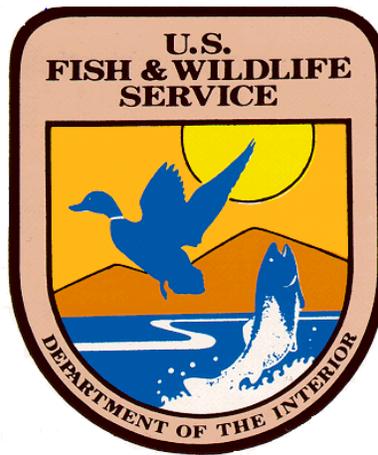


Environmental Assessment

Anadromous Fish Restoration Program  
**Mohler Tract Riparian Restoration, Stanislaus River**  
San Joaquin County, California



**U.S. FISH AND WILDLIFE SERVICE**  
**STOCKTON FISH AND WILDLIFE OFFICE**  
**STOCKTON, CALIFORNIA**

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## 1.0 INTRODUCTION

This Environmental Assessment (EA) was prepared by the U.S. Fish and Wildlife Service (Service) to assist in planning and decision making for a proposed riparian habitat restoration project on the 35-acre Mohler Tract adjacent to the Stanislaus River. The actions evaluated in this document are funded by Federal agencies and require Federal permits and approvals. Therefore, environmental documentation under the National Environmental Policy Act (NEPA) is required.

The Mohler Tract lies within the historic floodplain of the lower Stanislaus River at about River Mile (RM) 12.3 R (Figure 1). In 1999, the Anadromous Fish Restoration Program (AFRP), in cooperation with the California Waterfowl Association (CWA) and the San Joaquin River National Wildlife Refuge (SJRNWR), purchased this agricultural parcel. The site has been cultivated and intensively farmed for more than 50 years. A berm, constructed by previous landowners, separates the southern boundary of the parcel from a narrow band of riparian habitat and the river. The area adjacent to the site and along the Stanislaus River is typical of most river locations in the Central Valley, with only a narrow band of remnant riparian habitat remaining. The Stanislaus River and its tributaries have been significantly modified due to agricultural encroachment into the riparian zone. These modifications include impoundments, levees, gravel mining, and channelization (e.g., stream channel straightening). The Service proposes to convert the site to riparian habitat which would contribute to anadromous fish improvement efforts along the Stanislaus River. The riparian habitat would be designed in a manner that would contribute to re-establishing the river's ecological function.

The proposed action is consistent with several acts, programs, and plans involving Federal, State, and public entities that address protection, enhancement, and restoration of aquatic and riparian habitats within the Central Valley, including the Stanislaus River watershed. These acts, programs, and plans include the Central Valley Project Improvement Act's (CVPIA; Title 34 of Public Law 102-575) Final Restoration Plan for the Anadromous Fish Restoration Program (AFRP) (USFWS 2001), the CALFED Bay-Delta Program's (CALFED) Ecosystem Restoration Program (ERP) Plan (CALFED 1999a, b), the California Department of Fish and Game's (CDFG) Steelhead Restoration and Management Plan for California (CDFG 1993a), and CDFG's Restoring Central Valley Streams: A Plan For Action (CDFG 1993b), among others. The principles and goals of these programs overlap and provide the basis for the proposed riparian restoration on the Mohler Tract.

### 1.1 CVPIA Tiered Document

Whenever a broad environmental impact analysis has been prepared and a subsequent narrower analysis is then prepared on an action included within the entire program or policy, the subsequent analysis need only summarize the issues discussed in the broader analysis and incorporate discussions from the broader analysis by reference. This is known as tiering. Tiered documents focus on issues specific to the subsequent action and rely on the analyses of issues

Insert figure 1

already decided in the broader programmatic review (CALFED 2000b). The AFRP is a component of a broader program, the CVPIA. The CVPIA program evaluated environmental effects of a range of alternatives, including provisions for fish and wildlife habitat restoration. The CVPIA program prepared a programmatic environmental impact statement (PEIS) (DOI 1999) and Record of Decision (ROD) (DOI 2001) in accordance with NEPA.

A programmatic environmental document is frequently used to evaluate new programs, analyze a series of actions that are part of a larger project, or consider broad policy alternatives and programmatic mitigation measures. It is especially important in evaluating the "system-wide" impacts of multiple actions. If it is determined that a proposed action was not fully addressed in the programmatic environmental document, a tiered document should be prepared to address details and site-specific factors of the action. This EA, for the Mohler Tract riparian restoration project, is a tiered document of the CVPIA program and adopts appropriate provisions of the CVPIA's ROD.

### **1.1.1 AFRP**

The CVPIA authorizes and directs the Secretary of the Department of the Interior (DOI), in consultation with other State and Federal agencies, Indian tribes, and affected interests, to develop and implement a program which makes all reasonable efforts to at least double natural production of anadromous fish in California Central Valley rivers and streams. Anadromous fish include the chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), striped bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), white sturgeon (*Acipenser transmontanus*), and green sturgeon (*A. medirostris*). Further, the CVPIA requires that this program give first priority to measures that protect and restore natural channel and riparian habitat values through habitat restoration actions, modifications to Central Valley Project operations, and implementation of the supporting measures mandated by the CVPIA.

The DOI approached implementation of this directive through AFRP development, with the Service assuming lead responsibility. The AFRP encourages local citizens and groups to share or take the lead in implementing restoration actions. This approach is consistent with "California's Coordinated Regional Strategy to Conserve Biological Diversity" (California Biodiversity Council 1991) in which 26 State and Federal agencies emphasize regional solutions to regional problems.

The AFRP identified enhancement and maintenance of the riparian corridor in the lower Stanislaus River to improve stream bank and channel rearing habitat for juvenile salmonids as high priorities (USFWS 2001). Although the restoration of the Mohler Tract is not specifically mentioned in prior investigations for the lower Stanislaus River, its enhancement would contribute to salmonid restoration goals for this reach of the river.

Programmatic-level impacts and mitigation measures for the AFRP are described in the CVPIA PEIS (DOI 1999). As stated in the CVPIA PEIS, "The PEIS is not intended to disclose site-specific impacts of implementing the CVPIA. Because of the necessary level of generality of

assumptions used to perform a programmatic, region-wide analysis, many of the conclusions of the PEIS analysis cannot be directly applied to specific sites within the region or to a specific region.” Because the AFRP is a component of the CVPIA, AFRP-funded actions must tier from the CVPIA PEIS and be implemented in a manner consistent with the CVPIA ROD. In addition, mitigation measures and monitoring identified in the PEIS and ROD for CVPIA implementation must be incorporated into site-specific AFRP actions, where appropriate.

## **1.2 Purpose and Need**

The Stanislaus River system and its associated fish and wildlife habitats have incrementally deteriorated for over a century beginning with extensive gold mining in the 1850s. During and subsequent to mining events, riparian habitat conversion and instream habitat modifications have occurred due to agricultural land development, gravel mining, water impoundment construction, increased water diversions, decreased instream flows, and levee construction. All of these major actions and other events have led to the existing deteriorated riparian and aquatic habitat conditions of the Stanislaus River and its tributaries. In spite of habitat modifications, viable chinook salmon populations still occur in the lower reaches of the Stanislaus River downstream of New Melones Reservoir. Habitat restoration actions for the Mohler Tract are targeted at contributing to reversal of the deteriorated conditions in the lower Stanislaus River.

The purpose for taking action on the Mohler Tract is to restore and protect native riparian habitats adjacent to the Stanislaus River to benefit anadromous salmonids, their associated aquatic environment, and other associated fish and wildlife resources, while maintaining an equitable balance among adjacent land uses such as recreation, agriculture, and flood control. Stanislaus River aquatic and riparian habitat improvement actions are deemed an important component to contribute to the AFRP’s salmonid restoration efforts. These would contribute toward the implementation goals of several existing Central Valley fish and wildlife restoration plans to create a healthier, more-natural functioning ecosystem; enhance and restore aquatic and riparian habitats; protect and/or recover threatened and endangered species; and augment cumulative efforts to at least double populations of anadromous fish in Central Valley streams.

The Mohler Tract riparian restoration project objectives are to:

- Allow river access to the floodplain and improve habitat conditions for native fish species.
- Restore hydrologic function through structural site modifications which would allow for enhanced seasonal flooding, increased floodplain water storage potential, attenuation of flood flow velocities, and other benefits.
- Restore self-sustaining native riparian vegetation.
- Provide habitat for native wildlife species found in California’s Central Valley riparian systems.

- Provide habitat for listed species.
- Improve habitat for nesting and foraging riparian obligate songbirds and other neotropical migrant birds.

Although the acreage of the Mohler Tract is relatively small, it provides an excellent opportunity to demonstrate the effectiveness of using restoration techniques to convert flood-prone farmland on the Stanislaus River into habitat critical to wildlife species. Additionally, because it abuts other areas of riparian habitat, restoration of the Mohler Tract would assist in cumulative improvement of fish and wildlife habitat values along the Stanislaus River.

## **2.0 ALTERNATIVES**

The Proposed Action Alternative, the No Action Alternative, and the Alternative considered but eliminated from further evaluation are described in this section. These alternatives were developed from information provided by the Sacramento River Partners, CWA, the SJRNWR, and the Service.

### **2.1 No Action Alternative**

The No Action Alternative would not provide Federal AFRP funds for “active” riparian restoration or berm removal on the Mohler Tract. If the site is allowed to fallow, the land would follow a slow plant succession process. Natural seed dispersal and plant establishment would be relied on to vegetate the parcel which would be initially dominated by non-native species. Prudent land management practices may include planting of native riparian vegetation on the site to prevent the establishment of noxious weeds, assist in erosion control, and increase terrestrial habitat value of the site for wildlife. The No Action Alternative would not provide any immediate benefits to anadromous salmonids.

### **2.2 Proposed Action Alternative**

The proposed action would provide Federal AFRP funds to help finance riparian restoration and enhancement of habitats on the Mohler Tract. The Proposed Action Alternative is the preferred alternative and was developed and selected to meet the Mohler Tract riparian restoration objectives. Components of riparian restoration on the site include permanently eliminating row crop production, modifying the riverside berm (by breaching and removing a 200-foot-long section) and altering the site’s topography to emulate historic site contours and provide a more diverse landscape than the previous flat, row crop profile of the parcel. This alternative involves changing the physical characteristics of the site by using earth-moving equipment to breach and remove a part of the riverside berm and re-establish the original overflow channel contours to simulate historic connectivity with the river. A riparian vegetation planting and management plan would be implemented to enhance on-site habitats. Planted vegetation would be monitored, and failed vegetation replaced annually for 3-4 years following planting.

Potential project impacts would be limited to the temporary ground disturbing activities associated with: 1) breaching and excavating a section of the Mohler berm, 2) creating a training berm, and 3) recontouring the site with spoil from the berm. Implementing the following measures would minimize adverse effects on listed salmonids and associated habitats:

- C To avoid disturbing steelhead and chinook salmon, all ground disturbing activities would be conducted during the period of June through September, when it is unlikely that these salmonids would be present in the river.
- To protect the water quality of the river during berm modification and site contouring activities, all work would use best construction and drainage management practices. No work would take place in the riverbed.
- To avoid water quality impacts within the river during riparian revegetation activities, all planting would take place on the interior of the site and away from the river channel.
- Measures would be taken to control any post-construction runoff.

#### ***Measures to be Implemented to Improve Anadromous Salmonid Habitat and Floodplain Values***

To improve anadromous salmonid habitat and historic floodplain values on the site it would be necessary to re-establish connectivity with the river's floodplain and the main river channel through berm modification and site contouring. In addition, active restoration, including planting of riparian vegetation, would be included to help accelerate topographic changes as over-bank flows interact with established and increased vegetation. To assist in this effort, a site restoration plan would be created that considers the likely direction and behavior of over-bank flows and assists in evaluating riparian vegetation restoration needs and actions.

#### ***Berm modification***

Berm modification would be the first step to re-establish natural processes across the site. This would serve to reconnect portions of the historic floodplain with the river and would help to restore over-bank flows to the project site. The berm to be modified is located adjacent to the Stanislaus River along the south boundary of the parcel (Figure 2). Earth moving equipment would be used to remove a section of the berm. Spoil excavated from the berm would be used to create a training berm, swale, islands (mounds), and topographic diversity on the site (Figure 2). The interior of the berm to be removed contains concrete rubble which would be buried along the inboard side of the training berm. The training berm would direct river flows entering the site into a swale designed to direct low to moderate over-bank flows along the south side of the remaining berm and into the interior of the project site. Any excess concrete rubble would be

insert fig 2

hauled off-site to an appropriate disposal area. All or portions of the remaining berm may slowly erode away over time.

#### *Site contouring and channel creation*

Changing the physical characteristics of the site would include using earth moving equipment to re-establish the original channel or to create new secondary channels on the site. This is essentially an engineering design approach toward simulating historic geomorphic conditions.

#### *Vegetation Restoration*

Active vegetation management with native plant species would enhance habitats and restore riparian vegetation on site. The planting design for vegetation restoration on the site would include an implementation schedule, a maintenance guide, and a program to replace plants that do not survive. Active restoration would use state-of-the-art restoration production techniques to enable rapid and efficient development of habitat. The planting composition, density, and pattern would be based on the assessment of site conditions and project objectives. Once planted, the site would be intensively managed (maintenance, irrigation, weed control, etc) until the plants are established and have a high likelihood of unaided survival, typically in 3-5 years.

A preliminary planting design, plant community target, and species composition plan was prepared by Stillwater Sciences in 1998. The plan would be used to guide planting and includes a mixture of native trees, shrubs, vines, sedges, rushes and grasses for planting along the river corridor and inland to buffer zones between the parcel's boundaries. Typical composition would include species such as Fremont cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), valley oak (*Quercus lobata*), western sycamore (*Platanus racemosa*), several willow varieties (*Salix* spp.), wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), and coyote bush (*Baccharis pillularis*).

#### ***Monitoring and Adaptive Management***

Monitoring would be essential to improve and demonstrate the success of the project during implementation. As a component of the SJRNWR, once restoration has been accomplished, the operation and management of the Mohler Tract would be the responsibility of the Service. On-site monitoring and evaluation would be conducted on the site to assist the AFRP in evaluating the long-term benefits of such projects to anadromous fish resources. Monitoring would be conducted immediately prior to project implementation and for 3-5 years after project completion. The actions would be monitored to determine effectiveness. An adaptive management approach to problems would allow for remedial actions if established performance standards are not met.

### **2.3 Alternative Eliminated from Further Consideration - Replacement of the Existing Water Control Structure**

During development of the proposed project, an alternative considering replacement of the existing water control structure was eliminated from further consideration. This alternative is similar to the No Action Alternative, except the existing 18-inch pipe and flapgate would be

replaced with a 36-inch open-top box water control structure. The water control structure would be operated in a manner that would not trap fish on the site during and after high flows in the river. As high flows spill over to the land side of the unit, the flapgate on the new water control structure would allow trapped water to return to the river channel.

This alternative was eliminated from further consideration because implementing the action would: (1) not meet the purpose and need of the proposed action; (2) not meet the project's objective to provide unlimited access to the floodplain for salmonids; (3) not be consistent with the AFRP goals to re-establish natural fluvial geomorphic processes; and (4) would have safety issues related to removal of flashboards when the area is flooded.

### **3.0 AFFECTED ENVIRONMENT**

The affected environment includes the physical characteristics and biological resources potentially affected by implementing the Proposed Action Alternative. These include fish and wildlife resources and their habitats and any species listed as threatened or endangered under the Endangered Species Act of 1973, as amended (ESA).

The 35-acre Mohler Tract is located in the Central Valley within San Joaquin County in Central California at an elevation range of approximately 48.5 feet to 49.5 feet. The parcel is bracketed on the north and south by landowner-constructed berms. The 1,280-foot-long southern boundary of the Mohler Tract follows the curve of the Stanislaus River and is separated from the channel by a decadent berm (which terminates immediately downstream of the parcel) constructed by the previous landowner. The Mohler berm provides little or no protection to adjacent parcels. In addition, little or no protection is afforded to the Mohler Tract itself, as the parcel has flooded numerous times, most recently in 1997.

To the north, and just beyond the Mohler Tract property line, is another private berm constructed by other landowners which is currently owned by private owners and the City of Ripon. This berm was shortened by the City of Ripon when they constructed the Ripon Municipal Golf Course. The berm is designated by the California Department of Water Resources as a Local Improvement Project Levee and serves to protect the new subdivision north of the Mohler Tract from flooding. Adjacent and to the west is a 40-acre parcel with mature riparian habitat owned and administered by the Corps of Engineers (COE) as a unit of the Stanislaus River Parks. The land on the other side of the river is privately owned and a section supports riparian forest habitat and other sections contain orchards. The Ripon Municipal Golf Course is immediately upstream and east of Mohler Tract. Caswell State Park is about 7 river miles downstream.

#### **3.1 Vegetation and Wildlife**

The Mohler Tract has remained leveled for about 50 years since its was first cultivated for crop production. During this time, the site was managed to exclude vegetation other than crops. In 2000 and 2001, black-eyed peas were grown on the property in order to control weeds

(Sacramento River Partners 2001). Recently the site has been allowed to fallow and has been mowed to reduce fire danger risks to the surrounding properties. Because the site was intensively managed for agriculture, it currently does not support any significant wildlife populations or native habitat.

### **3.2 Fisheries**

The Mohler Tract is separated from the Stanislaus River by a berm constructed by previous landowners. Although the site historically provided functional floodplain habitat which interacted with the river system during high flow periods, this connection was largely severed with the creation of the berm. This has resulted in only occasional periods of over-bank flows on the parcel today.

Besides chinook salmon and steelhead trout, the Stanislaus River supports a wide variety of native and non-natives fishes. Sturgeon, American shad, and lamprey may occur downstream of the project area during their spawning migrations. Because of its slow movement, relative shallowness, and high summertime temperatures, the Stanislaus River supports a diverse population of warmwater fish species. Some native fish such as rainbow trout and the Sacramento sucker are likely to occur. Additionally, many introduced species exist in the river, including: largemouth bass, smallmouth bass, spotted bass, bluegill, and green sunfish.

### **3.3 Threatened and Endangered Species**

The Service has identified special status species that may occur in or be affected by projects within the vicinity of the action area. These are included in the species list for the project (Appendix A). The list includes 14 species that are federally listed as endangered or threatened and 1 species proposed to be listed under ESA. Currently, there is no suitable habitat on the Mohler Tract to support federally listed species or those proposed for listing. However, establishing potential suitable habitat for endangered and/or threatened species may occur with implementation of restoration actions.

The action area had the historic potential to provide habitat for the following species:

#### *Central Valley fall/late fall-run chinook salmon - candidate for listing*

Central Valley fall-run chinook salmon typically emigrate to the ocean in the spring of their first year and then spend 2 to 4 years in the ocean before returning to their natal stream to spawn. The annual fall-run chinook salmon migration in the Stanislaus River begins in early September, peaks in November, and tapers off in December and early January. Spawning generally occurs shortly after migration, primarily in late October through January. The salmon eggs incubate and hatch in the gravel between October and April, depending on time of spawning and water temperature. The fry begin to emerge from the gravel starting in January and continue through April. Most juvenile chinook in the Stanislaus River have left the spawning areas by July of their first year. These juveniles move downstream and continue rearing as they pass the vicinity of the Mohler Tract.

### Central Valley steelhead

Steelhead have the greatest diversity of life history patterns of any Pacific salmonid species, including varying degrees of anadromy, differences in reproductive biology, and plasticity of life history between generations. They prefer cold water between 55° and 70° F that is saturated with dissolved oxygen. In the Stanislaus River, steelhead exhibit two forms, a resident form that may remain in the river its entire life and an anadromous form that migrates to the ocean and returns to the river to spawn. Most river resident steelhead mature in 2 to 3 years. Most anadromous forms first spawn after spending 2 to 3 years in freshwater and then 1 to 2 years in the ocean, although small males that have spent only 1 year in freshwater and 1 year at sea occur regularly in some streams. Both resident and anadromous forms may be produced in the same nest, and anadromous forms are known to spawn with residents. Spawning occurs in the spring, but the spawning migration of anadromous forms extends from summer until the following spring. Unlike other salmonids which spawn once and then die, steelhead can spawn several times before death. Most anadromous adults ascend the river between December and May. Females excavate a nest in gravel-bottomed riffles and select a mate. The eggs are buried in the nest after spawning. They hatch in 3 to 4 weeks and the fry emerge from the gravel 2 to 3 weeks later and begin feeding.

### Valley elderberry longhorn beetle

The federally listed threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) inhabits riparian communities within the Central Valley and adjacent west-side foothill areas. It is dependent on its host plant, elderberry shrubs (*Sambucus* spp.), for all of its life stages. Adult VELB lay their eggs on elderberry stems, cracks in bark, or at the base of leaf petioles. Any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level is considered habitat. Elderberry shrubs are known to occur in the riparian corridors along the Stanislaus River, but none are present on the Mohler Tract.

### Riparian brush rabbit

Habitat for the endangered riparian brush rabbit (*Sylvilagus bachman riparius*) consists of riparian communities dominated by willow thickets, California wild rose, Pacific blackberry (*Rubus vitifolius*), wild grape (*Vitis californica*), Douglas' coyote bush (*Baccharis douglasii*), and various grasses. Brush rabbits have small home ranges that usually conform to the size of available brushy habitat. Avoiding large openings in shrub cover, they frequent small clearings, where they feed on a variety of herbaceous vegetation, including grasses, sedges, clover, forbes, shoots and leaves. Grasses and other herbs are their most important food.

Riparian brush rabbits breed from around January to May, putting them at a disadvantage to desert cottontail, which breed year round. Litters average three or four young, with each female having three or four litters per year. Because the subspecies was not described until after it is believed to have been extirpated from most of its historic range, definitive information on its former distribution is lacking. Today, known populations are confined to Caswell Memorial State Park on the Stanislaus River and along an overflow channel of the San Joaquin River.

### Riparian (San Joaquin Valley) woodrat

The endangered riparian woodrat (*Neotoma fuscipes riparia*) inhabits riparian communities along the lower portions of the San Joaquin and Stanislaus rivers in the northern San Joaquin Valley. Historic records for the riparian woodrat are distributed along the San Joaquin, Stanislaus, and Tuolumne rivers, and Corral Hollow in San Joaquin, Stanislaus, and Merced counties. Before the statewide reduction of riparian communities by nearly 90 percent, the riparian woodrat probably ranged throughout the extensive riparian forests along major streams flowing onto the floor of the northern San Joaquin Valley. Riparian woodrat populations today are greatly depleted.

### **3.4 Hydrology/Water Quality**

The Mohler Tract lies within a COE flood easement and is inundated at flows of 6,000 cfs, as measured at Ripon (Stillwater Sciences 1998). The 6,000 cfs flow has a return interval of 12 years. During high flows, floodwaters currently back up over the parcel from the downstream edge of the berm.

Water temperature data in the Stanislaus River, located immediately south of the Mohler Tract, is not available. However, prior to construction of surface water impoundments and diversions on the river, water temperatures were more dependent upon cooler stream flows from upper elevations. Subsequently, instream temperatures are now more dependent on ambient air temperature, impoundment water temperature, wind, humidity, amount of direct sunlight, and reservoir upwelling.

### **3.5 Air Quality**

The proposed project is within the eight-county San Joaquin Valley Air Basin. The San Joaquin Valley Unified Air Pollution Control District monitors air quality in the basin. Air quality throughout the basin is affected by a combination of air contaminants, meteorological conditions, and the topographical configuration of the San Joaquin Valley. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. A primary factor leading to the increase of air pollution is population growth. Accompanying population growth in the basin is additional smog produced by operation of vehicles, industrial processes, mining operations, and by agricultural activities, such as burning agricultural byproducts or dust from plowing, etc.

Currently, San Joaquin County is designated as a non-attainment area for Federal and State standards with regard to particulate matter less than 10 microns in diameter (PM10) and ozone. The Mohler Tract is outside the city of Ripon's urban area and is designated as an attainment area for both Federal and State carbon monoxide (CO) standards.

### **3.6 Recreation**

Recreational opportunities in the project vicinity include golfing, hiking, river rafting, wildlife viewing, swimming, and fishing. Currently the Mohler Tract does not provide recreational opportunities.

### **3.7 Socioeconomic Conditions and Land Use**

San Joaquin County's economy is driven by agriculture and agricultural industries. As the economic base, agriculture is a \$1.39 billion industry in the county which ranks within the top 10 ag-producing counties in the state and nation. Leading agricultural commodities include milk, grapes, cherries, tomatoes, and walnuts. The majority of land use in the county and region is agricultural with about 3,862 farms in the county encompassing about 808,828 acres of the 921,600-acre county.

The Mohler Tract was purchased in 1999 from a private landowner and incorporated as a unit of the SJRNWR, restricting future land uses on the parcel. Adjacent to the eastern boundary of the site is the Ripon Municipal Golf Course. The City of Ripon, located less than a mile from the Mohler Tract, is experiencing rapid growth, and property immediately north of the Mohler Tract has been subdivided and is being developed for residential housing.

### **3.8 Cultural Resources**

No previously recorded cultural resources or Native American cultural resources are known to exist in the project area.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 Vegetation and Wildlife**

#### **4.1.1 *No Action Alternative***

Implementing the No Action Alternative would result in a slow plant succession process if the site remains fallow. The main pioneering plant species would initially be exotic annuals. Their establishment would out compete native plants without intervention. The narrow riparian band immediately to the south would not be affected. Land fallowing and passive vegetation management on the parcel under the No Action Alternative would likely result in increased levels of fuel load, leading to an increased risk of fire danger on the site and adjacent properties. However, over time this alternative may provide some additional wildlife habitat in the project area. The absence of active management and monitoring of the site may provide undesirable occurrences of vagrancy on the parcel, also increasing the fire danger to surrounding properties.

Implementing land management practices and the planting of native vegetation on the site for soil erosion and exotic weed control could, over time, provide some upland wildlife habitat on the site. The berm would continue to separate the site from the river and without the interaction

of terrestrial and aquatic communities, the benefits to native wildlife species would be minimal and non-existent for fishes.

#### **4.1.2 *Proposed Action Alternative***

All restoration activities under the Proposed Action Alternative are designed to provide concurrent benefits to native plants, fish, and wildlife. The terrestrial and aquatic community interactions would be restored and maximized through time. This plan may be refined following final topographical modifications at the site.

Native plants and plant community associations would be established through time to provide wildlife habitat and an interactive upland/riparian/aquatic system. The final planting plan would include native plants compatible with the soils and moisture regime within the parcel. When compatible, plant assemblages would be structured to provide habitat for sensitive species. Berm removal, site contouring, and riparian revegetation would facilitate the establishment of native vegetation communities historically found on the Stanislaus River. Implementing all project components would result in a more functional transition from aquatic and riparian to upland habitat.

Enhanced riparian vegetation would provide temperature-reducing shade, nutrient cycling, production of invertebrates, bank cohesion, woody debris for ground cover, improvement of aesthetics on the site, reduction in bank shear stress and soil erosion, and would provide a buffer zone to reduce impacts from adjacent uplands such as human disturbance and contaminated runoff. The near-shore zone is especially important for wildlife that frequent the river. Improved and reconnected riparian corridors would provide dispersal and migration pathways for wildlife species that cannot traverse drier or more open adjacent areas. Enhanced riparian vegetation also may improve aesthetics, provide shade, and reduce water velocities, bank shear stress, and soil erosion.

Modifying or eliminating land use practices that have adverse effects on aquatic and riparian habitats could improve habitat values, eliminate risks to habitats from continuing habitat degradation, enable recovery of natural processes, and contribute to the recovery of sensitive species. Targeted sensitive species include the fall/late fall-run chinook salmon, steelhead trout, valley elderberry longhorn beetle, riparian brush rabbit, and riparian wood rat.

The monitoring program would be designed to evaluate the effectiveness of restoration actions, and then through adaptive management, allow for priority shifts in the focus of restoration actions. These activities would provide future site management flexibility as priorities and conditions change.

## **4.2 Fisheries**

### **4.2.1 *No Action Alternative***

The No Action Alternative would be expected to maintain the current aquatic conditions of the Stanislaus River immediately south of the Mohler Tract parcel.

#### **4.2.2 *Proposed Action Alternative***

Reconnecting the floodplain with the river and restoring and protecting riparian vegetation and habitat on the site would have long-term benefits for Stanislaus River fishes. The proposed project would contribute to ongoing efforts to protect and restore a continuous riparian corridor along the Stanislaus River. Removal of the riverside berm would reconnect the historical floodplain habitat on the parcel with the river. The restoration of riparian vegetation on the site would increase stream shading, helping to cool Stanislaus River water for chinook salmon and Central Valley steelhead; help control erosion and siltation, aiding in improvements to water quality; and would create and increase terrestrial habitats for insect prey species for fish.

The Preferred Alternative would increase the potential for a more natural expansion of the rivers appropriate geofluvial morphology. This would enable or accelerate restoration of natural processes within the Stanislaus River floodplain, increase the quantity and quality of the riparian corridor and would improve native fish habitats. Increased restoration of riparian habitat would also increase the quality and quantity of shaded riverine aquatic cover, a highly important habitat component for many native fish species.

Since construction of the berm on the Mohler Tract, the site has only provided salmon and steelhead refugia and rearing habitat during high flow events. Restoring the sites connectivity to the main river channel/floodplain through berm modification and site contouring would increase the availability and extent of this sort of habitat for juvenile anadromous fish on the Stanislaus River.

Project implementation would occur in the summer months through the end of September, when flows are lower than the elevation of the site and the listed anadromous salmonids are not expected to be present in this section of the Stanislaus River. Breaching and excavation of the berm and site preparation, and other ground-disturbing activities will occur during the driest time of year (June through September) to minimize potential for loose soils being washed into the river. During construction activities, the banks of the river will be closely monitored for erosion, and if slumping of banks occurs, measures such as willow wattling will be implemented. Equipment and machinery will not enter the streambed.

## 4.3 Threatened and Endangered Species

### 4.3.1 *No Action Alternative*

Attempts by Federal and State programs to protect and increase natural production of anadromous salmonids in the lower Stanislaus River watershed and the Central Valley may be hindered by the No Action Alternative. Without active restoration and enhancement, contributions toward the protection and recovery of threatened, endangered, and other sensitive wildlife and plant species along and adjacent to the Stanislaus River would be limited. The many provisions of the Central Valley Project Improvement Act (CVPIA), including the AFRP, target ecosystem restoration and include benefits for endangered and threatened species. Its assumed limited short- and long-term benefits to special status species associated with the aquatic and riparian ecosystems along the Stanislaus River would occur under the No Action Alternative.

### 4.3.2 *Proposed Action Alternative*

Restoring the Mohler Tract could provide for and increase opportunities to benefit several sensitive species. These species include the Central Valley fall/late-fall chinook salmon, Central Valley steelhead, valley elderberry longhorn beetle, riparian (San Joaquin Valley) woodrat, and riparian brush rabbit.

#### *Central Valley steelhead - threatened*

#### *Fall/late-fall run chinook salmon - candidate for listing*

The proposed project would contribute to the provision of a more appropriate and continuous riparian/instream habitat corridor for native anadromous fish species, including Central Valley steelhead and fall/late-fall run Chinook Salmon along the lower Stanislaus River. Restoration of the Mohler Tract would improve aquatic habitat and, over time, riparian vegetation restoration efforts would contribute to stream shading, resulting in cooler water for chinook salmon and steelhead; increased cover for juvenile salmonids; increased erosion and siltation control; and provision of terrestrial habitat for insects and other invertebrates which are prey for fish species.

Restoring connectivity between the Stanislaus River and the floodplain area at the Mohler Tract would benefit anadromous fish by improving and increasing aquatic and near-shore habitat conditions along the Stanislaus River. Central Valley steelhead and fall/late-fall run chinook salmon would benefit from the restoration and preservation of riparian habitat, including increased shaded riverine aquatic cover and near-shore aquatic habitat, and improved water quality conditions.

#### *Valley elderberry longhorn beetle*

Restoration of the Mohler Tract riparian zone would reconnect it with the mature riparian area on the adjacent COE property. This is expected to benefit VELB and other special-status species using this habitat.

### Riparian brush rabbit and Riparian (San Joaquin Valley) woodrat

The proposed project has the potential to benefit the endangered riparian woodrat and riparian brush rabbit by creating additional habitat for the species. The addition of riparian habitat on the parcel would create a natural buffer, protecting the river corridor from impacts of the Ripon Municipal Golf Course and expanding urban areas.

### Consultations

An informal intra-Service section 7 consultation under the ESA has been concluded resulting in the determination that implementing the Proposed Action Alternative is not likely to adversely affect any of the species listed in Appendix A, and currently under jurisdiction of the Service. Consultations under Section 7 of the ESA and under section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) have concluded with the National Oceanic and Atmospheric Administration (NOAA) Fisheries for species under their jurisdiction. The findings of NOAA Fisheries concurred with the Service's determination that the Proposed Action Alternative is not likely to adversely affect threatened Central Valley spring-run chinook salmon, endangered winter-run chinook salmon, threatened Central Valley steelhead, and Central Valley fall/late fall-run chinook salmon, a candidate for listing under the ESA. NOAA Fisheries also concurred with the Service's determination that the proposed project would not result in adverse impacts to the species listed above and would benefit Essential Fish Habitat (EFH) for chinook salmon and Central Valley steelhead in relation to the MSFCMA.

## **4.4 Hydrology/Water Quality**

### **4.4.1 *No Action Alternative***

The No Action Alternative will not affect current hydrology/water quality conditions on the Stanislaus River. The hydrology of the area would be expected to continue relatively unchanged.

### **4.4.2 *Proposed Action Alternative***

Under the Proposed Action Alternative, there would be general improvements in hydrologic function and water quality in this reach of the Stanislaus River. As upland and riparian areas improve, overbank flows would occur at lower instream flow regimes. More frequent overbank occurrences would contribute to maintaining riparian vegetation thereby protecting and stabilizing streambanks.

Hydrologic modeling was used to estimate the effects of the proposed action on surface water elevation. According to the hydraulic analysis (Sacramento River Partners 2001) computer-model<sup>1</sup> run simulation, implementing the Proposed Action Alternative would result in about a

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<sup>1</sup>The computer model used for the analysis was the U.S. Army Corps of Engineers River Analysis System (HEC-RAS), Version 2.2. The area modeled was the Stanislaus River between River Mile 9.6 to 17.4.

0.2 foot flood water elevation reduction upstream and no change downstream of the site within the flood control easement boundaries. Although berm modification and site recontouring is designed to reconnect the floodplain to the river, the Proposed Action Alternative would not increase flooding risks to the surrounding properties. The upstream flood elevation decrease would slightly decrease the area of inundation on the municipal golf course. This simulation was conducted under a two-year flood scenario. The berm near the northern boundary of the parcel would not be affected under the Proposed Action Alternative. The project would not adversely affect groundwater in the vicinity of the proposed project and would not impact the production rate of existing wells.

## **4.5 Air Quality**

### **4.5.1 *No Action Alternative***

The No Action Alternative would maintain current conditions in the project area.

### **4.5.2 *Proposed Action Alternative***

The proposed project could have short-term, temporary construction-related impacts on air quality. Effects on air quality would include generation of dust and PM10 matter from removal of the berm and channel excavation, transportation of material to disposal sites; and operation of heavy equipment. Nearby residences and recreation areas may be subject to short-term episodes of blowing dust and increased levels of PM10 from construction equipment. Construction-related emissions include CO, reactive organic gases, oxides of nitrogen, and PM10. These pollutants would be emitted in equipment exhaust over the course of project implementation and from trucks hauling material to the various project sites. Although construction-related impacts would be temporary, construction activity has the potential to generate measurable amounts of pollutants, adding to regional ozone and PM10 levels that are already in violation of Federal and State standards. The San Joaquin Valley Unified Air Pollution Control District considers the emission of any non-attainment pollutant to be a significant impact. This impact would be reduced to a less-than-significant level with implementation of the following measures during removal of the berm, channel excavation, and transportation of material to disposal sites to reduce construction-related emissions:

- Wet dust producing materials with water to limit visible dust emissions.
- Provide at least 6 inches of freeboard space from the top of the transport container or cover the transport container.
- Limit or promptly remove any accumulation of mud or dirt on construction equipment and vehicles at the end of each workday or once every 24 hours.

Odor from sediment may be noticed during removal of the berm and transportation of material to disposal sites. However, exposure to such odors would be limited in duration (less than 2

months), and implementation of the emission control mitigation measures identified above should minimize any objectionable odors affecting residents near the project.

## **4.6 Recreation**

### **4.6.1 *No Action Alternative***

Recreational opportunities do not currently exist on the site. Without the proposed project, any currently existing recreational opportunities in areas adjacent and near the parcel would not change.

### **4.6.2 *Proposed Action Alternative***

The potential level and types of recreational opportunities that may occur on the Mohler Tract in the future have not been determined at this time. However, due to the small size of the parcel, future management of the site may be limited to wildlife watching.

## **4.7 Socioeconomic Condition and Land Use**

### **4.7.1 *No Action Alternative***

The No Action Alternative would not have an appreciable affect on the area's socioeconomic conditions or local land use patterns.

### **4.7.2 *Proposed Action Alternative***

Although the conversion of 35 acres of former row crops to native habitat would contribute towards the conversion of farmland in San Joaquin County of the San Joaquin Valley to other land uses (natural open space), the Proposed Action Alternative would not have an appreciable affect on the area's socioeconomic conditions or the local land use patterns.

The loss of income resulting from the conversion of 35 acres of farmland would have a minimal indirect effect on fiscal resources in San Joaquin County and the San Joaquin Valley. The restoration of riparian habitat and rejoining the floodplain with the active river channel would contribute to the natural river environment along this reach of the river, enhancing the aesthetic value of the area.

Over time, land use in the vicinity of the City of Ripon would probably see some shift from agricultural uses to more intensive urban uses as a result of human population increases, consequently shifting the local socioeconomic base a small degree from agriculture toward the municipal and industrial side. Land uses may face greater development restrictions in some areas due to conflicts with other land uses, including fish and wildlife habitat and the existence of threatened and endangered species.

The Proposed Action Alternative is expected to benefit salmonid survival and recovery and, consequently, would increase salmon and steelhead production resulting in increased economic, recreational, and aesthetics benefits to the community. Retiring flood-prone lands would help prevent economic losses due to flooding and would reduce the likelihood of landowners having to build and maintain levees and other flood control structures to constrain the river channel.

#### **4.8 Cultural Resources**

##### **4.8.1 *No Action Alternative***

Cultural and historic resources would not be affected under the No Action Alternative.

##### **4.8.2 *Proposed Action Alternative***

A Cultural Resources Compliance Request for the proposed action was submitted to the Service's Regional Cultural Resources Office for review and evaluation. The Service Regional Archaeologist, following stipulations set forth in the Programmatic Agreement with California State Historic Preservation Office (SHPO), determined the proposed project undertaking has no potential to affect historic properties and requires no further cultural resource identification effort (36 CFR 800.4). The cultural resource compliance report confirmed that the project is not likely to affect cultural resources. However, in the event that cultural resources are discovered during project implementation, any ground disturbing activity would be halted and the Service's Regional Archaeologist would be notified and work would not resume until appropriate mitigation would be completed.

### **5.0 CUMULATIVE EFFECTS**

Cumulative effects on the environment result from incremental effect of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively substantial, actions taking place over a period of time.

Re-establishing the connectivity between floodplain lands and the river, coupled with the restoration of agricultural lands to native riparian habitats would contribute to the ecological integrity of the environment in the lower watershed of the Stanislaus River and would be expected to contribute towards meeting the goals of several Central Valley-wide programs for protecting, enhancing, and restoring riparian habitats within the San Joaquin Valley. Overall, the cumulative effects on fish, wildlife, special-status species, and unique biological communities would be beneficial and wildlife watching and fishing would be enhanced by widespread conservation of the river's riparian corridor.

The restoration of riparian habitat on the Mohler Tract would represent a cumulative benefit to the long-term conservation of anadromous salmonids and biological diversity in the region. Cumulative actions to improve stream corridor habitats in the watershed are expected to provide long-term benefits to associated vegetation and wildlife. These improvements, such as the restoration of habitat continuity in the riparian corridor, would contribute to the goals of several plans and programs for restoration of the watershed ecosystem. Cumulative impacts to fish and wildlife, including special-status species, would be beneficial.

Other restoration projects are expected to be coordinated with this restoration effort, but would be funded separately from this project. Potential cumulative actions related to salmon habitat improvements proposed individually or under additionally funded programs, outside the scope of this document, include screening water diversions, water acquisition, gravel replenishment, and fish passage problems in the lower Stanislaus River. Justification for these potential actions are provided by the CVPIA, CALFED and other authorities.

Successful effects of current and potential associated salmonid habitat improvement actions, considered together, are designed to double salmon population levels above the average annual escapements from 1967 to 1991. However, the historic effects of water development projects on the river have altered the natural form and function of the river channel and course of the waterway, and continuation of these activities, as in the past, can diminish the potential environmental gains of this and other related habitat improvement actions. Any increase in anadromous fish populations would be positive and the effectiveness of individual or cumulative actions would be evaluated through the monitoring and evaluation process. An "adaptive management" approach would be used to select the most successful actions in the future.

The following are examples of ongoing programs that have goals complementary to the Proposed Action Alternative. Implementing these related activities, over time, depending on available funding and landowner participation, would be expected to increase cumulative beneficial effects for fish and wildlife in the project areas.

### **5.1 Fish Screening Program**

The ongoing CVPIA fish screening program is targeted at anadromous fish entrainment reductions through screening of unscreened diversions and upgrading inadequate fish screens throughout the State. This activity is designed to reduce anadromous fish losses at water diversion sites. Reducing entrainment losses has the potential to increase populations by reducing juvenile fish mortality. Unscreened or improperly screened diversions can result in the loss or entrainment of juvenile salmonids.

### **5.2 Water Acquisition Program**

The CVPIA [Sections 3406(b)(3) and (d)(2)] water acquisition program acquires water from willing sellers to augment instream flows and provide level 4 supplies to some refuges in the state.

### **5.3 Restoring Central Valley Streams: A Plan for Action**

The specific goals of this plan developed by CDFG in 1993 are to restore and protect California's aquatic ecosystems that support fish and wildlife, and to protect threatened and endangered species. These goals were presented in Governor Pete Wilson's April 1992 water policy statement and incorporate the State-legislated mandate and policy to double populations of anadromous fish in California (Senate Bill 2261: Salmon, Steelhead Trout and Anadromous Fisheries Program Act). The plan encompasses all Central Valley waters accessible to anadromous fish outside of the Sacramento-San Joaquin Delta.

## **6.0 ENVIRONMENTAL COMPLIANCE**

The following Executive Orders and Legislative Acts have been reviewed as they apply to the proposed action:

### **National Environmental Policy Act**

This EA was prepared pursuant to regulations implementing the NEPA (42 USC 4321 *et seq.*). NEPA provides a commitment that Federal agencies would consider environmental effects of their actions. This EA provides information regarding the No Action Alternative and the Proposed Action Alternative, and environmental impacts. If, after certain key permits are obtained and the final EA is released, the Project is found to have no significant environmental effects, a "finding of no significant impact" (FONSI) would be filed.

### **Endangered Species Act**

The Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*), establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the preservation of the ecosystems upon which they depend. Section 7(a) of the ESA requires Federal agencies to consult with the Service and NMFS on any activities that may affect any species listed as threatened or endangered or designated critical habitat under their jurisdiction. This EA describes potential effects of the Proposed Action Alternative on federally listed species, informal consultations with the Service and NOAA Fisheries concluded in their concurrence with a determination that the proposed action is not likely to adversely affect federally listed or proposed species.

### **Fish and Wildlife Coordination Act**

The Fish and Wildlife Coordination Act (16, USC 661 *et seq.*) provides a basic procedural framework for the orderly consideration of fish and wildlife conservation measures in Federal

and federally permitted or licensed water development projects. Whenever any water body is proposed to be controlled or modified “for any purpose whatever” by a Federal agency or by any “public or private agency” under Federal permit or license, that agency is required “first” to consult with the wildlife agency with a view to the conservation of fish and wildlife resources in connection with the project. Additionally, a report is authorized to be prepared and submitted to the action agency or applicant for Federal license or permit. The report must be made available to the Congress or other authorizing agent when decisions are made to authorize (or not to authorize, or authorize with modifications) the project. A report meeting these requirements has been prepared by the Service.

#### **National Historic Preservation Act (1966)**

Compliance with the NHPA (16 USC 470 *et seq.*) would be necessary for the Proposed Action Alternative in areas listed, or that are eligible for listing, on the National Register for Historic Places. The Service, the Advisory Council on Historic Preservation, and the SHPO, pursuant to section 800.13 of the regulations (36 CFR 800.13) implementing section 106 of the NHPA, have entered into a Programmatic Agreement to streamline the cultural resource compliance process for low impact projects. A request for cultural resource compliance was submitted to the Service’s Regional Archeologist, Region 1, Portland, Oregon. The Regional Archeologist concurred that the proposed action does not constitute an undertaking with respect to the NHPA.

#### **Clean Water Act and Rivers and Harbors Act**

Section 404 of the Clean Water Act (33 USC 1344) requires that a Department of the Army permit be obtained from the COE for the discharge of dredged or fill material into the “waters of the United States,” including wetlands. Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable waters of the United States without a permit from the COE. The EA has described the potential effects of proposed action on wetlands and other waters. The proposed action would require a Nationwide Permit (NWP 27) because it may involve discharges of dredged or fill material into waters of the United States. We do not anticipate discharges of dredged or fill material into waters of the United States, but we would comply with all applicable regulations regarding the Act.

#### **Floodplain Management–Executive Order 11988**

Executive Order 11988 requires that all Federal agencies take action to reduce the risk of flood loss; to restore and preserve the natural and beneficial values served by floodplains; and to minimize the impact of floods on human safety, health, and welfare. The Mohler Tract is within the 100-year floodplain. The Proposed Action Alternative supports the preservation and enhancement of the natural and beneficial values of floodplains, and would be in compliance with Executive Order 11988.

#### **Protection of Wetlands--Executive Order 11990**

Executive Order 11990 requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. The EA has identified that the restoration actions would not result in the net loss of any wetlands.

Implementing the Proposed Action Alternative could enhance wetlands or increase their area, and is in compliance with Executive Order 11990.

**Environmental Justice in Minority and Low-Income Populations--Executive Order 12898**

Executive Order 12898 requires Federal agencies to identify and address disproportionately high and adverse human health and environmental effects of Federal programs, policies, and activities on minority and low-income populations. The Service has considered the environmental, social, and economic impacts of the Proposed Action Alternative on minority and low-income populations and has determined it would be in compliance with Executive Order 12898.

**Indian Trust Assets, Indian Sacred Sites on Federal Land--Executive Order 13007, and American Indian Religious Freedom Act of 1978**

These laws are designed to protect Indian Trust Assets; accommodate access and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoid adversely affecting the physical integrity of such sacred sites; and protect and preserve the observance of traditional Native American religions, respectively. The Proposed Action Alternative and associated mitigation measures would not violate these protections.

**Magnuson-Stevens Fishery Conservation and Management Act**

This act is designed to take immediate action to conserve and manage the fishery resources found off the coasts of the United States, and the anadromous species and continental shelf fishery resources of the United States. Prior to implementation of the proposed action, the Service has a statutory requirement under section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) to consult with NOAA Fisheries with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, that may adversely affect any Essential Fish Habitat (EFH) identified by MSFCMA. NOAA Fisheries concurred with our determination that the proposed project would not result in adverse impacts and would benefit EFH for chinook salmon and Central Valley steelhead in relation to the MSFCMA

## 7.0 REFERENCES

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ATTACHMENT A  
Endangered and Threatened Species that May Occur in  
or be Affected by Projects in the Selected Quads Listed Below  
Reference File No. -  
**Mohler Unit, Stanislaus River**  
March 18, 2003

QUAD: 443B RIPON

**Listed Species**

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E)  
riparian brush rabbit, *Sylvilagus bachmani riparius* (E)

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California tiger salamander, *Ambystoma californiense* (C/E)

California red-legged frog, *Rana aurora draytonii* (T)

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T) NMFS

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E) NMFS

Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T) NMFS

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

Conservancy fairy shrimp, *Branchinecta conservatio* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

vernal pool tadpole shrimp, *Lepidurus packardii* (E)

**Proposed Species**

Birds

mountain plover, *Charadrius montanus* (PT)

Invertebrates

Critical habitat, vernal pool invertebrates, See *Federal Register* 67:59883 (PX)

Plants

Critical habitat, vernal pool plants, See *Federal Register* 67:59883 (PX)

**Candidate Species**

Fish

green sturgeon, *Acipenser medirostris* (C)

Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C) NMFS

**Species of Concern**

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

western burrowing owl, *Athene cunicularia hypugaea* (SC)

Aleutian Canada goose, *Branta canadensis leucopareia* (D)

Swainson's hawk, *Buteo Swainsoni* (CA)

ferruginous hawk, *Buteo regalis* (SC)

Costa's hummingbird, *Calypte costae* (SC)

Lawrence's goldfinch, *Carduelis lawrencei* (SC)

Vaux's swift, *Chaetura vauxi* (SC)

white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

prairie falcon, *Falco mexicanus* (SC)

American peregrine falcon, *Falco peregrinus anatum* (D)

greater sandhill crane, *Grus canadensis tabida* (CA)

loggerhead shrike, *Lanius ludovicianus* (SC)

Lewis' woodpecker, *Melanerpes lewis* (SC)

long-billed curlew, *Numenius americanus* (SC)

Nuttall's woodpecker, *Picoides nuttallii* (SLC)

white-faced ibis, *Plegadis chihi* (SC)

- rufous hummingbird, *Selasphorus rufus* (SC)  
 California thrasher, *Toxostoma redivivum* (SC)
- Reptiles  
 silvery legless lizard, *Anniella pulchra pulchra* (SC)  
 northwestern pond turtle, *Clemmys marmorata marmorata* (SC)  
 southwestern pond turtle, *Clemmys marmorata pallida* (SC)  
 San Joaquin coachwhip (=whipsnake), *Masticophis flagellum ruddocki* (SC)  
 California horned lizard, *Phrynosoma coronatum frontale* (SC)
- Amphibians  
 western spadefoot toad, *Spea hammondi* (SC)
- Fish  
 river lamprey, *Lampetra ayresi* (SC)  
 Kern brook lamprey, *Lampetra hubbsi* (SC)  
 Pacific lamprey, *Lampetra tridentata* (SC)  
 longfin smelt, *Spirinchus thaleichthys* (SC)
- Invertebrates  
 Sacramento anthicid beetle, *Anthicus sacramento* (SC)  
 Midvalley fairy shrimp, *Branchinecta mesovallensis* (SC)  
 California linderiella fairy shrimp, *Linderiella occidentalis* (SC)  
 moestan blister beetle, *Lytta moesta* (SC)  
 molestan blister beetle, *Lytta molesta* (SC)
- Plants  
 brittlescale, *Atriplex depressa* (SC) \*  
 delta coyote-thistle (=button-celery), *Eryngium racemosum* (CA) \*

KEY:

- |       |                              |   |
|-------|------------------------------|---|
| (E)   | Endangered                   | Listed (in the Federal Register) as being in danger of extinction.  |
| (T)   | Threatened                   | Listed as likely to become endangered within the foreseeable future.  |
| (P)   | Proposed                     | Officially proposed (in the Federal Register) for listing as endangered or threatened.                                |
| (PX)  | Proposed<br>Critical Habitat | Proposed as an area essential to the conservation of the species.   |
| (C)   | Candidate                    | Candidate to become a proposed species.   |
| (SC)  | Species of<br>Concern        | May be endangered or threatened. Not enough biological information has been gathered to support listing at this time. |
| (SLC) | Species of<br>Local Concern  | Species of local or regional concern or conservation significance.  |
| (MB)  | Migratory Bird               | Migratory bird  |
| NMFS  | NMFS species                 | Under the jurisdiction of the National Marine Fisheries Service. Contact them directly.                               |
| (D)   | Delisted                     | Delisted. Status to be monitored for 5 years.   |
| (CA)  | State-Listed                 | Listed as threatened or endangered by the State of California.  |
| (*)   | Extirpated                   | Possibly extirpated from this quad.   |
| (**)  | Extinct<br>Critical Habitat  | Possibly extinct.<br>Area essential to the conservation of a species.   |