4.11 BIOLOGICAL RESOURCES

SETTING

The Setting section of the original FEIR (BASELINE, 1992a) provides a detailed discussion of the vegetation and wildlife resources on the project site, including information on: 1) plant communities and agricultural cover; 2) wildlife use and habitat types; and 3) occurrence of special-status plant and animal taxa. The FSEIR (BASELINE, 1993) provides new information and an expanded discussion on special-status animal taxa of concern,[1] focusing on San Joaquin kit fox and Swainson's hawk. This section of the DEIR summarizes information related to sensitive biological resources on the site, evaluates the proposed project plans and relevant provisions of the Draft Master Plan and Draft Specific Plan I, including a review of the proposed Habitat Management Plan which is intended to provide for wastewater reclamation, agricultural preservation, and wildlife habitat enhancement for Swainson's hawk and other special-status taxa, and identifies necessary mitigation.

Plant Cover, Wetlands, and Wildlife Use

Agricultural crops form the primary plant cover over most of the site (Figure 4.11-1). The introduction of livestock grazing in the late 1800s, followed by irrigation and year-round farming in the 1900s has resulted in the elimination of most of the native plant communities from the site. This rapid conversion of the native plant cover was most likely accompanied by the elimination of some wildlife species which historically occurred in the area. The conversion of most of the site to agricultural use has not been detrimental to all wildlife species. Some species have become well adapted to resources provided by agricultural habitat, including a number of special-status taxa, such as Swainson's hawk. Agricultural cropping patterns can vary both seasonally and annually (Figures 4.11-1, 4.11-2, and 4.11-3), which subsequently affects the cover type, abundance of rodents and other prey populations, and the foraging activity of mammalian, reptilian, and avian predator species. Most of the agriculturally-compatible species have become adapted to the seasonal and annual fluctuations associated with agricultural habitat.

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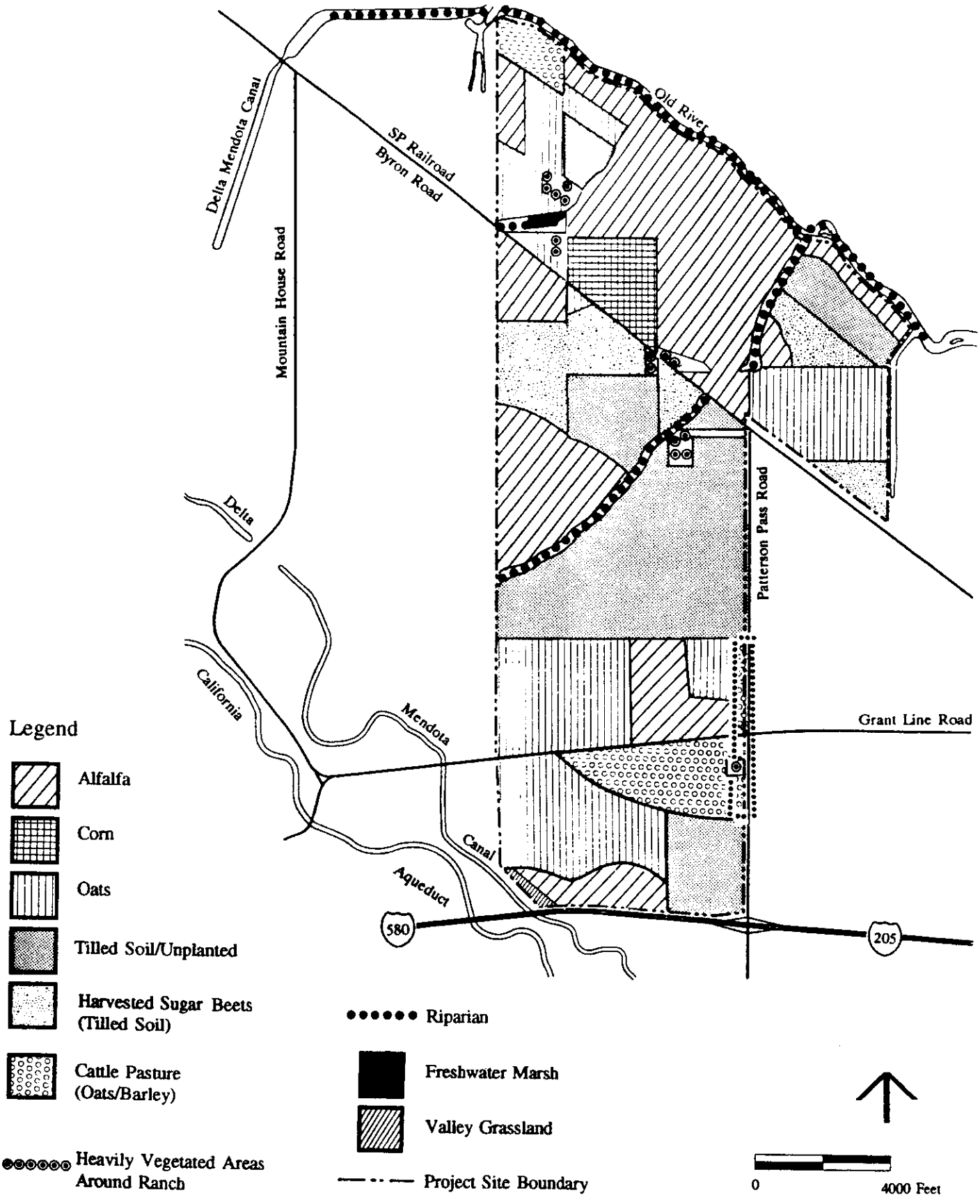
[1] Special-status taxa include: designated rare, threatened, or endangered species and candidate species for listing by the California Department of Fish and Game (CDFG); designated threatened or endangered species and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS); taxa considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act (CEQA) Guidelines (State of California, 1992), such as those identified on lists 1A, 1B, and 2 in the *Inventory of Rare and Endangered Vascular Plants of California* (California Native Plant Society, 1988); and possibly other taxa which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for State or Federal status, such as those included on lists 3 and 4 in the California Native Plant Society *Inventory* or identified as animal "Species of Special Concern" by the CDFG.

SPRING 1991 CROPPING PATTERNS

Figure 4.11-1



Source: BASELINE, 1992b

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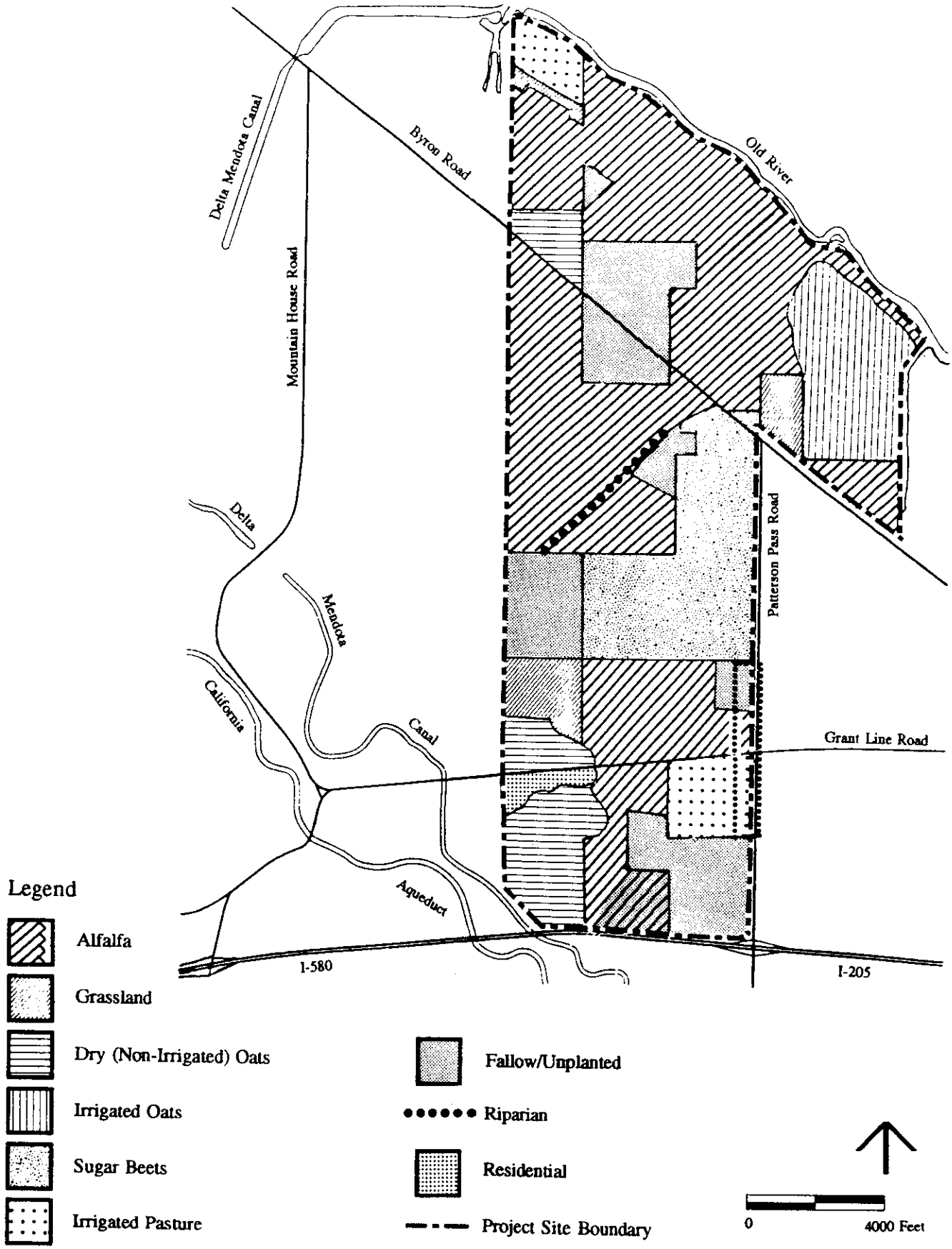
SPRING 1992 CROPPING PATTERNS

Figure 4.11-2



Source: Biosystems, Inc,. 1992.

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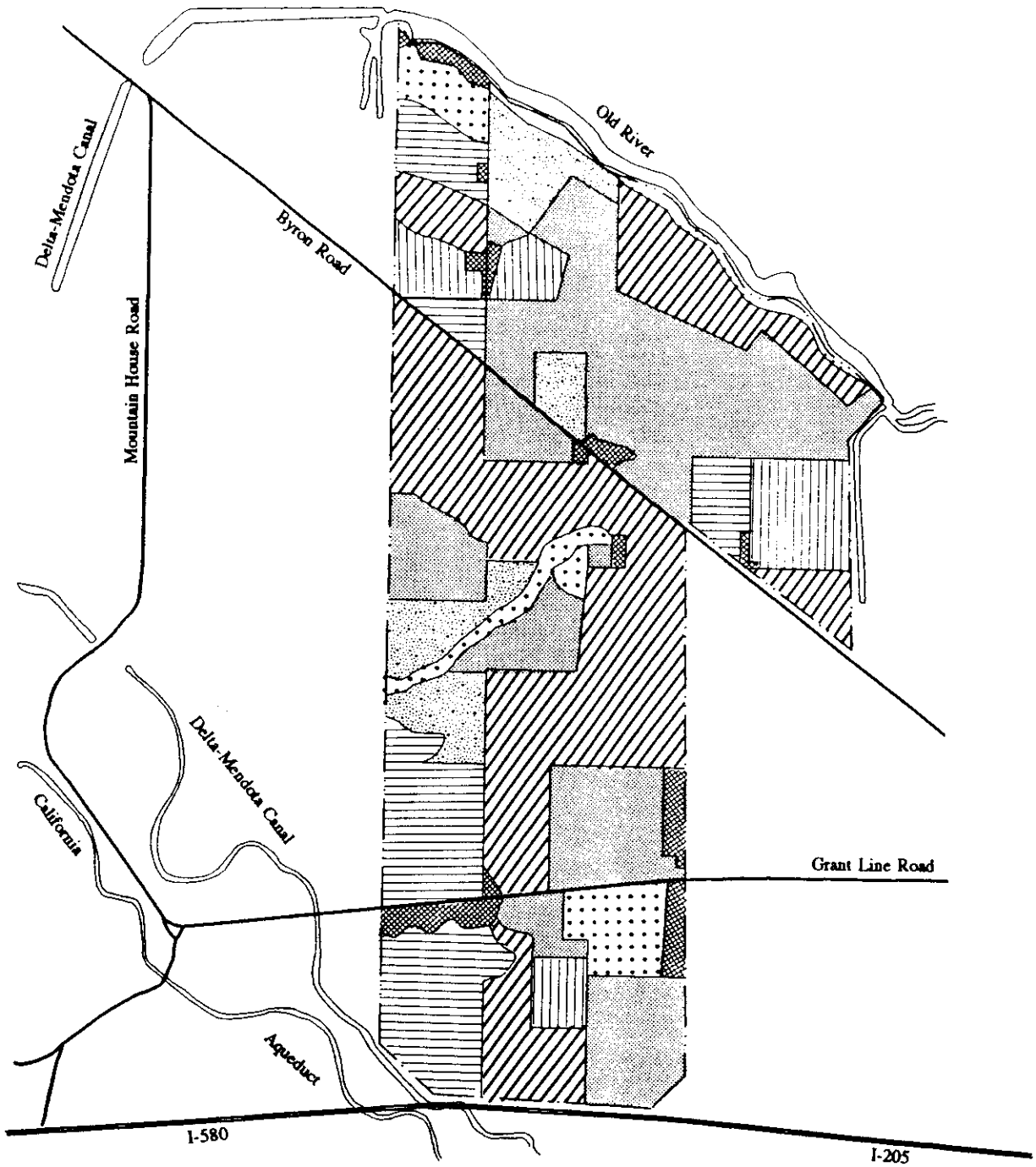
SPRING 1994 CROPPING PATTERNS

Figure 4.11-3



Legend

- Alfalfa
- Irrigated Wheat/Grain Hay
- Dry (Non-Irrigated) Oats/Grain/Pasture
- Sugar Beets
- Irrigated Pasture
- Unplanted Row Crop
- Residential/Dairy/ Other
- Project Site Boundary

0 4000 Feet

Source: The McCarty Company, 1994.

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Agricultural management practices and disturbance by grazing and levee construction has limited the establishment of trees on the site. Most trees are non-native species, planted as ornamental landscaping and shade trees in the vicinity of existing residences (Figure 4.11-4). Willow-dominated riparian scrub and woodland occur in a narrow band along Old River and intermittently along Mountain House Creek. Due to the scarcity and absence of other well-developed cover, these trees provide important perching, roosting, and nesting substrate for a wide variety of avian species.

Jurisdictional wetlands encompass approximately 25 acres of the site, forming seasonal wetlands and emergent marshland (Figure 4.11-4). Additional wetland acreage occurs as a narrow band along the southern bank of Old River. Wetlands are generally considered to be areas periodically or permanently inundated by water that support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Wetland vegetation is absent along portions of Mountain House Creek and other channels on the site, but modifications to these features may still be subject to jurisdictional review and authority by the U.S. Army Corps of Engineers (Corps) and CDFG.[2] Levee construction along Old River, and channelization and intensive grazing along Mountain House and Dry Creeks have severely limited the habitat value of these features, but these and other wetlands and waters of the U.S. still provide important resources to wildlife.

Special-Status Taxa

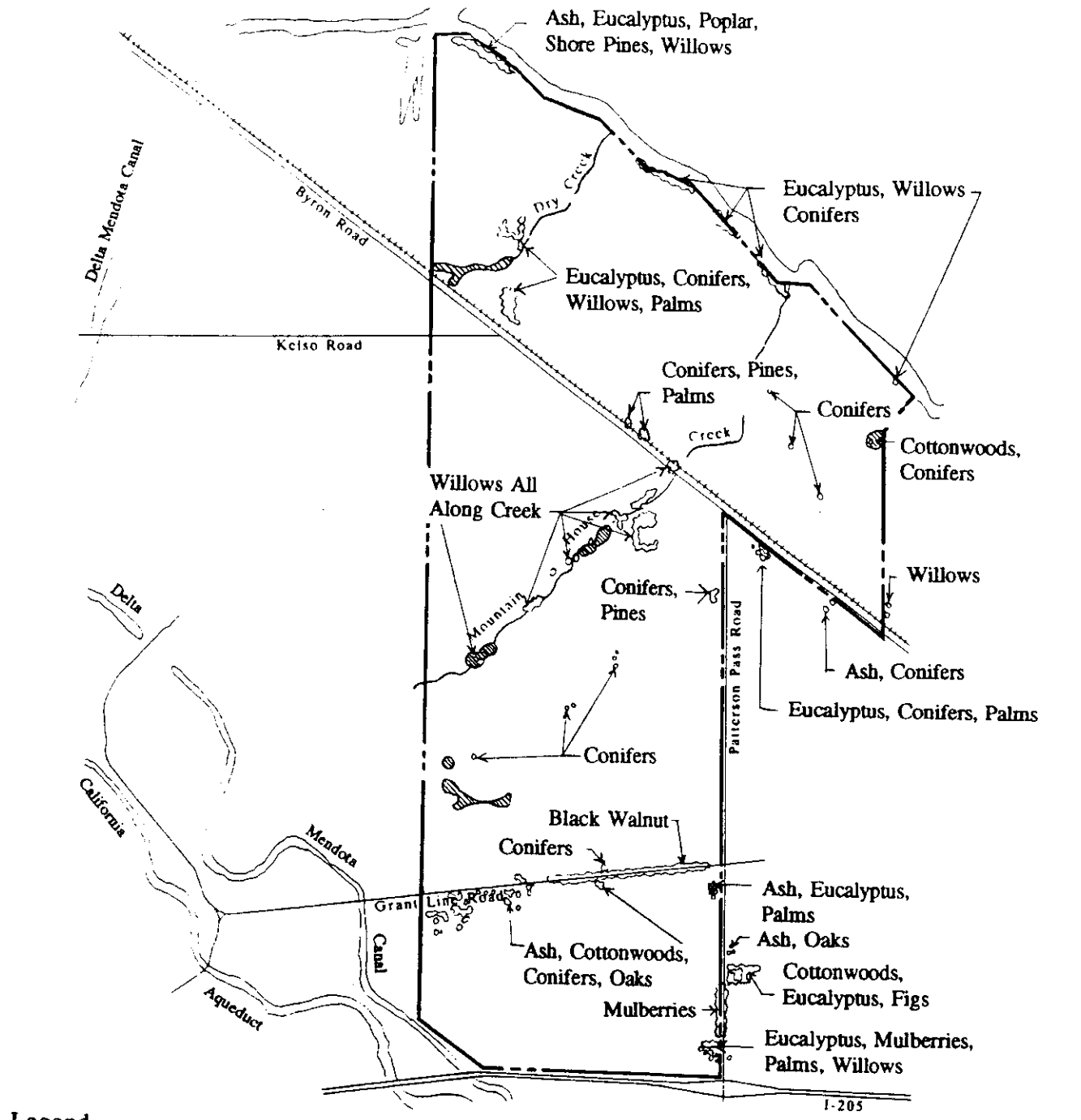
The original FEIR (BASELINE, 1992a) provides information on the potential for occurrence of each of the special-status taxa reported or suspected to possibly occur on the site. These include 14 animal taxa and two plant taxa of concern. One aquatic plant species, Mason's lilaeopsis (*Lilaeopsis masonii*), occurs on pilings and the hard mud banks of Old River in the northwest corner of the site. Suitable habitat for a second plant taxa of concern, California hibiscus (*Hibiscus lasiocarpus*), also occurs along Old River, but surveys conducted this summer failed to locate this species on the site (Zentner & Zentner, 1993).

Animal taxa of concern which have been reported or are suspected to occur on the site or project vicinity include: tricolored blackbird (*Agelarius tricolor*), burrowing owl (*Athene cunicularia*), Aleutian Canada goose (*Branta canadensis leucopareia*), Swainson's hawk (*Buteo swainsoni*), mountain plover (*Charadrius montanus*), northern harrier (*Circus cyaneus*), black-shouldered kite (*Elanus caerulea*), prairie falcon (*Falco mexicanus*), peregrine falcon (*Falco peregrinus anatum*), white-faced ibis (*Plegadis chihi*), San Joaquin kit fox (*Vulpes macrotis mutica*), western pond turtle (*Clemmys marmorata pallida*), delta smelt (*Hypomesus transpacificus*), and Sacramento splittail

[2] The CDFG and Corps have jurisdiction over modifications to river banks, lakes, stream channels and other wetland features. Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States and wetlands without a permit (individual or nationwide). Jurisdictional authority of the CDFG over wetland areas is established under Sections 1601-1606 of the Fish and Game Code, which pertains to activities which would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream, and requires an agreement with the Department before any disturbance.

1993 TREE LOCATIONS AND WETLANDS

Figure 4.11-4



Source: The SWA Group, 1993

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(*Pogonichthys macrolepidotus*). Table 4.11-1 provides information on the status and preferred habitat for each of these species.

Of these 14 taxa, Swainson's hawk and San Joaquin kit fox represent the largest potential constraint to development, given their legal status, wide-ranging foraging behavior, and the position of jurisdictional agencies over occurrence and utilization of the site. Northern harrier, black-shouldered kite, burrowing owl, tricolored blackbird, and western pond turtle were all observed on and in the vicinity of the site during previous studies (Figure 4.11-5). Sacramento splittail, **winter-run chinook salmon,** and delta smelt were not found in seine sampling along the Old River in 1991, but both of these species could use the inshore zone of the entire shoreline. The site is not believed to provide critical habitat for any of the remaining taxa of concern (i.e. Aleutian Canada goose, white-faced ibis, mountain plover, prairie falcon, and peregrine falcon), most of which are wintering migrant species that may occasionally use flooded cropland areas for foraging.

Special-status taxa with legal protection under the Federal or California Endangered Species Acts[3] often represent a major constraint to development, particularly when these species are wide ranging or highly sensitive to habitat disturbance. The San Joaquin kit fox (kit fox) and Swainson's hawk, both known from the region, require large contiguous areas of habitat to sustain viable populations and are threatened by continued loss of habitat in the Central Valley. Representatives of the USFWS and CDFG have repeatedly expressed concern over the potential impacts of the Mountain House New Town on habitat for both of these species, and have indicated that without adequate mitigation, project implementation would result in "take"[4] of these species under the State and Federal Endangered Species Acts. Based on discussions with the USFWS and guidelines of the CDFG

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[3] The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal taxa. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California taxa.

[4] "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further considered by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The case of *Palila vs. Hawaii Department of Land and Natural Resources* (No. 87-2188) provided a legal basis for concluding that habitat degradation is construed as "harm" and therefore invokes "take" under FESA. A recent Federal Circuit Court of Appeals case, decided on 11 March 1994, sets forth that FESA's prohibition against the "take" of an endangered species does not extend to the modification of habitat. In the case, *Sweet Homes vs. Babbitt* (No. 92-5255), the majority's decision found the USFWS regulation defining "harm" to embrace habitat modifications to be invalid, with the Chief Judge dissenting. The USFWS will most likely request that the United States Supreme Court review this case, given the conflict between this decision and the *Palila* case. The CDFG also considers the loss of listed species habitat as "take," although this policy lacks statutory authority and case law support under the CESA.

Two sections of the FESA contain provisions which allow or permit "incidental take." Section 10(a) provides a method by which a state or private action which may result in "take" may be permitted. The applicant must provide the USFWS with an acceptable conservation plan and publish notification for a permit in the Federal Register. Section 7 pertains to a federal agency which proposes to conduct an action which may result in "take," requiring consultation with USFWS and possible issuance of a jeopardy decision. Under the CESA, "take" can be permitted under Section 2081 of the Fish and Game Code. The applicant must enter into a habitat management agreement with the CDFG, which defines the permitted activities and provides adequate mitigation.

TABLE 4.11-1

SPECIAL-STATUS SPECIES
KNOWN OR SUSPECTED TO OCCUR IN PROJECT VICINITY

Species	Status	Preferred Habitat
Animals	**(State/Federal)[1]**	
Tri-colored blackbird (*Agelarius tricolor*)	CSC/FC(2)	Forages in agricultural fields and grasslands; nests primarily in freshwater marshes with tall emergent vegetation, and less often in low riparian thickets
Burrowing owl (*Athene cunicularia*)	CSC/--	Forages in grassland, seasonal marsh, and agricultural lands; tends to nest in rodent burrows
Aleutian Canada goose (*Branta canadensis leucopareia*)	--/FT	Winter use of fallow cropland, marshland, and grassland
Swainson's hawk (*Buteo swainsoni*)	ST/--	Forages in open grassland and agricultural fields; nests in riparian woodland and occasionally in isolated trees
Mountain plover (*Charadrius montanus*)	CSC/FC(2)	Winter use of grasslands and agricultural fields with low herbaceous vegetation
Northern harrier (*Circus cyaneus*)	CSC/--	Forages in agricultural and seasonal marsh areas with low grassland vegetation; uses shrub cover for nesting
Western pond turtle (*Clemmys marmorata pallida*)	CSC/FC(2)	Occurs along edges of streams, lakes and ponds with basking sites such as logs and steep banks
Black-shouldered kite (*Elanus caerulea*)	--/--[2]	Forages in agricultural, grassland, and seasonal marsh; nests in trees with dense foliage
California horned lark (*Eremophilla alpestris actia*)	**CSC/FC(2)**	**Open grasslands**
Prairie falcon (*Falco mexicanus*)	CSC/--	Forages in grassland or other open habitat near cliffs
Peregrine falcon (*Falco peregrinus anatum*)	SE/FE	Forages in marshland and grassland areas near rocky cliffs for nesting
Delta smelt (*Hypomesus transpacificus*)	SCT/FT	Occurs in brackish zone of delta, with temporary movement into adjacent fresh waster for spawning.
Loggerhead shrike (*Lanius ludovicianus*)	**CSC/FC(2)**	**Open grasslands and brushland**
Winter-run chinook salmon (*Oncorhynchus tshawytscha*)	**--/FE**	**Open water of Bay and Delta, tributary rivers and streams**

Table 4.11-1 Mountain House Species Status, *continued*

Species	Status	Preferred Habitat
White-faced ibis (*Plegadis chihi*)	CSC/FC(2)	Forages in shallow open water and mud flats; nests in freshwater marshes with emergent vegetation
Sacramento splittail (*Pogonichthys macrolepidotus*)	CSC/FC(2)	Occurs in dead-end sloughs and other slow moving waters of Delta
San Joaquin kit fox (*Vulpes macrotis mutica*)	ST/FE	Forages in grassland, alkali scrub, and other atypical habitat; usually dens in enlarged rodent burrows, as well as culverts, pipes, and other locations
Plants	**(State/Federal/CNPS)**[1]	
California hibiscus (*Hibiscus lasiocarpus*)	--/FC(3B)/2[3]	Occurs along edge of riparian and freshwater marsh
Mason's lilaeopsis (*Lilaeopsis masonii*)	SR/FC(2)/1B	Occurs along stream banks and marshes in tidal portion of Delta

[1] Federal Status:
FE - Listed as endangered under the FESA.
FT - Listed as threatened under the FESA.
FC(2) - A candidate species under review for federal listing. Category 2 includes species for which the USFWS presently has some biological information indicating that "proposing to list them as endangered or threatened species is possibly appropriate, but for which further biological research and field study is usually needed to determine biological vulnerability and threats." Category 2 species are not necessarily less rare or less threatened than Category 1 species. The distinction relates to the amount of data available and is therefore administrative rather than biological.
FC(3B) - Species in Category 3 are not current candidates for federal listing. Category 3B includes taxa which are no longer considered distinct taxa meeting the definition of "species" under the FESA.

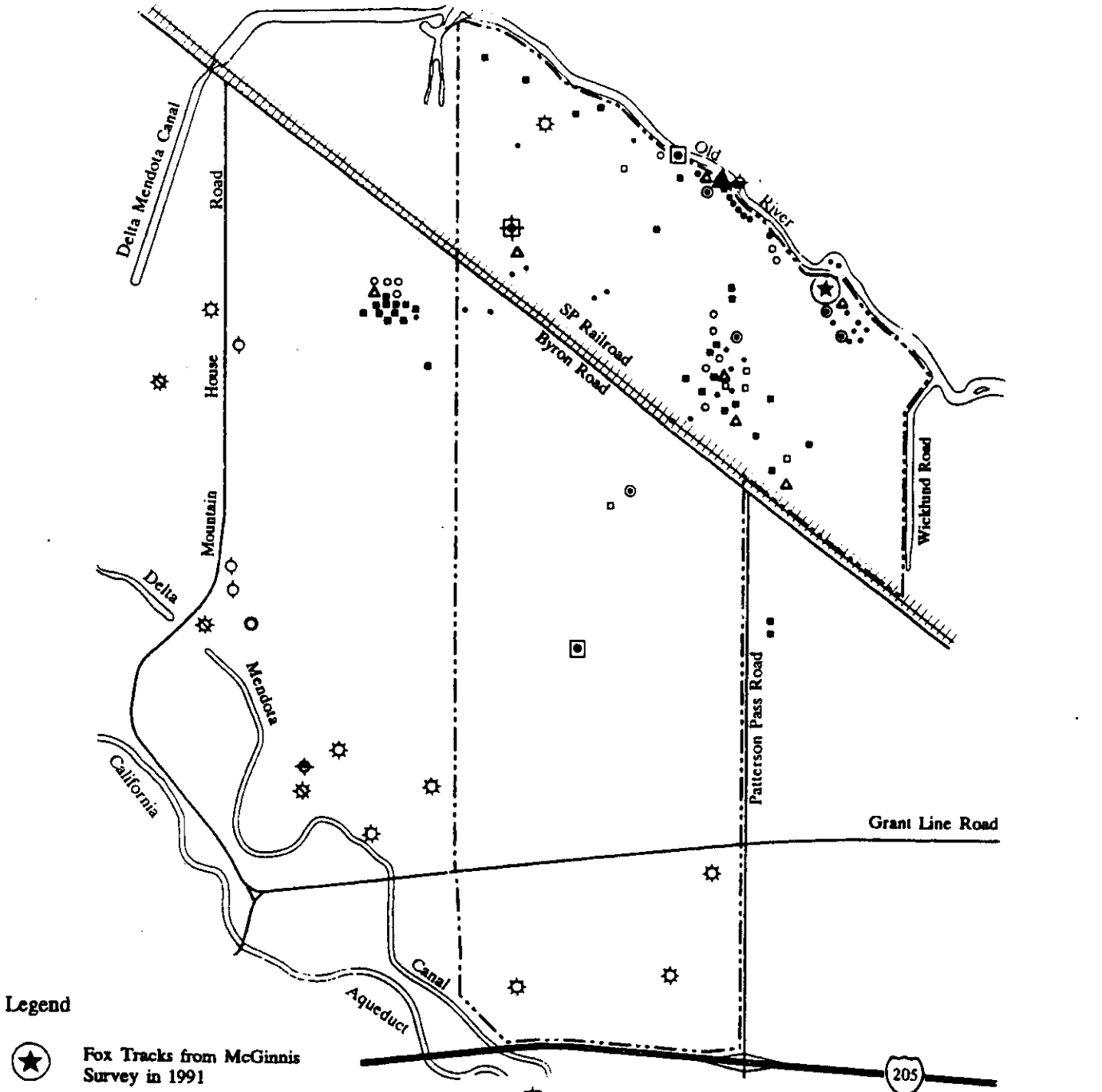
State Status:
SE - Listed as endangered under the CESA.
SR - Listed as rare under the CESA.
ST - Listed as threatened under the CESA.
CSC - Considered a "species of special concern" by the CDFG; species have no formal legal protection but nest sites and communal roosts are generally recognized as significant biotic features.

CNPS Status:
List 1B - Plants rare, threatened, or endangered in California and elsewhere.
List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere.

[2] Black-shouldered kite does not have a specific designated status, but is of concern to the CDFG because its numbers are declining.

[3] California hibiscus is no longer a federal candidate species, having been placed in Category 3B, which includes taxa once considered for listing but no longer under consideration and that are not current candidates for listing. This species has been reclassified from *Hibiscus californicus* to *Hibiscus lasiocarpus* in the recent Jepson Manual, and is now considered common outside of California, resulting in its placement on List 2 of the CNPS *Inventory*.

SENSITIVE WILDLIFE SPECIES SIGHTINGS Figure 4.11-5



Source: BASELINE, 1992; Biosystems, 1992, EIP, 1989, Jones & Stokes, 1990, Miriam Green Associates, 1994 and Grewell, 1994.

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(1992), the preliminary mitigation requirements anticipated by jurisdictional agencies involve preservation and enhancement of substantial acreage for each of these two taxa. It should be noted that the applicant is of the opinion that kit fox do not occupy the site, that no take would occur, and no habitat compensation should be required. Similarly, provisions to compensate for the loss of Swainson's hawk foraging habitat contained in the Draft Master Plan are based on the assumption by the applicant that no mitigation should be required for conversion of agricultural lands south of Byron Road.

Several objectives, policies, and implementation measures in the San Joaquin County General Plan 2010 address impacts of development projects to habitat required for special status species. The following policies and implementation measures in the Vegetation, Fish, and Wildlife Habitat section of the General Plan relate to preservation of habitat for threatened and endangered species:

Policy 1: Resources of significant biological and ecological importance in San Joaquin County shall be protected. These include wetlands; riparian areas; rare, threatened and endangered species and their habitats as well as potentially rare or commercially important species; vernal pools; significant oak groves and heritage trees.

Policy 2: No public action shall significantly diminish the wildlife and vegetative resources of the County; cumulatively significant impacts shall be avoided.

These policies are implemented by the following measures:

Implementation 3: Species Protection. The County shall:

(a) prepare and adopt regulations to protect special status taxa;

(b) address protection and preservation of special status taxa in review of development applications; and

(c) work with the California Department of Fish and Game to develop methods to save listed species such as the Swainson's Hawk.

Implementation 4: Habitat Protection, Preservation, and Restoration Program

(a) The County shall develop and implement, with the California Department of Fish and Game, a program to protect, restore, and manage wildlife and habitat resources. The project shall include establishment of financing by project mitigation funds.

(b) The County shall support habitat conservation and restoration plans for special-status taxa and shall work with the California Department of Fish and Game and other agencies in developing such plans.

San Joaquin Kit Fox

This subspecies is listed as a "threatened" species by the State and "endangered" by the USFWS.[5] San Joaquin kit fox historically inhabited most of the alkali sink plant community of the San Joaquin Valley and adjacent valley systems (Morrell, 1972, 1975). Kit fox also occupied the lower reaches of many of the surrounding foothill grassland areas, extending into western San Joaquin and eastern Contra Costa counties. However, intensive agriculture, livestock grazing, and ground squirrel eradication through the use of poison, have greatly reduced the available habitat for this subspecies during the past half century. The kit fox range map prepared by the USFWS (1990) shows the kit fox range extending over **approximately** the southern one-quarter ~~to one third~~ of the site.

A detailed survey for kit fox was conducted by Dr. Samuel McGinnis in 1991 during preparation of the original FEIR (BASELINE, 1992a). Three principal survey techniques were used following protocol defined by the CDFG at that time (1990). These included: visual survey for dens and prey; track station monitoring over a period of 18 days; and spotlighting surveys for six nights. Residents in the project vicinity were also consulted during the survey effort to determine any fox sightings they may have made over the years on the site and the surrounding area.

During the survey, a fox print was obtained from a sooted track plate along the Old River levee near the confluence with Mountain House Creek (Figure 4.11-5). The print had characteristics of both gray fox (*Urocyon cinereoargenteus*) and kit fox. Two independent consultants concluded that the track was more like kit fox than gray fox; however, this conclusion was not definitive. Dr. McGinnis believed that the Old River levee area, where the track print was obtained, apparently functions as both a movement corridor and feeding habitat for kit fox (BASELINE, 1992a). No other evidence of possible kit fox activity on the project site was observed during the survey effort by Dr. McGinnis. Consultation with State and Federal resource agencies and County staff concluded that additional surveys should be conducted to verify kit fox presence on the site.

BioSystems Analysis, Inc. (BioSystems) was subsequently retained by the County Community Development Department to resurvey the project vicinity for presence of kit fox and to evaluate the suitability of the site to support this subspecies. Spring and summer surveys were conducted as part of the field effort, extending from 27 April to 3 June and from 3 August to 3 September 1992, respectively. The field surveys included: den and sign surveys; night spotlighting; scent stations; camera stations; and incidental wildlife observations. Information on prey densities was also collected to provide an indication on the suitability of the site as possible foraging habitat.

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[5] An "endangered" species is one which is considered to be threatened with extinction throughout all, or a significant portion of its range. A "threatened" species is one which, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

A report on the survey was completed in October 1992 (BioSystems, 1992). The report provides background information on the status and natural history of kit fox, a description of methods and results of the surveys, a discussion of occurrence and habitat potential of the site, an evaluation of potential impacts of development, and recommended mitigation. No direct evidence of kit fox occurrence on the site was found during the BioSystems surveys. No "known" kit fox dens were found during the surveys, but two "possible" and five "potential" dens were identified (Figure 4.11-6).[6] One of the possible dens was located just southwest of the site, along the Delta-Mendota Canal. Kit fox-sized scats were found near the entrance of one of the possible dens, and other fox scats were found along Old River.

Historically, no confirmed kit fox sightings have been documented on the site, but two reliable kit fox sightings were recently reported within one and two miles (BioSystems, 1992). One daytime observation was made by Dr. McGinnis in March of 1992, approximately one mile west of the site. The fox was observed walking along the edge of an alfalfa field, approximately 200 yards south of Mountain House Road and east of the Delta-Mendota Canal (Figure 4.11-4). Another kit fox was sighted in June 1992 approximately two miles west of the site at the corner of Kelso and Burns roads, during a spotlighting survey by BioSystems (1992). **A recent kit fox sighting was made in early August 1994 by a CDFG biologist on the east side of the California Aqueduct approximately 1,800 feet northwest of the Grant Line Road intersection with Mountain House Road, and 1.25 miles from the western boundary of the site (Fleming, 1994). The fox was encountered during an evening survey for California red-legged frog along the aqueduct. After observing the fox at a distance of approximately 20 meters, it then moved southeast parallel to the canal alignment.**

Although no direct evidence of kit fox occurrence on the site was found during the BioSystems study, the author concluded that there is evidence to suggest that kit fox occasionally use the site for foraging and possibly denning (BioSystems, 1992). The site is well within the foraging range of the kit fox observed one mile to the west, and within the dispersal range of other known sightings. Kit fox densities in the northernmost part of their range are known to be extremely low (Orloff et al., 1986). Previous studies have demonstrated the difficulty of verifying kit fox occurrence in areas of low density (Hall, 1983; Orloff et al., 1986). Other canid species may have a negative effect on kit fox use of suitable foraging habitat, but the presence of coyote, red fox, and domestic dogs does not necessarily preclude kit fox from an area. Failure to observe kit fox or their signs during short-term

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[6] Dens were classified according to categories defined by Sue Orloff of BioSystems using a combination of factors, such as the size and shape of the entrance, and the presence of tracks, scats, and prey remains at or near the entrance. These categories vary slightly from the classification system currently used by the USFWS. Dens in the BioSystems report were classified as follows:

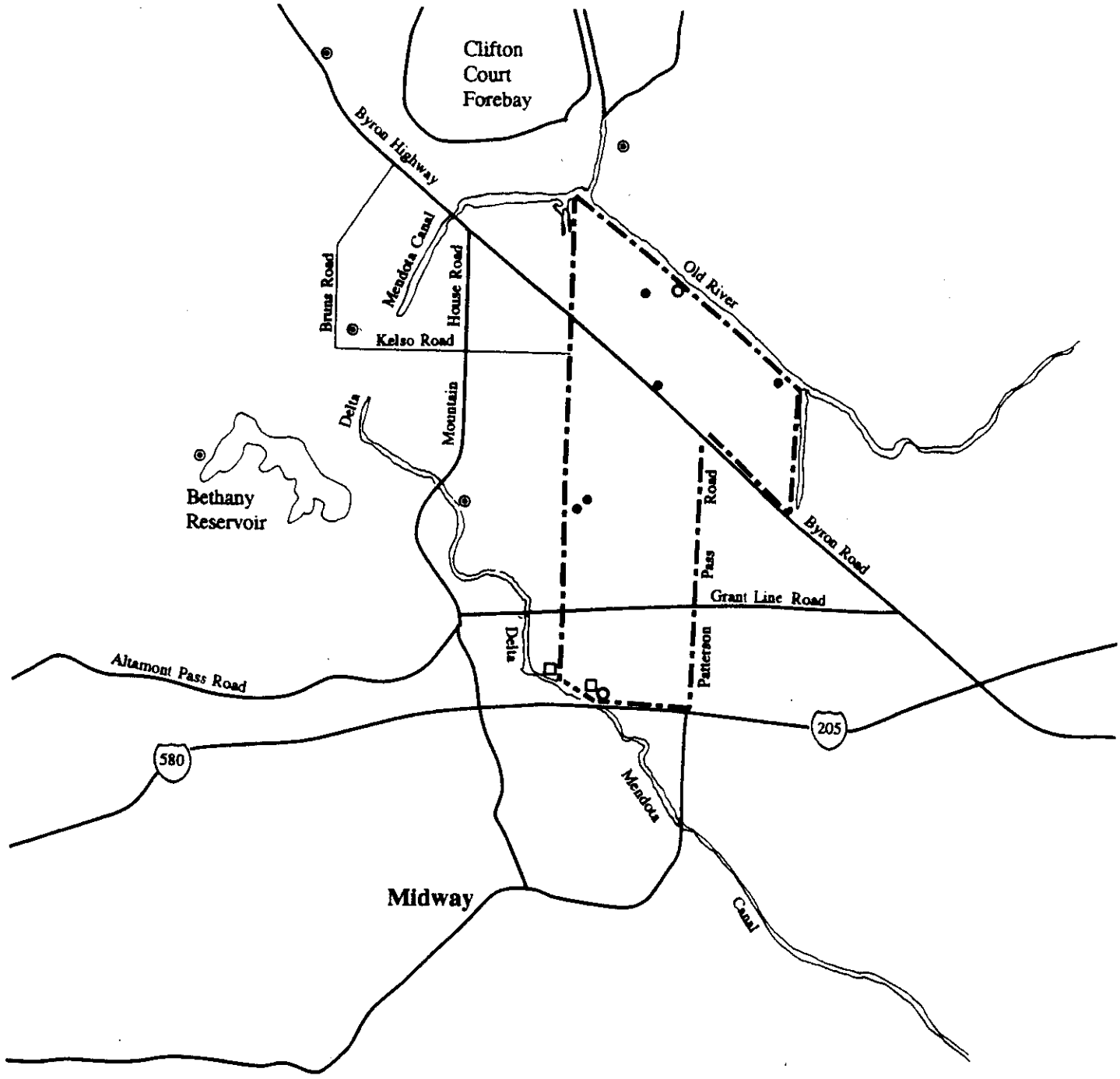
> Known: Any den of appropriate size and shape in suitable habitat of known past or present use by kit foxes.
> Natal/Pupping: Any den used by foxes to whelp and/or rear their pups. Signs of pupping activity are found at dens. Kit fox natal dens usually have multiple holes.
> Potential: Any den of appropriate size and shape in suitable habitat but without kit fox sign.
> Possible: Any den used by foxes, having fox sign and appropriate den entrance sizes, but for which identification to fox species is difficult. These dens could be used by red foxes or kit foxes.

surveys (such as those conducted on the project site) does not constitute proof that a particular area does not provide habitat for the subspecies (BioSystems, 1992).

During refinement of the Draft Master Plan and preparation of this DEIR, considerable effort has been made to clarify whether kit fox use the site, and if so, the significance of the potential impacts of the Draft Master Plan and appropriate level of mitigation. This has included: 1) preparation of

1992 KIT FOX SURVEY RESULTS AND SIGHTINGS

Figure 4.11-6



Source: BioSystems, Inc., 1992.

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a background report on kit fox by the applicant's biologist (Zentner & Zentner, 1993a), which includes an evaluation of the BioSystems report; 2) subsequent written comments by both BioSystems (1993) and the applicant's biologist (Zentner & Zentner, 1993b) on their interpretation of data, conclusions regarding kit fox use of the site, and need for mitigation; 3) preparation of a second review of the Biosystems report by another biological consulting firm retained by the applicant (H.T. Harvey and Associates, 1994); 4) written comments by Biosystems on this second review of their report (Biosystems, 1994); and 5) discussions with representatives of the USFWS (1994) and the CDFG. No consensus regarding kit fox occurrence or appropriate mitigation has been reached among the biologists involved in assessing the project.

In 1991, the County retained EIP Associates (EIP) to prepare a draft Habitat Conservation Plan (HCP) for kit fox in western San Joaquin County (EIP, 1993). The principal goal of the HCP was to create a legal, planning, and management framework which would serve to avoid jeopardizing the continued existence of kit fox currently occupying the western portion of San Joaquin County and adjacent lands. The draft HCP was intended to minimize impacts on kit fox habitat by providing sufficient mitigation lands to ensure survival, while eliminating the need for case-by-case review of any current or future development proposals. The study area evaluated as part of the draft HCP encompassed approximately 82,000 acres of the County, generally extending west of the Delta-Mendota Canal. The project site was not within the boundaries of the draft HCP study area, but is located immediately to the north.

The draft HCP contains policies and regulations to protect and conserve kit fox habitat within the study area and identifies a 23,200-acre "Core Conservation Area," generally west from I-580 to the 800-foot elevation line, and from I-205 south to the Stanislaus County line. The Core Conservation Area was considered to have the optimum mix of habitat factors for kit fox (prey base, soil type, elevation, vegetation) and contains the majority of the documented kit fox sightings in the County. The draft HCP encourages the preservation of this Core Conservation Area through establishment of conservation easements purchased by applicants of proposed developments in other locations within the HCP study area. The draft HCP has not been formally reviewed by the County Planning Commission and the Board of Supervisors, and efforts to refine and eventually adopt the HCP have not progressed since the preliminary draft report was released in June 1993.

Swainson's Hawk

Swainson's hawk is a summer breeding resident of the Central Valley, generally occurring in areas where riparian woodland and surrounding agricultural lands provide roosting, nesting, and foraging habitat. The hawk is unique among California raptors because it migrates to the Central Valley from South America in late March and early April to nest and raise its young. In late August and September, this species returns to Argentina and other neighboring countries for the fall and winter periods.

The loss of nesting and foraging habitat has greatly reduced the breeding range and abundance of Swainson's hawk in California, with an estimated decline of 90 percent in the breeding population between 1900 and 1979 (Bloom, 1980). Originally adapted to open grasslands, it has become

increasingly dependent on agricultural lands as native plant communities have been converted to agricultural uses. In recognition of the dramatic decline in population, changes in original habitat, and loss of critical foraging and nesting habitat, the hawk was designated as a "threatened" species by the California Fish and Game Commission in 1983.

Agricultural crop patterns currently influence the distribution and abundance of Swainson's hawk in the Central Valley, and foraging behavior reflects changes in prey density and availability. Swainson's hawk is an opportunistic feeder, foraging in different areas as agricultural practices expose prey or prey populations become abundant. Suitable foraging habitat currently includes open grassland or lightly-grazed dryland pasture, alfalfa and other hay crops, fallow fields, and combinations of hay, grain, and row crops such as tomato and beets. Unsuitable foraging habitat includes any crop-type in which prey are inaccessible, or which do not support adequate prey populations, such as vineyards, orchards, and cotton.

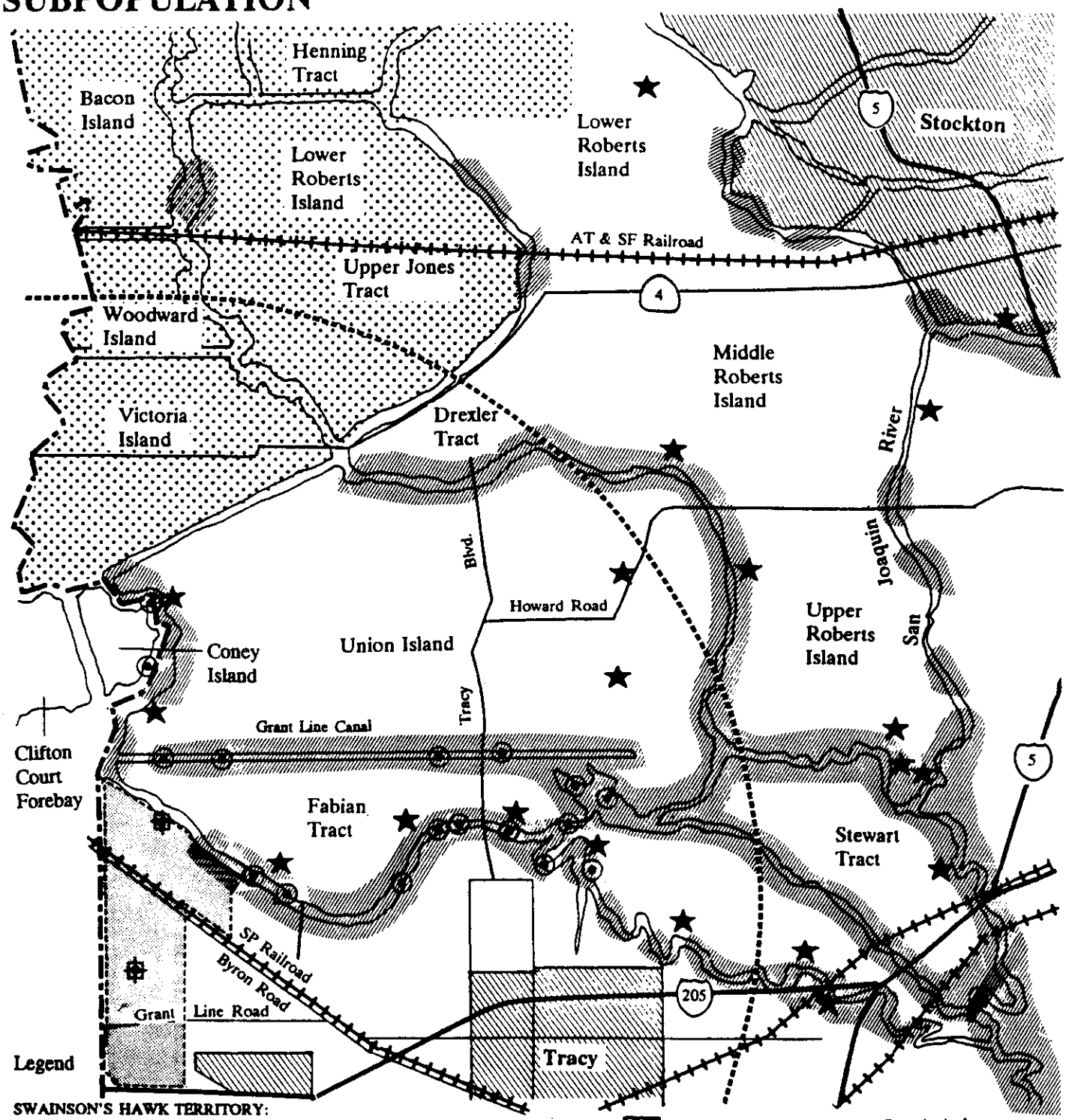
Large, open expanses of foraging habitat adjacent to or within an estimated 10-mile radius of a nest are required for successful reproductive performance, with distance from nest site and availability of suitable crop types considered to be limiting factors to successful fledging of young. Several active Swainson's hawk nesting territories have been documented along Old River in the western portion of the County, referred to as the south Delta subpopulations (Jones & Stokes Associates, 1990). Twenty-one breeding pairs were found in this area by Jones & Stokes Associates, nine within a 10-mile radius of the site. Most of the nests were located in riparian forest along Old River, Middle River, and the San Joaquin River (Figure 4.11-7). Although foraging habitat is commonly proximate to nest sites, Swainson's hawk have been documented foraging up to 18 miles from a nest (Estep, 1989).

During preparation of the original FEIR the site was surveyed on 12 occasions between 18 April and 23 May 1991 to determine Swainson's hawk presence and activity (BASELINE, 1992a). A total of 42 Swainson's hawk sightings were recorded during the surveys, and on five separate occasions birds were foraging as a pair (Figure 4.11-5). Of the 33 sightings of individual hawks, 30 were made between Byron Road and Old River, consistent with the predominance of alfalfa and other suitable crop types in 1991 (Figure 4.11-1). Most of the sightings were made in and over alfalfa fields, and generally when swathing, bailing, or flood irrigation of alfalfa was occurring or had recently taken place. Large populations of California ground squirrels and Audubon cottontail rabbits were also observed along the riparian zone of the Old River levee and on irrigation berms. During the days or weeks when harvesting or irrigation was not taking place on a particular field, the constant presence of ground squirrels and rabbits on the adjacent levees and berms may have attracted Swainson's hawk to the vicinity of Old River until harvest activities provided greater opportunities to obtain prey in other locations.

No nesting activity was observed on the site in 1991 (BASELINE, 1992a), but no detailed nesting or foraging surveys have been conducted on the site since then. The survey work conducted in 1990 by Jones & Stokes Associates identified nine nesting locations within a 10-mile radius of the site (Figure 4.11-7). A wildlife monitoring program conducted by a previous biological consultant to the

NESTING DISTRIBUTION OF THE SOUTH DELTA SWAINSON'S HAWK SUBPOPULATION

Figure 4.11-7



Source: Jones and Stokes, 1990, Miriam Green Associates, 1994, Grewell, 1994, and BASELINE, 1993.

BASELINE

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applicant (EIP, 1989) noted that a pair of Swainson's hawk unsuccessfully attempted to nest on the site in an isolated willow tree along Old River (Figure 4.11-5), and it ~~could be possible that a pair of hawks may attempt to nest on the site again in the future~~ **appears that this may be the location of one of the current active nests described below**. More recent surveys conducted for the Department of Water Resources (DWR) during the 1993 breeding season as part of the Interim South Delta Project identified several additional nest locations within two miles of the Old River frontage of the site (Miriam Green Associates, 1994). These include: two nests on islands upriver from the Westside Irrigation District Canal along the eastern edge of the site, four nests along Grant Line Canal on the northern edge of Fabian Tract, and on Coney Island near the Clifton Court Forebay (Figure 4.11-7) . The nesting survey for DWR was restricted to levees and levee islands, and it is possible that additional territories in the project vicinity were undetected during the 1993 nesting season.

~~A~~ **At least two** pairs of hawks established ~~a~~ nests on the project site in ~~April of~~ 1994 (Figure 4.11-5). ~~The~~ **One** nest is located on the south levee of Old River in an isolated willow tree (Grewell, 1994). CDFG and DWR biologists discovered the nest during monitoring of construction activities associated with a barrier in Old River, approximately 0.4 mile downstream from the nest. Due to the proximity of construction, the nest has been monitored extensively by CDFG and DWR biologists. **The other nest occurs in a eucalyptus tree surrounded by alfalfa fields in the southern third of the site.**

Based on this recent nest information, as of 1994 the entire site is within two miles of an active nest. Given the average ten-mile foraging radius for Swainson's hawk from an active nest, the fact that suitable nesting habitat occurs along the nearby Delta river system, and documented nesting and foraging activity on the site, it is reasonable to assume that nesting pairs and fledglings depend on the site for a portion of their prey requirements. A detailed telemetry study of all nesting pairs within approximately 10 miles would be necessary to provide accurate information on the relationship of the entire site to the home range and core foraging habitat of individual birds.

Except where existing rural development or unsuitable crops are cultivated, most of the site meets the two basic criteria used by the CDFG in determining whether a particular area provides suitable foraging habitat for Swainson's hawk, which should be mitigated for if converted to urban uses (CDFG, 1992). These criteria include: 1) location within a 10-mile radius of an active nest site, and 2) presence of suitable foraging habitat type. All of the site falls within a 10-mile radius of documented nesting territories, and hawk activity observed during preparation of the original FEIR (BASELINE, 1992a) indicates the importance of the northern portion of the site as foraging habitat. The extent of suitable foraging habitat on the site varies from year to year as cropping patterns change, but areas devoted to alfalfa generally remain in production for four to five years after planting because this is a perennial species, making it particularly important to foraging raptors. Areas to the south of Byron Road are most likely currently used by Swainson's hawk for foraging, particularly when management of alfalfa fields exposes prey, but further detailed surveys would be necessary to confirm the extent and frequency of use.

The extent of alfalfa on the site has changed considerably since the 1991 field survey effort, with substantially more area south of Byron Road devoted to alfalfa production in 1992 and 1994 (Figures

4.11-2 and 4.11-3). Over 50 percent of the area north of Byron Road devoted to alfalfa in 1991 (Figure 4.11-1) is currently unplanted or in production with another crop (Figure 4.11-3), emphasizing the importance of the remaining alfalfa fields to the south of Byron Road. The CDFG considers all agricultural and pastureland not devoted to unsuitable crop-types (i.e., vineyards, mature orchards, and cotton) as potential foraging habitat, including plowed or fallow lands and fields under

crop rotation which are currently planted with a crop where prey are inaccessible, such as corn (CDFG, 1992).

Inventories of acreages devoted to crops and other uses on the site provide an estimate of the extent of suitable foraging habitat on the site. The analysis from the SEIR used information from an inventory conducted for the applicant in September 1992 (The McCarty Company, 1992)[7] to provide an initial determination on the total acreage which would meet the CDFG criteria for suitable habitat. Inventories were also conducted in 1989 and 1994 (The McCarty Company, 1989; 1994), and together provide a preliminary estimate of the average acreage devoted to suitable and unsuitable foraging habitat (Table 4.11-2). Excluding dairy facilities, non-farm lands with residential and other developed uses, and almond orchards (which over three years averaged a total of 418 acres), the remaining 4,260 acres of the site represents suitable foraging habitat for Swainson's hawk based on cover types. Of this, fields planted in alfalfa (three-year average of 1,556 acres) provide high quality foraging habitat, and the remainder generally provides moderate to low quality habitat. Areas devoted to corn (three-year average of 324 acres) provides poor quality habitat in the year planted due to the inaccessibility of prey, but is still considered potential foraging habitat by the CDFG as these fields tend to be planted with suitable crop types in subsequent years as part of crop rotation. Although a detailed inventory was not performed for crop estimates in 1993, the extent of cropland devoted to alfalfa has been estimated to be as high as 2,332 acres, assuming that no alfalfa acreage was removed in 1992 and 305.6 additional acres were planted south of Byron Road in 1993 (The McCarty Company, 1994).

In 1990, the City of Stockton initiated a process to develop a plan to provide for mitigation for the loss of Swainson's hawk foraging and nesting habitat due to proposed development within that city. It was determined that providing adequate mitigation was infeasible if restricted to the city limits, and the study area was expanded to include all of San Joaquin County. Participation by the County and other local jurisdictions necessary to complete a countywide plan was initiated, but funding for the expanded scope of work has not been secured. Only a preliminary draft Habitat Conservation Plan has been completed (Jones & Stokes Associates, 1991). In 1993, the San Joaquin County Council of Governments (COG) Board voted to add preparation of a countywide, multi-species Habitat Management Plan to the COG work program. Eventually, a regionally-based multi-species

[7] The crop acreages identified in the subsequent surveys vary from those identified in the original FEIR due to the time of year and changes in crop patterns.

Habitat Conservation Plan may serve to finance the acquisition and maintenance of habitat for Swainson's hawk and other special-status taxa in San Joaquin County.[8]

[8] San Joaquin County and other jurisdictions have required that **some** recent development projects mitigate for the loss of Swainson's hawk habitat, according to the draft mitigation guidelines proposed by the Department of Fish and Game. **Other development projects have been required to "comply with the California Endangered Species Act."** A large subdivision approved by the County in the unincorporated town of Lockford was required to purchase land or conservation easements off-site to mitigate for impacts to Swainson's hawk (the River Oaks subdivision, being constructed by Luis Aristhendi in Lockford, was required to purchase mitigation lands off-site). A 430-unit subdivision proposed in French Camp was similarly required to mitigate for Swainson's hawk impacts according to the CDFG guidelines (the Lee Lakes subdivision, proposed by Madoski, is currently on appeal to the Board of Supervisors). The City of Tracy has required that developers of the large I-205 Specific Plan area, including the regional shopping mall at the Grant Line Road/I-205 interchange, comply with CDFG mitigation guidelines by contributing a per acre fee to a fund that will purchase Swainson's hawk habitat elsewhere.

TABLE 4.11-2

ESTIMATED CROP AND NON-CROP ACREAGE
SWAINSON'S HAWK FORAGING HABITAT SUITABILITY

Crop Type/Land Use	December 1989	September 1992	May 1994	Average Total
Unsuitable foraging cover types:				
Non-farm lands	324.7	324.7	399.7	
Dairy facility	46.0	46.0	56.5	
Almond orchard	57.7	0.0	0.0	
Total acreage	428.4	370.7	456.2	418.4
Suitable foraging cover types:				
Alfalfa	1,140.9	2,027.1	1,500.7	
Corn	0.0	973.1	0.0	
Irrigated row crop - not planted	0.0	0.0	1,291.2	
Other irrigated cropland	2,620.3	801.7	922.1	
Non-irrigated cropland	470.8	487.8	490.5	
Total acreage	4,232.0	4,289.7	4,204.5	4,242.1

Source: The McCarty Company, 1989, 1992, and 1994.

Note: Other irrigated cropland includes green beans, grain, pasture, sugar beets, and cannery tomatoes. Non-irrigated cropland includes pasture and grain. Unplanted irrigated row crops in 1994 could include corn, green beans, sugar beets, and tomatoes, but had not been planted by the time the survey was conducted.

IMPACTS AND MITIGATION MEASURES

The CEQA Guidelines identify potentially significant environmental effects on biological resources mto include:

- impacts on a population or critical habitat of special-status plant or animal taxa;
- substantial interference with the movement of any resident or migratory fish or wildlife species;
- substantial reduction in habitat for fish, wildlife, or plants.

Although not specifically identified in the CEQA Guidelines as a potentially significant effect, modifications to wetlands and substantial non-compliance with policies of San Joaquin County General plan 2010 related to the protection of biological resources are also considered to be potentially significant adverse impacts. Modifications to wetlands are of great concern to jurisdictional agencies due to the regional and national importance of these features, and is therefore considered a significant impact.

MASTER PLAN

The Draft Master Plan addresses recreational facilities and open space issues for the proposed community, including creation of public parks and management of sensitive biological resources. Approximately 763 acres of the site would be designated for open space use, including a community park along Mountain House Creek, a regional park along the Old River, two golf courses, a marina, wetlands preservation, and other parklands, easements, and buffers. A major component of the Draft Master Plan is the establishment of a multi-purpose Habitat Management Plan (HMP) which would provide for water reclamation, agricultural preservation, and wildlife habitat enhancement for Swainson's hawk and other special-status taxa. Other provisions related to biological resource management include: wetlands preservation, tree conservation, and treatment of other special-status taxa of concern.

Habitat Management Plan

The project HMP is intended to provide a method for mitigating the loss of foraging habitat for Swainson's hawk and other special-status raptors, and conversion of agricultural lands to non-farm uses. This is proposed through off-site dedication and management of agricultural lands, using reclaimed wastewater as the primarily source of irrigation water. The *Mountain House Multi-Purpose Habitat Management Plan* (Zentner & Zentner, 1994**a and 1994b**) has been proposed as a preliminary HMP for the project, focusing on mitigating loss of foraging habitat for Swainson's hawk. The proposed HMP summarizes information on the status, distribution, and habitat requirements of Swainson's hawk and other raptors, evaluates the proposed project and its relationship to the assumptions regarding potential loss of foraging habitat, describes the proposed mitigation plan, identifies performance and monitoring standards, and provides a preliminary implementation plan. The proposed HMP does not address the on-site nesting activity by Swainson's hawk, which has occurred since the last revisions to the plan were made, and does not include any specific provisions to protect the nest location or critical habitat for the nesting territory.

Three areas have been identified as alternative locations for the proposed HMP wastewater disposal and habitat mitigation area. The three alternatives include: a preferred permanent location, using agricultural lands on Fabian Tract; an alternative permanent location, using agricultural lands in Alameda County immediately west of the site; and an interim alternative, using the lands to the north of Byron Road within the project site for disposal until development in later phases. The location north of Byron Road is being considered for interim use to provide for wastewater disposal requirements for development associated with Specific Plan I until a permanent location is selected and constructed. The interim location would occupy an estimated total of 410 acres, with 120 acres of storage ponds and 290 acres of irrigation lands for wastewater disposal.

~~One of the basic assumptions of the proposed HMP is that the actual area of impact on foraging habitat for Swainson's hawk within the project site is limited only to the area north of Byron Road. This assumption by the applicant's biologist would substantially limit the mitigation requirements for the project.~~ The HMP proposes to provide mitigation for the loss of approximately ~~1,500~~ **3,860** acres of on-site habitat. Additional mitigation is proposed for the loss of foraging habitat resulting from

construction of the permanent wastewater storage ponds so the HMP assumes that mitigation would be required for the loss of approximately ~~1,800~~ **4,160** acres of existing foraging habitat.

Swainson's Hawk

As proposed in the Draft Master Plan, mitigation for loss of foraging habitat ~~north of Byron Road~~ would be achieved through a combination of different approaches. These include participation in the Mountain House HMP, fee participation in a County-sponsored multi-species conservation program, or by other programs approved by the County, direct payment of mitigation fees to the CDFG, if a CDFG-sponsored program were in effect at the time mitigation were undertaken, or through a combination of these programs. The actual mitigation for loss of Swainson's hawk foraging habitat would therefore be provided incrementally as identified foraging habitat was converted to urban uses.

TABLE 4.11-3

APPLICANT'S PROPOSED SWAINSON'S HAWK MITIGATION PROGRAM (SHMP)[1]

Type of Habitat Acquired[2]	Distance of Mitigation Land from Active Nest	Nest Trees Planted	Habitat Enhanced	Mitigation Ratio[3]
~~Foraging~~	~~>10 miles~~	~~N/A~~	~~Yes~~	~~0.75:1~~
Foraging	>5 miles and within 10 miles	N/A	Yes	0.50:1
Foraging	0 to 5 miles	N/A	Yes	0.33:1
Potential nesting[4]	N/A	Yes	Yes	0.25:1
Existing nesting[4]	N/A	No[5]	Yes	0.17:1

Source: Zentner & Zentner, 1994.

[1] Program assumes a ~~1,500~~ 3,860-acre area of suitable foraging habitat on the project site would require mitigation. Mitigation would also be required for approximately 300 acres of foraging habitat on Fabian Tract if used for wastewater storage ponds.

[2] Mitigation lands would be dedicated in fee or through establishment of conservation easements. ~~These~~ Foraging lands would be at least 100 acres in size and, subject to reasonable land availability, contiguous. **Nesting habitat (existing and proposed) shall be at least five acres in size and shall contribute no more than six percent of total mitigation lands.**

[3] Mitigation ratio represents the amount of land, by habitat type, to be acquired to mitigate for each acre lost to development.

[4] Combined existing and potential nesting habitat would constitute no more than six percent of total mitigation lands.

[5] Existing nesting habitat already contains nest trees and would not be planted with additional nest trees.

If applicants for development proposals ~~north of Byron Road~~ elected to participate in the Mountain House HMP, compensation for loss of foraging habitat would be provided according to a mitigation ratio established in a Proposed Swainson's Hawk Mitigation Program (SHMP) (Table 4.11-3). Depending on the type of replacement habitat created or acquired, the applicant would choose from a "menu" of mitigation options. The proposed mitigation credit ratios in the SHMP range from

0.17:1 ratio for acquisition of existing off-site nesting habitat[9], to a ~~0.75:1~~ **0.5:1** ratio for foraging habitat created or acquired more **than 5 miles but less** than 10 miles from an active nest. Ratios for replacement foraging habitat less than 10 miles from an active nest would vary from 0.50:1 to 0.33:1, depending on distance from the selected nest location.

San Joaquin Kit Fox

Provisions in the Draft Master Plan related to San Joaquin kit fox are limited to preconstruction and construction protocol, and no other implementation measures such as compensation for loss of habitat are proposed. The *Background Report, Mountain House New Town and the San Joaquin Kit Fox* (Zentner & Zentner, 1993a) prepared by the applicant's biologist summarizes information on distribution and habitat requirements of kit fox, reviews the results of recent studies conducted in the project vicinity, and makes a comparison of this information to the habitat characteristics of the site. Habitat characteristics and suitability issues evaluated in the report include: prey densities, land use patterns, interspecies competition and predation, escape cover, and barriers to movement. In the section entitled "Legal Requirements," the *Background Report* concludes:

> "Considering federal and state law and the specific factual circumstances of the plan, the project proponents have no legal obligation to provide mitigation for the preservation of the San Joaquin kit fox."

Other Special-Status Species

In addition to Swainson's hawk and San Joaquin kit fox, the Draft Master Plan addresses several other special-status taxa which could be affected by the project, and proposes site surveys for these species prior to submittal of any Development Permit. Implementation measures include: pre-construction surveys to protect active raptor nests during the breeding season, preserving and enhancing the Mountain House Creek and Old River corridors as suitable habitat for taxa of concern, relocation of active burrowing owl nests, and participation in the Mountain House HMP.

Wetlands Management

Most of the jurisdictional wetlands on the site would be preserved in their existing location. The Draft Master Plan include policies to protect existing wetlands and provide mitigation where impacts are unavoidable. The Plan also includes implementation measures which require the preparation of detailed plans for treatment of wetlands, buffers to protect valuable habitat, control of storm water runoff, and other measures. Separate sections of the Draft Master Plan address the Mountain House Creek corridor and Old River habitat, including information on the preservation and enhancement of wetlands and other habitat values.

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[9] Credit for each acre of foraging habitat lost to development is given for each 0.17-acre of existing off-site nesting habitat acquired as part of the SHMP.

Tree Conservation

The Draft Master Plan includes policies and measures to preserve healthy trees as visual and biological resources. Tree surveys and assessments would be required prior to submittal of the first Development Plan to determine the location, species, and condition of mature trees. Those trees found suitable for preservation would be considered in preparing detailed roadway and development designs. With the proposed measures in the Draft Master Plan, potential impacts on trees is considered less-than-significant with regard to biological resources. This issue is addressed further in Visual Quality, Section 4.8 of this DEIR (see impacts and mitigation measures M4.8-4 and S4.8-4).

Mountain House Creek Community Park

Mountain House Creek Community Park would be established as the primary open space area running diagonally through the project, providing opportunities for passive recreational use and wildlife habitat enhancement. The park would encompass approximately 80 acres, formed by a corridor along the existing creek channel. Habitat restoration within the creek corridor would include creation of perennial and seasonal marshland, riparian woodland, and native grasslands. Implementation measures in the Draft Master Plan address landscape design, flood control requirements, park and recreational use, infrastructure improvements, water quality, and restoration construction. Detailed restoration plans would be required for each specific plan along the creek. Creek improvements would be constructed at the same time drainage and flood control improvements are implemented, to be phased as development proceeds in the different neighborhoods along the Creek.

Old River Regional Park

The Old River levee would be developed as a regional park, serving a variety of purposes including recreational use, wildlife habitat, and flood protection. The Draft Master Plan contains implementation measures to provide for flood control through construction of a second levee, and requirements related to park and recreational use, habitat enhancement, and operation, maintenance, and monitoring. Provisions for habitat enhancement include creation of oak woodland, riparian woodland, and grassland plant communities. Recreational activities would be buffered from the river frontage, with most trails and other improvements constructed along the second levee. Timing, phasing, and responsibilities for the park improvements would be addressed as part of the overall Parks and Open Space Plan, and implementation may be tied to development of neighborhoods adjacent to Old River. The proposed 60-acre marina along Old River is addressed under the Private Recreation section of the Draft Master Plan, with details regarding design criteria to be provided as part of the Specific Plan for the surrounding area.

Impact M4.11-1

Project implementation would result in the elimination of over 4,000 acres of agricultural land and associated wildlife habitat on the site.

Implementation of the Mountain House project would eliminate all the existing agricultural and pasture land on the site, which supports a range of wildlife species. Most of the existing habitat would eventually be replaced with urban development, ornamental landscaping, intensively managed parks, and other open space uses that have only limited value as wildlife habitat. Of greatest concern is the area between Byron Road and Old River, where large numbers of mammalian and avian predatory species were observed during field surveys of the site (Figure 4.11-3). The proposed replacement of approximately 1,500 acres of cropland north of Byron Road with urban uses and intensively managed open space uses, such as a marina, golf courses, and neighborhood parks, would offer no viable alternative habitat for wildlife, including several special-status taxa that occur on or frequent the area.

Off-site mitigation programs would serve to protect and enhance existing habitat in the area surrounding the project site, particularly for special-status taxa. Enhancement of the Mountain House Creek corridor and the Old River riparian corridor would improve the wildlife habitat value of these features, but would be bordered by intensive development and recreational uses, and would not fully mitigate the conversion of the remainder of the site to urban uses. The loss of over 4,000 acres of existing habitat on the site represents a substantial reduction in wildlife habitat and must be considered a significant unavoidable adverse impact of the project, as indicated in the CEQA Guidelines.

Mitigation Measures M4.11-1

Specific measures recommended to mitigate potential adverse impacts on San Joaquin kit fox, Swainson's hawk, other special-status taxa, the Mountain House Creek corridor, wetland features, and habitat associated with Old River would serve to partially mitigate the loss of existing wildlife habitat. However, the loss of over 4,000 acres of wildlife habitat is an unavoidable adverse impact, which cannot be fully mitigated to a less-than-significant level.

Impact M4.11-2

Project implementation would result in elimination of suitable on-site foraging and dispersal habitat for San Joaquin kit fox.

Implementation of the proposed project would eventually result in the elimination of all the suitable kit fox foraging habitat on the site. Based on the results and conclusions from the BioSystems survey and discussions with representatives of the USFWS and CDFG in 1992 (BASELINE, 1993), the FSEIR indicated that the project would have a significant adverse impact on kit fox habitat and recommended the preparation of a habitat protection, replacement, and management plan that addressed on-site protection or conservation of replacement habitat. Based on prey availability and cover type, an estimated 3,211 acres of the site were determined to be of high- or moderate-value as kit fox foraging habitat in the FSEIR, with the remaining 1,456 acres considered to be of little

or no habitat value (BioSystems, 1992).[10] Consultation with representatives of the USFWS and CDFG during the 1992 survey by BioSystems indicated that an acceptable compensation for loss of suitable kit fox habitat would be a 3:1 ratio (three acres of replacement habitat for each one acre lost to development), consistent with mitigation requirements for other developments affecting substantial areas of kit fox habitat in the area, including the proposed Los Vaqueros Reservoir and Byron Airport projects in Contra Costa County (BioSystems, 1992). However, in response to concerns raised by the applicant's consultants over the recommended 3:1 ratio of compensation for lost habitat, and questions raised over the jurisdictional authority of the County in defining specific mitigation measures for compliance with CESA and FESA, specific references related to possible mitigation ratios and acreage requirements were deleted from the text and mitigation measures in the SEIR.

As noted previously, the applicant's position is that the site does not provide suitable denning and foraging habitat for kit fox, that the project would not result in a "take," as defined by the Endangered Species Acts, and that no habitat compensation should be required. Somewhat inconsistently, the Draft Master Plan does include pre-construction and construction protocol "to ensure that project construction does not result in harm or injury to the kit fox." In a second review of the BioSystems report, another biological consultant retained by the applicant states that kit fox individuals from the population in the grasslands of the Altamont Hills "may occasionally investigate portions of the Mountain House site, and that juveniles may sometimes move through the area attempting to disperse to suitable habitat, but that the site is not part of the home range of any kit fox" (H.T. Harvey and Associates, 1994).

Most of the proposed protocol would meet the pre-construction, construction, and operational recommendations specified in the survey report by BioSystems and the *Standardized Recommendations for Protection of the San Joaquin Kit Fox* (USFWS, 1989). However, some details of the proposed protocol appear to be inadequate to ensure protection of any kit fox encountered during construction. These include:

- the length of time between pre-construction surveys and when construction occurs;
- the definition of dens; and
- the lack of consultation with the USFWS.

The length of time allowed between pre-construction surveys and the actual grading or other disturbance of the site could increase the possibility that kit fox may subsequently move into an area and could be harmed or killed if trapped in a den when construction actually begins. The pre-construction protocol focuses on "known" dens rather than both "known" and "potential" dens, as defined in the *Standardized Recommendations* of the USFWS. The failure to consider "potential" dens could reduce the available retreat cover for kit fox using the site. Finally, the proposed protocol provides for only limited consultation with representatives of the USFWS in determining appropriate

[10] Alfalfa fields and berms were considered by BioSystems to provide atypical, but high-quality habitat. Irrigated oats, dry oats, and grasslands were considered to provide moderate-quality habitat. Irrigated pasture, riparian/marsh, and row crops/fallow fields were considered to provide little or no habitat value to kit fox.

treatment of any known dens that are encountered during the pre-construction survey or necessary monitoring.

Because of the discrepancy between the mitigation requirements recommended by jurisdictional agencies during preparation of the SEIR and the limited mitigation proposed in the Draft Master Plan, ~~an informal consultation was conducted with~~ the USFWS **was consulted** during preparation of this DEIR. The purpose of the ~~informal~~ consultation was to ascertain the agency's position regarding kit fox occupancy of the site and the likely mitigation requirements to permit incidental take of the endangered subspecies. Representatives of the USFWS were supplied with all of the studies and assessments addressing kit fox use of the site, including the survey report by BioSystems (1992), the FSEIR (BASELINE, 1993), the *Background Report* by the applicant's biologist (Zentner & Zentner, 1993a), and *Comments on the Background Report* prepared by Sue Orloff of BioSystems (1993).

A meeting was held on 23 November 1993 to review the preliminary findings of the USFWS. The meeting was attended by two representatives of the Service, a representative of the applicant's biologist, and two of the consultants involved in preparation of this DEIR. During the meeting, representatives of the USFWS summarized their interpretation of the *Background Report* and confirmed their position that the site is occupied kit fox habitat, and that the agency would continue to recommend a 3:1 ratio for required mitigation. Using crop data for 1989 and 1992, the USFWS representatives determined that an average of 2,537 acres on the site provide suitable foraging habitat which they concluded would require mitigation if converted to urban uses (USFWS, 1994).

Although the acreage total of 2,537 acres currently considered by USFWS as providing suitable habitat is somewhat less than that determined by BioSystems, it still represents a substantial mitigation requirement, which could be as high as 7,611 acres at a 3:1 ratio. This mitigation requirement could have major ramifications on the long-term feasibility of developing the site, which have not been taken into account by the applicant or the County. The financial ramification of this recommended mitigation requirement should be addressed prior to the approval of the Draft Master Plan, even if mitigation were deferred to the time of individual Tentative Map or Development Permit applications.

Estimates of habitat suitability reflect the cover type at selected periods in time, and changes in crop patterns affect the extent of the suitable habitat on the site. Areas determined to be currently of little or no value to kit fox (i.e., irrigated pasture, row crops, and fallow fields) still have the potential for use as foraging habitat if the site remains in agricultural use. These areas may have supported crops considered to provide atypical high- to moderate quality habitat in the recent past. One approach to providing a more thorough understanding of the extent of high- to moderate-quality kit fox habitat on the site would be to review agricultural cropping patterns over the past five to ten years. Average values could then be obtained for each of the different crop types, and any off-site habitat compensation requirements could be determined from these average values. A survey of past cropping patterns on adjacent lands to the west would also be useful if this area is considered for off-site compensation. This approach to determining compensation requirements could be

implemented during the preparation of a mitigation plan for kit fox, if required by jurisdictional agencies.

There are several factors which would seem to indicate that the recommended 3:1 ratio for replacement habitat may be excessive. This would be the same compensation ratio required for locations where known dens and other direct evidence of use have been documented. As noted previously, the site is located at the periphery of the currently accepted kit fox range mapped by the USFWS. Agricultural cover, especially row crops, have generally not been known to provide important habitat for kit fox, and the changing mosaic of crop types and associated habitat may be limiting factors in the suitability of the site as foraging habitat. Further detailed study on kit fox use of agricultural habitat would be necessary to clarify the importance of this habitat type, particularly in the northern portion of their range. However, the lack of any definitive evidence of kit fox occurrence and use of the site indicate that the overall habitat value is lower than the nearby grasslands of the Altamont Hills, where numerous sightings and dens have been documented.

These factors would seem to justify consideration of less than a 3:1 compensation ratio for the loss of designated high- to moderate-quality atypical habitat on the site. Preservation and enhancement of approximately 2,537 acres of the agricultural lands to the west of the site as part of a kit fox habitat management plan for the project would serve to retain similar habitat within the known range of kit fox (where at least one kit fox has actually been sighted). Preserving agricultural acreage at a mitigation ratio of 1:1 may serve as a reasonable compromise between the applicant and jurisdictional agencies and help to resolve permit requirements without the added costs and delays associated with possible legal actions. Alternatively, the applicant could be required to purchase conservation easements for land within the "Core Conservation Area" west of I-580, identified in the County's draft HCP.

Mitigation Measure M4.11-2

(a) The Draft Master Plan provisions related to San Joaquin kit fox should be revised and amended, based on the results of further negotiation with representatives of the USFWS and the CDFG. The revised Draft Master Plan should provide a coordinated approach to addressing the concerns of jurisdictional agencies. Adjacent agricultural lands in Alameda County ~~*should*~~ ***may*** *be considered as a suitable off-site mitigation area for San Joaquin kit fox,* ~~*but could not then be used as the location*~~ ***except*** *for* ***any*** *wastewater* ***storage ponds*** ~~*disposal and habitat management for the Swainson's hawk mitigation, as this would result in further reduction of suitable kit fox habitat.*~~ *Alternatively, mitigation lands within the "Core Conservation Area" identified in the County's draft HCP could be acquired by the applicant. Approval of the Draft Master Plan should be contingent on subsequent revisions necessary to comply with San Joaquin County General Plan 2010 policies regarding habitat protection and any possible requirements of jurisdictional agencies, pursuant to the provisions of the State and Federal Endangered Species Acts.*

If required by jurisdictional agencies, an incidental take permit and a Habitat Management Agreement for San Joaquin kit fox should be obtained by the project applicant, or by subsequent applicants for other specific plans within the project, or by subsequent applicants of individual Tentative Maps. A copy of any and all fully executed permits and/or management agreements should be submitted to the San Joaquin County Community Development Department prior to the issuance of any Development Permit, construction permits, or building permits, or initiation of any improvements such as construction of water or wastewater treatment plants, whichever occurs first.

(b) The Draft Master Plan provisions regarding kit fox should be revised to reflect the position of jurisdictional agencies and the likelihood that an incidental take permit would be required from the USFWS and a Habitat Management Agreement would be required from the CDFG before grading or other modifications to the site would be allowed. Revisions should be made to the relevant discussion, assumptions, policies, and implementation measures in section 7.3.3 of the Draft Master Plan and ~~the "Background Report" by the applicant's biologist (Zentner & Zentner, 1993a)~~ ***"The San Joaquin Kit Fox Report" contained in Appendix 7-D*** *to reflect these likely requirements. These should include the following:*

- *Revise Assumption 7.3.3-1 b) of the Draft Master Plan, and Policy a) and Implementation a) for Objective 3 of Biological Resource Management section (Appendix C) to reflect that compensation for loss of suitable kit fox habitat could include off-site mitigation and/or other requirements to comply with the provisions of Section 10(a) of the Federal Endangered Species Act and Section 2081 of the State Fish and Game Code.*

- *Revise Implementation a) for Objective 3 of Biological Resource Management section (Appendix C) to indicate that the proposed "Kit Fox Pre-construction and Construction Protocol" contained in Appendix 7-F should be reviewed and meet with the approval of the USFWS and the CDFG, and that these protocol shall apply until jurisdictional agencies determine that their implementation is no longer required to prevent harm or injury to kit fox. A copy of the revised protocol should be submitted to the San Joaquin County Community Development Department, together with the written approval of jurisdictional agencies, prior to issuance of any construction permit or initiation of site improvements, whichever comes first.*

(c) The proposed "Kit Fox Pre-construction and Construction Protocol" contained in Appendix 7-F of the Draft Master Plan should be revised to provide greater consistency with the preconstruction, construction, and operational recommendations specified in the survey report by BioSystems (1992), and at minimum should meet the "Standardized Recommendations of the Protection of the San Joaquin Kit Fox" (USFWS, 1989). This should include the following:

- *Revise Pre-construction Protocol Measure 1 to adjust the pre-construction survey period from "six (6) months" to "within 60 days" prior to initiation of any construction activity,*

and to include the USFWS in the required notification of survey results within two weeks of completing a survey.

- *Revise Pre-construction Protocol Measure 2 to include treatment of both known and "potential" kit fox dens encountered during pre-construction surveys. This should include provisions related to monitoring of den status (Measure 2a), den destruction (Measure 2b), and establishment of a protective exclusion zone if the potential den would not be destroyed by grading or other development activities (Measure 2e).*

- *Revise Pre-construction Protocol Measure 2d to read as follows:*

  "Prior to destruction of any known kit fox den, the USFWS shall be notified in writing of the intent to destroy the subject den(s), and disposition of the den shall be determined by the USFWS. Destruction of occupied known or suspected natal or pupping dens shall not be permitted during the breeding season (1 November through 31 July), until the den has been vacated or the kit fox pups have dispersed. Adequate measures, including restrictions or curtailment of construction activity and use of exclusion fencing, shall be developed in consultation with the USFWS and implemented to ensure protection of the natal or pupping dens while occupied by kit fox pups."

- *Revise Pre-construction Protocol Measure 2e to delete all references to specific distances for the protective exclusion zone and to indicate that the size (radius) of the zone shall be established in consultation with representatives of the USFWS and CDFG.*

- *Revise Construction Protocol Measure 1 to include the following provision at the end of the measure:*

  "If live kit fox are encountered, ramps or structures should be installed immediately, if possible, to allow the animal(s) to escape."

- *Revise Construction Protocol Measure 6 to state that all construction pipes of 4-24 inches in diameter shall be stacked "at least 3.5 feet above ground" prior to use. The end of this measure should include the following provision:*

  "If during inspection, a kit fox is discovered inside a pipe, that section of pipe should not be moved, or if necessary should be moved only once to remove it from the path of construction activity, until the kit fox has escaped."

- *Revise Construction Protocol Measure 8 to include the following provisions at the end of the measure:*

  "The designated ecological monitor shall notify the USFWS and CDFG in writing within three working days of the findings of any such animal. Notification must include the date,

time, and location of the incident, and any other pertinent information. Any kit fox found dead or injured must be turned over immediately to the CDFG for care and analysis."

(d) If off-site mitigation is required by jurisdictional agencies, the management practices and habitat enhancement recommendations specified in the survey report by BioSystems (1992) should be incorporated into the habitat management plan to ensure long-term viability of mitigation areas as kit fox habitat. Any deviation from the BioSystems recommendations should be negotiated with representatives of the USFWS and CDFG, with adequate explanation provided to justify them from a biological standpoint.

Impact M4.11-3

Project implementation would result in elimination of all existing and potential on-site foraging habitat for Swainson's hawk.

Proposed development would contribute to a reduction in existing and potential foraging habitat for Swainson's hawk, and could adversely affect nesting along this segment of Old River. Habitat loss is the most significant threat to the remaining populations, as agricultural practices change or agricultural lands are converted to urban uses, and as nest trees are destroyed. This conversion of foraging habitat and effect on known nesting territories on the site and vicinity would conflict with San Joaquin County General Plan 2010 policies and would be a significant adverse impact under CEQA, resulting in a substantial reduction of critical habitat for this special-status species.

The loss of nesting and foraging habitat has greatly reduced the breeding range and abundance of Swainson's hawk in California, and the CDFG has developed detailed mitigation guidelines in an effort to protect critical habitat for this species (CDFG, 1992). The *Draft Mitigation Guidelines for Swainson's Hawk* (CDFG, 1992 **and 1993**) provide information on recommended management, natural history and population status, nesting and foraging requirements, and mitigation criteria for Swainson's hawk, with a general goal of no net loss of breeding or foraging habitat. The guidelines are intended to provide lead agencies and project sponsors with an interim framework for developing adequate measures to mitigate the loss of habitat until a comprehensive plan is completed and adopted by the CDFG. The mitigation criteria specified in the guidelines include: consultation with representatives of the Department; restrictions on disturbance within one half mile of a known nest site from March 1 through August 15; prevention of loss of nest trees; maintenance of sufficient foraging habitat to support breeding pairs and successful fledgling of young; and retention, restoration and enhancement of nesting and foraging habitat. The guidelines stipulate that mitigation for foraging habitat be provided at a minimum 1:1 acre ratio (one acre of replacement habitat for each one acre lost to development).

The CDFG has been continuously reevaluating the provisions of the *Draft Mitigation Guidelines* since they were first prepared in 1990; while the Guidelines provide a framework for mitigation, the degree to which mitigation for specific projects conforms with the Guidelines has varied greatly from region to region. The CDFG is now attempting to standardize enforcement of the Guidelines to

provide predictability in determining mitigation cost/requirements for projects within the species range and a consistent program for enforcement in different counties and regions of the Department. Revised Guidelines were distributed for comment in October 1993 (CDFG, 1993).

The only substantial change between the 1992 and 1993 Guidelines pertains to mitigation ratios considered necessary to maintain sufficient foraging habitat to support breeding pairs. While the 1992 Guidelines call for a 1:1 mitigation ratio for all suitable foraging habitat within 10 miles of an active nest, the mitigation ratios in the revised Guidelines vary with distance from an active nest. Within one mile of an active nest, the minimum mitigation requirement ratio of 1:1 remains unchanged. Beyond one mile but within five miles, the mitigation requirement drops to a minimum ratio of 0.75:1 (0.75 acre of new habitat management lands for every acre lost to development). Beyond five miles but within a 10 mile radius, the mitigation requirement drops again to a minimum ratio 0.5:1. A modified version of the revised 1993 Guidelines will presumably be used by the Department in the future, but as of the date this report was prepared, the 1992 Guidelines are still to be used in evaluating conformance of individual projects with the mitigation goals of the CDFG (Zezulak, 1993).

As discussed in the SEIR, project implementation would result in the loss of over 4,200 acres of suitable Swainson's hawk foraging habitat, which meet the two basic criteria used by the CDFG in determining mitigation requirements to maintain sufficient habitat to support breeding pairs. This would include the loss of over 2,000 acres of alfalfa fields which provide high quality foraging habitat. Due to the extent and density of development proposed on the site, the suitability of foraging habitat on adjacent undeveloped properties ~~to the east and west would most likely~~ **could** be reduced as well, **particularly to the southwest**. In the absence of adequate mitigation, the CDFG would consider this loss of foraging habitat to constitute "take" under Section 2081 of the State Fish and Game Code, and would be considered a significant adverse impact of the project under the CEQA Guidelines (CDFG, 1994).

In an informal meeting held in October of 1993 during preparation of this DEIR, representatives of the CDFG expressed concern over the disparity between provisions in a preliminary version of the proposed HMP and specifications in the *Draft Mitigation Guidelines*. The CDFG representative expressed concern over the feasibility of using treated wastewater for irrigation on mitigation lands for Swainson's hawk, as proposed in the HMP, but could not comment more thoroughly because of the preliminary nature of the HMP and lack of sufficient detail (Mensch, 1993). The concerns of the CDFG were re-iterated several months later in a written review of an expanded version of the proposed HMP, citing "internal inconsistencies", "sweeping generalities", and "major discrepancies" with the *Draft Mitigation Guidelines* (CDFG, 1994). The proposed HMP ~~has~~ **had** been refined further since the last review by the CDFG **before circulation of the DEIR**, but the major assumptions regarding mitigation requirements and departure from the *Draft Mitigation Guidelines* remained largely unchanged. ~~The recent nesting activity on the site will most likely only magnify the concerns of the CDFG, and their position that the HMP as proposed inadequately addresses potential impacts on Swainson's hawk and provides insufficient mitigation.~~ **The comment letter by the CDFG (1994) on the DEIR again reiterates their concern over the inadequacies of the**

previous draft of the proposed HMP. As noted above, the proposed HMP has been revised again during the public review period of the DEIR (Zentner & Zentner, 1994b). Major changes to the proposed HMP include acknowledgment that the project would impact up to an estimated 3,860 acres of suitable foraging habitat and incorporation of recent information on nesting activity on the site. While the revised HMP now recognizes that most of the site provides suitable foraging habitat, the relevant assumptions, policies, and implementations of the Draft Master Plan and many of the provisions of the HMP have not been revised as recommended in Mitigation Measure M4.11-3. Although further review would be necessary to confirm CDFG's position regarding the revised HMP, it appears likely that they would again find the report "inadequate and inaccurate" (CDFG, 1994) given that most of the errors and concerns identified in their most recent review have still not been rectified.

Based on the observations reported in the original FEIR in 1991 and without more recent or thorough studies on foraging activity on the site, the ~~proposed~~ **revised** HMP prepared by the applicant's biologist ~~concludes~~ **still contends** that historic and **most** current use for foraging by Swainson's hawk is limited to the area north of Byron Road (Zentner & Zentner, 1994**b**). Swainson's hawk foraging activity observed in 1991 reflected the abundance of high quality foraging habitat (primarily alfalfa fields in the northern portion of the site) and preponderance of poor quality habitat to the south of Byron Road, much of which was tilled soil with no forage value at all (Figure 4.11-1). As noted previously, cropping patterns in agricultural habitat change seasonally and annually, and the foraging activities of Swainson's hawk and other opportunistic feeders are modified as prey abundance and availability change. The abundance of high quality foraging habitat south of Byron Road has increased substantially since 1991 (Figures 4.11-2 and 4.11-3), and it is likely that foraging activity by Swainson's hawk has also increased throughout this portion of the site. Future development would permanently eliminate suitable foraging habitat from the site as agricultural fields were converted to urban uses.

The proposed mitigation ratios specified in Table 4.11-3 provide substantial acreage credit for creating or purchasing nesting habitat, a provision that is not included in either the 1992 or 1993 *Draft Mitigation Guidelines*. While establishment and preservation of nesting habitat is a desirable goal of the HMP, the proposed credit ratios appear excessive given that most riparian habitat along Old River and other locations in the project vicinity would most likely be preserved as a normal condition of development approval. The proposed Swainson's Hawk Mitigation Program (SHMP), a part of the Habitat Management Plan (HMP), also bases credit ratios for foraging habitat on proximity of the mitigation lands to an "active nest,"[11] rather than the distance the converted foraging habitat is from a known nest location as defined in the revised 1993 *Draft Mitigation Guidelines*. All proposed mitigation ratios contained in Table 4.11-3 would provide for substantially less replacement habitat than the minimum ratio specifications of the CDFG guidelines.

The Draft Master Plan ~~and proposed HMP~~ **still** contains outdated information on existing nesting habitat, using information on nesting locations reported from a single source (Jones & Stokes, 1990a). The absence of on-site nesting, ~~and~~ distance from nest locations, **and limited foraging activity** was assumed in the ~~proposed~~ **previous** HMP to be one of the factors which justified a proposed reduction in mitigation requirements from those specified by the CDFG. As indicated by the on-site nesting activity in the 1994 breeding season, this assumption is inaccurate. Other recent surveys conducted for DWR indicate that a number of attempted and successful nest locations occur within two miles of the site, with some less than one mile to the east along Old River (Miriam Green Associates, 1994). The entire site is located within five miles of one or more active nesting territories. Although ideal nesting habitat for the species is absent on the site, isolated trees and less well-developed riparian habitat, such as that occurring along the Old River frontage, could provide nesting substrate in the future. The on-site nesting activity and proximity of other known nesting locations increase the likelihood that the site provides

[11] The proposed HMP defines an "active nest" as a nest site which has been used within the past three years rather than five years as currently defined by the CDFG.

critical foraging habitat for one or more nesting pairs and fledgling birds, which should be recognized in refining the proposed HMP and providing adequate mitigation for conversion of suitable habitat.

As currently proposed by the applicant, the HMP would provide mitigation for the conversion of a total of approximately ~~1,800~~ **4,160** acres (~~1,500~~ **3,860** acres **on the site** ~~north of Byron Road~~ and **possibly** 300 acres at **off-site** wastewater storage ponds) of suitable foraging habitat, ~~and assumes that no mitigation would be required for lands south of Byron Road~~ **which is still approximately 382 acres less than the average indicated in Table 4.11-2**. Using the proposed mitigation ratios from the HMP (Table 4.11-3), a total of from ~~1,350~~ **2,080** to ~~562~~ **1,302** acres of mitigation lands would be established as part of the SHMP if applied to ~~1,800~~ **4,160** acres (Table 4.11-4). The highest estimate (~~1,350~~ **2,080** acres) is based on a mitigation program with no nesting habitat and all foraging habitat located ~~more than~~ **between 5 and** 10 miles from an active nest. The lowest estimate (~~562~~ **1,302** acres) is based on a mitigation program with all foraging habitat located less than five miles from an active nest (~~520~~ **1,214** acres) and a maximum amount of acquired existing nesting habitat (~~34~~ **88** acres). These totals could be reduced even further if future applicants choose other methods to meet proposed mitigation requirements in the Draft Master Plan, such as participation in a Countywide HMP. The acreage totals for the proposed HMP would represent less than ~~13~~ **29** to ~~30~~ **46** percent of the acreage requirement specified in the 1992 *Draft Mitigation Guidelines* (Table 4.11-4). A detailed analysis would be necessary to determine the total acreage requirement using the 1993 *Draft Mitigation Guidelines*, but a preliminary estimate of ~~3,700~~ **4,300** acres indicates that the proposed HMP would provide less than ~~from 16~~ **31 percent up** to ~~37~~ **49** percent of the acreage requirements specified in the revised 1993 *Draft Mitigation Guidelines*.

Applying the proposed mitigation ratios from the SHMP (Table 4.11-3) to 4,260 acres of suitable foraging habitat on the site and 300 acres for the off-site wastewater storage ponds (instead of the proposed ~~1,800~~ **4,160** acres) results in a maximum total estimate of from ~~3,195~~ **2,280** to ~~1,577~~ **1,413** acres for off-site mitigation lands. Due to major inconsistencies between the basic assumptions and provisions in the Draft Master Plan and the mitigation guidelines of the CDFG, particularly the limited area identified as foraging habitat and lack of any specific measures to protect the on-site nest locations such as development setbacks and construction restrictions, the **revised** HMP ~~as currently proposed~~ would **still** not adequately mitigate potential impacts on Swainson's hawk use of the site.

Concerns over the appropriateness of using treated wastewater in habitat mitigation areas would have to be addressed through careful monitoring and management for salts and mineral levels. Numerous discrepancies over the basic assumptions and appropriate mitigation ratios proposed as part of the HMP and SHMP would also have to be resolved through further negotiation with the CDFG. If these numerous issues can be resolved, the conceptual program and mitigation site design described in the proposed HMP appears to be biologically feasible. Some important details of the proposed mitigation program have not yet been incorporated into the Draft Master Plan or proposed HMP. These include:

- appropriate crop types to be used on mitigation lands;
- minimum size of mitigation lands allowed as part of a specific SHMP;

TABLE 4.11-4

ESTIMATED ACREAGES FOR SWAINSON'S HAWK MITIGATION

Mitigation Guidelines/Program	Mitigation Ratios	Total Mitigation Acreage
Proposed SHMP applied to ~~1,800~~ **4,160** acres	Varies, see Table 4.11-3.	Estimate of from ~~1,350~~ **2,080** to ~~562~~ **1,302** acres.[1]
Proposed SHMP applied to 4,560 acres[2]	Varies, see Table 4.11-3.	Estimate of from ~~3,195~~ **2,280** to ~~1,577~~ **1,413** acres.[1]
CDFG 1992 Guidelines applied to 4,560 acres	1:1	Maximum of 4,560 acres.[3]
CDFG 1993 Guidelines applied to 4,560 acres	Varies between 0.5:1 and 1:1, based on proximity to nest location	Estimate of ~~3,700~~ **4,300** acres.[4]

Source: Environmental Collaborative.

[1] Highest estimate assumes mitigation program with no nesting habitat and all foraging habitat located over **5 miles but less than** 10 miles from an active nest. Lowest estimate assumes all foraging habitat located less than five miles from an active nest and a maximum amount of acquired nesting habitat ~~(256 acres of nesting habitat)~~.

[2] This includes 4,260 acres of suitable habitat on-site **indicated in Table 4.11-2** and 300 acres of off-site lands to be used for wastewater storage ponds.

[3] Acreage requirements may be lower, depending on the extent of any on-site habitat preservation, and enhancement efforts for off-site lands.

[4] Based on the distance of suitable foraging habitat from nearest known nest location along Old River **and center of site**, with approximately ~~1,000~~ **3,500** acres (**together with** 300 acres for off-site storage ponds) located within one mile of an active nest, and the remainder of the site located within 5 miles of an active nest.

- a mechanism to ensure a minimum acreage of suitable foraging habitat is provided every year if unsuitable crop types such as silage corn are to be permitted as part of crop rotation;
- development setbacks, restrictions on construction activities, and other provisions to protect the existing nest on the site;
- details on the relationship of the SHMP to phased improvements associated with wastewater reuse; and
- information on all mitigation options and procedures necessary to ensure overall coordination, management, and monitoring of the HMP.

The primary permanent off-site mitigation area on Fabian Tract would provide an opportunity for habitat enhancement in close proximity to the site and numerous known nest locations. The island is surrounded by Old River to the south and the Grant Line Canal to the north, both of which contain riparian habitat which is currently used for nesting and could be enhanced further as additional nesting habitat. The island contains over 4,500 acres of land, allowing for adjustment to the ultimate

size of the habitat management lands in the Mountain House HMP as negotiations with the CDFG (and property owners) proceed and mitigation requirements are more clearly defined.

In contrast, the proposed Alameda County off-site mitigation area west of the site is located at the southwestern edge of the delta system, and does not border any major riparian habitat which is typically preferred for nesting by Swainson's hawk. Mature trees which could be used as isolated nesting locations in this area are scarce throughout the agricultural fields. This mitigation area would eventually be separated from the Old River corridor by future development within the new community, and the further south dedicated habitat is located the more isolated it would be from the river. At buildout of the project, hawks would generally have to fly over urban development to access foraging habitat in the mitigation area. This would most likely contribute to a reduction in suitability and use by Swainson's hawk, even if foraging habitat were enhanced and additional trees were planted and managed for nesting habitat within the mitigation area. Enhancement of this area for Swainson's hawk habitat may also lower its value to other special-status taxa with different requirements which have been reported from the area, including kit fox.

Mitigation Measures M4.11-3

(a) Approval of the Draft Master Plan (which includes the HMP) should be contingent on subsequent revisions necessary to comply with San Joaquin County General Plan 2010 policies regarding habitat protection and with Section 2081 of the State Fish and Game Code and the Habitat Management Agreement required by the CDFG.

The Draft Master Plan and proposed HMP provisions regarding compensation for conversion of suitable foraging habitat should be revised to provide greater consistency with the "Draft Mitigation Guidelines for Swainson's Hawks in the Central Valley of California" prepared by the CDFG. Depending on the extent of any on-site preservation and the enhancement associated with off-site mitigation, replacement habitat requirements could be as high as 4,560 acres (includes 300 acres for off-site wastewater storage ponds).

Revisions should be made to the relevant assumptions, policies, implementations of the Draft Master Plan, and the "Mountain House Multi-Purpose Habitat Management Plan" (Zentner & Zentner, 1994b). This should include the following:

- *Revise Assumptions 7.3.1 a) and b) of the Draft Master Plan, and Policy a) and Implementation c) for Objective 2 of Biological Resources Management section (Appendix C) to indicate that acreage requirements for the HMP would be determined through negotiation with CDFG in preparing a Habitat Management Agreement pursuant to Section 2081 of the State Fish and Game Code.*

- *Delete specific references to a limited mitigation requirement of only 1,500 acres throughout the Draft Master Plan and* ***revise the*** *proposed HMP* ***to indicate that an estimated 4,240 acres of on-site habitat could be converted to urban uses****. Specific references that should be deleted or revised in the Draft Master Plan include: Assumptions 7.3.1 a) and b),*

Assumption 7.3.2 a), Table 7.3, and Figure 7.8 of the Draft Master Plan, as well as Policy a) for Objective 2 of Biological Resources Management section (Appendix C).

- *Resolve acceptability of establishing mitigation credit prescription ratios for foraging habitat based on proximity of mitigation lands to an active nest rather than distance of lost habitat from an active nest with the CDFG, and revise the proposed Swainson's Hawk Mitigation Program (Table 7-3 of the Draft Master Plan) accordingly. If the proposed approach is considered acceptable by the CDFG, mitigation ratios indicated in the Swainson's Hawk Mitigation Program should be revised. The proposed establishment of mitigation land greater than 10 miles from an active nest should be eliminated from the Swainson's Hawk Mitigation Program and deleted from Table 7-3 of the Draft Master Plan as these lands would have highly limited value to nesting pairs due to their distance from an active nest.*

- *Resolve acceptability of establishing mitigation credit for nesting habitat, and as directed by the CDFG delete or revise the specified acreage ratios defined in the Swainson's Hawk Mitigation Program of the proposed HMP (Table 7.3 of the Draft Master Plan) for existing and potential nesting habitat.*

- *Revise the relevant text of the Draft Master Plan and the proposed HMP regarding Swainson's hawk nesting habitat to reflect more recent data on distribution of nesting locations in the project vicinity, including the active nests on the site during the 1994 breeding season, that nesting locations change to varying degrees over time as new breeding pairs enter an area or disturbance factors reduce the suitability of historic nest locations, and the fact that trees on the site could be used for nesting in the future.*

- *Revise the text of the Draft Master Plan and the proposed HMP to provide for preservation* ***or adequate mitigation for loss*** *of the active Swainson's hawk nests on the site. Adequate development setbacks should be provided around the active nest* ***along Old River*** *to ensure its long-term suitability for nesting, which may include establishment of permanent foraging habitat on the site. The land area of the proposed Regional Park along Old River should be expanded, as necessary, to provide for the protection of the nest and surrounding foraging habitat, with additional policies and implementations included in the Old River Regional Park section of the Draft Master Plan to prevent possible disturbance associated with recreational use of the parklands. This should also include provisions to prohibit or intensively monitor any disturbance, construction, or other project-related activities within 1/2 mile which may cause nest abandonment or forced fledging if the nest is in active use in future years. Details regarding appropriate setbacks, monitoring requirements, and development restrictions* ***around an active nest, as well as appropriate mitigation if the active nest in the center of the site is lost,*** *should be defined in consultation with the CDFG.*

- *Revise Implementation g) for Objective 1 of Biological Resources Management section (Appendix C) and the proposed HMP to indicate that unacceptable crop types would not be planted on mitigation lands and that a mechanism would be established to ensure a*

*minimum level of high-quality foraging habitat (i.e., alfalfa). Unacceptable crop types to be specified in the HMP should include vineyard, orchard, cotton, and other crop types where prey are inaccessible to foraging hawks. A mechanism to ensure that minimum acreage requirements for suitable foraging crop types are met is particularly important if unsuitable crops such as silage corn are to be permitted as part of crop rotation in the mitigation lands. A minimum acreage requirement for alfalfa within the mitigation area should be coordinated with the CDFG, but the 35 percent specified in the proposed HMP appears too low. Acreage ~~diverted~~ **devoted** to alfalfa on mitigation lands should at a minimum meet the average for the project site, estimated at 41 percent, based on cropping patterns for 1989, 1992, 1993, and 1994.*

- *Revise Implementation h) for Objective 1 of Biological Resources Management section (Appendix C) and the proposed HMP to indicate that use of rodenticide shall only be allowed when small mammal levels pose a serious threat to agricultural crops and populations levels reach a specified threshold. This threshold and procedures to determine and implement remedial action should be coordinated with the CDFG, but the threshold specified in the proposed HMP of only 10 burrows per 100 feet appears too low. A mean of 20 burrows per 100 feet were observed in alfalfa fields during the survey by BioSystems (1992) and would be a more acceptable threshold before use of rodenticides should be permitted.*

- *Revise Assumption 7.3.2 c) of the Draft Master Plan to indicate that mitigated land dedicated as part of a specific Swainson's Hawk Mitigation Program needs to be at least 100 acres in size, consistent with the proposed HMP.*

- *Revise the proposed HMP to include information on all mitigation options, overall phasing and monitoring of all mitigation lands established as part of each specific Swainson's Hawk Mitigation Program, and relationship of implementing the specific programs to phasing of improvements associated with wastewater reuse.*

A take permit or Habitat Management Agreement for loss of Swainson's hawk habitat should be obtained by the applicant, pursuant to Section 2081 of the State Fish and Game Code. A copy of the fully executed habitat management agreement with the CDFG should be submitted to the San Joaquin County Community Development Department prior to the issuance of any Development Permit, construction permit, or building permit, or initiation of any improvements such as construction of water or wastewater treatment plants, whichever occurs first.

(b) The proposed HMP should be revised to include a combination of on-site habitat preservation and off-site replacement. Ideally, the entire area north of Byron Road, containing approximately 1,500 acres, should be set aside as an agricultural preserve to be enhanced and managed for Swainson's hawk and other protected wildlife species, with the required replacement habitat provided at a ratio negotiated and approved by the CDFG, and any additional compensation provided in the immediate vicinity off-site.

As an alternative to a combination of on- and off-site habitat mitigation, Fabian Tract would be the preferred off-site mitigation area, due to its location within the Delta system, proximity to active nesting territories, and presence of existing and potential foraging habitat.

With the possible exception of the area north of Byron Road, which is currently not within the boundary of the proposed secondary wastewater reuse area, the adjacent lands in Alameda County should not be used as mitigation lands for loss of Swainson's hawk foraging habitat on the site. The proposed alternative permanent reclamation area in Alameda County is unsuitable for Swainson's hawk mitigation due to its distance from Old River and the Delta system, lack of nesting habitat in close proximity to the area, potential conflicts with habitat requirements of other special-status taxa such as kit fox, and ultimate separation from other foraging habitat as the Mountain House project is implemented. Reference to use of adjacent lands in Alameda County as mitigation lands for loss of Swainson's hawk foraging habitat should be deleted from the Draft Master Plan and proposed HMP unless the mitigation area is restricted to north of Byron Road.

Impact M4.11-4

In addition to San Joaquin kit fox and Swainson's hawk, proposed development would affect a number of other special-status taxa.

The loss of a substantial amount of agricultural habitat would also adversely affect other special-status bird taxa known to occur on or frequent the site. These include: northern harrier, black-shouldered kite, burrowing owl, **loggerhead shrike, California horned lark,** and possibly tricolored blackbird. The loss of over 4,000 acres of suitable foraging habitat would contribute to an incremental decline in the status of each of these species, eliminating the site as suitable foraging habitat and possibly destroying active nests as well. Measures implemented to mitigate adverse impacts on Swainson's hawk may also serve to alleviate impacts on these taxa, depending on the extent of on-site habitat preservation, characteristics of any required off-site conservation areas and the provisions for habitat enhancement. Any off-site mitigation area would have to consider whether enhancement efforts for target species would adversely affect the suitability of the area for other special-status taxa which have different habitat requirements.

Measures recommended in the SEIR which address other special-status taxa and minimize loss of raptor nests in active use on the site have been incorporated into provisions of the Draft Master Plan. Without adequate pre-construction surveys, it is possible that nests of special-status raptors could be inadvertently destroyed during incremental phases of development, killing both young and adult individuals. Loss of an active nest for any of the raptors known to frequent the site would be in violation of the Migratory Bird Treaty Act[12] and the State Fish and Game Code. As each large tract of land would be developed, supplemental surveys have been proposed prior to construction,

[12] The Migratory Bird Treaty Act does not provide protection for habitat of migratory birds, but does prohibit the destruction or possession of individual birds, eggs, or nests in active use without a permit from the USFWS.

with any active nest protected until fledging has occurred and disposition of the nest resolved in consultation with the CDFG.

Proposed development may also affect special-status plant and animal populations associated with the riparian and open water habitat along Old River. These include the reported population of Mason's lilaeopsis in the northwestern corner of the site, as well as possible occurrences of delta smelt, Sacramento splittail, **winter-run chinook salmon,** and California hibiscus. If additional populations of taxa of concern occur along Old River, adequate protection would be necessary to ensure the long-term viability of plant populations and the suitability of the river habitat for delta smelt and other fish species. While the Draft Master Plan includes general implementation measures pertaining to the need for further study during review of Specific Plans, and habitat preservation and enhancement along Old River, no measures have been proposed that address the individual species known from or suspected to occur along the river.

Mitigation Measure M4.11-4

(a) To provide for protection of any populations of special-status species along the Old River frontage of the site, the following should be included as part of the Parks and Open Space Master Plan as an additional Implementation for Objective 4 of Biological Resources Management section (Appendix C):

"j) A habitat protection plan shall be prepared for the population of Mason's lilaeopsis in the northwestern portion of the site prior to approval of the first specific plan adjacent to Old River in this area. The habitat protection plan shall be prepared by a qualified plant ecologist in consultation with and which meets with the approval of representatives of the USFWS and CDFG. The plan shall provide for the protection of identified populations, addressing potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat.

"k) A habitat protection plan for Mason's lilaeopsis and other special-status taxa which may be encountered during further detailed surveys, shall be prepared prior to approval of any specific plan along Old River. Other special-status taxa of concern include delta smelt, Sacramento splittail, ***winter-run chinook salmon,*** *and California hibiscus.*

"l) A survey shall be conducted along the banks of Old River to confirm the presence or absence of the California hibiscus on the site, prior to approval of any specific plan which could affect Old River. The survey shall preferably be conducted by a qualified botanist during the blooming period of this species, in August and September. If populations of this species are encountered, a habitat protection plan shall be prepared by a qualified plant ecologist in consultation with representatives of the USFWS and CDFG. The plan shall provide for the protection of identified populations, addressing

potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat.

*"m) A survey shall be conducted to confirm the presence or absence of ~~D~~ **delta smelt, winter-run chinook salmon,** and Sacramento splittail along the river segment bordering the site, prior to approval of any specific plan which could affect Old River. The survey shall be conducted by a qualified fishery biologist using an otter trawl at intervals along the river segment during the spring spawning season **and during migration periods**. If **any of** the species is detected, a habitat protection plan should be prepared by a qualified fisheries biologist in consultation with and which meets with the approval of representatives of the USFWS and CDFG. The plan shall provide for the protection and enhancement of existing habitat conditions, addressing potential impacts associated with boating, marina development, water diversion, storm drainage runoff, levee modifications, and recreational use of levee habitat."*

(b) Several aspects of the Draft Master Plan provisions regarding Other Special-Status Species should be revised to ensure protection of active nests and compliance with applicable State and Federal regulations, as follows:

- *Revise Implementation b) for Objective 4 of Biological Resources Management (Appendix C) to include pre-construction raptor surveys along the Old River frontage of the site as well.*

- *Revise Implementation c) for Objective 4 of Biological Resources Management to indicate that any relocation of an active burrowing owl nest should be performed in accordance with CDFG guidelines and that a permit must be obtained prior to any disturbance to the nest.*

- *Revise Implementation i) for Objective 4 of Biological Resources Management to indicate that pre-construction raptor and burrowing owl surveys would still be required to protect active nests until young birds have fledged even if an applicant participates in the HMP or other conservation plan.*

Impact M4.11-5

The project would block the movement of most terrestrial species between the eastern base of the Altamont Hills and the Delta-farmland region to the east.

Future development of the site would eliminate the open agricultural habitat and could eventually block wildlife movement across the site for most terrestrial species. While the Mountain House Creek riparian zone has been substantially altered, its proposed use as a "community park" could prevent its functioning as a wildlife movement corridor, particularly if the area were developed with intensively managed landscaping with little cover or habitat value and were designed for active recreational use.

Mitigation in the SEIR recommended that Mountain House Creek be enhanced and maintained as natural habitat and a wildlife movement corridor across the site. Criteria defined in the mitigation measure included: establishing a restored corridor with a minimum width of 200 feet, use of native plant species to create a mosaic of emergent vegetation and dense cover, restrictions on human access and recreational improvements, and provisions for monitoring of the restoration plan.

The Draft Master Plan addresses the need for preservation and enhancement of the creek corridor, and in general recognizes the importance of minimizing direct human activity within the creek corridor. However, a number of the proposed Implementations would be inconsistent with the recommended criteria to restrict human access, and could limit the potential habitat value of the corridor. In particular, creating a paved, multi-use path on either side of the Creek would contribute to intensive pedestrian and cycling activity along the edge of the corridor. The improved path should be restricted to one side of the Creek, perhaps alternating from side to side of roadway crossings, with a less intensive unpaved hiking trail on the opposite site to define the edge of recreational uses and undisturbed wildlife habitat. The opposite sides of the Creek should be maintained as upland wildlife habitat. In addition, provisions for monitoring, maintenance, and corrective action if the restoration plans do not meet specific performance standards appear to be inadequate to ensure long-term success of the creek restoration effort. The *Mountain House Creek Phase One Habitat Restoration Plan* (Zentner & Zentner, 1993c) provides a detailed conceptual approach to restoration along the segment of the Creek within the Specific Plan I area, but most of the recommended performance standards and monitoring methods have not been incorporated into the Draft Master Plan. Provisions for any monitoring of the Creek restoration effort are currently limited to periodic "inspections" with no performance criteria.

Information on timing of proposed restoration efforts is not clearly defined in the Draft Master Plan. Presumably a restoration plan would be required during review of each Specific Plan encompassing portions of the creek, and specific design and improvement plans would be implemented as adjoining lands along the creek are developed. Flood control improvements are proposed to be constructed sequentially as various neighborhoods are developed along the creek, and any restoration efforts could not be implemented until the final modifications to the corridor for flood control purposes have been completed. This proposed approach to implementation could allow development to proceed and surrounding agricultural habitat to be lost throughout the Specific Plan area until a particular creek segment would be directly affected by construction. The habitat restoration effort along the creek could be fragmented for many years, depending on the ultimate timing of development on adjacent lands proceeds. This approach to restoration would not provide for a continuous corridor of habitat until the entire length of the Creek were developed with urban uses, severely limiting its overall habitat value for much of the life of the project.

Establishment of dense cover along the corridor would take ten years or more after initial plantings, and allowing restoration improvements to be made incrementally would delay the effectiveness of the enhancement effort all that much longer. Implementing the restoration component of the Creek plan during the initial stages of development within a specific plan area would allow for

establishment of protective cover before much of the surrounding lands were developed, and would increase the potential use of the creek as a movement corridor for larger wildlife species.

The Draft Master Plan should serve to ensure that the restoration component of the Mountain House Creek Community Park be funded as a backbone improvement during the specific plan phase, consistent with the Draft Master Plan position that the park be established as the "primary open space spine through the community." This would permit establishment of protective cover for wildlife before adjacent lands are developed with urban uses, and provide for habitat enhancement along the entire length of the Creek within the specific plan area rather than a fragmented approach as individual developments make improvements to the Creek corridor and phased flood control improvements are implemented. To some extent, recreational improvements such as trails, pathways, bridges, fencing, signage, and interpretive displays could still be required as part of individual development plans for affected creek segments. However, this requirement must be balanced with the need to protect sensitive habitat and adequately control human disturbance within the corridor. At some point during buildout of the specific plan area, fencing, signage, and interpretive displays would be necessary to protect sensitive habitat, and trails and pathways would be necessary to direct and control pedestrian activity and to meet recreational demands within the community.

Mitigation Measure M4.11-5

(a) The Mountain House Creek Planting and Restoration Measures contained in Appendix 7-A to the Draft Master Plan, referred to in Implementations l), n), dd), ee), and ff) for Objectives 3 and 4 of Parks and Recreation section (Appendix C), should be expanded to include provisions for monitoring, replacement plantings, and re-evaluation of the restoration plan, similar to the provisions contained on pages 27-33 of the "Mountain House Creek Phase One Habitat Restoration Plan" (Zentner & Zentner, 1993c).

Several aspects of Draft Master Plan provisions regarding Mountain House Creek should be revised to ensure successful implementation of proposed restoration and enhancement efforts, provide for establishment of protective cover prior to development of adjacent lands, and to limit disturbance to wildlife along the enhanced corridor. This should include the following:

- *Revise Implementation p) for Objectives 3 and 4 of Parks and Recreation (Appendix C) to read as follows:*

  "p) The restored Mountain House Creek corridor shall accommodate a multi-purpose trail along one side of the creek, but other recreational uses such as picnic areas, playgrounds, and turf shall be restricted outside the corridor to minimize human activity within sensitive wildlife habitat. The location of the multi-use path can vary from either side of the Creek, but the opposite side of the Creek corridor shall remain without a paved path to limit disturbance to wildlife."

- *Revise Implementation q) for Objectives 3 and 4 of Parks and Recreation (Appendix C) to read as follows:*

  "q) Recreational uses may be located along the perimeter of the corridor, but shall require additional land area separate from the minimum corridor width of 200 feet. Trails shall meander on the outside edge of the corridor encroaching no closer than 50 feet from the creek channel or other surface water features, providing views of the creek and a sense of community participation without degrading the wildlife habitat value of the corridor."

- *Revise Implementation s) for Objectives 3 and 4 of Parks and Recreation (Appendix C) to read as follows:*

  "s) Recreational activities shall be buffered from wetlands and sensitive wildlife habitat along the Creek. These buffers may include vegetative screens or hedges composed of native plant materials which allow views but discourage access to sensitive areas."

- *Revise Implementation u) for Objectives 3 and 4 of Parks and Recreation (Appendix C) to read as follows:*

  "u) A post-and-cable or similar barrier shall be provided along all Creek corridor edges which front public spaces such as roads. 'Good neighbor' fencing (open fencing promoting views of the corridor) shall be used to minimize the potential for dumping of debris and yard clippings into the corridor where private residential and commercial uses border the Creek and no trail system is proposed."

- *Merge and revise Implementations w) and x) for Objectives 3 and 4 of Parks and Recreation (Appendix C) into a single measure to read as follows:*

  "w) A multi-use path shall be constructed along the Creek from Marina Boulevard to Old River. A minimum 16-foot right-of-way shall be reserved for the path. Within the right-of-way, a minimum eight-foot width shall be improved with asphalt, and painted with a center stripe. The path shall be grade-separated where it crosses the SP tracks."

- *Revise Policy e) for Objective 5 of Parks and Recreation (Appendix C) to read as follows:*

  "e) Passive recreational uses such as bird watching, nature trails, and observation areas are normally compatible with wetlands and may be permitted adjacent to wetlands. Active recreational uses such as ballfields, paved bike trails, or other such uses shall not be located within or immediately adjacent to wetlands areas."

The Mountain House Creek Community Park section of the Draft Master Plan, including Implementation v) for Objectives 3 and 4 of Parks and Recreation (Appendix C), should be revised to define timing of the creek restoration component of the park plans during the specific plan phase. Implementation v) should indicate that:

"v) All channel modifications, wetland enhancement, and revegetation associated with the Creek restoration component of the park plans shall be funded and implemented as backbone improvements during the specific plan phase and not deferred as a requirement of individual tentative map or phased flood control improvements along the Creek corridor."

(b) All exhibits depicting the creek corridor in the Draft Master Plan should be modified to show a single multi-use path, possible alternating from one to the other side of the corridor as it follows the length of the creek ***(and should include provisions for access for maintenance vehicles).*** *This should include Figures 7.4 and 7.5 referred to in Implementations b), g), and p) for Objectives 3 and 4 of Parks and Recreation (Appendix C).*

Impact M4.11-6

Development of the project site would eliminate seasonal wetlands and temporarily flooded areas such as irrigated pastures and drainage swales.

The Draft Master Plan would preserve most of the existing wetlands in their existing locations, minimizing potential adverse impacts and the need to develop a detailed wetland restoration plan. Restoration of the Mountain House Creek and preservation and enhancement of habitat along Old River would result in a net increase to the total acreage and habitat value of wetlands on the site. Some provisions of the Draft Master Plan related to wetland management would be inconsistent with the objective of preserving these features, providing inadequate setbacks and no verification with jurisdictional agencies. Any unavoidable modifications to wetlands and other waters of the U.S. should still require review by the Corps and CDFG to determine jurisdiction and any mitigation requirements.

Mitigation Measure M4.11-6

The Draft Master Plan provisions regarding Wetlands Management should be revised to ensure adequate setbacks from wetlands and coordination with jurisdictional agencies. This should include the following:

- *Revise Policy d) for Objective 5 of Biological Resources Management (Appendix C) to read as follows:*

  "d) Wetlands shall be protected from damage caused by adjoining development. Buildings and structures shall be setback from the edge of wetlands a minimum of 50 feet. This setback distance should be increased where wetlands are of high value, or restoration and enhancement is proposed."

- *The following should be included as an additional Implementation for Objective 5 of Biological Resources (Appendix C):*

  "j) Any proposed modifications to wetlands or waters of the U.S. should be prepared in consultation with and meet, where required, with the approval of representatives of the Corps and the CDFG prior to approval of any specific plans encompassing these features."

Impact M4.11-7

Construction and operation of the proposed 60-acre marina would impact the productive inshore zone and riparian edge habitat of Old River.

The proposed marina could degrade the water quality and habitat value of Old River. The Draft Master Plan currently has no objectives, policies, or implementation measures related to the need to minimize potential adverse impacts of the proposed marina. Disturbance associated with construction and operation of the marina could also adversely affect a number of special-status taxa reported from or suspected to occur along this segment of the Old River, including Mason's lilaeopsis, California hibiscus, delta smelt, and Sacramento splittail. The presence of such a large facility would substantially increase boat traffic on Old River, and would most likely result in higher average boat speeds on this segment of the river due to water skiing and other recreational activities. Increased boating activity and speeds would result in adverse impacts on fish, wildlife, and aquatic habitat. These impacts include: disturbance to fish and wildlife habitat along the shoreline and inshore zone of the River; increased levels of petroleum pollutants; and killing of small fish and aquatic invertebrates through the direct action of propellers and engine water cooling systems. Water stagnation and algal blooms could occur within the marina waters, adversely affecting oxygen availability for young fish and other aquatic organisms.

Mitigation Measure M4.11-7

(a) To ensure adequate protection of the aquatic habitat of Old River, the following should be included as an additional policy for Objective 9 of Parks and Recreation (Appendix C):

"d) Unless detailed study demonstrates that the potential impacts of the proposed marina on biotic resources could be mitigated to a less-than-significant level, the proposed 60-acre marina shall be eliminated in favor of a boat launch ramp and day use parking lot for the private use of the residents of the new community. This facility could be fashioned along the lines of other San Joaquin County public use ramps and picnic areas such as those located off Manley Road in the Mossdale area and at the end of Dos Reis Road west of Lathrop. This mitigation would provide easy access to the Delta system for the residents of Mountain House New Town while at the same time eliminate many of the potential hazards to the Old River aquatic system caused by a marina operation. Recommended further study shall be conducted as part of the environmental review for the specific plan encompassing the marina area."

(b) Implementation b) for Objective 9 of Parks and Recreation (Appendix C) should be expanded to include provisions to minimize disturbance to fish and wildlife habitat of Old River, prevent water quality degradation, and conduct further detailed surveys for special-status taxa as recommended in Mitigation Measures 4.11-4(a), (b), and (c).

(c) To minimize disturbance to wildlife and riparian habitat along Old River, the following should be included at the end of Implementation f) for Objective 6 of Parks and Recreation section (Appendix C):

". . .This shall include signage along the length of the site fronting Old River, limiting boat speeds to 5 mph to prevent disturbance to wildlife and riparian habitat."

Impact M4.11-8

Off-site improvements, such as the raw water conveyance pipeline and pumping facilities, wastewater storage ponds, and application of wastewater irrigation could adversely affect sensitive biological resources.

Project implementation would result in a number of off-site improvements which could adversely affect sensitive biological resources such as critical habitat or restricted populations of special-status taxa, sensitive natural communities, and wetlands. In general, most of the detailed studies conducted during preparation and environmental review of the Draft Master Plan have focused on the project site, and only limited information is available on presence of any sensitive resources within areas considered as possible locations for off-site disposal of wastewater.

Available information indicates that habitat for a number of special-status taxa could be affected by off-site improvements. For the adjacent lands in Alameda County to the west of the site, this could include: suitable foraging and denning habitat for kit fox; foraging and burrow habitat for burrowing owl; aquatic habitat supporting populations of California red-legged frog (*Rana aurora draytonii*) and curve-footed hygrotus diving beetle (*Hygrotus curvipes*); and possibly populations of several plant taxa of concern reported from the area (Jones & Stokes, 1990a) such as caper-fruited tropidocarpum (*Tropidocarpum capparideum*), San Joaquin spearscale (*Atriplex patula* ssp. *spicata*), Contra Costa goldfields (*Lasthenia conjugens*), and California hibiscus. Detailed surveys would be necessary to confirm the presence or absence of sensitive resources in areas affected by project-related improvements. Enhancement of this area for use by Swainson's hawk and other raptors may also lower its value to kit fox, which have different habitat requirements.

Assuming habitat along Old River and other waterways would not be disturbed by improvements, the presence of sensitive resources on Fabian Tract would be of less concern due to the geographic isolation of the island, which limits access by land-motile species, and the extent of past disturbance by agricultural use. Sensitive resources on Fabian Tract would most likely be limited to nests of Swainson's hawk and other raptors, although further detailed surveys would be necessary to confirm this assumption.

Use of treated wastewater as the primary source of irrigation water in the mitigation lands of the proposed HMP could result in increased levels of salts and metals, which could affect the agricultural viability of the land to support suitable crop types for use as foraging habitat as well as the types of crops that can be grown. Metals could accumulate on crops or be absorbed through the plant root systems and enter the food chain when ingested by rodents and other herbivores, which provide the primary food source for Swainson's hawk and other raptors addressed by the HMP. Salt and metal levels in the effluent would depend on the wastewater source. Long-term monitoring and management of water quality would be necessary to ensure viability of suitable agricultural crops, and to minimize exposure of wildlife to high levels of metals.

Raw water would be pumped from the California Aqueduct to serve as the source of potable water for the project. **The proposed intake point for water along the aqueduct is located downstream from the Skinner Fish Protection Facility, which is intended to prevent movement of fish and other aquatic species from the Delta into the aqueduct. While the fish screening device used at the Skinner Facility has been shown to be less than 100 percent effective, and fish that are entrained through the facility may subsequently survive to inhabit the California Aqueduct, the fish are considered lost from the Delta for regulatory and resource management purposes. Any entrainment losses at the Skinner Facility are considered an impact of State Water Project operations on Delta fisheries, not the subsequent downstream diversions or specific project use of water from the aqueduct, including the intake proposed as part of the project. The California Department of Water Resources is required to account and mitigate for fisheries losses at the facility, and no additional mitigation is considered necessary.** ~~While major fish screens near Clifton Court Forebay are intended to prevent movement of fish into the aqueduct, it does have a limited fishery resource, and species observed within the aqueduct have included the small delta smelt. Without adequate screening, fish and other aquatic wildlife within the aqueduct could be drawn into the pumping facility and destroyed (Fjelstad, 1993). The CDFG has developed *General Fish Screening Criteria* to prevent loss of fishery resources, pursuant to sections 1600 and 6100 of the Fish and Game Code. These criteria specify the placement, opening size, and construction requirements of fish screens.~~

Mitigation Measure M4.11-8

(a) Detailed field surveys of any proposed off-site mitigation locations should be conducted by a qualified biological consultant to determine the presence of any special-status taxa, sensitive natural communities, or wetland resources. Surveys for special-status taxa should focus on the presence of critical habitat features (i.e., nest and den locations of highly mobile species, and breeding habitat for amphibians and insect taxa of concern) which could be adversely affected by construction of the wastewater storage ponds, conveyance pipelines, and other improvements. If sensitive resources are encountered, proposed improvements should be modified, and as necessary, to provide compliance with the State and Federal Endangered Species Acts, a habitat protection plan should be prepared by a qualified biologist in consultation with representatives of the USFWS and CDFG. These provisions could include appropriate setbacks and construction restrictions from a nest or den during the breeding

season for the taxa of concern, or relocation of proposed structural improvements such as storage ponds or pipeline alignments.

~~*(b) The pump intake for raw water drawn from the California Aqueduct should be designed to meet the "General Fish Screening Criteria" used by the CDFG to minimize the loss of fish and other aquatic species.*~~

~~*(c)*~~ ***(b)*** *Also refer to mitigation measures in Section 4.4.2 of this DEIR, Wastewater, for additional provisions to adequately monitor and adjust the proposed effluent reuse plan to prevent excessive levels of salts and metals in wastewater irrigation.*

SPECIFIC PLAN I

Specific Plan I provides information on recreation and open space resources within the Specific Plan area, identifying the overall recreation system, neighborhood parks, and community parks. The Draft Specific Plan I also contains a discussion on Biological Resources, addressing the proposed HMP and Swainson's hawk mitigation, San Joaquin kit fox, wetlands management, and other sensitive species. As proposed in the Draft Master Plan, provisions related to protection of kit fox are limited to pre-construction and construction protocol. The Draft Specific Plan I discussion on Swainson's hawk and the proposed HMP assume that approximately 175 acres of foraging habitat would be lost, together with possibly a portion of the 300 acres of habitat on Fabian Tract if wastewater storage ponds are constructed as part of this phase of development. No mitigation has been proposed for conversion of suitable Swainson's hawk foraging habitat to the south of Byron Road, and the discussion simply defers to the Draft Master Plan for information on timing and location of proposed mitigation.

Provisions contained in the Draft Master Plan and Draft Specific Plan I, with recommended revisions made in this DEIR, would serve to mitigate potential impacts on other special-status taxa, wetland resources, and mature trees to a level of less-than-significant. Specific Plan I would not result in any direct impacts to Old River, although an increasing population on the site could lead to additional human activity along the banks of the River and the demand for a regional park.

Impact S4.11-1 (C,O,M)

Specific Plan I would result in elimination of suitable foraging and dispersal habitat for San Joaquin kit fox on over 700 acres of the site.

Implementation of Specific Plan I would result in the conversion of more than 700 acres of atypical foraging habitat considered to be of high to moderate quality for use by kit fox, based on the suitability analysis prepared by BioSystems (1992). Depending on phasing, urban development within the Specific Plan I area could disrupt movement and dispersal through other portions of the site, resulting in fragmentation of surrounding agricultural habitat and contributing to a further reduction in suitable habitat. No provisions have been made to provide for the loss of kit fox habitat, and without adequate mitigation, implementation of Specific Plan I may be in violation of the State and Federal Endangered Species Act.

Pre-construction survey and construction protocol have been proposed to prevent harm or injury to kit fox, but this has not been clearly identified as an implementation in Specific Plan I. Revisions to the proposed protocol included in Appendix 7-F of the Draft Master Plan would also be necessary to ensure protection of kit fox during construction.

Mitigation Measure S4.11-1 (C,O,M)

(a) Specific Plan I section 7.2.2 should be revised to include appropriate discussion, policies, and implementation measures regarding San Joaquin kit fox, consistent with the recommendations in Mitigation Measures 4.11-2(a), (b), (c), and (d). Approval of Specific

Plan I should be contingent on subsequent revisions necessary to comply with the State and Federal Endangered Species Acts.

(b) The Kit Fox Pre-construction and Construction Protocol contained in Appendix 7-B of the Draft Master Plan should be revised as recommended in Mitigation Measure M4.11-2(c), and section 7.2.2 of the Draft Specific Plan I should be expanded to include an implementation measure which requires that these protocol shall apply until jurisdictional agencies determine that their implementation is no longer required to prevent harm or injury to kit fox.

Impact S4.11-2 (C,O,M)

Specific Plan I would result in elimination of over 1,000 acres of suitable foraging habitat for Swainson's hawk on the site.

As currently proposed, Specific Plan I would provide mitigation for less than 15 percent of the over 1,000 acres of existing and potential Swainson's hawk foraging habitat which would be converted to urban uses, a substantial portion of which is now planted with alfalfa. An additional 410 acres to the north of Byron Road outside the Specific Plan I area could be affected through construction of storage ponds and modifications to agricultural lands associated with land disposal of treated wastewater for this first phase of development in the new community. This could result in the elimination of 120 acres of high-quality habitat to accommodate wastewater storage ponds. Because the Draft Specific Plan I lacks any provisions related to appropriate management of agricultural lands in the wastewater reuse program, even the estimated 290 acres necessary for land disposal of treated effluent could eventually become unsuitable as foraging habitat for Swainson's hawk. This loss of suitable foraging habitat for Swainson's hawk would most likely be considered "take" of a State threatened species by the CDFG, and would be a significant adverse impact under the CEQA Guidelines.

Mitigation Measure S4.11-2 (C,O,M)

The Draft Specific Plan I section 7.2.1 should be revised to include appropriate discussion, policies, and implementation measures regarding Swainson's hawk and the proposed Habitat Management Plan, consistent with the recommendations in Mitigation Measures 4.11-3(a) and (b). This should include deleting the reference to loss of only 175 acres of Swainson's hawk foraging habitat on the site, and providing a clear description of the timing and relationship of required mitigation to wastewater reuse if the proposed HMP is to be implemented during Specific Plan I. Approval of the Draft Specific Plan I should be contingent on subsequent revisions necessary to comply with the required habitat management agreement with the CDFG.

*~~As required by the CDFG, a~~ **A** take permit for loss of Swainson's hawk habitat ~~should~~ **shall** be ~~obtained by the applicant~~ **required**, pursuant to Section 2081 of the State Fish and Game Code. ~~A~~ **If required, a** copy of the fully executed habitat management agreement with the CDFG should be submitted to the San Joaquin Community Development Department prior to the issuance of any*

Development Permit, construction permit, or building permit, or initiation of any improvements, such as construction of the water or wastewater treatment plants, whichever occurs first.

Impact S4.11-3 (C)

The proposed Mountain House Creek Linear Park includes trail and landscape improvements which would contribute to intensive human activity along the Creek and would limit the potential wildlife habitat value of the corridor.

While the proposed *Mountain House Phase One Habitat Restoration Plan* (Zentner & Zentner, 1993c) provides a thorough evaluation of the existing condition of the Mountain House Creek corridor, appropriate plantings, and a conceptual approach to restoration, most of the recommended performance standards and monitoring methods contained in that Plan have not been incorporated into the Draft Master Plan or Draft Specific Plan I. Without adequate monitoring, maintenance, and any necessary corrective action if specific performance standards were not met, the long-term success of the Creek restoration effort is questionable. Details of the creek plans indicated in the Mountain House Creek Linear Park Concept would conflict with recommended revisions to the Draft Master Plan intended to minimize habitat disturbance in the corridor. These potential conflicts include: pathways along both sides of the Creek, corridor widths that appear to be less than 200 feet, and ornamental landscape improvements at roadway crossings and other locations along the corridor.

The creek restoration component would apparently be constructed in sequence to coincide with flood control improvements which would be necessary as various neighborhoods are developed along the corridor. As currently proposed, improvements would actually be restricted to just one side of the creek until development reaches a threshold in one neighborhood. The Draft Specific Plan I contains no information on the relationship between flood control improvements and creek restoration. Due to the phased approach to implementing improvements, the habitat restoration effort along the creek would be fragmented for some period of time, possibly years. This approach would not provide for important cover along both sides of the creek until bordered by development, and would severely limit the habitat value of the restoration effort and function as a movement corridor for larger wildlife species.

Mitigation Measure S4.11-3 (C)

The Draft Specific Plan I section 7.1.3 should be revised to include appropriate discussion, policies, and implementation measures regarding treatment of the Mountain House Creek corridor, consistent with the recommendations in Mitigation Measure 4.11-5(a).

Impact S4.11-4 (C,O,M)

Off-site improvements, such as the raw water conveyance pipeline and pumping facilities, wastewater storage ponds, and application of wastewater irrigation could adversely affect sensitive biological resources.

Several aspects of the Draft Specific Plan I would require off-site improvements which could affect critical habitat or restricted populations of special-status taxa, sensitive natural communities, and wetlands. Pumping from the California aqueduct could destroy fish and other aquatic wildlife within the aqueduct drawn into the pumping facility if adequate screening were not provided at the intake point. Specific impacts associated with the wastewater reuse program would depend on the alternative location selected for land disposal and storage pond construction, but could result in significant adverse impacts if further detailed confirmation surveys were not conducted, necessary modifications made to protect sensitive resources, and appropriate monitoring and management measures are not implement.

Mitigation Measure S4.11-4 (C,O,M)

Additional detailed field surveys, necessary modifications to all proposed off-site improvements to be used during any phase of implementation of Specific Plan I, and appropriate monitoring provisions recommended in Mitigation Measures M4.11-8(a), (b), and (c) should be implemented prior to approval of any Tentative Map within the Specific Plan I area or issuance of any Development Permit, construction permit, or building permit, or initiation of any improvements such as construction of water or wastewater treatment plants, whichever occurs first.