranch Addition serving multiple public agencies;
- Relocation of existing administrative center to Sunset Ranch Addition; and
- Implement policies that foster community involvement and coordination with local and regional planning efforts.

EVALUATION

The minimum treatment of natural and recreation resources (Alternative 1A) does not provide for substantial recreation development, but is limited in the extent of management of important natural, cultural and visual resources. On the other end of the spectrum, the maximum treatment of natural and recreation alternatives (Alternative 1C) calls for the greatest amount of facility development, but also includes the strongest or most stringent management of natural resources at the Park. The moderate treatment of natural and recreation alternatives (Alternative 1B) lies in between these two bookend planning concepts. It is difficult to ascertain what the resulting net environmental effect would be from these three alternatives on the environmental resources at the Park. Based on the balance of physical

development and environmental stewardship that characterizes each of these alternatives, it would be expected that these three alternatives would result in comparable environmental impacts relative to one another. Further, because the proposed General Plan is characterized by a combination of the three planning alternatives described above, and also balances the development of facilities with sound stewardship of natural resources, it is also expected to result in comparable environmental impacts relative to these planning concepts.

ALTERNATIVE 2: MAXIMUM RESTORATION ALTERNATIVE

Description

This alternative represents the scenario where the existing subunits of the Park and all future property additions are restored to natural habitat conditions to the extent feasible. As such, existing facilities at the Park would be removed where appropriate and no new recreation or operations-related facilities would be developed. The Park would ultimately represent discontiguous pockets of protected open space, where visitors could engage in passive recreation opportunities in the absence of developed facilities.

Evaluation

The Maximum Restoration alternative would result in less environmental impacts relative to the proposed General Plan. Because no recreation or other facility development is proposed, adverse environmental effects associated with ground-disturbing construction activities, such as loss or degradation of sensitive riparian and/or wildlife habitat, would be avoided. Also, there would be relatively less visitation to the Park under this alternative because recreation opportunities at the Park would be limited to passive opportunities only. With less visitation, there would also be less demand on consumptive resources (e.g., potable water) and public services (e.g., law enforcement), and resulting traffic, air quality, and noise effects would be less pronounced relative to the proposed project. However, this alternative would still entail addition of the three proposed properties included as part of the proposed project (i.e., Beard property, Sunset Ranch, and Singh Orchard), which would be restored to their natural habitat conditions. As a result, this alternative would result in the conversion of Important Farmland to non-agricultural uses similar to the proposed project.

Although the Maximum Restoration alternative would result in less impact to the environment, relative to the proposed project, it would not achieve one of the Department's primary missions –providing high-quality recreation opportunities to residents of the State. However, this alternative would still meet the criteria of a State Park, which are intended to balance natural, cultural, and scenic resource considerations and facilitate the provision of the recreational opportunities they provide to the public (albeit extremely limited under this alternative).

ALTERNATIVE 3: NO PROJECT ALTERNATIVE

Description

The California Environmental Quality Act requires an evaluation of the "no project" alternative and its impact (CEQA Guidelines §15126.6[e][1]). The no project alternative represents perpetuation of existing management actions, and its analysis is based on the physical conditions that are likely to occur in the future if the project (the proposed General Plan) is not approved and implemented. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the expected impacts of not approving the project. If a general plan is not implemented for Bidwell-Sacramento River State Park, the existing management scenario would continue for Park development, operation, and management, which includes, but is not limited to, the following features:

- maintenance of existing recreation and operation facilities and Park grounds,
- restoration of existing properties that were acquired for habitat values,
- property acquisition that facilitate management of the Park, and
- implementation of the Interpretive Prospectus (1997) developed for the Park.

Evaluation

The existing conditions at the Park, including the lack of needed facilities, would continue if the General Plan were not adopted. Visitation to the Park is increasing every year and based on demographic trends, use of the Park would increase, but not at the level expected under the proposed General Plan due to the lack of facilities. There would be public pressure to expand facilities at the Park; however, without a general plan in place, the Department would not have the authority to develop or enhance facilities to respond to this demand and funding for recreation and interpretation improvements to enhance the visitor experience may be difficult to obtain. Recreational and interpretive improvements that could enhance the visitor experience at the Park's current level of use or anticipated future needs would not be developed. As a result, similar to the Maximum Restoration alternative (Alternative 2), this alternative would potentially avoid construction-related impacts associated with facility development that would occur under the proposed General Plan.

However, without the facility improvement to accommodate the existing visitor demand, as well as the projected increase in visitor use (although less than the proposed General Plan), sensitive natural and cultural resources may be expected to degrade over time because of overuse and lack of formalized management approaches. In other words, under the No Project Alternative, the Park's natural and cultural resources would not receive an increased level of protection, as prescribed under the General Plan. Comprehensive Park-wide resource management plans and policies for natural and cultural resources would not be implemented, including the development of a formal Cultural Resource Management Plan (CRMP).

Traffic and circulation improvements may not be accomplished under the No Project Alternative. Parking and circulation problems would continue as visitor use increases, creating issues with visitor capacity at the Park. Improvements to informational and directional signage would not occur.

Finally, this alternative would continue current patterns of property acquisition, including those properties that contain Important Farmland. Because the Department would not continue agricultural use of these properties under most circumstances, the No Project Alternative would result in significant and unavoidable impacts to agricultural resources, similar to the proposed General Plan.

4.8.2 Environmentally Superior Alternative

State CEQA Guidelines §15126(d)(2) states that "if the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives." In light of this guidance, the EIR discusses whether the no project alternative or one of the other plan alternatives would be environmentally superior. Alternatives considered here include the proposed General Plan, the three planning alternatives (Alternatives 1A, 1B, and 1C), the Maximum Restoration Alternative, and the No Project Alternative.

It is concluded that the Maximum Restoration Alternative is the environmentally superior alternative from the alternatives considered here. Although property acquisition would still likely proceed under this alternative, thus potentially resulting in the conversion of *Important Farmland* to non-agricultural uses (a significant and unavoidable impact under all of the alternatives), it would minimize ground-disturbing activities and construction- and service-related impacts associated with facility development, which would be the lowest out of all of the alternatives. However, this alternative fails to meet one of the fundamental objectives of the Department, which is to provide high-quality recreation to residents of the State. Passive recreation opportunities would be provided, in conjunction with habitat restoration activities, but due to the sensitivities associated with restoration efforts, these opportunities would be extremely limited. As a result, it was excluded from further consideration in the planning process.

The proposed General Plan was selected because it balances the interests of natural, cultural, and recreational resources at the Park. It is based on fundamental principles of land and resource stewardship, which are found throughout the goals and guidelines of the Plan. Moreover, it provides the framework to establish improved and expanded recreation opportunities to Park visitors, which is an integral consideration for State Parks planning.

5

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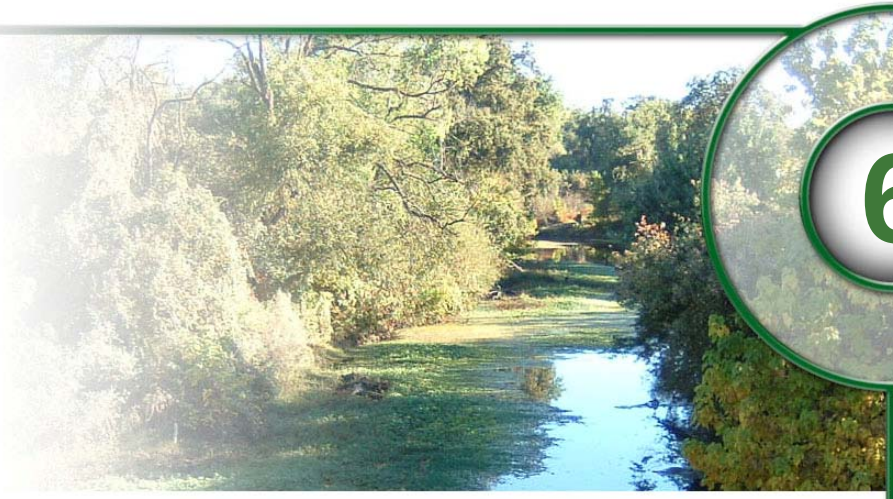

6

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7

Glossary of Terms and Acronyms

7 GLOSSARY OF TERMS AND ACRONYMS

Adaptive use: use of a historic structure for a purpose other than for which it was originally intended.

Aesthetics: refer to the visual, audible, and other sensory factors within the park setting and its surrounding landscapes that, taken together, establish character or sense of place.

Active fault: a fault that has moved recently and which is likely to move again. For planning purposes, an "active fault" is usually defined as one showing movement within the last 11,000 years and can be expected to move within the next 100 years.

Alluvium: a general term for all detrital deposits resulting from the operations of modern rivers, thus including the sediments laid down in riverbeds, flood plains, lakes, fans at foot of mountain slopes and estuaries.

Ambient air quality: the atmospheric concentration (amount in specified volume of air) of a specific compound as actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions.

Ambient noise level: the composite of noise from all sources near and far.

Archaeological: pertaining to the material remains of past human life, culture, or activities.

Aquifer: the underground layer of water-bearing rock, sand, or gravel through which water can seep or be held in natural storage. Such water holding rock layers hold sufficient water to be used as a water supply.

Bedrock: the solid rock underlying unconsolidated surface materials.

Best available control technology (BACT): the most stringent emission limit or control technique that has been achieved in practice that is applicable to a particular emission source.

Bikeways: bicycle travel way, encompasses bicycle lanes, bicycle paths, and bicycle routes.

Best management practices (BMP): the most current methods, treatments, or actions in regards to environmental mitigation responses.

Biodiversity: biological diversity in an environment as indicated by numbers of different species of plants and animals, as well as the relative abundance of all the species within a given area.

Buffer: land that protects natural and/or cultural values of a resource or park from adverse effects arising outside the buffer.

California Coastal Commission: established by the 1972 Coastal Act to review and approve projects and actions within a defined zone along the California coastline for compliance with the Coastal Act.

California State Parks and Recreation Commission: established in 1927 to advise the Director of Parks and Recreation on the recreational needs of the people of California. In 1928 it gathered support for the first state park bond issue. The Commission schedules public hearings to consider classification or reclassification and the approval of State Parks' general plan (and amendments) for each park unit.

California Environmental Quality Act (CEQA): a state law (PRC §21000 et al.) requiring state and local agencies to take actions on projects with consideration for environmental protection. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General Plans require a "program EIR" and park development projects require a project environmental document.

Classification: official designation of units of the State Park System. Classification are established by the State Parks and Recreation Commission at the recommendation of Department staff and are based on the sensitivity and kind of unit's most important resources and what types of use the unit will receive from the public.

Clean Water Act (CWA): enacted in 1972 to create a basic framework for current programs to control water pollution; provide statutory authority for the National Pollutant Discharge Elimination System (NPDES).

Concession: a contract with persons, corporations, partnerships, or associations for the provision of products, facilities, programs, and management and visitor services that will provide for the enhancement of park visitor use, enjoyment, safety, and convenience. Concession developments, programs, and services must be compatible with a park unit's classification and general plan provisions.

Conservation easement: acquisition of rights and interests to a property to protect identified conservation or resource values using a reserved interest deed. Easements may apply to entire parcels of land or to specific parts of the property. Most are permanent, although term easements pose restrictions for a limited number of years. Land protected by a conservation easement remains on the tax rolls and is privately owned and managed; landowners who donate conservation easements are generally entitled to tax benefits.

Constraints: (1) the state of being restricted or confined within prescribed bounds (2) one that restricts, limits, or regulates; a check.

County Route: a segment of roadway that has been officially designated by the Director of California Department of Transportation as a scenic corridor.

Cultural heritage point of interest: human activity site, interpretive exhibit. Utilizes both preservation and interpretation.

Cultural landscape: a geographic area (including both the cultural and natural resources) associated with a historic event, activity, or person or exhibiting cultural or aesthetic values. This type is a landscape that evolved through use by people whose activities or occupancy shaped it.

Cultural resource: a resource that exists because of human activities. Cultural resources can be prehistoric (dating from before European settlement) or historic (post-European contact).

Cultural preserve: the subclassification protects areas of outstanding historic interest in state parks, including such features as sites, buildings, or zones where significant events in the flow of history in California occurred. They need to be large enough to protect resources from potential damage and to permit effective management and interpretation and must also have complete integrity of the resources; no conflicting improvements, such as roads, are permitted. Natural resources values are secondary to historical values in cultural preserves.

Culvert: a drain, ditch, or conduit not incorporated in a closed system that carries drainage water under driveway, roadway, railroad, pedestrian walk or publicway. Culverts are often built to channelize streams and as part of flood control systems.

Cumulative Impact: as defined by the state CEQA Guidelines (§15355) two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts.

Degradation: the reduction of environmental quality in an area through a lessening of diversity, the creation of growth anomalies, or the supplanting of native species by nonnative plant and animal species.

Demographic: having to do with a particular characteristic of a segment of the public at large; may be connected to the group's age, the region where the group resides, a particular recreational interest, economic status, etc.

Ecology: the study of the interrelationship of living things to one another and their environment.

Ecosystem: a community consisting of all biological organisms (plant, animals, insects, etc.) in a given area interacting with the physical environment (soil, water, air) to function together as a unit of nature.

Ecotone: a transition area between two adjacent ecological communities, usually exhibiting competition between organisms common to both; often a rich biological area.

Effect/impact: an environmental change; as defined by State CEQA Guidelines §15358: (1) Direct or primary effects are caused by the project and occur at the same time and place (2) Indirect or secondary effects that are caused by the project and are late in time or farther removed in distance, but still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water quality and other natural systems including ecosystems.

Endangered species: a species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy form one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

Endemic: indigenous to, and restricted to, a particular area.

Environment: as defined in State CEQA Guidelines §15360, "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historical and aesthetic significance."

Environmental impact report (EIR): a report required by CEQA that assesses all the environmental characteristics of an area and determines what effects of impacts will result if the area is altered or disturbed by a proposed action. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require the preparation of a "program" EIR appropriate to its level of specificity.

Environmentally sensitive: an area in which plant or animal life or their habitats are either rare or especially valuable because of their role in an ecosystem. Such areas can be easily disturbed or degraded by human activities and developments.

Ethnographic: a multi-format group of materials gathered and organized by an anthropologist, folklorist, or other cultural researcher to document human life and traditions.

Exotic species: a species occurring in an area outside of its historically known natural range that has been intentionally introduced to or have inadvertently infiltrated into the system. Also known as non-native, ornamental, or introduced species. Exotic animals prey upon native species and compete with them for food and habitat. Exotic plant species can convert native ecosystems into a non-native dominated system that provides little benefit to other species in the ecosystem.

Floodplain: a lowland or relatively flat area adjoining inland or coastal waters that is subject to a one or greater chance of flooding in any given year (i.e., 100-year flood).

Floodway: the channel of a natural stream or river and portions of the flood plain adjoining the channel, which are reasonable required to carry and discharge the floodwater or flood flow of any natural stream or river.

Forbes: any herbaceous (non-woody) plant having broad leaves, and therefore excluding grasses and grass-like plants.

Geology: the scientific study of the origin, history, and structure of the earth.

General plan (GP): a genera plan is a legal planning document that provides guidelines for the development, management, and operation of a unit of the state park system. A general plan evaluates and defines land uses, resource management, facilities, interpretation, concessions, and operations of a park unit as well as addressing environmental impacts in a programmatic manner. A park unit must have an approved general plan prior to implementing any major development project.

Grade: the degree of rise or descent of a sloping surface.

Habitat: the physical location or type of environment, in which an organism or biological population lives or occurs. It involves an environment of a particular kind, defined by characteristics such as climate, terrain, elevation, soil type, and vegetation. Habitat typically includes shelter and/or sustenance.

Hazardous material: any substance that, because of its quantity, concentration, physical or chemical characteristics, poses a significant presence or potential hazard to human health and safety or to the environment. Lead-based paint is an example of a hazardous material.

Historic character: the sum of all visual aspects, features, materials, and species associated with a structure or cultural landscape's history, i.e., the original configuration together with losses and later changes. These qualities are often referred to as character defining.

Hydrology: pertaining to the study of water on the surface of the land, in the soil and underlying geology, and in the air.

Impervious surface: any material, which reduces or prevents absorption of water into land.

Infrastructure: public services and facilities, such as sewage-disposal systems, water supply systems, other utility systems, road and site access systems.

Initial study: as defined by State CEQA Guidelines §15365, an analysis of a project's potential environmental effects and their relative significance. An initial study is preliminary to deciding whether to prepare a negative declaration or an EIR.

Interpretation: in this planning document, it refers to a communication process, designed to reveal meanings and relationships of our cultural and natural heritage, through involvement with objects, artifacts, landscapes, sties, and oral histories.

Kilowatt: a measure of the rate of electrical flow equal to one thousand watts.

Kilowatt–hour: a measure of quality of electrical consumption equal to the power of one kilowatt acting for one hour.

Landform: configuration of land surface (topography).

Mean sea level: the average altitude of sea surface for all tidal stages.

Mitigation measure: a measure proposed that would eliminate, avoid, rectify, compensate for, or reduce significant environmental effects (see State CEQA Guidelines §15370).

Morphology: form and structure of a plant that is typical.

Mycology: the study of fungi.

National Register of Historic Places (NRHP): the official federal list of buildings, structures, objects, sites and districts worthy of historic preservation. The register recognizes resources of local, state, and national significance. The register lists only those properties that have retained enough physical integrity to accurately convey their appearance during their period of significance. Crystal Cove was listed on the NRHP as a Historic District on June 15, 1976.

Native species: a plant or animal that is historically indigenous to a specific site area.

Negative declaration: when a project is not exempt from CEQA and will not have a significant effect upon the environment a negative declaration must be written (see State CEQA Guidelines §15371).

Natural preserve: a subclassification within a unit of the State Park System that requires parks and Recreation Commission approval. Its main purpose is to maintain such features as rare and endangered plants and animals and their supporting ecosystems in perpetuity.

Office of Historic Preservation (OHP): the governmental agency primarily responsible for the statewide administration of the historic preservation program in California. Its

responsibilities include identifying, evaluating, and registering historic properties and ensuring compliance with federal and state regulatory obligations.

Open Space: an area with few or no paved surfaces or buildings, which may be primarily in its natural state or improved for use as a park.

Project: as defined by the State CEQA Guidelines §15378, a project can be one of the following a) activities undertaken by any public agency; b) activities undertaken by a person which are supported in whole or in part through contracts, grants, subsidies, loans or other forms of assistance from one or more public agencies; c) activities involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

Public Resources Code (PRC): in addition to the State Constitution and Statues, California Law consists of 29 codes covering various subject areas. The PRC addresses natural, cultural, aesthetic, and recreation resources of the State.

Riprap: a loose assemblage of broken rock or concrete often used to prevent erosion.

Riparian: riparian habitat represents the vegetative and wildlife areas adjacent to perennial and intermittent streams and are delineated by the existence of plant species normally found near fresh water.

Runoff: that portion of rainfall or surplus water that does not percolate into the ground and flows overland and is discharged into surface drainages or bodies of water.

Septic system: an on-site sewage treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absences of oxygen. Septic systems are often used where a municipal sewer system is not available.

Significant effect on the environment: as defined by State CEQA Guidelines §15382, substantial or potentially substantial, adverse change on any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to physical change may be considered in determining whether the physical change is significant.

Shoulder season: the months of the year immediately before and after the park's busy recreation season. This term generally refers to April and October, but could also shade into late March and early November, depending upon activities under discussion.

Siltation: the process of silt deposition. Silt is a loose sedimentary material composed of finely divided particles of soil or rock, often carried in cloudy suspension in water.

Solid waste: term used to describe the mixture of items, discarded by agricultural, residential and non-residential activities.

Special-status species: plant or animal species that are typically listed (State and Federal) as endangered, rare and threatened, plus those species considered by the scientific community to be deserving of such listing.

State Historic Preservation Officer (SHPO): the chief administrative officer for the OHP and is also the executive secretary of the State Historic Resources Commission.

Subclassification: a separate classification for a portion or unit of the State Park System. The State Parks and Recreation Commission establish these at the recommendation of Department staff. Cultural preserves, and Wilderness are subclassifications.

Subsidence: the gradual sinking of land as a result of natural or man-made causes.

Threatened species: an animal or plant species that is considered likely to become endangered throughout a significant portion of its range within the foreseeable future because its prospects for survival and reproduction are in jeopardy from one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

Topography: graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations.

Trailhead: the beginning of a trial, usually marked by information signs.

Viewshed: the area that can be seen from a specified location.

Watershed: the total area above a given point on a watercourse that contributes water to the flow of the watercourse; entire region drained by a watercourse.

Wetland: includes the environment of subtidal, mudflats, tidal salt marsh, periodically inundated or brackish marsh, diked marshland, associated upland, and freshwater marsh.

Wilderness: within state parks, this is a subclassification requiring approval by the State Parks and Recreation Commission. It provides protection for plants and animals and their supporting ecosystems while also encouraging recreational use. Its provision includes no permanent facilities other than "semi-improved campgrounds" and possible retention of structures existing when the land was designated. No mechanical equipment may be used in a wilderness (including bicycles), and there is a 2000-foot no-fly zone above.

ACRONYMS

AADT	average annual daily trip
ACSC	areas of critical state concern
ADA	Americans with Disabilities Act
ADT	average daily traffic
APCD	Air Pollution Control District
AQMD	Air Quality Management District
ARB	California Air Resource Board
BACT	best available control technology
BCAQMD	Butte County Air Quality Management District
BLM	Bureau of Land Management
BMP	best management practices
C	Celsius
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CBC	California Building Code
CCC	California Coastal Commission
CCP	Comprehensive Conservation Plan
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected Species as designated by the California Fish and Game Code
CFR	Code of Federal Regulation

cfs	cubic feet per second
CHFT	California Heritage Task Force
CHP	California Highway Patrol
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
Commission	California Parks and Recreation Commission
CORRP	California Outdoor Recreation Resource Plan
CUP	Conditional Use Permit
CRHR	California Register of Historic Resources
CRMP	Cultural Resource Management Plan
CVP	Central Valley Project
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
DEIR	draft environmental impact report
DFG	State of California, Department of Fish an Game
DOC	Department of Conservation
DOE	Department of Energy (U.S.)
DOF	Department of Finance
DPR	California Department of Parks and Recreation
du	dwelling units
DWR	State of California, Department of Water Resources
EIR	environmental impact report
F	Fahrenheit
FCAA	Federal Clean Air Act
FEIR	final environmental impact report

FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FIP	Federal Implementation Plan
gal	gallon
GCAPCD	Glenn County Air Pollution Control District
GIS	Geographic Information System
GP	General Plan
GPS	Global Positioning System
HAPs	Hazardous Air Pollutants
HC	hydrocarbons
HCP	Habitat Conservation Plan
ISO	Insurance Services Offices (Rating)
kW	kilowatt
kWh	kilowatt-hour
LAFCO	Local Agency Formation Commission
L_{eq}	energy-equivalent noise level
L_{dn}	day-night average noise level
LOS	level of service
M	Richter Scale Magnitude
mgd	million gallons per day
ml	milliliters
mm	millimeter
MOU	Memorandum of Understanding
MRZ	Mineral Resource Zone

msl	mean sea level
MW	megawatts
N	nitrogen
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Communities Conservation Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxide(s)
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NTHP	National Trust for Historic Preservation
O_3	ozone
OHP	State of California, Office of Historic Preservation
OHV	off-highway vehicle
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
ROG	reactive organic gasses

RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SB	State Beach
SHPO	State Historic Preservation Officer
SMARA	California Surface Mining and Reclamation Act of 1975
SO_2	sulfur dioxide
SP	State Parks
SR	State Route
SRCA	Sacramento River Conservation Area
SRCAF	Sacramento River Conservation Area Forum
SRA	State Recreation Area
SRNWR	Sacramento River National Wildlife Refuge
SSC	Species of Special Concern
SVAB	Sacramento Valley Air Basin
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
THC	total hydro carbons
TCM	Transportation Control Management/Measures
TNC	The Nature Conservancy
TSM	Transportation Systems Management
UC	University of California
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency

USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
V	volts
Valley	Sacramento Valley
V/C	volume to capacity ration (of traffic volume to roadway capacity)

APPENDIX A

ENVIRONMENTAL REGULATIONS AND PERMIT REQUIREMENTS

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ENVIRONMENTAL REGULATIONS AND PERMIT REQUIREMENTS

Many biological resources in California are protected by Federal and State laws and regulations. During the project planning and pre-implementation process, surveys and other assessments may be needed to determine site sensitivities and compliance measures to minimize environmental impacts or effects on protected resources. Key environmental regulatory requirements and permits applicable to implementation of the General Plan are discussed below.

FEDERAL REGULATIONS

Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have authority over projects that may result in take of a federally listed species. Under the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If a project has a reasonable likelihood that it would result in take of a federally listed species, either one of two take approvals is required: an incidental take permit, under Section 10(a) of the ESA (if no other federal action is involved), or a federal interagency consultation and Biological Opinion, under Section 7 of the ESA (if another federal approval is needed).

The recreation facilities improvements and recreation activities discussed in this report have the potential to affect federally listed threatened or endangered, and candidate or proposed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, implements a series of treaties that provide international migratory bird protection, and authorize the Secretary of the Interior to regulate the taking of migratory birds. The MBTA states it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill…any migratory bird, or any part, nest or egg of any such bird, included in the terms of conventions" with certain other countries (16 U.S. Code [USC] 703). The current list of species protected by the MBTA contains several hundred species and essentially includes all native birds. Section 3513 of the California Fish and Game Code provides for adoption of the MBTA's provisions. Although neither the MBTA nor this state code offers statutory or regulatory mechanisms for obtaining an incidental take permit for the loss of nongame migratory birds, a Section 10(a) permit issued under the ESA may constitute a special purpose permit for the take of a listed species that is also covered by the MBTA. Sometimes CDFG and USFWS seek measures that demonstrate avoidance of loss of MBTA-covered species. USFWS and CDFG have discretion whether or not to pursue an

MBTA action, if some migratory birds would be lost, but have decided not to pursue action when agencies demonstrate that all reasonable loss avoidance measures have been incorporated into a project.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a requirement to obtain a permit from USACE prior to initiating any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Pursuant to Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States. In addition, under Section 10 of the Rivers and Harbors Act, USACE issues permits for structures and/or work in or affecting navigable waters of the United States. Fills of less than ½ acre of non-tidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under the USACE's nationwide permit (NWP) program, provided the project satisfies the terms and conditions of the particular NWP. Fills that do not qualify for a NWP require a Letter of Permission of an individual permit.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, an incidental take permit from the California Department of Fish and Game (CDFG) is required for projects that could result in the take of a state-listed Threatened or Endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the federal act does. As a result, the threshold for a take under the CESA is higher than that under the ESA.

Section 401 of the Clean Water Act (CWA)

Section 401(a)(1) of the Clean Water Act (CWA) specifies that any applicant for a Federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate, that any such discharge will comply with the applicable provisions of the Clean Water Act. Succinctly, this means that in California, the Regional Board must certify that the project will comply with water quality standards (defined below). In some instances, the need for certification may be waived if the action is shown to have minimal water quality effects.

Section 3503.5 of the California Fish and Game Code - Protection of Raptors

Section 3503.5 of the Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

Section 1600 of the California Fish and Game Code - Streambed Alteration Agreement

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake in California that supports wildlife resources and/or riparian vegetation are subject to regulation by CDFG, pursuant to §1600 through §1603 of the California Fish and Game Code. Under §1601 for public projects and §1603 for projects proposed by nonpublic entities, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by CDFG, or use any material from the streambeds, without first notifying CDFG of such activity. Authorization from CDFG would be in the form of a Streambed Alteration Agreement.

APPENDIX B

FLORISTIC INVENTORY OF BIDWELL-SACRAMENTO RIVER STATE PARK

APPENDIX B

FLORISTIC INVENTORY OF BIDWELL-SACRAMENTO RIVER STATE PARK

GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
FERNS AND ALLIES		
Azollaceae		
Azolla filiculoides	mosquito fern	CL, GB, IF, PC; floating or stranded on mud along sloughs, seasonally stranded on littoral zone of main river
Equisetaceae		
Equisetum arvense	common horsetail	CL, GB, PA, PC; moist soil of point bars, openings in woodland and willow scrub
Equisetum hyemale ssp. *affine*	common scouring rush	CL
Equsetum laevigatum	Smooth scouring rush	GB, PA; moist edges and openings in woodland, willow scrub
LICHENS[3]		
Parmeliaceae		
Evernia prunastri		
Flavopunctelia flaventior		
Melanelia subolivacea		
Parmelina quercina		

Management Unit
CL=Chico Landing GB=Gravel Bar IF=Indian Fishery PA=Peterson Addition PC=Pine Creek

*= Non-native species within the park
[1]= Species not observed by J. Dittes in 2003
[2]= Species could be misidentified because it was not observed by J. Dittes and does not occur in the County according to the Butte County Flora (Oswald and Ahart 1994; J. Dittes, pers. comm. 2003;).
[3]= Species added to inventory based on a query of the Chico State University Herbarium database performed by J. Dittes (See Appendix C).

GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Physciaceae		
Physcia adscendens		
Physcia stellaris		
Ramalinaceae		
Ramalina farinacea		
Ramalina leptocarpha		
Teloschistaceae		
Xanthoria fallax		
Xanthoria polycarpa		
DICOTS		
Aceraceae		
Acer negundo var. *californicum*	box elder	GB; frequent in riparian woodland
Acer saccharinum *	sugar maple	PC; Infrequent
Amaranthaceae		
Amaranthus albus *	tumble pigweed	CL, PA, PC; disturbed sites and gravel bar
Amaranthus blitoides	mat amaranth	CL, GB, IF, PA, PC; disturbed road and trail edges
Amaranthus californicus[1]	California amaranth	
Amaranthus deflexus *	Large-fruited amaranth	PA; infrequent
Amaranthus retroflexus *	redroot pigweed	GB, PA, PC; Infrequent

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[3]= Species added to inventory based on a query of the Chico State University Herbarium database performed by J. Dittes (See Appendix C).

GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Amaranthus rudis *	tall amaranth	GB, PA; this taxon is not in Jepson Manual; upper bank of Chico Creek
Anacardiaceae		
Toxicodendron diversilobum	poison oak	CL, GB, IF, PA, PC; frequent understory component and woodland edges, can climb vinelike into riparian canopy
Apiaceae		
Anthriscus caucalis *[1]	bur chervil	
Conium maculatum *	poison hemlock	CL, GB, IF, PA, PC; disturbed moist areas and understory in valley oak woodland
Daucus carota *	wild carrot, Queen Anne's-lace	GB, PA; infrequent in disturbed sites
Torilis arvensis *	hedge-parsley	CL, GB, IF, PA, PC; frequent in drier disturbed sites, part of ruderal grassland
Torilis nodosa[1]	knotted hedge-parsley	
Apocynaceae		
Vinca major *	periwinkle	PC, IF; noxious weed in valley oak woodland
Araliaceae		
Hedera helix *[1]	English ivy	Plants removed in 2001-2002
Aristolochiaceae		
Aristolochia californica	California pipevine	CL, GB, IF, PA, PC; frequent vine in riparian

Management Unit
CL=Chico Landing GB=Gravel Bar IF=Indian Fishery PA=Peterson Addition PC=Pine Creek

*= Non-native species within the park
[1]= Species not observed by J. Dittes in 2003
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[3]= Species added to inventory based on a query of the Chico State University Herbarium database performed by J. Dittes (See Appendix C).

GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
		woodland
Asteraceae		
Ambrosia artemisifolia	annual ragweed	GB, PA; Infrequent on gravel bars
Ambrosia psilostachya	western ragweed	CL, GB, IF, PA, PC
Anthemis cotula *[1]	mayweed	
*Artemisia biennis**[3]	biennial sagewort	
Artemisia douglasiana	common mugwort	CL, GB, IF, PA, PC: frequent in all riparian habitats
Aster chilensis[1]	California aster	
Aster subulatus var. *ligulatus*	annual water-aster	CL, GB, PC; inconspicuous in moist sunny areas
Baccharis douglasii[1]	salt marsh baccharis	
Baccharis pilularis	coyote brush	CL, GB, IF, PA, PC
Baccharis salicifolia	mule-fat	PC
Bidens frondosa	sticktight	CL, GB, IF, PA, PC; frequent in littoral zone and shaded cottonwood forest
Centaurea solstitialis *	yellow star-thistle	CL, GB, IF, PA, PC; frequent in dry disturbed sites
Chamomilla suaveolens	pineapple weed	CL. GB; disturbed sites and occasional on gravel bars
Cichorium intybus *	chicory	CL, GB, IF, PA, PC; frequent in dry disturbed sites
Cirsium arvense *	Canada thistle	IF
Cirsium vulgare *	bull thistle	PA

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Conyza canadensis	Canada horseweed	CL, GB, PA; frequent in dry disturbed sites
Conyza floribunda *	many-flowered horseweed	CL, GB, PA, PC
Conyza sp.	horseweed	CL, GB, IF, PA, PC
Eclipta prostrata *	False daisy	CL, GB, PA; inconspicuous in moist sunny sites, littoral zone
Erigeron annuus *	annual daisy	CL, PC; Infrequent in moist sunny sites, littoral zone
Eriophyllum lanatum var. *grandiflorum*	large-flowered wooly-sunflower	CL; several scattered individuals on gravel bar
Euthamnia occidentalis	western goldenrod	CL, GB, IF, PA, PC; common on gravel bars and in willow scrub, moist disturbed road edges
Filago californica[1]	California filago	
Gnaphalium luteo-album *	weedy cudweed	CL, GB; sunny moist areas
Gnaphalium palustre	western marsh cudweed	CL, GB, PC
Grindelia camporum var. *camporum*	gumweed	CL
Hemizonia pungens	common spikeweed	CL
Heterotheca oregona	Oregon golden-aster	CL, GB, IF
Hypochaeris glabra *	smooth cat's ear	CL
Lactuca serriola *	prickly lettuce	CL, GB, IF, PA, PC
Picris echioides *	bristly ox-tongue	IF, PA
Rudbeckia hirta var. *pulcherrima* *[3]	black-eyed susan	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Senecio vulgaris *	common groundsel, old-man-of-spring	CL, GB, IF, PA, PC; disturbed areas and occasional on gravel bars
Silybum marianum *	milk thistle	CL, GB, PC, IF;
Sonchus arvensis *[1]	perennial sow thistle	
Sonchus asper ssp. *asper* *	prickly sow thistle	CL, GB, PC;
Sonchus oleraceus *	sow thistle	IF
Taraxacum officinale *	dandelion	CL, GB, IF, PA, PC
Xanthium strumarium	cocklebur	CL, GB, IF, PA, PC; frequent in moist sunny sites
Betulaceae		
Alnus rhombifolia	white alder	CL, GB; infrequent on gravel bars
Bignoniaceae		
*Catalpa speciosa**	northern catalpa	PA, PC; Scattered individuals near upper banks of Chico Creek
Boraginaceae		
Heliotropum curassavicum	wild heliotrope	CL, GB, IF; disturbed sites and gravels bars
Plagiobothrys bracteatus	bracted popcorn-flower	CL; scattered individuals on moist sand on gravel bar
Brassicaceae		
Brassica nigra *	black mustard	IF;
Brassica rapa *[1]	field mustard	
Capsella bursa-pastoris *	shepherd's purse	IF; disturbed sites

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Cardamine oligosperma.	annual bittercress	CL, GB
Cardaria chalapensis *	lens-pod hoarycress	CL, PA, IF
Cardaria draba *[2]	hoary cress	Not known from Butte County
Coronopus didymus *	lesser swinecress	IF
Draba verna *	spring whitlow-grass	CL, GB: open sites on gravel bar
Hirschfeldia incana *	hoary mustard	CL, GB, IF, PA, PC
Lepidium latifolium *	perennial pepperweed	
Lepidium nitidum var. *nitidum*	shining pepper-grass	CL, GB
Raphanus raphanistrum *	jointed charlock	CL, GB, IF, PA, PC
Raphanus sativus *	wild radish	IF
Rorippa curvisiliqua var. *occidentalis*	western yellowcress	CL, GB
Calycanthaceae		
Calycanthus occidentalis[1]	spicebush	Planted at PA
Capparaceae		
Polanisia dodecandra ssp. *trachysperma*	Clammyweed	CL, GB, PA; occasional on gravel bar and road/levee embankment
Caprifoliaceae		
Sambucus mexicana	blue elderberry	CL, GB, IF, PA, PC
Caryophyllaceae		
Cerastium glomeratum	mouse-eared chickweed	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Herniaria hirsuta ssp. *hirsuta*	gray herniaria	CL, GB
Petrorhagia dubia *	grass pink	CL, GB, IF
Spergularia bocconii	Boccone's sandspurry	
Spergularia rubra *	ruby sandspurry	CL, GB, PC, IF
Stellaria media *	common chickweed	IF
Stellaria nitens *	mouse-ear chickweed	GB
Chenopodiaceae		
Atriplex triangularis	spearscale	CL, PA
Chenopodium album *	white goosefoot, lamb's-quarters	CL, GB, IF, PA, PC
Chenopodium ambrosioides *	Mexican tea	CL, GB, PA, PC
Chenopodium botrys *	Jerusalem oak	CL, GB, IF
Chenopodium murale *[1]	nettle-leaved goosefoot	
Chenopodium strictim var. *glaucofolium* *	glaucus-leaved goosefoot	GB, PA
Cycloloma atriplicifolium *	winged pigweed	CL, GB; syn. *Atriplex atriplicifolium*
Kochia scoparia *[3]	common red sage	
Salsola tragus *	Russian-thistle	CL, GB, PA
Convolvulaceae		
Convolvulus arvensis	bindweed	CL, GB, IF, PA, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Crassulaceae		
Crassula sp.	pygmyweed	CL, GB
Curcurbitaceae		
Cucurbita pepo *	field pumpkin	PA
Marah fabaceus	California manroot	CL, GB, IF, PA, PC
Dipsacaceae		
Scabiosa atropurpurea[3]	pincushion plant	
Elatinaceae		
Bergia texana[3]	Texas bergia	
Euphorbiaceae		
Chamaesyce maculata *	spotted spurge	CL
Chamaesyce serpyllifolia ssp. *serpyllifolia*	thyme-leaved spurge	CL, GB, PA
Eremocarpus setigerus	doveweed, turkey-mullein	CL, GB, IF, PA, PC
Euphorbia peplus *	petty spurge	CL
Fabaceae		
Albizia julibrissin *	silktree	PC
Hoita macrostachya	leather root	
Lathyrus jepsonii var. *californicus*	California pea	IF, PC
Lotus corniculatus	bird's foot trefoil	
Lotus micranthus	small-flowered lotus	

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Lotus purshianus	Chile-lotus	CL, IF, GB, PC
Lupinus spp.	lupines	
Medicago polymorpha *	common bur-clover	CL, GB, IF, PA, PC
Medicago praecox *	Mediterranean bur-clover	CL
Melilotus alba *	white sweet-clover	CL, GB, IF, PA, PC
Melilotus indica *	sour-clover	
*Robinia pseudoacacia**	black locust	PC
Trifolium dubium *	rose clover	CL, GB, IF
Trifolium variegatum	white-tipped clover	
Sesbania punicea[1,3]*	Sesbania	Invasive weed
Vicia villosa *	hairy vetch	CL, GB, IF, PC
Fagaceae		
Quercus lobata	valley oak	CL, GB, IF, PA, PC
Quercus wislizenii	interior live oak	
Gentianaceae		
Centaurium muehlenbergii	June centaury	CL, PA, PC
Geraniaceae		
Erodium botrys	long-beaked filaree	
Erodium cicutarium *	red-stemmed filaree	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Geranium molle *	dove's-foot geranium	CL, IF, PC
Geranium dissectum *	cut-leaved geranium	GB
Haloragaceae		
Myriophyllum sp.	water milfoil	IF
Hydrocharitaceae		
Elodea canadensis	Canadian waterweed	CL, IF, PC
Hypericaceae		
Hypericum perforatum *	Klamathweed	CL, IF, PA
Juglandaceae		
Carya illinoinensis	pecan	
Juglans californica varieties*	California black walnut (orchard rootstock or hybrids)	CL, GB, IF, PA, PC; (Varieties *californica*, *hindsii*, *californica* x *hindsii* hybrids, and/or hybrids with *J. regia*. Identification unclear)
Juglans regia	English walnut	GB, PC
Lamiaceae		
Lamium amplexicaule *	henbit	IF, PC
Lycopus americanus	cut-leaved bugle-weed	CL, GB, PC
Marrubium vulgare *	horehound	CL, GB, IF, PA, PC
Melissa officinalis *	bee-balm	PC
Mentha arvensis	wild mint	PC
Mentha pulegium *	pennyroyal	PC, CL

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Mentha sp.	mint	
Trichostema lanceolatum	vinegar-weed	CL, GB
Loasaceae		
Mentzelia laevicaulis	blazing star	CL, GB
Lythraceae		
Ammannia coccinea[3]	purple ammannia	
Ammannia robusta[3]	grand ammannia	
Lythrum hyssopifolium *	hyssop loosestrife	CL, GB, PA, PC
Rotala indica *	Indian toothcup	CL
Rotala ramosior[3]	lowland rotala	
Malvaceae		
Abutilon theophrasti *	velvetleaf	PA, GB
Hibiscus lasiocarpus[1]	rose-mallow	Planted at PA
Malva nicaeensis *	bull mallow	IF, PC
Malva parviflora	cheeseweed	CL, PC
Molluginaceae		
Mollugo verticillata *	Indian-chickweed	CL, GB, PC
Moraceae		
Ficus carica *	edible fig	CL, GB, IF, PC
Maclura pomifera	osage-orange	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Morus alba *	white mulberry	GB, PC
Myrtaceae		
*Eucalyptus camaldulensis**	red gum	
Eucalyptus sp.*	eucalyptus	
Oleaceae		
Fraxinus latifolia	Oregon ash	CL, GB, IF, PA, PC
Onagraceae		
Epilobium brachycarpum	panicle willow-herb	CL, GB, IF, PA, PC
Epilobium ciliatum ssp. *ciliatum*	fringed willow-herb	
Epilobium densiflorum[3]	dense-flowered willow-herb	
Ludwigia peploides ssp. *montevidensis* *	Montevideo waterweed	CL, GB, IF, PA, PC; emergent and littoral mud; forms dense impenetrable mats
Ludwigia peploides ssp. *peploides*	floating water-primrose	
Oenothera elata ssp. *hirsutissima*	hairy evening primrose	PA
Orobanchaceae		
Orobanche vallicola	valley broom-rape	CL; one single plant observed under blue elderberry next to old boat ramp
Oxalidaceae		
Oxalis corniculata *	creeping wood-sorrel	GB
Phytolaccaceae		
Phytolacca americana *	pokeweed	CL, GB, IF, PA, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Plantaginaceae		
Plantago lanceolata *	English plantain	CL, GB, PA, PC
Plantago major *	common plantain	GB
Platanaceae		
Platanus racemosa	California sycamore	CL, GB, IF, PA, PC
*Platanus x acerifolia**	London plane tree	
Polygonaceae		
Polygonum arenastrum *	common knotweed	CL, GB, IF, PA, PC
Polygonum hydropiperoides	mild water-pepper	CL, PA, PC, GB; emergent along Chico Creek,
Polygonum lapathifolium	willow-weed	CL, GB, PA, PC
Polygonum persicaria	lady's thumb	CL, GB, IF, PA, PC
Polygonum punctatum	punctate smartweed	
Rumex acetosella *	sheep sorrel	IF
Rumex conglomeratus	sharp dock	
Rumex crispus *	curly dock	CL, GB, IF, PA, PC
Rumex pulcher *	fiddle dock	CL, GB, IF, PA, PC
Portulacaceae		
Claytonia perfoliata	miner's lettuce	CL, GB, IF, PA, PC
Portulaca oleracea *	common purslane	GB, PA

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Primulaceae		
Anagallis arvensis	scarlet pimpernel	
Ranunculaceae		
Clematis ligusticifolia	virgin's bower	CL, GB, IF, PA, PC
Clematis pauciflora	few-flowered clematis	
Ranunculus aquatilis	water buttercup	CL, GB, IF, PC
Rhamnaceae		
Rhamnus tomentella ssp. *tomentella*	hoary coffeeberry	IF
Rosaceae		
Heteromeles arbutifolia	toyon	CL
Prunus cerastifera	cherry plum	CL
Prunus dulcis *	almond	CL, IF, PA, PC
Prunus persica	peach	
Prunus sp.*	prune orchard rootstock	GB
*Pyrus communis**[3]	pear	
Rosa californica	California wild rose	CL, IF, PA, PC
Rosa sp. *	rose	
Rubus discolor *	Himalayan blackberry	CL, GB, IF, PA, PC
Rubus leucodermis	white-bark raspberry	
Rubus ursinus	California blackberry	CL, GB, IF, PA, PC

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Rubiaceae		
Cephalanthus occidentalis var. *californicus*	California buttonbush	CL, GB, IF, PA, PC
Galium aparine *	common bedstraw	CL, GB, IF, PA, PC
Galium parisiense *	bedstraw	IF
Salicaceae		
Populus fremontii ssp. *fremontii*	Fremont cottonwood	CL, GB, IF, PA, PC
Salix exigua	sandbar willow	CL, GB, IF, PA, PC
Salix gooddingii	Goodding's black willow	CL, GB, IF, PA, PC
Salix laevigata	red willow	CL, GB, IF, PA, PC
Salix lasiolepis	arroyo willow	CL, GB, IF, PA, PC
Salix lucida ssp. *lasiandra*	shining willow	CL, PC
Salix melanopsis	dusky willow	CL, GB
Scrophulariaceae		
Antirrhinum cornutum[3]	spurred snapdragon	
Castilleja attenuata	valley-tassels	CL
*Kickxia elatine**	sharp-leaved fluellin	CL, GB, IF, PA, PC
Lindernia dubia var. *anagallidae*	false pimpernel	CL, GB, PA, PC
Mimulus glaucescens	shield-bracted monkeyflower	CL
Mimulus guttatus	seep monkeyflower	CL, GB
Mimulus pilosus	downy mimetanthe	CL, GB

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Verbascum blattaria *	moth mullein	CL, GB, IF, PA, PC
Verbascum thapsus *	woolly mullein	CL, GB, PA
Veronica anagallis-aquatica	water speedwell	CL, GB
Veronica peregrina ssp. *xalapensis*	purselane speedwell	CL, GB
Simaroubaceae		
*Ailanthus altissima**	tree-of-heaven	
Solanaceae		
Datura ferox	Chinese thornapple	CL, GB, PA
Datura stramonium var. *tatula*	purple-stemmed jimson-weed	CL, PA
Nicotiana acuminata var. *multiflora*	Many-flowered tobacco	CL, GB, IF
Physalis lanceifolia	lanceleaf groundcherry	
Physalis philadelphica *	tomatillo	PA
Solanum americanum	American nightshade	CL, GB, PA
Solanum nigrum[1]	black nightshade	Not known from Butte County
Tamaricaceae		
*Tamarix parviflora**	tamarisk	
Ulmaceae		
Celtis sp.*	hackberry	PC

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Urticaceae		
Urtica dioica ssp. *holosericea*	hoary creek nettle, stinging nettle	CL, GB, IF, PA, PC
Urtica urens	burning nettle	GB
Verbenaceae		
Phyla lanceolata	lance-leaf lippia	
Phyla nodiflora var. *nodiflora*	creeping lippia	GB, IF, PA, PC
Phyla nodiflora var. *rosea*	matted tribe	
Verbena bonariensis *	South American vervain	CL, PA
Verbena littoralis	shore vervain	CL, GB, IF, PA, PC
Violaceae		
Viola sp. *	violet	GB, IF, PC
Viscaceae		
Phoradendron macrophyllum	big-leaved mistletoe	CL, PC; on Fremont's cottonwood
Vitaceae		
*Parthenocissus cinquefolia**[2]	Virginia creeper	This is not known from Butte County
Vitis californica	California wild grape	CL, GB, IF, PA, PC
Zygophyllaceae		
Tribulus terrestris *	puncture vine	GB, PA, PC

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MONOCOTS		
Alismataceae		
Sagittaria latifolia	broad-leaf arrowhead	
Sagittaria longiloba	long-lobed arrowhead	
Araceae		
Arum italicum *	Italian arum	CL, GB
Cyperaceae		
Carex barbarae	Santa Barbara sedge, valley sedge	CL, GB, IF, PA, PC
Cyperus bipartitus	Two-parted cyperus	GB
Cyperus difformis *	Small-flowered cyperus	CL, PC
Cyperus eragrostis	tall flatsedge, tall cyperus	CL, GB, IF, PA, PC
Cyperus erythrorhizos[3]	red-rooted cyperus	
Cyperus esculentus	yellow nutsedge	CL, GB, IF, PA, PC
Cyperus niger	black cyperus	CL, GB, PC
Cyperus squarrosus	awned cyperus	
Cyperus strigosus	false nutsedge	
Eleocharis acicularis var. *acicularis*	needle spike-rush	CL
Eleocharis coloradoensis[3]	spike-rush	
Eleocharis macrostachya	common spike-rush	CL, GB, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Eleocharis radicans[3]	creeping spike-rush	
Eleocharis sp.	spike-rush	GB, CL, PC
Fimbristylis autumnalis*[3]	fimbristylis	
Lipocarpha micrantha	small-flowered lipocarpha	CL, PC
Scirpus acutus var. *occidentalis*	common tule	CL, GB, IF, PA, PC
Scirpus americanus[2]	common three-square	not known from Butte County
Scirpus californicus[2]	California bulrush	not known from Butte County
Scirpus fluviatilis[1]	river bulrush	
Scirpus mucronatus[1]	bog bulrush	
Scirpus robustus[2]	big bulrush	not known from Butte County
Iridaceae		
Iris sp. *	iris	PC
Juncaceae		
Juncus acuminatus	sharp-fruited rush	
Juncus balticus	Baltic rush	CL
Juncus bufonius	toad rush	CL, GB, PA, PC
Juncus effusus var. *pacificus*	Pacific rush	CL, GB, PA
Juncus patens	spreading rush	
Lemnaceae		
Lemna sp.	common duckweed	CL, GB, IF, PC; Likely to be *L. minuta*

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Liliaceae		
Asparagus officinalis *	garden asparagus	CL, PC
Smilax californica	California greenbriar	CL
Poaceae		
Agrostis avenacea[1]	Aven's bentgrass	
Agrostis exarata[1]	spiked bentgrass	
Alopecurus aequalis	short-awned foxtail	CL
Arundo donax *	giant reed	GB
Avena fatua *	wild oats	CL, GB, IF, PA, PC
Bromus catharticus *	rescue grass	IF, PA, PC
Bromus diandrus *	ripgut brome	CL, GB, IF, PA, PC
Bromus hordeaceus *	soft chess	CL, GB, IF, PA, PC
Chloris virgata *	silky chloris	CL, GB, PA, PC
Cynodon dactylon *	Bermuda grass	CL, GB, IF, PA, PC
Cynosurus echinatus *	hedgehog dogtail-grass	CL, GB, IF, PA, PC
Cortaderia selloana *[1]	pampas grass	Plants removed in 2001-2002
Crypsis schoenoides *	swamp pricklegrass	GB
Dactylis glomerata *	orchardgrass	IF
Deschampsia danthonioides	annual hairgrass	GB, IF
Digitaria sanguinalis *	hairy crabgrass	GB, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Echinochloa colona	jungle-rice	CL, PA
Echinochloa crus-galli	barnyard grass	IF, GB, PA, PC
Elymus glaucus ssp. *glaucus*	blue wild-rye	CL, GB, IF, PA, PC
Elytrigia repens *	quackgrass	
Eragrostis mexicana ssp. *virescens*	Green lovegrass	CL, GB, PA, PC
Eragrostis pectinacea var. *pectinacea*	purple lovegrass	CL, GB, PA
Gastridium ventricosum	nitgrass	CL, GB
Hordeum jubatum[1]	squirreltail barley	
Hordeum marinum ssp. *gussoneanum* *	Mediterranean barley	IF, PC
Hordeum murinum ssp. *leporinum* *	barley	CL, GB, IF, PA, PC
Leptochloa fascicularis	bearded sprangletop	CL, IF, GB, PA
Leptochloa uninerva	Mexican sprangletop	PA
Leymus triticoides	creeping wild-rye	CL, IF, PA
Lolium multiflorum *	Italian rye-grass	CL, GB, IF, PA, PC
Muhlenbergia rigens	deergrass	PA
Panicum capillare	witchgrass	CL, GB
Panicum dichotomiflorum	smooth witchgrass	GB
Paspalum dilatatum *	dallisgrass	CL, GB, IF, PA, PC
Paspalum distichum	knotgrass	IF, GB; slough margin, infrequent
Phalaris aquatica *	Canary-grass	IF

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Piptatherum miliaceum *	smilograss	CL, GB, IF, PA, PC
Poa annua *	annual bluegrass	CL, GB, IF, PA, PC
Poa pratensis	Kentucky bluegrass	
Polypogon monspeliensis *	rabbit's-foot grass, annual beardgrass	CL, GB, PC
Setaria pumila *	yellow bristlegrass	CL, GB, PA, PC
Sorghum halepense *	Johnson grass	CL, GB, IF, PA, PC
Vulpia myuros var. *myuros* *	rattail fescue	CL
Potamogetonaceae		
Potamogeton crispus *	crispate-leaved pondweed	CL, GB, IF, PA, PC
Potamogeton nodosus	long-leaved pondweed	
Typhaceae		
Typha angustifolia	narrowleaf cattail	CL, GB, IF, PA, PC
Typha latifolia	broadleaf cattail	CL, GB, IF, PC
Sources: GIC 1998a; 1998b; 2003; Sacramento River Partners 2000; Elliott, pers. comm. 2003; Dempsey, pers. comm. 2003; Dittes and Guardino Consulting 2003		

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APPENDIX C

CHICO STATE UNIVERSITY HERBARIUM (CHSC) DATABASE QUERY RESULTS FOR BIDWELL-SACRAMENTO RIVER STATE PARK

Appendix C
Chico State University
Herbarium Database Query Results
for Bidwell-Sacramento State Park

Acc. No.	Division	Family	Genus	Epithet	Rank	Infraspecific	Collector	More Collectors	Coll'n No	Date	County	T-R-S	Elev.	Elev Units	Locality
47964	Anthophyta (flowering plants)	Amaranthaceae	Amaranthus	deflexus			Vernon Oswald		1062	10/10/1983	Butte				Bidwell State Park on the e side of the Sacramento R. w of Chico. The Indian Fishery at the jct. Of W. Sacramento Ave & River Rd.
43782	Anthophyta (flowering plants)	Araceae	Arum	italicum			Vernon Oswald		2369	5/4/1987	Butte	T22N R01W S35	135	ft.	Bidwell River State Park near the boat ramp just n of the Washout.
47851	Anthophyta (flowering plants)	Asteraceae	Artemisia	biennis			Vernon H. Oswald		4030	12/6/1989	Butte	T22N R01W S22 SE1/4 of NW1/4	140	ft.	Arroyo Chico. Pine Creek Landing Site of Bidwell River Park, west of Chico.
21059	Anthophyta (flowering plants)	Asteraceae	Baccharis	pilularis			M. S. Taylor		948	10/3/1975	Butte		120	ft.	On Sacramento River, ca. 1/2 mi N of washout on River Rd, ca. 10 mi W of Chico.
28424	Anthophyta (flowering plants)	Asteraceae	Bidens	frondosa			M. S. Taylor		2208	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, ca. 5 mi W of Chico.
28743	Anthophyta (flowering plants)	Asteraceae	Eclipta	prostrata			R. A. Schlising		3511	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
28422	Anthophyta (flowering plants)	Asteraceae	Euthamia	occidentalis			M. S. Taylor		2215	10/2/1979	Butte		100	ft.	On sandbar in Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
28621	Anthophyta (flowering plants)	Asteraceae	Gnaphalium	palustre			M. S. Taylor		2211	10/2/1979	Butte		100	ft.	On Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
29803	Anthophyta (flowering plants)	Asteraceae	Heterotheca	oregona	var.	compacta	M. S. Taylor		2210	10/2/1979	Butte		100	ft.	Sacramento River, at Chico Landing, off River Rd, ca. 5 mi w of Chico.
43631	Anthophyta (flowering plants)	Asteraceae	Rudbeckia	hirta	var.	pulcherrima	Vernon Oswald		3003	6/17/1987	Glenn	T21N R01W S	125	ft.	West side of Sacramento River opposite the Washout (site of Chico Landing).
34565	Anthophyta (flowering plants)	Brassicaceae	Raphanus	raphanistrum			R. E. Preston	L. E. Preston	157	1/1/1982	Butte	T22N R01W S35			In almond orchard, e side of River Rd. ca. 1 mi s of Sacramento Ave.; Chico Landing site, ca. 5 mi w of Chico.
48287	Anthophyta (flowering plants)	Chenopodiaceae	Atriplex	triangularis			Vernon Oswald		1077	10/10/1983	Butte				Indian Fishery, Bidwell River State Park w of Chico at the jct. of W. Sacramento Ave. & River Rd.
21254	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides			M. S. Taylor		933	10/3/1975	Butte		120	ft.	Abundant ca. 1/4 mi n of the washout, between River Rd and the Sacramento River, ca. 10 mi w of Chico.
28484	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	atriplicifolium			R. Schlising		3497	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico. Just n of Chico Landing Site in Bidwlel River State Park.
34193	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	botrys			R. A. Schlising		3510	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico. Just n of Chico Landing Site in Bidwell River State Park.
34200	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides	var.	ambrosioides	J. D. Jokerst		1490 B	9/26/1981	Butte				Locally abundant in dry sand bars adjacent to and E of Sacramento River at the Bidwell River State Park (Chico Landing) ca. 5.0 mi W of Chico.
48291	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides			Vernon Oswald		913	7/25/1983	Butte				River Road at the washout w of Chico.

Appendix C
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Herbarium Database Query Results
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69681	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium				Vernon Oswald		3171	7/30/1987	Butte	T22N R01W S	120	ft.	Ranch Arroyo Chico. On the edge of the Sacramento River just upstream from the washout (Chico Landing site).
45267	Anthophyta (flowering plants)	Chenopodiaceae	Kochia	scoparia			Vernon Oswald		3702	9/21/1988	Butte	T22N R01W S	135	ft.	Ranch Arroyo Chico. Pine Creek Landing, Bidwell River Park, w of Chico.
13717	Anthophyta (flowering plants)	Chenopodiaceae	Salsola	tragus			M. S. Taylor		332	10/11/1974	Butte				Abundant in weed field, ca. 50 ft e of River Rd, opposite washout on Sacramento River, ca. 10 mi w of Chico.
30916	Anthophyta (flowering plants)	Chenopodiaceae	Salsola	tragus			M. S. Taylor		2207	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, off River Road, ca. 5 mi w of Chico.
21134	Anthophyta (flowering plants)	Cyperaceae	Cyperus	erythrorhizos			M. S. Taylor		940	10/3/1975	Butte		120	ft.	Sandbar on Sacramento River, ca. 10 mi w of Chico. Bidwell River State Park at Chico Landing.
34197	Anthophyta (flowering plants)	Cyperaceae	Cyperus	strigosus			J. D. Jokerst	L. Ahart	1494	9/26/1981	Butte				Swale ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34198	Anthophyta (flowering plants)	Cyperaceae	Cyperus	difformis			J. D. Jokerst	L. Ahart	1492	9/26/1981	Butte				Moist swale ca 110 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34199	Anthophyta (flowering plants)	Cyperaceae	Cyperus	bipartitus			J. D. Jokerst	L. Ahart	1493	9/26/1981	Butte				Swale 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
37825	Anthophyta (flowering plants)	Cyperaceae	Cyperus	difformis			R. A. Schlising		3503	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
68408	Anthophyta (flowering plants)	Cyperaceae	Cyperus	strigosus			L. P. Janeway	C. A. Janeway	1865	9/14/1986	Butte	T21N R01W S02 NE1/4	120	ft.	On bank along small slough/backwater of the Sacramento River at "the washout."
34211	Anthophyta (flowering plants)	Cyperaceae	Eleocharis	radicans			J. D. Jokerst	L. Ahart	1481	9/26/1981	Butte				At the high water of a back slough at the Sacramento River. Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
45313	Anthophyta (flowering plants)	Cyperaceae	Eleocharis	coloradoensis			Vernon Oswald		3703	9/21/1988	Butte	T22N R01W S Rancho Arroyo Chico	115	ft.	Rancho Arroyo Chico. East side of Sacramento River just upstream from the Washout (Chico Landing Site).
34194	Anthophyta (flowering plants)	Cyperaceae	Fimbristylis	autumnalis			R. A. Schlising		3502	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
38927	Anthophyta (flowering plants)	Cyperaceae	Fimbristylis	autumnalis			Vernon Oswald		911	7/25/1983	Butte				Bidwell State Park, w of the parking area at the boat ramp, River Rd. near the washout.
34201	Anthophyta (flowering plants)	Cyperaceae	Lipocarpha	micrantha			J. D. Jokerst	L. Ahart	1487 B	9/26/1981	Butte				Low lying swale, E of Sacramento River ca 100 m, Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
37824	Anthophyta (flowering plants)	Cyperaceae	Lipocarpha	micrantha			R. A. Schlising		3501	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.

Appendix C
Chico State University
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43658	Anthophyta (flowering plants)	Dipsacaceae	Scabiosa	atropurpurea			Vernon Oswald		907	7/24/1983	Butte				Boat ramp, Bidwell State Park, on River Rd. w of Chico near the washout.
28459	Anthophyta (flowering plants)	Elatinaceae	Bergia	texana			R. A. Schlising		3507	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
21015	Anthophyta (flowering plants)	Euphorbiaceae	Eremocarpus	setigerus			M. S. Taylor		947	10/3/1975	Butte		120	ft.	Roadsides, ca. 1/4 mi n of the washout, between River Road and the Sacramento River, ca. 10 mi w of Chico.
43671	Anthophyta (flowering plants)	Fabaceae	Sesbania	punicea			Vernon Oswald		2998	6/12/1987	Butte	T21N R01W S	115	ft.	South side of the mouth of Big Chico Creek at the Sacramento River.
34202	Anthophyta (flowering plants)	Juncaceae	Juncus	acuminatus			J. D. Jokerst	L. Ahart	1487	9/26/1981	Butte				Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico E bank Sacramento River.
21048	Anthophyta (flowering plants)	Lamiaceae	Lycopus	americanus			M. S. Taylor		934	10/3/1975	Butte		120	ft.	Abundant ca. 1/4 mi n of the washout on the Sacramento River, between River Rd and the Sacramento River, ca. 10 mi w of Chico.
19540	Anthophyta (flowering plants)	Lythraceae	Ammannia	coccinea			F. T. Griggs		143	8/8/1974	Butte				Growing in the Sacramento River between the Hamilton City bridge and the mouth of Big Chico Creek.
28620	Anthophyta (flowering plants)	Lythraceae	Ammannia	robusta			M. S. Taylor.		2213	10/2/1979	Butte		100	ft.	Scattered in sandbar in Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
28475	Anthophyta (flowering plants)	Lythraceae	Rotala	ramosior			R. A. Schlising		3508	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
45332	Anthophyta (flowering plants)	Moraceae	Morus	alba			Vernon Oswald		2319	4/9/1987	Butte	T21N R01W S2	125	ft.	Bidwell River State Park between the Washout (Chico Landing Site) and Big Chico Creek.
13714	Anthophyta (flowering plants)	Oleaceae	Fraxinus	latifolia			M. S. Taylor		327	10/11/1974	Butte				Abundant along slough ca. 1/2 mi n of washout on the Sacramento River, ca. 10 mi w of Chico.
13710	Anthophyta (flowering plants)	Onagraceae	Epilobium	densiflorum			M. S. Taylor		333	10/11/1974	Butte				On sandbar in Sacramento River, ca. 1/4 mi n of washout, ca. 10 mi w of Chico.
45528	Anthophyta (flowering plants)	Onagraceae	Ludwigia	peploides	ssp.	montevidensis	L. P. Janeway	C. A. Janeway	1863	9/14/1986	Butte	T22N R01W S22 SE1/4	130	ft.	Pine Creek Landing; backwater of Sacramento River at Pine Creek. Along edges of the slough.
61053	Anthophyta (flowering plants)	Onagraceae	Ludwigia	peploides	ssp.	montevidensis	Vernon H. Oswald		5739	7/29/1993	Butte	T22N R01W S	125	ft.	Chico Landing (site) boat ramp, Bidwell River State Park, along the Sacramento River W of Chico. In slough and leading up to the ramp.
47037	Anthophyta (flowering plants)	Onagraceae	Oenothera	elata	ssp.	hirsutissima	R. A. Schlising		4480	10/6/1985	Butte	T22N R01W S	120	ft.	At Sacramento River, W of Chico, N of Chico Landing site. Along E edge of river.
23542	Anthophyta (flowering plants)	Poaceae	Arundo	donax			M. S. Taylor		936	10/3/1975	Butte		120	ft.	Ca. º mi n of the washout, between River Rd and the Sacramento River, ca. 10 mi w of Chico.

28737	Anthophyta (flowering plants)	Poaceae	Crypsis	schoenoides			R. A. Schlising		3500	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park; margin of river.
34195	Anthophyta (flowering plants)	Poaceae	Crypsis	schoenoides			J. D. Jokerst	L. Ahart	1488	9/26/1981	Butte				On sand bars adjacent to and E of Sacramento River at the Bidwell River State Park (Chico Landing), ca. 5.0 mi W of Chico.
29252	Anthophyta (flowering plants)	Poaceae	Digitaria	sanguinalis			M. S. Taylor		2209	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, off River Rd., ca. 5 mi w of Chico.
34206	Anthophyta (flowering plants)	Poaceae	Echinochloa	crus-galli			J. D. Jokerst	L. Ahart	1485	9/26/1981	Butte				In swale (old river channel). Bidwell River State Park (Chico Landing) ca. 5. mi W of Chico. E bank Sacramento River.
34204	Anthophyta (flowering plants)	Poaceae	Eragrostis	pectinacea	var.	pectinacea	J. D. Jokerst		1501	9/26/1981	Butte				Swale ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34196	Anthophyta (flowering plants)	Poaceae	Leptochloa	fascicularis			J. D. Jokerst	L. Ahart	1496	9/26/1981	Butte				Ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34203	Anthophyta (flowering plants)	Poaceae	Panicum	capillare			J. D. Jokerst		1486	9/26/1981	Butte				Bidwell River State Park (Chico landing) ca 5.0 mi W of Chico.
34785	Anthophyta (flowering plants)	Poaceae	Piptatherum	miliaceum			L. Ahart		3207	9/26/1981	Butte		40	m.	Near the Sacramento River s of the washout, ca. 6 mi w of Chico.
49562	Anthophyta (flowering plants)	Poaceae	Piptatherum	miliaceum			Vernon Oswald		1829	6/12/1985	Butte	T21N R01W S02 NE1/4 of NE1/4	125	ft.	Bidwell State Park slightly s of the Washout on River Rd. On a bank of the river.
28622	Anthophyta (flowering plants)	Potamogetonaceae	Potamogeton	crispus			M. S. Taylor		2216	10/2/1979	Butte		100	ft.	On e bank of Sacramento River at Chico Landing, ca. 5 mi w of Chico.
49685	Anthophyta (flowering plants)	Potamogetonaceae	Potamogeton	crispus			Vernon Oswald		3173	8/2/1987	Butte	T22N R01W S Rancho Arroyo Chico	120	ft.	Mouth of the slough leading into the boat ramp just upstream from the Washout (Chico Landing site) on the Sacramento River.
43865	Anthophyta (flowering plants)	Rosaceae	Pyrus	communis			Vernon Oswald		3262	3/24/1988	Butte	T21N R01W S05 SE1/4 of NE1/4	125	ft.	Rancho Arroyo Chico. Bidwell River State Park s of Chico Landing Site, just n of the access road to a gravel bar along the Sacramento River at Chico Creek.
13715	Anthophyta (flowering plants)	Salicaceae	Populus	fremontii			M. S. Taylor		326	10/11/1974	Butte				Ca. 50 ft e of Sacramento River, ca. 1/4 mi n of washout, ca. 10 mi w of Chico.
34210	Anthophyta (flowering plants)	Salicaceae	Salix	melanopsis			J. D. Jokerst	L. Ahart	1480	9/26/1981	Butte				5 mi W of Chico at Bidwell River State Park (Chico Landing).
21049	Anthophyta (flowering plants)	Scrophulariaceae	Antirrhinum	cornutum			M. S. Taylor		937	10/3/1975	Butte		120	ft.	On the Sacramento River, ca. 1/4 mi n of the washout on River Rd, ca. 10 mi w of Chico.
33526	Anthophyta (flowering plants)	Scrophulariaceae	Kickxia	elatine			R. A. Schlising		3512	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
43146	Anthophyta (flowering plants)	Scrophulariaceae	Kickxia	elatine			R. A. Schlising		3512	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, n of Chico Landing Site in Bidwell River State Park.

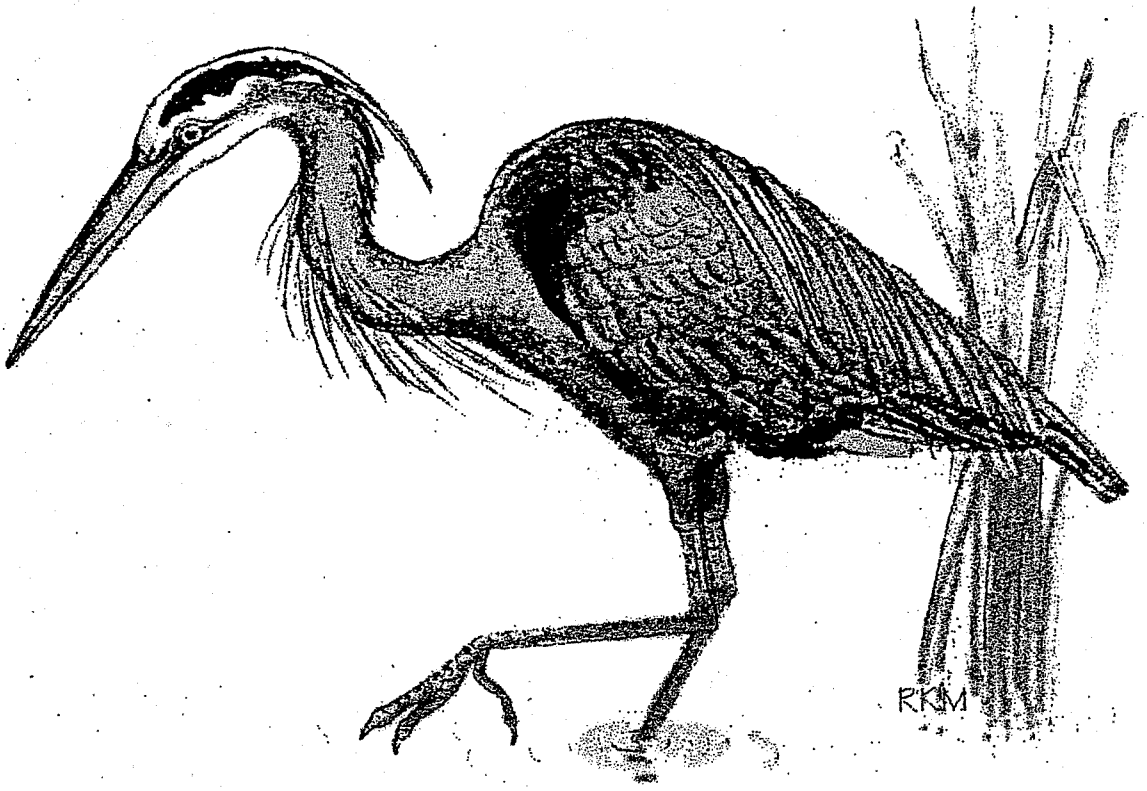
Appendix C
Chico State University
Herbarium Database Query Results
for Bidwell-Sacramento State Park

21050	Anthophyta (flowering plants)	Scrophulariaceae	Mimulus	pilosus			M. S. Taylor		938	10/3/1975	Butte		120	ft.	Scattered on sand bar on Sacramento River, ca. 1/4 mi n of the washout on River Rd, ca. 10 mi w of Chico.
28623	Anthophyta (flowering plants)	Scrophulariaceae	Veronica	anagallis-aquatica			M. S. Taylor		2214	10/2/1979	Butte		100	ft.	In sand bar in Sacramento River at Chico Landing, ca. 5 mi w of Chico.
49047	Anthophyta (flowering plants)	Scrophulariaceae	Veronica	anagallis-aquatica			Vernon Oswald		912	7/25/1983	Butte				Bidwell State Park, w of the parking area at the boat ramp on River Rd. near the washout.
49448	Anthophyta (flowering plants)	Verbenaceae	Phyla	nodiflora	var.	nodiflora	Vernon Oswald		3172	7/30/1987	Butte	T22N R01W S	120	ft.	Rancho Arroyo Chico. Mouth of the slough leading into the boat ramp just upstream from the Washout (Chico Landing site) on the Sacramento River.
49449	Anthophyta (flowering plants)	Verbenaceae	Phyla	nodiflora	var.	nodiflora	Vernon Oswald		910	7/25/1983	Butte				Indian Fishery (Tyler Slough), Bidwell State Park, at the w end of W. Sacramento Ave. w of Chico.
47285	lichens	Parmeliaceae	Evernia	prunastri			M. S. Taylor		2	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
24089	lichens	Parmeliaceae	Flavopunctelia	flaventior			C. J. Roy		6	1/30/1975	Butte				River Road at Washout.
24094	lichens	Parmeliaceae	Melanelia	subolivacea			C. J. Roy		4	1/30/1975	Butte				River Road at Washout.
24092	lichens	Parmeliaceae	Parmelina	quercina			C. J. Roy		4	1/30/1975	Butte				River Road at Washout.
23997	lichens	Physciaceae	Physcia	adscendens			C. J. Roy		6	1/30/1975	Butte				River Road at Washout.
24002	lichens	Physciaceae	Physcia	stellaris			C. J. Roy		2	1/30/1975	Butte				River Road at Washout.
24006	lichens	Physciaceae	Physcia				C. J. Roy		3	1/30/1975	Butte				River Road at Washout.
48209	lichens	Physciaceae	Physcia	adscendens			G. R. Pintler			1/26/1978	Butte				River Road at Washout.
24036	lichens	Ramalinaceae	Ramalina	leptocarpha			C. J. Roy		3	1/30/1975	Butte				River Road at Washout.
47282	lichens	Ramalinaceae	Ramalina	leptocarpha			M. S. Taylor		13	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
47284	lichens	Ramalinaceae	Ramalina	farinacea			M. S. Taylor		16	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
24057	lichens	Teloschistaceae	Xanthoria	fallax			C. J. Roy		2	1/30/1975	Butte				River Road at Washout.
24058	lichens	Teloschistaceae	Xanthoria	polycarpa			C. J. Roy		1	1/30/1975	Butte				Sacramento River at Washout, River Road.

APPENDIX D

BIDWELL-SACRAMENTO RIVER STATE PARK INTERPRETIVE PROSPECTUS, (1997)

BIDWELL-SACRAMENTO RIVER STATE PARK



INTERPRETIVE PROSPECTUS

May 1997

BIDWELL-SACRAMENTO RIVER STATE PARK

INTERPRETIVE PROSPECTUS

By
Richard K. McGaugh,
State Park Ranger I

Stephen W. Feazel,
District Interpretive Specialist

William B. Stewart,
Supervising Ranger
Northern Buttes District

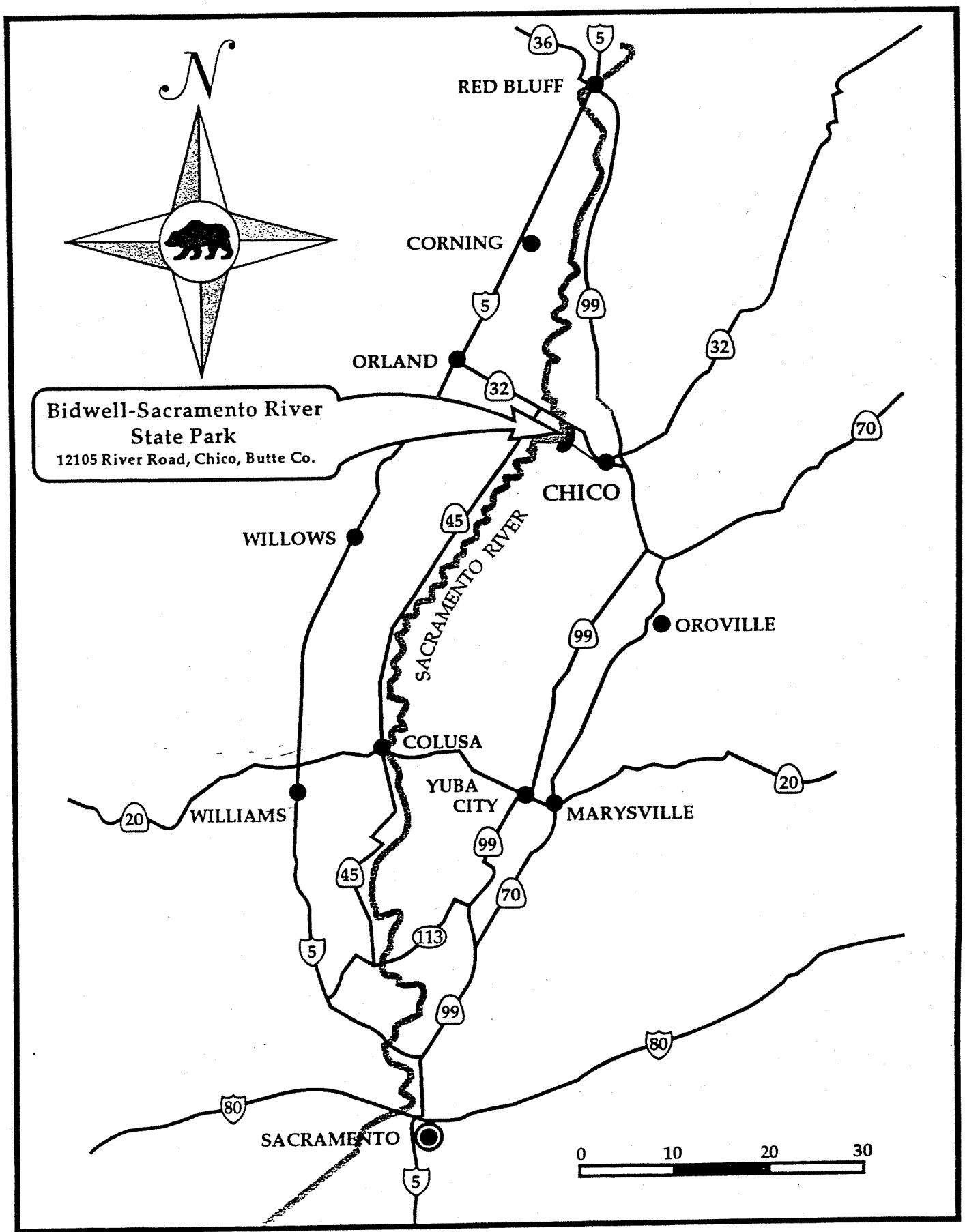
and

Richard D. Clark,
State Park Interpreter II
Northern Service Center

May
1997

Approved _____ Date 5/7/97

David E. Bartlett, District Superintendent
Northern Buttes District


N
RED BLUFF
CORNING
ORLAND
Bidwell-Sacramento River
State Park
12105 River Road, Chico, Butte Co.
CHICO
WILLOWS
SACRAMENTO RIVER
OROVILLE
COLUSA
YUBA
CITY
MARYSVILLE
WILLIAMS
SACRAMENTO
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10
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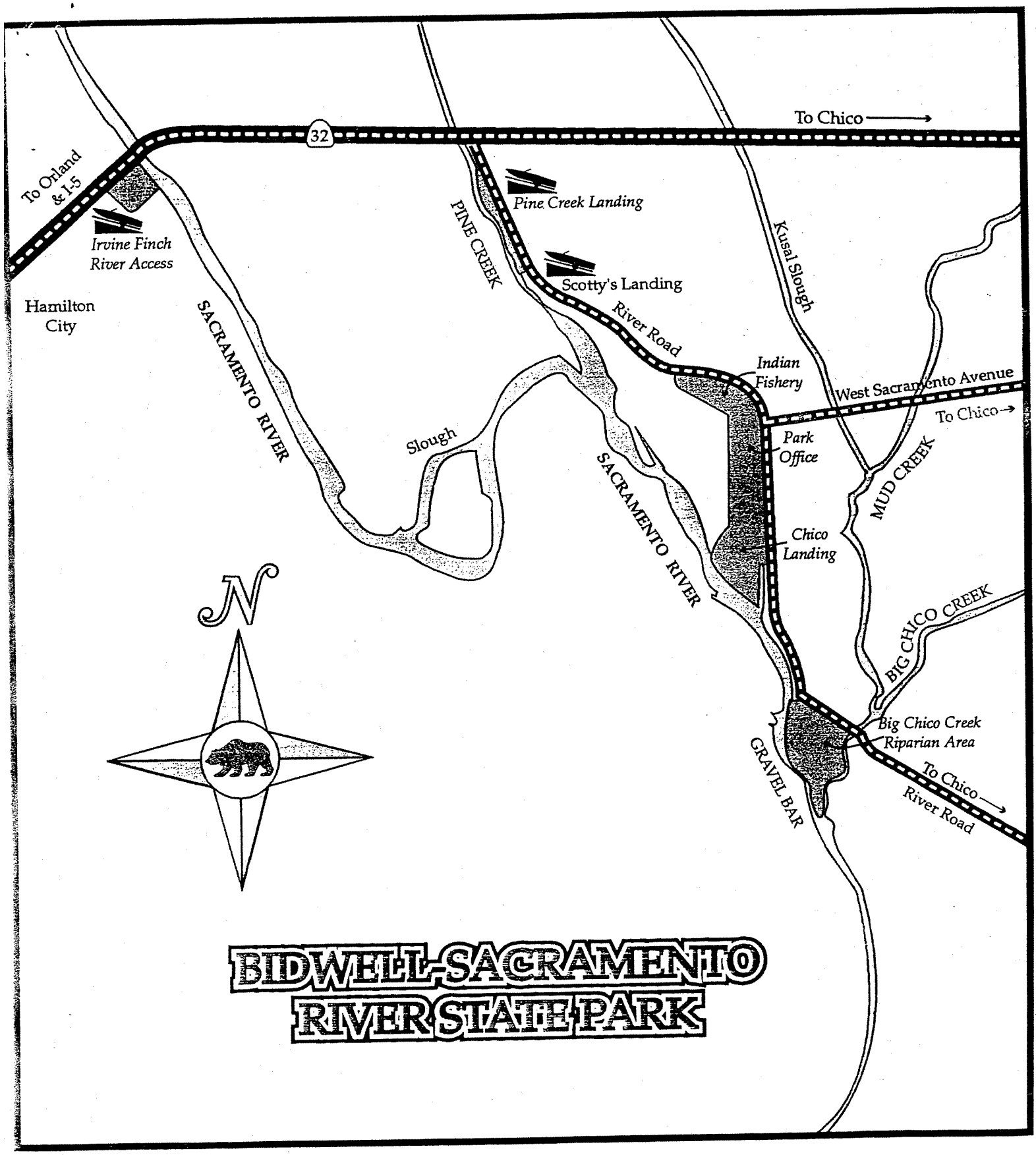
32
70
45
20
113
80

MAP NO.1


To Chico
32
To Orland & I-5
Irvine Finch River Access
Hamilton City
SACRAMENTO RIVER
PINE CREEK
Pine Creek Landing
Scotty's Landing
River Road
Kusal Slough
Indian Fishery
West Sacramento Avenue
To Chico
Park Office
MUD CREEK
Slough
SACRAMENTO RIVER
Chico Landing
BIG CHICO CREEK
Big Chico Creek Riparian Area
GRAVEL BAR
To Chico
River Road
N
BIDWELL-SACRAMENTO RIVER STATE PARK

MAP NO. 2

Introduction

This Interpretive Prospectus provides guidance for immediate interpretive development at Bidwell-Sacramento River State Park. When a General Plan is developed, it is expected that this Interpretive Prospectus will be revisited for possible updating.

This prospectus identifies factors that affect the interpretation of the natural and cultural environment at Bidwell-Sacramento River State Park. It makes recommendations that can positively influence the effectiveness of this interpretation, as well as heightening the public's understanding of natural and cultural history and appreciation of the park.

Interpretive Themes

Interpretation relies on themes to connect the significant natural, cultural, and recreational resources of the park to the visitors in personally meaningful ways. Themes define the point of view, and focus information that will be presented through various interpretive media.

Background Information

Location

Bidwell-Sacramento River State Park is located some six miles west of the City of Chico (see Map 1). It lies mostly on the east bank of the Sacramento River in the County of Butte. One segment, Irvine Finch River Access, lies on the west bank of the Sacramento River in Glenn County.

Service Areas

The park may be conveniently divided into five areas of use and location. Though the park is a whole, such a division provides a useful way of describing and discussing the interpretive needs of the park in workable and logical units. From north to south the areas of the park are: Irvine Finch River Access; Pine Creek Landing; Indian Fishery; Chico Landing; and Big Chico Creek Riparian Area (see Map 2).

Park History

On November 15, 1882, John Bidwell conveyed 11.45 acres of land to the County of Butte to build roads to give access to the river. On July 1, 1908 Mrs. Anne E.K. Bidwell deeded to the state a strip of land running west from

Chico along the north bank of Chico Creek for some five miles to the Sacramento River, a strip running on both banks of the Lindo Channel some six miles to the Sacramento River, and a strip running the length of the east bank of the Sacramento River some four miles. This land was to be under the auspices of the State Forestry Service and was to protect tree growth along the wooded banks.

Partly because of the possible overlapping of areas in deeds and conveyances, and the resultant clouding of titles between the state and the county, it was decided in 1950 that the state would convey its portion to the county and thereby merge the deeds. This was authorized by the State Park Commission March 17, 1950.

The state leased additional properties to the County of Butte for recreational purposes. At this time the park consisted of about 181 acres, but not including Irvine Finch River Access, a later acquisition.

The county did not want to develop a parks and recreation program and so leased some land to the Chico Area Recreation and Park District (C.A.R.D.). C.A.R.D. in turn leased nearly all the property to a rod and gun club. By the 1960s boundary disputes with neighboring land owners frustrated efforts at developing a master facilities plan.

A planned cadastral survey of disputed boundaries was not completed. Hunting, shooting, wood-cutting, dumping and the intrusion of off-road vehicles defiled the park. In 1972, at the request of petitioning local government, the California Department of Parks and Recreation was mandated by the legislature to study alternative methods to preserve Bidwell River Park. A resulting 1974 report recommended that Bidwell River Park be acquired by the state as part of the State Park System. A 1977 bill authorized the acquisition of Bidwell River Park and on August 1, 1979, the park was transferred back to the State Park System. It was named and classified as Bidwell-Sacramento River State Park in 1990.

Boundary concerns have been resolved as a result of an extensive State Park Survey and Agreements with Butte County. There has also been an ongoing effort to recover the park by closing off roads, and installing park boundary fences and boundary markers.

Role In Education

Historically the park has emphasized recreation, but by reclaiming the habitat the department has provided an ideal resource for the study of riparian ecology. Local educators have availed themselves of this resource, from

kindergarten through master's degree programs. One of the goals of this document is to increase interpretation for educational purposes.

Planning Considerations

Themes need to be developed to organize the interpretation of Bidwell-Sacramento River State Park and the region's natural and cultural history and environment. In formulating themes, attention should be given to the following:

- The story of Bidwell-Sacramento River State Park has ancient geologic and hydrologic origins.
- The park area's particular origins and its riparian nature have consequences for the kind of habitat it will support.
- The river park's narrative continues with the interaction and use by various cultures: prehistoric cultures; ethnographic and ongoing interaction by the ~~Konkow~~ Mechoopda peoples; the incursions of Spanish Colonial and Mexican downstream residents; and then arrival and settlement by trappers and pioneers from parts of Europe, but mainly from an expanding United States.
- The river had an important transportation role with river boats, ferries (Bidwell Ferry), roads, bridges (Giannelli Bridge), a railroad bridge, and wharves.
- Agriculture has been important since the days of the Bidwells and includes orchards, livestock raising and dairying, rice crops and other grains, and sugar beets and other row crops.
- Commercial and subsistence fishing, hunting, and trapping were early pre-recreational uses of the river.
- Fishing and hunting were joined by boating, rafting, tubing, bird watching, and water skiing as recreational uses of the river.
- Early recreation uses of the river area included river bank dance halls.

Focus

Interpretation of Bidwell-Sacramento River State Park should provoke an understanding of riparian systems, specifically that of the Sacramento River.

Approach

- To present Bidwell-Sacramento River State Park in the context of a riparian habitat.
- To be cognizant of the mission of State Parks in preserving the riparian habitat while providing quality natural, cultural and recreational experiences.

- To present the Bidwells' story as an important part of the interpretive history of the park.

RECOMMENDATIONS

The approach for interpretive development in the park will be guided by the themes described below.

Riparian/Riverine

UNIFYING THEME

The ~~Riparian~~ Habitat is Dynamic and Critically Important to the Health of the Sacramento River and All Life Associated with It.

The riparian nature of the habitat of Bidwell-Sacramento River State Park is the dominant feature of the park; the existing habitat is representative of what once dominated the rivers and streams of California. Only about 20% of the riparian habitat remains since Euro-American arrival in California.

Primary and Secondary Themes

Primary and secondary themes should be developed for each park area. They should define the use and meaning of that area and reflect its contribution to the whole park. The development of the themes for each area will appear in the subsection concerning that area. Such interpretive themes may be primary to an area, but that does not exclude their applicability to other areas of the park.

Interpretive Periods

The Interpretive Period sets the framework for interpretation in the park, directing and focusing interpretive themes, facilities, and activities to represent appropriate, specific years or groups of years.

Background Information

Natural History

Taken as a whole, Bidwell-Sacramento River State Park is an example of classic riverine, or riparian landscape. The park contains examples of nearly every successional stage of riparian habitat that can be associated with the river— from barren gravel bars, to pioneering thickets of young cottonwoods, willow, and alder, to towering forests of mature cottonwood, and finally, to the

climax oak woodland community. All habitat types and their associated residents can be observed within the park.

The younger successional stages (willow, alder, etc.) are easily observed anywhere along the river's edge. The successional stages are constantly being produced as the river meanders through the valley, creating and shifting gravel bars about, washing away then depositing tons of silt in which the new seedlings will sprout. This is a process that has been repeating itself for many thousands of years. The older, later successional stages, such as the oak woodland, are less evident, as they take years longer to produce. Most of this type of habitat along the river has been replaced in recent human history with agriculture, owing to the richness of the accumulated soils. However, a good example of oak woodland does exist at Indian Fishery.

The riparian habitat along the river course supports many hundreds of species of plants and animals, some of which are unique to the riparian environment. Providing a rich source of food, shelter, and environmental conditions (e.g., temperature, shade, humidity, water for drinking), the riparian forest is important to all its inhabitants for their survival. It is immeasurably important to California today as an educational example of river dynamics and riparian plant community succession.

Native Americans

Archaeologically, there is a time depth of human occupation in the local area of around 4500 years. The peoples residing in the area during the late prehistoric period up to and through contact with Euro-Americans, are known to us today as the Northwestern Maidu or Konkow. The Konkow, along with the Maidu (Northeastern Maidu) and the Nisenan (Southern Maidu), form a sub-group of the California Penutian linguistic family. Konkow territory covered a portion of the Sacramento Valley from somewhat west of the Sacramento River and ran east into the foothills above Oroville and Chico.

Divided into communities of adjacent villages organized for ceremonial and subsistence activities, the Konkow followed a seasonal subsistence cycle. Wintering in permanent villages, they went into the valley in spring for grass seeds and other plant materials. In summer they hunted game and gathered plants from temporary camps. In autumn they located around streams to catch salmon and traveled to oak groves to gather acorns.

Several Konkow village sites are known in the area immediately around the park boundaries. Six archaeological sites have been identified, but are outside the park boundaries.

Euro-Americans

The Konkow may have first met Europeans and Euro-Americans beginning with the Moraga expedition of 1808. Luis Arguello explored the Feather River in 1821, and the Jedediah Smith party spent several months in Konkow territory in 1828. Between 1825 and 1840, Hudson's Bay Company trappers and American fur traders wandered the Sacramento valley. In 1841 Lieutenant George Emmons and a party of 39 members from the Charles Wilkes scientific expedition passed by on the west bank of the Sacramento River. In 1843 John Bidwell first got sight of the area.

During 1844, three land grants were awarded that encompass much of the present-day park: Rancho Arroyo Chico, five square leagues granted to William Dickey, includes most of the current park; Rancho de Farwell, five square leagues granted to Edward A. Farwell, was to the south; and Rancho Capay, ten square leagues granted to Josefa Soto, was to the west of the river. Much of Rancho Capay later became the property of Richard J. Walsh, a Shasta merchant. To the north, along Pine Creek, the land was unclaimed and became part of US public domain. In 1849 John Bidwell acquired Rancho Arroyo Chico from William Dickey.

Planning Considerations

The primary interpretive period should be in harmony with the park's Unifying Interpretive Theme. Secondary interpretive periods can be used to highlight other eras that help tell the story, and help place the park in the appropriate natural and historic context. In setting the park's interpretive periods, it should be noted that:

- The river and its riparian flanks are the story.
- The story is rooted in geological history.
- People eventually interact with the river and its ecology and have an affect on the environment or play a part in the resource management of the park unit.
- The act of giving land to the state and setting in motion those events that turned it into a state park have historical importance.

Primary Interpretive Period: *The Present*

The Primary Interpretive Period is the present, today; what is most important to interpret about the park is how it is now. Though the river and the riparian course are dynamic, what should be interpreted is the immediate.

Secondary Interpretive Period: *Prehistoric origins*

Prehistoric origins should interpret the geologic and hydrologic development of the river and its changing riparian environment.

Secondary Interpretive Period: *Human prehistory*

Human prehistory includes the interaction of the Native Americans with the river and the riparian basin up to the coming of the Euro-Americans.

Secondary Interpretive Period: *Early history and General & Annie Bidwell*

This period includes the early Euro-American period, and focuses on the uses of the river and its surrounding land up to the time of Annie Bidwell's gift to the state.

Secondary Interpretive Period: *Annie's Gift up to the present*

This period covers the changes that went on with the small portion of land Annie Bidwell gave to the state, as well as the other portions that have become a part of the Bidwell-Sacramento River State Park.

GENERAL RECOMMENDATIONS

- Interpretive information should reflect the needs of the user.
- The sub-entrance sign for each area should be replaced with a newer, more "park-like" structure that both identifies the area and identifies it as a part of Bidwell-Sacramento River State Park.
- These sub-entrance signs should also include the park's hours of operation. There should be adequate signing to situate the visitor within the specific area, as well as orienting them to the rest of the park.
- Specific interpretive spots within the site area should be identified. Locations of facilities should be clearly marked.
- Parking and no parking areas need to be clearly marked.
- Programs for presentation on-site or off-site about the area will need to be developed and made available.

Irvine Finch River Access

Background Information

Irvine Finch River Access is the only area of the park in Glenn County. It was created when the old steel Giannelli Bridge, a turn bridge, was replaced by a modern high-arch concrete bridge. A portion of land was acquired to be set aside to provide recreation access to the Sacramento River. This was due, in great part, to the efforts of Irvine Finch, a former Glenn County Supervisor. The five acres provide parking for those wanting to use the launching facilities of the park.

Planning Considerations

Current conditions at Irvine Finch River Access include the following:

- Parking spaces for 295 vehicles.
- A launching ramp.
- Rest rooms.
- Two ramadas for picnickers.
- One notice/interpretive shelter.

Interpretive facilities planned for Irvine Finch River Access should take the following into account:

- The river must be accessible.
- Recreational opportunities must be available.
- Safety is always a primary concern.
- Natural history must not be outweighed by recreation.
- The history of the area also needs to be interpreted.

Area Interpretive Themes

Primary Theme

Access to Recreation: The River Provides the Opportunity to Fish, Hunt, Observe Nature, and Participate in Water Activities.

Irvine Finch River Access is the primary entry to the recreational opportunities of the park. The launching facilities provide entry for fishing boats, ski boats, jet skis, and the ever popular inner tube and similar rafts. The river provides opportunity for all sorts of water craft sports and activities. It is here that visitors launch on to the river to fish for steelhead, salmon, bass, and

sturgeon. In fall and winter the visitors launch boats to hunt for pheasant, ducks, geese, and dove.

Secondary Themes

~

Safety in Recreation: The River Moves Relentlessly and Water Safety is a Principal Concern.

~

History of the River Banks: As the River Flows Through Time, Cultural Changes Occur to the Surrounding Land.

The variety of recreational activities, the variety of water craft used, and the variety of water safety skills the visitor brings to his day on the river make water safety an important concern. This concern needs to be communicated to the visitor.

The variety of changes to the land and the variety of human uses of the land need to be interpreted to the visitor.

Focus

The focus of interpretation at Irvine Finch River Access is recreation.

Approach

Interpretive Panels

- Interpretive panels should be guided by the general and the site specific themes.

Special Events

- Promote special events by local community groups.

PROPOSED INTERPRETATION

The major emphasis of interpretation at Irvine Finch River Access will focus on the interpretive themes using interpretive panels and special events.

Pine Creek Landing

Background Information

The Pine Creek Landing property was part of a parcel of land along the Sacramento River that, along with other streamside parcels throughout the Chico area, was deeded to the state of California by Annie E.K. Bidwell on July 1, 1908.

The park property in State ownership was leased by the Division of Beaches and Parks to Butte County in 1950 by legislative deed, for recreational purposes. Since Butte County did not want to manage these lands for parks and recreation, they leased the property to the Chico Area Recreation District, who sub-leased it to a local rod and gun club.

The property at Pine Creek was sub-sub-leased to private concessionaires who established a boat landing business at the site. The concessions contract was subsequently re-sold to several successive owners through the 1960s and 1970s.

In August of 1979 the park was transferred back into the State Park System and the Pine Creek Landing was once again owned by the State of California. The concessionaire at the time of re-acquisition was occupying the property. He ran a boat launch, landing, mooring business, and a beer bar. He was unable to make necessary improvements to the operation called for by contract with the state, and so relinquished his claim on the property to the state. The property was cleaned up and several run-down structures were removed from the site, including the remains of a dilapidated boathouse which at one time housed a Sea Scout station established at the site in 1944.

Planning Considerations

Current conditions at Pine Creek Landing include the following:

- The current Pine Creek Landing day use area consists of an approximately 4 or 5 acre site adjacent to Pine Creek.
- There is a small, pre-existing boat launch ramp, and a parking area adequate for about 15 vehicles with boat trailers near the ramp.
- There are four picnic sites, with a short trail connecting them, and fishing access to numerous sites along the bank of Pine Creek. A second parking area will accommodate about six vehicles.
- Family use at this site is increasing.
- There is no potable water source or rest room facility in the area.

- The typical activities are fishing, boating related to fishing, canoeing, kayaking, picnicking, relaxing, bird and wildlife watching, and walking.

Interpretive facilities planned for Pine Creek Landing should take the following into account:

- Most of the area's visitors will continue to come for fishing, boating and fishing access.
- There need to be adequate facilities available for the convenience of the park users.
- The presence of the riparian vegetative resources at the site should determine the primary focus of any interpretive panels and/or displays.
- The significant cultural history associated with the area warrants interpretation (e.g., Bidwell's Ferry site; the Sea Scout Station site, or early settlers).
- The area is adjacent to a well-traveled road and will always be subject to the intrusive noise from the presence of automobiles as well as power boats on the water.
- Much of the area adjacent to Pine Creek is subject to annual inundation due to seasonal flooding of both Pine Creek and the Sacramento River. Any facilities installed must be designed with this in mind.

Area Interpretive Themes:

Primary Theme

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Riparian Tributaries: The Riparian Habitat is a Unique Feature of the Sacramento River Tributary System

Secondary Theme

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Habitat Flows into Habitat: The River Meander Creates a Slough at Pine Creek Landing

The presence of the riparian vegetative resources at the site, the nature of Pine Creek tributary, the annual inundation, and the resultant slough provide a special opportunity for interpretation of a river meander system.

Focus

The primary focus for interpretation at Pine Creek Landing should be consistent with the overall theme for the park and emphasize the importance of the riparian forest.

A secondary focus should be on the kinds of recreation engaged in by visitors with emphasis on fishing, boating, and observing nature.

Approach

Since the area is part of the riparian community, it will not be difficult to point out examples of the constituent elements of a riparian area. The riparian zone should be interpreted as a whole, but individual components should also be singled out for a more in-depth explanation.

The various types of fish available and techniques for successful fishing should be interpreted. Tips for safe boating and information about canoeing and kayaking in the area should be made available by panel or brochure. Inclusion as a part of the overall interpretation of the area is essential to properly appreciate the Pine Creek site. There is rich local history associated with the Bidwells and the operation of the area as a Sea Scout station.

Interpretive Trails

- Canoe interpretive trails: "Up the Creek with a Paddle."
- A fisherman's footpath that connects some of the access and fishing sites should be developed to serve as a "mini-interpretive trail"

Interpretive Panels

Panels to be used at the Pine Creek Landing area could include the following topics:

- Value of riparian forest vegetation. from prehistory to now
- Fish and fishing in Pine Creek.
- History of the Sea Scout station at Pine Creek Landing.
- History of John Bidwell's Ferry. - Chico landing, Keaus Ferry & Chico Free Bridge.
- Boating and boating safety.

Brochures

- Interpretive canoe trail brochure: "Up the Creek with a Paddle."

PROPOSED INTERPRETATION

Any interpretation proposed for the Pine Creek Landing area will be new, since there is currently no interpretation taking place at the site. Specific sites for the installation of interpretive facilities need to be investigated and marked.

Locations of all signs, markers, and displays will have to be established. Local historical interest groups should be contacted for assistance with the historical site facilities, markers and displays.

A quality interpretive program at Pine Creek Landing will encourage visits by school groups and the local citizenry. Additionally, existing user groups such as fishermen, picnickers and boaters will find their park experience enhanced by quality, on-site interpretation. A canoe interpretive trail will provide a unique interpretive experience for canoeists.

Indian Fishery

Background Information

In the late prehistory and early Euro-American periods, as folk memory has it, fish weirs were built and used at this location. This memory has manifested itself in the traditional place name for the area. — ~ date —

Indian Fishery is located west of the intersection of River Road and West Sacramento Avenue. It consists of approximately 35 acres, including an ox-bow lake, riparian vegetation on high terrace, and an oak woodland with an understory of mixed grasses and poison oak. California wild grape and California pipevine can be found in abundance throughout the area.

The area is a day-use park for such activities as hiking, fishing, and picnicking. Indian Fishery has a 1/2 mile hiking trail, called Indian Fishery Nature Trail, that winds through the oak woodland understory along the edge of the ox-bow lake. The trail has sixteen trail markers that direct the visitor's attention to various elements of interest along the way. They include characteristic plants, examples of human impact, changes in the river course, animal inhabitants, and evidences of their activities.

The trail which begins and ends at the parking lot, has been established for day-users. The public use area has been fenced to separate it from the surrounding natural wildland area. There are picnic tables and a portable rest room.

Fishing is popular in the ox-bow lake for bluegill, crappie, largemouth blackbass, and catfish. The lake is relatively shallow and quite warm in the summer.

Planning Considerations

Interpretive facilities planned for Indian Fishery should take the following into account:

- This is a multi-use area for hiking, fishing and picnicking.
- Interpretation should address the impact of visitors on the natural resources of Indian Fishery.

Area Interpretive Themes

Primary Theme

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Ox-bow Lakes Are Dynamic: The Ox-bow Lake at Indian Fishery is an Offspring of the Ever Changing Sacramento River Hydraulic System

Secondary Themes

~

Oak Woodlands: The Oak Woodland at Indian Fishery is an Integral Part of the Riparian Corridor

~

The Indian Fishery Weir: The Site of the Vanished Historic Weir at Indian Fishery Represents The Native American Uses of the River and its Riparian Habitat

~

Steamboats And Dances: With the Arrival of Euro-Americans on the River the Uses of the River Change and Affect the Riparian Boundaries

The ox-bow lake at Indian Fishery provides a distinct opportunity to interpret the evolution of the Sacramento River hydraulic system. The oak woodland is an important vegetative response to the changing environment of the area. Late pre-historic and early Euro-American uses of the river reflect the history of Indian Fishery.

Focus

The focus of interpretation at Indian Fishery should be for school or educational purposes.

Approach

Interpretive Trails

- Trails should be self-guided.
- Consideration should be given to developing a loop trail around the lake in cooperation with the Department of Fish and Game and The Wildlife Conservation Board.

Interpretive Panels

- Interpretive panels should expound the themes of Indian Fishery.
- Panels should be kept within the general public use area.

Special Events

- Promote special events by local community groups.

PROPOSED INTERPRETATION

A speakers' series would be an appropriate event for Indian Fishery as would guided and self-guided nature walks and school environmental trail experience programs. Interpretive panels and signs are valuable here.

Chico Landing

Background Information

The traditional name for this area, Chico Landing, may be something of a misnomer as the mouth of Big Chico Creek was probably the original Chico Landing site. However, the location of the landing was probably moved several times because of changing conditions of gravel bars, the river bluff, snags, and channel depth. No doubt one of the sites was in this area.

Chico Landing was an important connection point with the Shasta stages in the 1850s, and served as an outlet for the cattle ranch of Richard J. Walsh, a Shasta merchant, and for John Bidwell's agricultural products. The upper Sacramento River was the most convenient and fastest method of moving freight into the upper valley until the completion of the Oregon and Pacific Railroad to Red Bluff in 1872. Down-river traffic to Sacramento and San Francisco assumed importance after 1860.

Present day Chico Landing is located south of the Park Office between River Road and the Sacramento River. It consists of approximately 90 acres including high terrace riparian vegetation and an oak woodland with an understory of mixed grasses and poison oak. California wild grape and California pipevine can be found in abundance throughout the area.

Planning Considerations

Interpretive facilities planned for Chico Landing should take the following into account:

- The riparian environment.
- The historic aspects of Chico Landing.
- The value of a non-intensive, low maintenance environmental camp.
- The value of outdoor education.

Area Interpretive Themes

Primary Theme

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The River Is the Laboratory: Chico Landing is an Outdoor Laboratory that Provides a Site for Educational Experiences that Demonstrate and Communicate the Value of Riparian Habitat

The particular opportunity that an outdoor laboratory would provide expands the scope of interpretation for the area and the park.

Focus

Chico Landing provides a site for education and recreation in a riparian environment.

Approach

Chico Landing provides a site for riparian research, outdoor education, recreational opportunities, and a primitive camp for educational groups.

Interpretive Trails

- Use existing trails where possible.

Interpretive Panels

- Interpretive panels should enhance the outdoor laboratory concept.
- Panels should interpret the riparian habitat.

Brochures

- Develop an Outdoor Laboratory brochure.
- Guidelines for use of the area.

PROPOSED INTERPRETATION

The primary interpretive use of this site will be as an outdoor laboratory for all age groups. The site will include space for a low maintenance, removable, primitive camp. This camp will only be available to educational groups who are using the riparian habitat as their teaching laboratory (See Appendix B).

Big Chico Creek Riparian Area

Background Information

Big Chico Creek Riparian Area is on approximately 45 acres between River Road, the Sacramento River, and Big Chico Creek. The site was part of Bidwell's Rancho Chico property. This area consists of a relatively mature riparian forest with inland successional stages present from the bare gravel bar next to the river to the mature cottonwood forest. There are some very old pecan and English walnut trees scattered throughout the area, evidence that this tract was once cleared and planted to orchard. Once abandoned as agricultural land, the area has returned to native riparian forest.

The mouth of the Big Chico Creek was probably the original Chico Landing site, although it is more than likely the location of the landing was moved numerous times. The area is subject to annual flooding of both the Sacramento River and Big Chico Creek. It is thickly vegetated and is important for wildlife habitat. Because public access to the Sacramento River has been established, it is one of the park's most consistently visited areas. Fishermen, sunbathers, and river floaters all take advantage of the adjacent gravel bar.

Planning Considerations

Interpretive facilities planned for Big Chico Creek Riparian Area should take the following into account:

- Boating, skiing, jet skiing, and tubing.
- Gravel bar recreation in the summer.
- School group visitation for riparian forest areas.
- Expansion of game trails into interpretive trails and fisherman's access.
- Serious seasonal flooding and accessibility problems.
- Gravel bars are nurseries for fish fry.

Area Interpretive Themes

Primary Theme

Changing Face of the River: Confluence of the Big Chico Creek and the Sacramento River Dynamically Redefines the Riparian Landscape

Secondary Themes

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The River Requires Stewardship: With Good Stewardship a Healthy Riparian Environment Allows a Healthy Wildlife Environment to Return

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Recreation and the Gravel Bar: Recreational Use of the Gravel Bar Interrupts the Natural Cycle as the Gravel Bar Provides Environment for Fish Fry, Fry Feeders, and Pioneer Forests

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Safety in Recreation: The River Moves Relentlessly and Water Safety is a Principal Concern.

The variety of recreational activities, the water craft used, and the water safety skills the visitor brings to his day on the river make water safety an important concern which needs to be communicated to the visitor.

Focus

Interpreting riparian habitat and recreation in a riparian environment will be areas of focus.

Approach

Much of the interpretation to the general public at Big Chico Creek Riparian Area would be dependent on redefined trails, portable interpretive signs, brochures, and public contact with trained staff.

Interpretive Trails

- Nature walks will interpret the natural and wildland areas using existing trails.

Interpretive Panels

- Develop removable interpretive panels based on the themes for the area

PROPOSED INTERPRETATION

Interpretation at Big Chico Creek Riparian Area will consist of interpretive nature walks, interpretive panels that interpret the themes of the area, and special events as requested.

APPENDICES

A. Partial Outside Resource List

California Department of Fish and Game

The Wildlife Conservation Board

The Nature Conservancy

United States Fish and Wildlife Service

California State University, Chico

Butte County

Sacramento River Preservation Trust

B. Proposal For Special Primitive Group Camp And Outdoor Education Concept

An outdoor education area with sites for overnight camping is proposed for an area within the defined Chico Landing area. There is currently a location referred to by park employees as the "burn-pile", which is what the site was used for in the past. This area is accessible through a locked gate, a controlled entry-point, and has enough open space for a small parking lot, room for portable toilets, and so forth. A footpath leads to a nearby clearing adjacent to a small pond, which is a remnant of the old river channel. This area provides access to many unique examples of riparian habitat and river dynamics and therefore lends itself well to the establishment of an outdoor laboratory or classroom site. There is currently no location like this set up for educational activities in the Sacramento River vicinity near Chico.

There is growing interest in the Sacramento River riparian habitat by university students from California State University, Chico, and by students from schools in the Chico area. Additionally, there are no camping facilities within twenty miles of Chico. There are many requests from organized groups for overnight environmental living studies programs.

It is proposed that this area be developed to include environmental trails, an outdoor environmental classroom or instruction sites, overnight campsites, and parking and sanitary facilities. All facilities would be "primitive" and reversible. This facility would be available on a reservation basis only.

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APPENDIX E

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT, USFWS, AND CDFG (2001)

MEMORANDUM OF UNDERSTANDING

between

THE U.S. FISH AND WILDLIFE SERVICE
regarding the
SACRAMENTO RIVER NATIONAL WILDLIFE REFUGE

and

THE CALIFORNIA DEPARTMENT OF FISH AND GAME
regarding the
SACRAMENTO RIVER WILDLIFE AREA

and

THE CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
NORTHERN BUTTES DISTRICT

I. PARTICIPANTS

This Memorandum of Understanding (MOU) is an agreement for land management purposes between the U.S. Fish and Wildlife Service regarding the Sacramento River National Wildlife Refuge (Service), the California Department of Fish and Game regarding the Sacramento River Wildlife Area (Department), and the California Department of Parks and Recreation regarding the Sacramento River State Parks (State Parks). In addition to presently owned and managed lands, this MOU will also apply to any future acquisitions by the Service, Department, and State Parks within the designated units.

II. PURPOSE

The purpose of this MOU is to formally document an agreement to mutually manage, monitor, restore and enhance lands managed for fish, wildlife, and plants along the Sacramento River in Tehama, Butte, Glenn, and Colusa Counties, California. An additional purpose is to communicate between agencies regularly to prevent duplicating or prescribing conflicting land management and acquisition efforts.

III. AUTHORITY

Fish and Wildlife Coordination Act of 1958, 16 U.S.C. 661.
Migratory Bird Conservation Act, 16 U.S.C. 715i.
Endangered Species Act of 1973, 16 U.S.C. 1531-1544.

IV. SCOPE OF ACTIONS

The affected area includes all lands owned and managed as the Sacramento River National Wildlife Refuge, Sacramento River Wildlife Area, and State Parks located along the Sacramento River in the designated counties. These lands have been identified in several documents as providing essential habitat for numerous species of fish and wildlife including many threatened and endangered species. The Service, Department, and State Parks mutually agree to manage these lands for the conservation of biological, cultural, and scenic values, and for promoting compatible wildlife-dependent recreational opportunities.

The Service, Department and State Parks agree to cooperate on the following items:

A. General Management:

- Combine efforts to mutually manage, monitor, restore, and enhance fish and wildlife management projects in the designated area.
- Coordinate management between agencies to prevent duplicating or prescribing conflicting management.

B. Public Use:

- Coordinate to provide public use opportunities that are consistent with the goals and needs of both agencies and their respective public.
- Provide clear, non-conflicting, straight-forward information to visitors.
- Cooperate in the development of public use plans. This would include cooperating with signing, brochures, use maps, and regulations.
- Promote mutual environmental education and special event opportunities.

In some instances, an agency may need to change its public use regulations in a specific area to protect natural resources (i.e. sensitive species) and provide a quality outdoor experience for the public. All public use will be offered in a manner that is consistent with land purchase and public trust documents, and is compatible with Service, Department, and State Parks purposes and missions.

C. Acquisition:

- Coordinate on acquisition plans.
- Prevent duplicate or conflicting acquisition efforts.
- Pursue joint funding opportunities when applicable.

D. **Maintenance:**

- Coordinate and share maintenance equipment and staff, whenever possible.
- Negotiate transportation and maintenance/repairs of shared equipment.
- Combine maintenance work parties to address specific concerns in a timely manner and to reduce funding needs for joint project.

E. **Biological Data:**

- SURVEYS. Data collection will be coordinated and standardized between agencies whenever possible to strengthen study results and to aid interpreting trends in wildlife and plant populations. Agencies agree to coordinate efforts in research of threatened and endangered species, migratory birds, fish, wildlife (including predators), and plant surveys. Combining funds for a specific contract, arranging for volunteer and staff assistance, and sharing equipment (i.e. boats, ATV, etc.) may facilitate research projects.

- RESEARCH. Research needs will be identified and efforts combined to initiate and fund specific research projects.

- MONITORING. Monitoring of restoration project sites will be coordinated so that the information is comparable, consistent and complementary. Efforts may be combined to fund and staff specific monitoring components.

F. **Permits:**

The agencies will communicate and cooperate on permits. Combined or regional environmental documents and permits that could benefit both agencies will be considered. Special-Use Permits will be required for all activities on Service lands and the equivalent required for all activities on Department and State Parks lands.

G. **Law Enforcement:**

The agencies will communicate and cooperate on law enforcement issues. Efforts will be made to discuss issues, potential problems, needed support and to exchange phone numbers and current staffing information on a regular basis. Signing efforts will be mutually updated and implemented.

H. **Coordination:**

Formal meetings will be held semi-annually in spring and fall at a minimum. The agencies will alternate hosting and provide agendas and notification for the meeting. The meeting agendas (jointly developed) may be changed under mutual consent of the agencies and additional meetings may be held to discuss specific topics. Suggested agenda topics include:

- Discuss current issues/events
- Provide relevant updates on agency activities
- Highlight a main topic/training opportunity at each meeting
- Set next meeting location, time, and date

V. PROJECT OFFICERS

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Assistant Refuge Manager
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U.S. Fish and Wildlife Service
752 County Road 99W
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VI. MODIFICATION AND TERMINATION

This MOU agreement may be amended with consent all agencies. Amendments will be attached to this document after concurrence of the agencies.

This agreement may be terminated as mutually agreed or upon 6 months written notice by either agency.

VII. APPROVAL

This MOU shall be effective on the date all signatures are received and will be in effect for a period of five years. At that time, the MOU may be reviewed, updated, and extended for an additional five-year period.

Donald Koch — 5/14/01

Don Koch, Regional Manager — Date
Northern California - North Coast Region
California Department of Fish and Game
Redding, California

Banky Curtis — 6/17/01

Banky Curtis, Regional Manager — Date
Sacramento Valley - Central Sierra Region
California Department of Fish and Game
Rancho Cordova, California

Kathryn V. Foley — 7/6/01

Kathryn Foley, District Superintendent — Date
Northern Buttes District
Department of Parks and Recreation
Oroville, California

[signature] — 7/16/01

Kevin S. Foerster, Project Leader — Date
Sacramento National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
Willows, California