

4 ENVIRONMENTAL ANALYSIS

This chapter is divided into five main sections. Section 4.1 discusses the effects that were determined to be less than significant based primarily on review of the analyses presented in the IS (see Appendix B of this Draft EIR).

Sections 4.2 through 4.5 address the four resource topics evaluated in this Draft EIR: Agricultural Land and Land Uses; Hydrology, Water Quality, and River Geomorphology; Biological Resources; and Cultural Resources. Each of these sections includes a subsection that discusses the *environmental setting* (i.e., existing conditions) in accordance with State CEQA Guidelines Section 15125. This information constitutes the baseline conditions with which the proposed project is compared. The *regulatory setting* subsection describes pertinent federal, state, and local laws and regulations that may apply to the proposed project. The *environmental impacts* subsection discusses potential effects of the proposed project in accordance with State CEQA Guidelines Sections 15126.2(a) and 15143. Project impacts are numbered sequentially in each subsection. The discussion that follows each impact statement includes the substantial evidence upon which the significance conclusion is based. A discussion of cumulative impacts is provided in Chapter 5. The *mitigation measures* subsection identifies mitigation measures recommended to reduce any potentially significant effects associated with the proposed project to less-than-significant levels, in accordance with State CEQA Guidelines Sections 15002(a)(3), 15021(a)(2), and 15091(a)(1). The numbering of each mitigation measure corresponds to the numbering of the impact to which it applies.

4.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

The effects discussed in this section were determined to be less than significant for the proposed project. The conclusions provided in this discussion are based primarily on responses to checklist questions from Appendix G of the State CEQA Guidelines that are provided in the IS prepared for the proposed project. These responses were key to providing the basis for determining which issues would be excluded from further discussion in this Draft EIR. The potential damage to public services infrastructure located downstream of the project area was identified in the IS as a potentially significant impact. Further analysis has resulted in a conclusion that the proposed project would not alter existing conditions in a way that would increase the risk of damage to roads and other public services infrastructure. This issue is discussed in detail below under “Public Services.”

AESTHETICS

Restoration of native riparian habitat in the project area would result in a change in the landscape from cropland and orchard to a mix of riparian communities (forest, savannah, and grassland), a change that would generally be considered as an improvement in the existing viewshed, or that possibly would be considered by some viewers to be a neutral change. Implementation of the proposed project would involve removal of existing vegetation, which would temporarily degrade the existing visual character in the project area. Removal of the orchards and other crops would be replaced with a mixture of grassland, riparian oak woodland, and elderberry savannah habitats that would mature over a 3-year period to appear natural and undisturbed.

AIR QUALITY

Standard diesel-powered tractors would be used at the project sites during project implementation phases. Operation of the tractors would not violate or obstruct implementation of any applicable air quality plan. Operation of equipment during project implementation would generate small amounts of fugitive dust, which can be a significant contributor to air pollution. However, the proposed project would establish permanent native riparian habitat on lands that have been plowed in the past. The proposed project would not be expected to generate fugitive dust in greater quantities or concentrations than has occurred over past decades when the fields were regularly plowed. After the 3-year project implementation period, no ground disturbance would occur that would generate fugitive dust.

The proposed project would be implemented on federal property, and the general project area is sparsely populated. If odors are generated by application of herbicides or fertilizer or by decomposing mud or plants, these odors would be detectable to USFWS and TNC personnel and other contracted workers. No sensitive receptors (e.g., housing areas or other types of urban development) are present nearby.

GEOLOGY AND SOILS

The proposed project does not involve construction or urban development that could expose people to geologic hazards (e.g., earthquakes, landslides, liquefaction or collapse of structures); therefore, geologic hazards are not significant issues. Although there is the potential for flood flows to erode the project sites, USFWS has concluded that the possibility of near-term erosion and sedimentation would be offset by the long-term protection afforded by the permanent cover of native riparian habitat with an established root system. (Refer to Section 4.3, “Hydrology, Water Quality, and River Geomorphology,” for further discussion.) The proposed project would not include any new septic systems, nor would it generate wastewater that would require treatment.

HAZARDS AND HAZARDOUS MATERIALS

The proposed project would require the use of regulated herbicides, used in compliance with specified application standards, during the 3-year project implementation period (see Chapter 3, “Description of the Proposed Project”). This practice would not result in a requirement to dispose of a hazardous substance. The proposed project would comply with USFWS policy that prevents storage of chemicals or materials on the project sites. Short-term use of groundwater from existing agricultural wells would occur during the 3-year project implementation period. The well water is not a source of potable water. Wildland fire prevention and management is addressed in the SRNWR CCP. The proposed project would occur on sites that are not accessible by public roads; therefore, it would not conflict with an adopted emergency response plan or other emergency plan.

MINERAL RESOURCES

The proposed project would not be implemented on land that has been identified as a locally-important mineral resource recovery site. The floodplain includes some deposits of gravel; however, deposits of gravel are available elsewhere, and the loss of these sites as potential sources of gravel is not considered a potentially significant impact.

NOISE

The proposed project would involve the use of standard diesel-powered tractors during the 3-year project implementation period. Tractor use has occurred on the project sites and in the project area for decades as a standard part of agricultural practices, and local noise ordinances and standards do not restrict these activities. The proposed project would not result in long-term generation of noise from any source, nor would it increase ambient noise levels. The nearest airport to the proposed project sites is Haigh Field near Orland, approximately 7 miles away.

POPULATION AND HOUSING

The proposed project would restore native riparian habitat on public property. While it could increase tourism in the area, the proposed project would not provide any infrastructure that could lead to development. No housing would be replaced by the project, nor would it require people to relocate.

PUBLIC SERVICES

The IS prepared for the proposed project identified potential damage to public services infrastructure located downstream of the project area as a potentially significant impact. This impact relates to the potential for Sacramento River floodwaters or other natural processes to cause uprooting of vegetation that could clog weirs or other infrastructure and otherwise cause flood-related damage to facilities. This section describes the current

understanding of woody debris sources within the Sacramento River floodplain, and discusses processes that result in woody debris being entrained in the river flows. In general, woody debris near the river can consist of large native riparian forest trees or commercial agricultural orchard trees that may become entrained through: (1) natural fall of live (or dead) trees located on steep river banks as they become large and heavy; (2) overbank flows that loosen downed debris or orchard cuttings; and (3) bank erosion or undercutting and/or large scale losses from the river meandering into riparian and orchard areas. This type of debris would also be considered a cumulative impact associated with the varied wood sources and complex ecological and geomorphic processes that result in wood entering the river both upstream from and within the project area.

Consultation with agency personnel has been conducted during preparation of this Draft EIR to further understand this issue. The Reclamation Board maintains flood protection infrastructure along the Sacramento River, and woody debris removal is a component of the overall facilities maintenance program (Sorensen, pers. comm., 2005). The Reclamation Board considers large woody debris (LWD), such as large cottonwood trees, to pose the highest risk to structural integrity of downstream infrastructure. Maintaining safe conditions for workers removing LWD from affected areas during peak flow events is also a concern (Sorensen, pers. comm., 2005). For example, past removal of large trees at Fremont Weir has required periodic closures of U.S. Interstate 5 during peak flow events to reduce the safety risks to the public and to workers using large cranes for the work.

Native trees and orchard trees provide sources of wood that have been and are currently extensive within the riparian corridor and surrounding agricultural lands adjacent to the Sacramento River. The potential for LWD to enter flood flows and the consequential effects on floodplain functions and infrastructure has been present in the past and will continue to occur; it is part of existing conditions in the project area. The proposed project would replace 305 acres of orchard trees (mostly almond, with some walnut) with restored riparian woodland. Consequently, the potential direct impact on woody debris production from the proposed restoration project area involves an exchange of type of wood source as some orchard trees are replaced by trees that grow in riparian areas. Following restoration of riparian habitat at the proposed project sites, the relative number of trees and sizes of native trees would vary compared with the characteristics of existing orchard trees depending on the length of time that had passed following establishment of riparian woodland areas. In the near term, the amount of potential woody debris in the newly restored riparian woodland areas would be less than the amount present in mature orchards that would be replaced. In the long term, surviving riparian trees would grow larger than orchard trees. The area of existing riparian woodland located within the Sacramento River riparian corridor was estimated to be about 15,000 acres in 1987 (DWR 1987). When these existing riparian areas are combined with the existing extensive agricultural areas that provide a source of woody debris, the potential direct effect of the proposed project (exchanging agricultural wood sources for native riparian wood sources on parts of the project sites) becomes relatively inconsequential; therefore, the proposed project would not substantially alter the risk of potential impacts to floodplain infrastructure from clogging of weirs or damage to public services infrastructure.

Whether the natural growth of restored, larger native trees in the floodplain constitutes a potential contribution to a cumulative impact depends on other factors in addition to the existing amount of wood available that can affect the floodplain region, (e.g., the stability and resistance of the land to erosive flood flows). Research and other substantial evidence that compares generation of potentially damaging woody debris from riparian habitat areas to that generated from agricultural areas within the project area is limited; therefore, detailed assessments of the issue are speculative (USFWS 2000; Henderson 2003; Brandon, pers. comm., 2005). Riparian forests and orchards are recognized as important sources of LWD deposited into the river (USFWS 2000), and riparian vegetation growing on the higher floodplain areas is also recognized as an element which aids in trapping and retaining debris (USACE and The Reclamation Board 2002). Recent telemetry tracking of tagged woody debris performed in the Chico Landing Subreach over the course of approximately 1 year (Henderson 2003) indicates that nearly all tagged LWD trees stayed within the river channel, and that downed trees traveled an average of 6 miles downstream. This data suggests LWD sources extend over large areas of the river corridor. Because this issue has been identified as one of concern in stakeholder discussion forums, DWR is continuing these tracking studies on the Sacramento River and is in the process of identifying suitable trees for tagging. As part of these studies, DWR looked for suitable trees (i.e., those that match DWR criteria for LWD) to mark at existing

restoration sites in order to track the migration of LWD and was unable to find any (Roberts, pers. comm., 2005). Therefore, current evidence suggests that riparian restoration projects are not contributing substantially to ongoing debris production.

In addition, a relevant study conducted by Micheli et al. (2004) compared meander migration rates and bank erodibility from 1949 to 1997 for reaches of the Sacramento River between Red Bluff and Colusa; this study concluded that agricultural areas of the floodplain have generally eroded at higher rates (about 80–150% higher) than riparian forest areas. The results of the Micheli study suggest that restoration of riparian woodland, including that proposed under this project, may result in cumulative reduced rates of erosion and meander of the Sacramento River and increased resistance to the overall production of woody debris compared to that occurring on agricultural lands.

The existing Sacramento River Flood Control Project (SRFCP) infrastructure was largely constructed and operational by 1960 and, starting in 1960, the first of the authorizations under the SRFCP began implementation of systematic bank protection efforts within the project area (USACE and The Reclamation Board 2002). Extensive areas of riparian vegetation had already been removed prior to the construction of dams and other flood control infrastructure. Additional losses of riparian habitat occurred within the floodway generally during the 1960s that continued through the 1990s as riparian forests were replaced by agricultural uses (USFWS 2000). For example, approximately 10,000 acres of riparian forest were cleared from the riparian corridor between 1952 and 1987 between Keswick Dam and the town of Colusa, while orchard lands increased by about 16,000 acres (DWR 1987). Approximately 3,200 acres of riparian vegetation were cleared between the project levees (those constructed by USACE) in the Beehive Bend Subreach. The rate of clearing of agricultural land appeared to decrease after 1972, and additional analysis suggests a slight rebound of riparian forest acreage between 1972 and 1987. Available studies also suggest that hydrologic conditions in the Sacramento River are significantly less conducive to riparian tree recruitment compared to historical pre-dam conditions (Singer 2003, TNC 2003a), which leads to the conclusion that overall potential long-term riparian growth conditions are reduced when compared to past conditions. Based on all of these factors, it is reasonable to conclude that the contribution of LWD originating from riparian woodland areas has generally decreased since the construction of SRFCP infrastructure, and that damage risks associated with woody debris from riparian woodland sources has also decreased over time.

Although evidence about risks from entrained trees is limited, available studies tend to indicate that native riparian woodland does not, at least, cause a significant additional potential risk, and may in fact reduce the risk of woody debris entering flood flows. No studies are known to support the idea that large, uprooted native trees originating from restoration projects are entering the Sacramento River floodway and creating a substantial increased risk to public services infrastructure compared with existing conditions (i.e., compared with fallen orchard trees entering flood flows). Consequently, the Draft EIR did not find evidence to indicate that a considerable contribution to a cumulative impact would occur.

As discussed in Chapter 3, “Description of the Proposed Project,” USFWS maintains a working relationship with The Reclamation Board by providing draft habitat restoration plans for review and comment. Ongoing coordination between these two agencies includes incorporation of restoration project design elements that address The Reclamation Board’s resource management concerns and maintenance issues, including the potential generation of woody debris. In addition, the proposed project implementation phases that involve removal of old orchards and the subsequent planting and establishment of riparian vegetation would be designed and carried out in a manner that is consistent with the SRNWR CCP and the SRCA Forum Handbook.

RECREATION

The proposed project would not affect uses of existing regional or neighborhood parks. It is planned to occur on federal property under the management of USFWS. Restoration of habitat at the project sites would be consistent

with the management guidelines contained in the SRNWR CCP. See Chapter 3, “Description of the Proposed Project,” and Section 4.2, “Agricultural Resources and Land Uses,” for further discussion.

TRANSPORTATION AND TRAFFIC

The proposed project would not result in increased traffic on local public roads and at intersections that would be substantial in relation to the existing traffic load and the capacity of the local street system. Local traffic congestion would not increase as a result of the proposed project, nor would air traffic be affected. The proposed project would not result in any hazard relating to a project design feature. Use of standard farm equipment during project implementation phases would be consistent with historical farming practices in the region that have included the presence of slow-moving farm equipment on local roadways. Implementation of the proposed project would not result in an incremental increase in this type of hazard. No local emergency access route would be impaired as a result of the proposed project. No public parking would be provided related to the proposed project.

UTILITIES AND SERVICE SYSTEMS

The proposed project would not generate wastewater, nor would it include expansion of existing treatment facilities. No change in constructed storm water facilities would occur. The proposed project would not require any increased need for irrigation, nor would it generate waste that would require disposal at a landfill. If wood waste is generated by the proposed project related to removal of an existing orchard, it would be used as fuel in a cogeneration facility. The proposed project would be in compliance with local, state, and USFWS policies regarding disposal of solid waste.

This page left intentionally blank