7 ALTERNATIVES

7.1 CEQA REQUIREMENTS

Guiding principles for alternatives analysis are provided by the State CEQA Guidelines Section 15126.6. These principles 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 range of reasonable alternatives must be selected and discussed in a manner that fosters meaningful public participation and informed decision making (State CEQA Guidelines Section 15126.6[f]).

The alternatives analysis in this Draft EIR is governed by the "rule of reason" in accordance with Section 15126.6(f) of the State CEQA Guidelines. That is, the range of alternatives presented in this document is limited to those that permit for a reasoned choice by CBDA decision makers. In addition to the guiding principles for the selection of alternatives as set forth above, Section 15126.6 of the State CEQA Guidelines requires that an EIR: (1) evaluate a *no project* alternative, (2) identify alternatives that were originally considered but then rejected from further evaluation, and (3) identify the *environmentally superior* alternative.

Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects (State CEQA Guidelines Section 15126.6[c]). Lead agencies are guided by the general definition of feasibility found in CEQA: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (State CEQA Guidelines Section 15364)."

A description of the project alternatives, including the no project alternative, is provided in this Draft EIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the proposed project alternative, which is the restoration and enhancement of native riparian habitat—including forest, savannah, and grassland—at three sites within the SRNWR, as described in Chapter 3, "Description of the Proposed Project."

7.2 ALTERNATIVES EVALUATED

7.2.1 PROCESS USED TO DEVELOP ALTERNATIVES

In 2002, USFWS, in accordance with NEPA, completed an EA/FONSI for restoring riparian habitat on units within the SRNWR that contain the restoration project sites addressed in this Draft EIR (USFWS 2002). NEPA requires evaluation of a broader array of issues than CEQA, because the law defines *human environment* to encompass both physical environmental and socioeconomic issues, while CEQA focuses on the physical environmental topics. CEQA is more stringent in its mandate to adopt *feasible mitigation measures* to avoid or reduce significant effects, while NEPA requires a discussion of measures to mitigate adverse environmental effects, but does not mandate adoption of mitigation. As part of the 2002 USFWS EA/FONSI, NEPA required consideration of the Federal Farmland Protection Act. Therefore, that analysis included an alternative that evaluated active restoration of habitat on lands that included prime and non-prime farmland. As a result, in addition to the proposed project, the alternatives evaluated in that EA/FONSI included *no action*, *passive revegetation*, and *revegetation only on non-prime farmland within refuge lands*. The analyses for the EA/FONSI provided the starting point for developing the alternatives for this Draft EIR. Although CEQA does not treat socioeconomic impacts, in and of themselves, as significant impacts on the environment, it provides lead agencies the discretion to include socioeconomic information in CEQA documents (State CEQA Guidelines Section 15131). As a matter of policy, information on the socioeconomics effects related to this proposed restoration project is provided in Chapter 8, "Socioeconomic Issues."

The analysis conducted for the EA/FONSI resulted in rejection of the alternative to revegetate only non-prime farmland. Under this alternative, those portions of the SRNWR units designated as Prime Farmland or *interim irrigated farmland* (a category specific to Butte County farmland) would not be restored to native riparian vegetation and would remain available for agricultural production. Remaining SRNWR units or portions of units that were not Prime Farmland or interim irrigated farmland would be restored to native habitat. While eliminating the effects of habitat restoration on Prime Farmland, the long-term management of agricultural lands for agricultural production is inconsistent with USFWS policy and the legislative intent of establishing the SRNWR. Also, because other lands (i.e., lands that are not in agricultural production or that do not contain prime soils) that could potentially be acquired by USFWS are generally nonexistent within the SRCA (see Chapter 3, "Description of the Proposed Project," for a description of the SRCA), the rejected alternative would have reduced the number of acres available for habitat restoration throughout the SRNWR by approximately 90%, resulting in dramatic reductions in benefits to wildlife, including threatened or endangered species (USFWS 2002).

The EA/FONSI did not evaluate alternative locations, for the project would happen only on SRNWR lands that had been acquired only after careful consideration of restoration potential, biological significance, threats to wildlife value and presence of a willing seller.

To further develop the alternatives in this Draft EIR, the purpose of the SRNWR was taken into consideration. USFWS operates under a congressional mandate to preserve, restore, and enhance riparian habitat for threatened and endangered species, songbirds, waterfowl, other migratory birds, anadromous fish, resident riparian wildlife and plants. In the proposed project, all the restoration project sites are owned by USFWS; both the Capay and Dead Man's Reach Units were purchased with CALFED Program ERP funds specifically for the purpose of habitat restoration using CALFED Program ERP funding. To be consistent, any action would need to add and protect habitat along the Sacramento River. Therefore, alternatives considered in this Draft EIR include the *proposed project alternativ*e (active restoration of riparian habitat), the *no project alternative*, and the *passive restoration alternative*. The alternatives descriptions and evaluations are the same as those provided in the EA/FONSI for restoring riparian habitat on units within the SRNWR (USFWS 2002).

7.2.2 ALTERNATIVE 1–NO PROJECT

DESCRIPTION

The no project alternative represents perpetuation of existing management practices. The analysis of this alternative is based on the physical conditions that are likely to occur in the future if the proposed project (the active restoration of riparian habitat) is not approved and implemented. Under this alternative, riparian vegetation would not be restored or enhanced on the existing SRNWR lands, and existing conditions at the three project sites would be unaltered. Agricultural operations would continue at the Capay and Dead Man's Reach project sites and the Pine Creek project site would remain fallow.

EVALUATION

No direct effects would occur, either positive or negative, under the no project alternative. Because there would be no efforts to restore and enhance riparian vegetation on the SRNWR lands, there would be no near-term benefits to wildlife and no increase in habitat values. An indirect effect of the no project alternative is the continual loss of almond trees at Dead Man's Reach due to poor health, and the periodic effects of flooding and wind damage. If no action is taken, the almond orchard at Dead Man's Reach will cease to be productive and will have to be abandoned. The no project alternative does not meet the project objectives to restore and enhance riparian vegetation. It does not meet the objectives to provide increased habitat values for threatened and endangered species, songbirds, waterfowl and other migratory birds, anadromous fish, resident riparian wildlife, and plants.

7.2.3 ALTERNATIVE 2–PASSIVE RESTORATION

DESCRIPTION

Under the passive restoration alternative, the project sites would not be actively restored and enhanced, but agricultural activities would cease at the Capay and Dead Man's Reach project sites and the Pine Creek project site would remain fallow. This alternative would rely on natural recruitment from adjacent remnant riparian communities to recolonize the fallow project sites, and on current hydrological conditions to sustain establishing seedlings. A weed control program could be implemented as part of the passive restoration alternative. Analysis of this alternative is based on the physical conditions that are likely to occur in the future if active habitat restoration practices are not implemented but current land use practices are abandoned to allow natural processes to reclaim the land at the three project sites.

EVALUATION

The passive restoration alternative would not provide much short-term increase in wildlife habitat value. A much longer time frame would be needed for establishment of habitat that would have real value to wildlife, and the eventual increase in wildlife habitat value is likely to be lower than is expected with the proposed project alternative because it would likely include many nonnative and invasive species, and natural recruitment of native species is likely to be very low. Other negative effects could occur as a result of the passive restoration alternative including the creation of a source for navel orange worm infestation if the almond orchard at the Dead Man's Reach project site were abandoned. It would be necessary to remove the almond orchard in order to eliminate the risk of navel orange worm spreading to adjacent orchards on private property.

Passive restoration is not considered a practicable alternative at the Dead Man's Reach project site because hydrological conditions required to sustain recolonization by native riparian vegetation no longer exist at the site due to extensive hydrologic modifications including land leveling associated with previous agricultural operations.

At the Capay project site, passive restoration could be successful on the lowest portion of the project site, which encompasses approximately 25 acres, where the appropriate flooding and soil conditions exist to support regeneration of riparian species. Passive restoration has proven unsuccessful on the remainder of the site when it was allowed to go fallow in the past, regardless of it being classified as Prime and Statewide Important Farmland. The failure has been attributed to poor soils (course gravel and sand) and invasive weeds. Fallow fields at Capay quickly became dominated by yellow starthistle (*Centaurea solstitialis*), and intensive weed management has been implemented in an effort to eradicate this species. Allowing the Capay project site to go fallow would likely serve to establish a regional source of yellow starthistle, particularly if no weed management program was implemented as part of the passive restoration alternative, and would not satisfy the project objective to increase wildlife habitat values.

Passive restoration would be a more viable alternative at the Pine Creek project site given that the site has a relatively high water table and productive soil. In addition, the Pine Creek project site is bounded on two sides by thin bands of riparian vegetation that could serve as a seed source for recolonization. However, without active management and revegetation, the Pine Creek project site could become dominated by invasive weed species such as Bermuda grass (*Cynodon dactylon*) and Italian ryegrass (*Lolium multiflorum*), which could hinder the establishment of native plant species; furthermore, flooding of the site is too infrequent to allow good seed dispersal throughout the site.

Long-term observations indicate that passive restoration is an impracticable alternative for the project sites because the project objectives cannot be accomplished in a successful manner within a reasonable period of time under this alternative, if ever. The infrequency of flooding on these high floodplain terraces provides very limited opportunities for native propagule dissemination, hydrology has been altered to the point that native riparian

species cannot be supported to establishment, and competition from invasive weed species also interferes with establishment of native vegetation. This alternative would be improved if invasive weed management was incorporated, but the problems with native plant recruitment and hydrological support would still exist due to the altered hydrology upstream of the subreach (from Shasta Dam) and at the project sites due to land leveling.

7.2.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. State CEQA Guidelines Section 15126.6(d)(2) state 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. Alternatives considered in this Draft EIR include the proposed project alternative (active riparian habitat restoration), the no project alternative, and the passive restoration alternative.

The no project alternative would not achieve the project objectives of restoring and enhancing native vegetation to increase habitat value within SRNWR lands. The passive restoration alternative is impracticable because the project objectives cannot be accomplished in a successful manner within a reasonable period of time under this alternative, if ever.

The proposed project alternative is the environmentally superior alternative of the alternatives considered. Under the proposed project alternative, native species would be planted and actively maintained for 3 years to allow the planted vegetation to become established. The planned maintenance program includes irrigation and weed control to allow root systems to mature to the depth of the water table and to eliminate or control weeds that could interfere with the establishment of native plants. The proposed project alternative would provide the best balance between avoiding environmental impacts and obtaining the project objectives. No significant increases in flood risks would result from any of the alternatives considered. The proposed project alternative would result in no significant impact to the environment. Identified potentially significant impacts would be mitigated to a less-than-significant level (see Section 4.5, “Cultural Resources”). The proposed project would provide the most feasible opportunity to achieve the project objectives to restore and enhance native riparian vegetation and to provide increased habitat values for threatened and endangered species, songbirds, waterfowl and other migratory birds, anadromous fish, resident riparian wildlife, and plants.

7.2.5 ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED EVALUATION

Alternative site selection within the SRNWR was considered but rejected as impracticable because alternative sites within SRNWR are not available. Alternative sites within the SRNWR that have not been restored are already planned for future restoration under projects separate from the proposed project evaluated in this Draft EIR. Alternative sites within the Chico Landing Subreach that are not part of SRNWR lands either do not meet USFWS selection criteria as suitable sites for restoration, or they are unavailable to acquire. These criteria include biological significance of the tract, existing and anticipated threats to the tract’s wildlife value, and landowner’s willingness to sell the property (USFWS 2002).

An additional 315 acres exists adjacent to the west side of the project site within the Dead Man’s Reach Unit. This land is currently planted as walnut orchard that continues to yield a walnut crop, with production continuing at a satisfactory level. This additional acreage within the Dead Man’s Reach Unit will be a restoration site in the future provided that additional funding is obtained (Luster, pers. comm., 2005).

As discussed above under Section 7.2.1, “Process Used to Develop Alternatives,” the 2002 USFWS EA/FONSI evaluated an alternative that would have involved active restoration only on non-prime farmland. While eliminating the effects of habitat restoration on Prime Farmland, the long-term management of agricultural lands for agricultural production is inconsistent with USFWS policy and the legislative intent of establishing the SRNWR. Also, because other lands (i.e., lands that are not in agricultural production or that do not contain prime soils) that could potentially be acquired by USFWS are generally nonexistent within the SRCA, the rejected

alternative would have reduced the number of acres available for habitat restoration throughout the SRNWR by approximately 90%, resulting in dramatic reductions in benefits to wildlife, including threatened or endangered species (USFWS 2002).

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