APPENDIX 7-B

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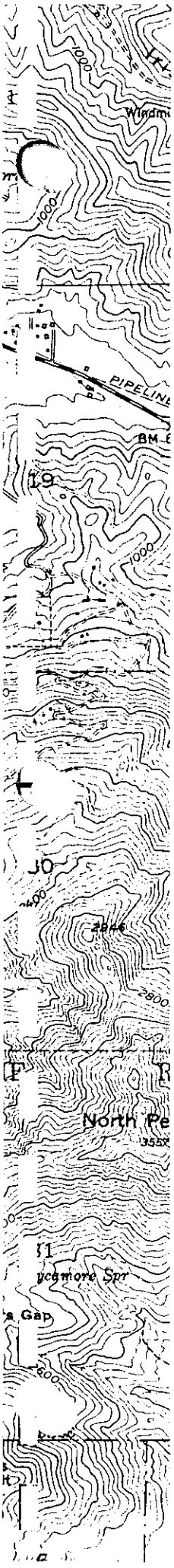
Habitat Management Plan (HMP)



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MOUNTAIN HOUSE MULTI-PURPOSE HABITAT MANAGEMENT PLAN

(Final Revised Plan)

Zentner and Zentner

Prepared For:

Trimark Communities

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Land Planning and Restoration

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Executive Summary

MOUNTAIN HOUSE
MULTI-PURPOSE HABITAT MANAGEMENT PLAN

A. PURPOSE

The Mountain House project site (the "project site") is located at the western edge of San Joaquin County, California, approximately five miles northwest of the City of Tracy *(Figure 1)*. This Habitat Management Plan ("HMP") describes the mitigation to be provided by the proposed project for the loss of foraging habitat for several raptors, including the Swainson's hawk (*Buteo swainsoni*) ("SH"), northern harrier (*Circus cyaneus*), and black-shouldered kite (*Elanus caerulea*), and the tri-colored blackbird (*Agelaius tricolor*). Mitigation may occur on any site that meets the criteria contained in this document .

The primary mechanism proposed by this HMP to mitigate these impacts is the dedication of off-site lands to viable agricultural uses, utilizing reclaimed wastewater as the primary irrigation source. Mitigation also may occur in riparian areas or other areas obtained for purposes of habitat mitigation. These lands will be designed to provide habitat for the SH, the other raptors, and the tri-colored blackbird. Additionally, if an agricultural impact fee is adopted by the County for impacts stemming from the conversion of agricultural lands to non-farm uses that is applicable to this project, then any agricultural lands dedicated pursuant to the HMP shall, to the greatest extent possible, satisfy any obligation of this project to pay a fee or otherwise comply with the relevant County agricultural impact ordinance.

The purpose of this HMP is to describe the means by which this mitigation will be provided. This includes a discussion of the likely impacts, especially to the SH, appropriate mitigation, and the mechanisms for ensuring that this mitigation is properly implemented.

B. BACKGROUND

The Final Supplemental EIR ("FSEIR") by Baseline Environmental (1993) for the General Plan Amendment (GPA) for the proposed project included a number of mitigation measures relative to agricultural impacts, wastewater use, and SH and other raptor impacts. These mitigation measures provided general guidance on appropriate mitigation and set the stage for a multi-use HMP. Mitigation measure 4.1-1 (b), for example, stated that "land set aside for Swainson Hawk Mitigation that is also prime agricultural land could be credited as mitigating both impacts". Similarly, measure 4.4.2-2 (b) states that wastewater impacts should be mitigated through development of an "off-site reclamation system that is sized to [treat] as much wastewater as possible up to the entire annual flow". Finally, the FSEIR requires that an HMP for the SH be prepared that would include consideration of the northern harrier and black-shouldered kite and that the extent of mitigation for the SH "could be as high as 4,290 acres".

The FSEIR did not identify a specific amount of required mitigation for agricultural, wastewater or raptor impacts but did set an upper limit (noted above) for SH mitigation. This relatively general approach to mitigation is consistent with the role of an EIR for a GPA; more specific mitigation measures are typically left to either later stages or other mechanisms. In the case of Mountain House, identifying a specific amount of mitigation or a specific process for defining the required mitigation is the primary role of this HMP. In addition, this HMP is meant to discuss any new information made available since the completion of the FSEIR, including new assessments of information presented in the FSEIR.

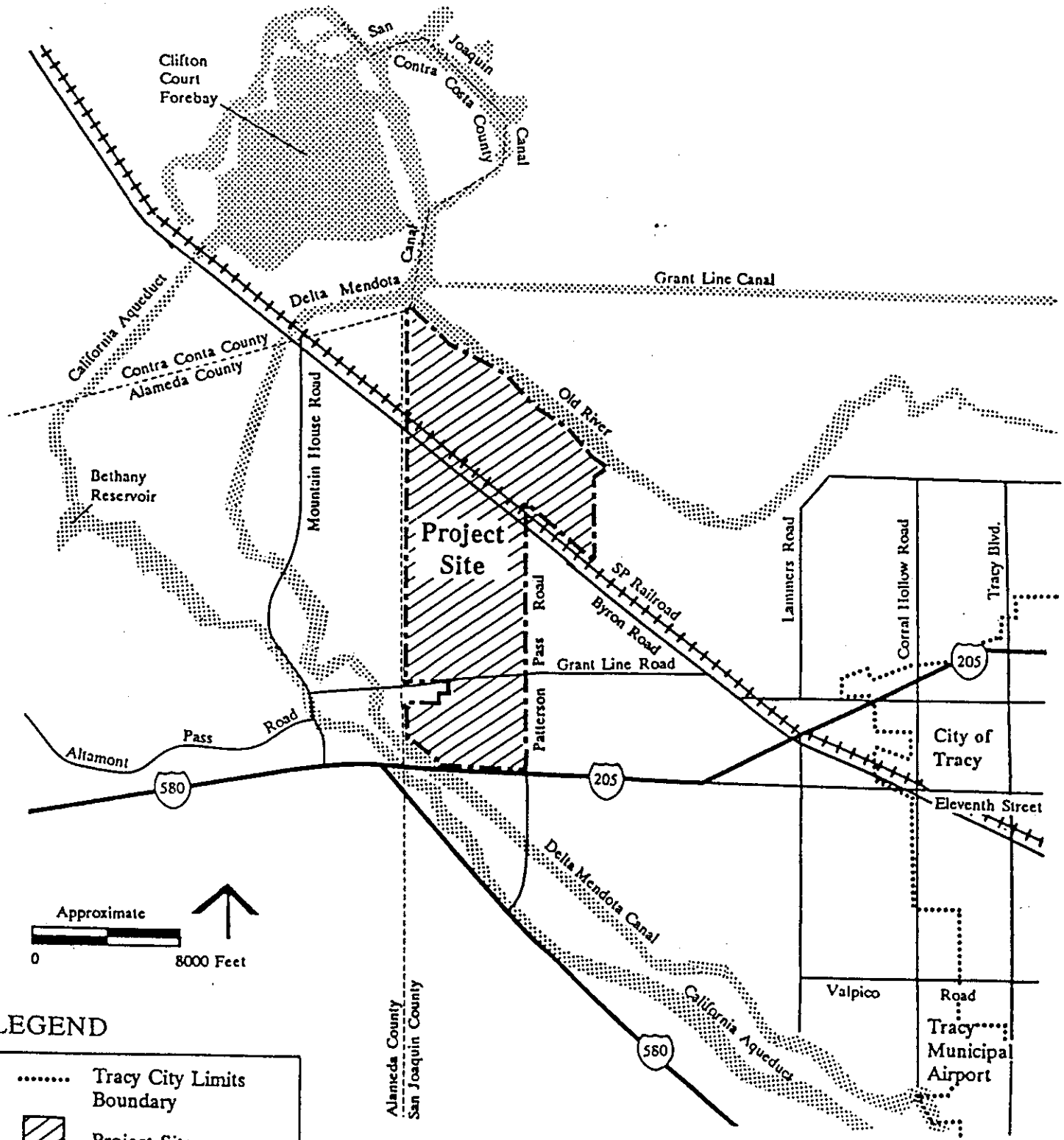

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FIGURE 1
Project Site

This HMP focuses on impacts to and mitigation for the SH. Wastewater, agricultural, other raptor, and tri-colored blackbird impacts are also important but, as noted in the FSEIR, these other impacts can be mitigated through a variety of means. The greater specificity required for SH mitigation by the FSEIR necessitates an emphasis on the SH in this multi-use HMP. Additionally, the added level of protection provided for the SH by the California Endangered Species Act (CESA) beyond that provided by County policies mandates additional review and scrutiny. However, as recommended in the FSEIR, the mitigation identified for the SH may also help to mitigate agricultural impacts and provide for re-use of treated wastewater.

C. SH IMPACTS

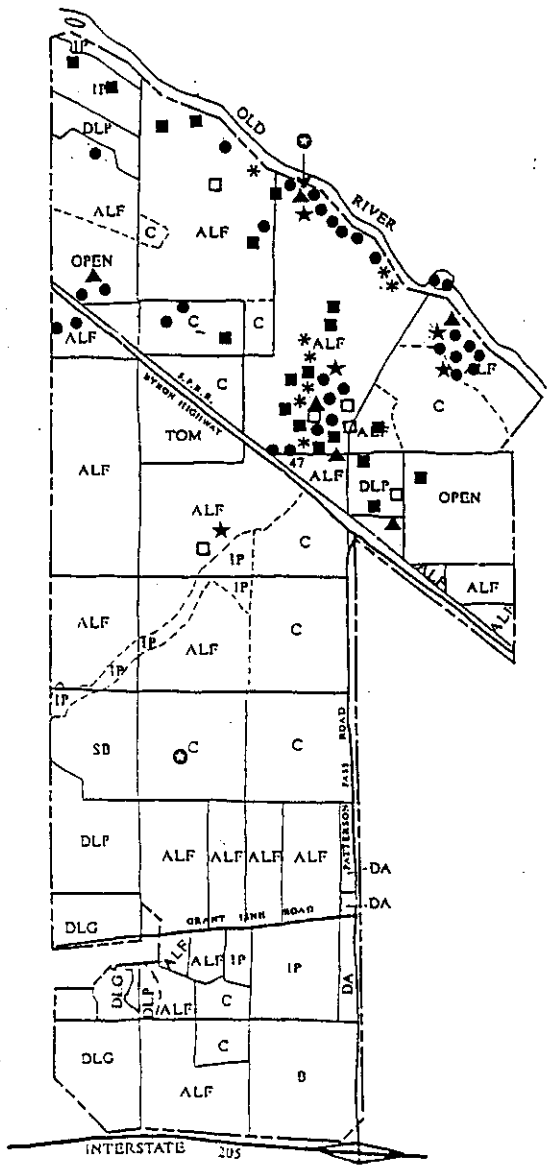
The SH is a spring-summer visitor to California, nesting and raising fledglings here and wintering in South America. Prior to the advent of Europeans into California, the SH probably foraged in the native perennial grasslands of the Central Valley and nested in valley oaks (Quercus lobata) and similar tall, native trees associated with creeks and waterways. Today, the SH forages almost entirely in farmlands and actively seeks farmlands being disced or flooded as these activities force its prey, primarily small mammals such as voles, into the open. Despite this apparent affinity for non-native foraging grounds and farming activities, the SH is also generally known for its fidelity to native riparian trees for nesting. Jones & Stokes (1990) noted that, "more than 87% of the known nest sites in the Central Valley are within riparian systems." Consequently, in the Central Valley today and in San Joaquin County, the SH is typically found where suitable forage crops are cultivated near native nesting trees. These conditions are typically met adjacent to riparian systems; these are the lands within the region that have the combination of water and permeable, low salinity soils that support the native nesting trees used by the SH. SH does not now make significant use of large parts of the Delta or the western edge of the San Joaquin Valley despite the presence of suitable crops due to the absence of native nesting trees, a result of unsuitable soil and climatic conditions in these particular areas.

The reported use of the SH on the project site prior to spring, 1994 was consistent with this pattern (*Figure 2*). The southern two-thirds of the Mountain House site is historically a part of the saline alluvial fans of the western San

Joaquin Valley, a habitat that, for the reasons noted above, did not contain either perennial grasslands or native trees and, consequently, did not support the SH. Avifauna surveys of the project site, completed over one breeding season in 1992 for the FSEIR, did not find appreciable evidence of the SH in this part of the site. The FSEIR found that most (65%) SH sightings on the project site were directly adjacent to the Old River, on the northern border of the project site. Two clusters of SH use between 3000 and 4500 feet of Old River marked farm activities that exposed SH prey (Baseline, 1993); these two clusters accounted for 44% of the total sightings. Accordingly, 99% of the sightings of the SH on the project site reported in the FSEIR were adjacent to or near Old River. Despite the presence of suitable crop types and farming activities that should have drawn the SH into the area south of Byron Road, this area was essentially unused by the SH during the survey period .

Spring and summer 1994 surveys by California Department of Fish and Game (DFG) and Zentner and Zentner have documented two active SH nests on the Mountain House site, however, in contrast to the prior surveys which found no active nests on the site (*Figure 2*). One SH nest is located in a willow tree which over-hangs the water in Old River; and the other SH nest occurs in a lone eucalyptus tree surrounded by fields recently converted to alfalfa in the southern third of the site. These fields were formerly in corn, a crop type unfavorable to SH. SH show strong nesting fidelity, often returning to the same nest tree for many years (Jones & Stokes, 1990), which suggests that the new nests on site may have been established by young adults. While a nest in a willow adjacent to Old River is at least partly consistent with typical SH nesting patterns, very few SH have been observed nesting in the non-native eucalyptus. This nest may either be a result of SH taking advantage of new prey opportunities resulting from the conversion of a cornfield to alfalfa, a relatively inexperienced pair of adults nesting in uncertain conditions, poor data on typical SH nesting, or long-term shifts in SH fidelity to certain nesting trees. The latter two possibilities suggest that SH use of atypical nesting trees may be or become more commonly used than presently suspected, an important implication for SH management.

FSEIR surveys showed that foraging activity by the northern harrier and black-shouldered kite was also heavily concentrated in the northern 1500 acres of the project site. This concentration of raptors in one area may be due to a higher concentration of small mammals in this area. This northern portion contains a greater extent of burrows and shrubs and grasses along the levee and field edges



LEGEND

- Parcel Boundary
- Crop Division Within a Parcel
- Crop Symbol
- Project Site Boundary
- Individual Swainson's Hawk Sightings
- Swainson's Hawk Pair Sightings
- 1994 Active Nest Tree
- Individual Northern Harrier Sightings
- Northern Harrier Pair Sightings
- Individual Black Shoulder Kite Sightings
- Black Shoulder Kite Pair Sightings

SYMBOL	CROP
OPEN	Harvested and Land Plowed (Alfalfa/Row Crop Rotation)
ALF	Alfalfa
B	Beans
C	Corn
DLG	Dry Land Grain
DLP	Dry Land (Native Pasture)
SB	Sugar Beets
IP	Irrigated Pasture
TOM	Tomatoes
DA	Dairy / Residences

North

SCALE: 1" = 3000'=0"

SOURCES

Nesting: Jones & Stokes Associates, 1990. Preliminary administrative draft habitat conservation plan for the Swainson's hawk in San Joaquin County. Figures 4.2 and 4.3.
Sightings: Baseline Environmental Consulting, 1991
Crops: The McCarty Company, 1992.

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FIGURE 2
Raptors sighted and Crop Patterns, Mountain House

than does the southern portion of the site. These conditions result in much higher concentrations of small mammal prey than on the remainder of the site.

Based on this new survey data, as of spring 1994 the entire project site is within 2 miles or less of an active SH nest. The recent 1994 nesting efforts indicate that all areas of suitable crops on the site should now be considered as SH foraging habitat, despite the absence of those tree species preferred by SH for nesting (valley oak and Fremont cottonwood). However, data from the FSEIR survey and Jones & Stokes (1990) still suggests that SH and the other raptors strongly favor the northern third of the site due to sustained prey populations supported by physical factors (friable soils and high water table, the same factors that historically favored the preferred species of nesting trees). Despite the new nesting location south of Byron Road, the habitat north of Byron Road is thus still considered to be more valuable foraging habitat for SH and the other raptors than areas to the south of Byron Road.

Despite these probable differences in use, this HMP has determined that the SH impact area of the proposed project includes all areas of the project site that support suitable crops for SH foraging. Approximately 430 acres of the 4290 acres now in farm uses consist of farmsteads, dairies, and other facilities not compatible with SH use. Accordingly, the total area susceptible to use by the SH on-site is 3860 acres. This determination is consistent with the FSEIR which concluded that the entire area of suitable croplands on-site could be considered the SH impact area. This conclusion is also consistent with the DFG SH 1992 Mitigation Guidelines (the "1992 Guidelines") and substantially revised SH 1993 Mitigation Guidelines (the "1993 Guidelines"). These guidelines have subsequently been withdrawn from public use and are now intended by DFG for "internal guidance only" (Rempel, personal communication). Proposed mitigation values and replacement ratios (acquired to lost) will be discussed below in relation to the 1992 and 1993 Guidelines and other considerations.

D. SH MITIGATION

Designing an SH mitigation program is problematic due to the uneveness of impact regulation and the lack of mitigation history. Known SH impacts in the

Central Valley consist primarily of the conversion of suitable crop types to unsuitable crops (alfalfa to corn, for example), the conversion of suitable crop types to non-farm uses, or the loss of nesting trees. No evidence is currently available with regards to the relative importance of these impacts. SH impacts on the wintering grounds in South America have been suggested (Sugnet & Associates 1992) but not verified (SHTAC 1993). The DFG is responsible in California for regulating SH impacts under CESA. The DFG has not pursued regulation of SH impacts resulting from crop conversions but instead has focused exclusively on projects that require a CEQA document, i.e. those projects that entail the conversion of crop lands to non-crop uses. Accordingly, SH mitigation efforts have been and apparently will be a result of local planning decisions, not DFG mandates, raising the spectre of consistency in regulation.

Despite DFG recommendations on many CEQA documents, no SH mitigation project has been built to date in California. Relatively large development projects, including State projects, have been approved and built since 1988 (when DFG actively began seeking SH mitigation) which have replaced suitable crop lands near active nest sites with developed lands without providing SH mitigation. SH mitigation programs that have been initiated to date have either been terminated without implementing any mitigation, have involved only the dedication of fees for additional studies, or are at a very early planning stage.

Without practicable guidelines or precedents, identifying a mitigation program for wildlife species is extremely difficult. This is especially evident in the case of the SH. While the need for nesting habitat mitigation is relatively clear, the use and value of foraging habitat is not. First, it is unclear whether the shift from the native SH foraging grounds of perennial grasslands, which have relatively low prey densities and moderate prey visibility, to crop lands, which have intermittently high prey density and visibility, has increased or reduced foraging opportunities. Second, the amount of suitable foraging land per nesting pair is not known. SH, like all raptors, forages as close to nest trees as possible. Telemetry studies by DFG show that while the SH may forage as far as eighteen miles from a nest, the vast majority of hawks forage no more than five miles from a nest and most forage within one mile, especially when suitable foraging habitat is near the nest. And, while the general preference of the SH for certain crop types is well-documented, the relative value to SH of the suitable crops under varying farming regimes is not. Finally, it is not known whether the existing areas of farmland in the Central Valley that are protected by various

development restrictions (Williamson Act contracts, planning regulations such as those being developed by the Delta Commission, etc.) are sufficient to ensure preservation of the species.

The FSEIR depended solely on the 1992 Guidelines to define mitigation levels. It states that depending on various factors, replacement habitat requirements for SH impacts could be as much as 4,290 acres.[1] This level of mitigation represents a 1:1 ratio (acquired to lost), without regard to the type of mitigation provided, the distance of the mitigation site from a nesting tree, or the relative value to the SH of the impact area.

However, since completion of the FSEIR, the DFG has substantially revised its guidelines, issuing the 1993 Guidelines. The 1993 Guidelines revised mitigation ratios significantly, devising a "sliding scale" of mitigation depending on the distance of the impact area from an active nest site. The 1993 Guidelines provide for a 1:1 ratio for impact areas within one mile of an active nest; 0.75:1 for impact areas between one and five miles of an active nest; and 0.5:1 for impact areas greater than five and within ten miles of an active nest. Based on current data, the entire site is within 2 miles or less of an active nest site. Although the 1993 Guidelines would recommend a 1:1 mitigation ratio for those parts of the site within 1 mile of an active nest and a 0.75:1 ratio for those more than 1 mile from such a nest, these Guidelines are now without regulatory affect. Additionally, determining specifically which portions of the site are within 1 or 2 miles would be difficult. For other large projects, the DFG has recognized the difficulties in defining the exact location of the impact area relative to nest sites and now accepts a 0.5:1 ratio for these projects (Zezulak, personal communication).

This HMP proposes a mitigation program based upon the DFG 1993 Guidelines with additional refinements reflecting the needs of the SH and subsequent DFG guidance. This program provides guidelines specific to the Mountain House project reflecting the need for foraging habitat in proximity to nesting trees and the need for additional nesting opportunities. The following table provides a summary of the HMP proposal. Please note that mitigation for

[1] The FSEIR also authorizes payment of mitigation fees in lieu of providing replacement habitat.

SH impacts on the project site is based on the distance of the mitigation site from a nest tree not the distance of the impact area from a nest tree. The mitigation table is arranged according to the habitat type to be acquired. Consequently, for any developer of a portion of the SH impact area on the project site, this table provides a "menu" of possible selections, subject to specific restrictions. For foraging habitat acquisition, these mitigation ratios are based upon the distance of the acquired foraging habitat from an active nesting tree. The DFG Guidelines (both 1992 and 1993) do not address this subject. The 1993 DFG Guidelines propose varying levels of mitigation based upon the distance of the impact area from an active nest site.

Proposed Mountain House SH Mitigation Program[2]

Type of Habitat Acquired[3]	Distance of Mitigation Land from Active Nest	Nest Trees Planted	Habitat Enhanced	*Mitigation Ratio[4]
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	N/A	Yes	Yes	0.25:1
Existing Nesting	N/A	No[5]	Yes	0.17:1

*Mitigation Ratio represents the ratio of acquired habitat to impacted area.

For the acquisition of foraging habitat, the HMP proposes the following mitigation ratios.

[2] This program assumes a *3,860*-acre impact area on the project site. Mitigation also may be required for approximately 300 additional acres of foraging habitat if off-site agricultural acreage is used for wastewater storage.

[3] See Appendix B for habitat descriptions and other definitions. Mitigation lands may be dedicated in fee or through appropriate conservation easements. Foraging lands must be at least 100 acres in size and, subject to reasonable land availability, contiguous. Nesting habitat (existing and proposed) shall be at least 5 acres in size and shall constitute no more than 6% of the total mitigation area.

[4] The mitigation ratios represent the amount of land, by habitat type, to be acquired to mitigate for each acre of impact.

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

* 0.5:1 where the acquired foraging habitat is between 5 and 10 miles from an active nest. This is consistent with later, informal mitigation proposals from DFG for large projects where defining the center of the impact area may be problematic. Note, however, that the HMP mitigation ratios focus on the distance of the mitigation land from the nesting site while the DFG Guidelines focus on the distance of the impact area from the mitigation site.

* 0.33:1 where the acquired foraging habitat is within 0 to 5 miles of an active nest. This lower level of mitigation is justified due to the relative proximity of the mitigation lands to an active nest site.

In addition, specific enhancement measures for all acquired foraging lands are provided in the HMP, including the use of treated wastewater to increase productivity, restrictions on rodenticides, and the provision of cover plants to increase small mammal populations. These added enhancement measures (discussed in more detail below) and the costs associated with these measures justify a lower mitigation ratio than might be identified through strict application of one of the DFG Guidelines. Finally, this HMP incorporates by reference the habitat enhancement activities that will be completed by the developer along Old River and Mountain House Creek. These two habitat enhancement projects will construct more than 100 acres of native habitats, most of which will be suitable for the SH.

The HMP mitigation program also promotes the provision of nesting habitat. Nesting habitat may be the critical "weak link" in the survival of SH in the County. SH preferentially nests in native riparian trees, especially cottonwoods and valley oaks. The 1993 Guidelines state that preserving nesting trees is a high priority for overall SH preservation, noting that much of the Central Valley's riparian woodlands have been lost (up to 90% in some estimates) and the remaining areas are under a continuing threat. Finally, European settlement may have actually increased available foraging habitat for the SH while it certainly led to the destruction of much of the nesting habitat. Consequently, a combined program that emphasizes both foraging and nesting habitat for the SH is the most logical approach.

For the acquisition of nesting habitat, the HMP proposes the following ratios.

* 0.25:1 for the purchase of potential nesting habitat and the planting of suitable trees and assurances for their continued growth.

* 0.17:1 for the purchase and preservation of existing nesting habitat.

These ratios are the lowest proposed by the HMP but they recognize the importance of nesting habitat and the additional costs required to purchase or provide nesting habitat. Additionally, only 6% of the total mitigation commitment may be in the form of nesting habitat (potential and existing combined).

These ratios can be seen as refinements of the guidance provided by the DFG Guidelines in that they provide for the protection and/or creation of nesting habitat and provide an incentive for developers to protect foraging habitat near nesting trees as mitigation for foraging habitat loss. The present Guidelines and the ecological literature on SH nesting and native riparian landscapes describe the loss of historic nesting habitat and note that this may be critical to the SH but the Guidelines do not now provide for the purchase or creation of nesting habitat. Research on the SH and other raptors stresses the importance of foraging habitat near nest trees but the current Guidelines do not provide for an incentive system that recognizes this need.

Based upon this mitigation formula, the HMP would provide for the acquisition of between 1220 and 1930 acres of SH mitigation land, assuming a 3860-acre impact area. The figure of 1220 acres is based on a mitigation program that acquires 1150 acres of foraging habitat less than 5 miles from an active nest site (a 0.33:1 mitigation ratio which therefore mitigates for 3450 acres of SH impact area) and 70 acres of existing nesting habitat (a 0.17:1 mitigation ratio). The larger figure noted above of 1930 acres is based on a mitigation program that acquires only foraging habitat that is between 5 and 10 miles from an active nest site, thereby requiring a 0.5:1 mitigation ratio.

Finally, the project will mitigate for the loss of the one nesting tree (discovered in spring 1994) that exists south of Byron Road through this program and the additional measures described below. Consequently, upon acceptance of the mitigation program by the County, the tree south of Byron Road will be removed at a time when no SH occupy the project site (generally, between September 15 and March 1, but the lack of occupancy will be verified by a biologist prior to elimination of the tree). This tree may not be removed during the period between March 1 and September 15 and if this tree still stands during this period and construction is occurring on the project site, then no disturbance or other project-related activities that may cause nest abandonment or forced fledgling shall occur within 1/2 mile of the tree between March 1 and August 15, or until fledglings are no longer dependent upon nest habitat, a determination that must be made in writing by a biologist. The other known nest tree on the project site occurs on the banks of the Old River and is not proposed for disturbance, although the adjacent lands will be enhanced as part of the restoration and other activities carried out in the development of the Old River Park. For this tree, no grading or other activities requiring the use of heavy equipment will not occur between March 1 and September 15 within 1/4 mile of the tree. The smaller distance of 1/4 mile is applied to this tree because it is buffered by the Old River. If SH are disturbed in this tree they can fly across Old River to the far shore. Other activities that do not require heavy equipment, e.g. planting, may occur during this period.

E. HABITAT ENHANCEMENT

This HMP proposes habitat enhancement measures that are not contemplated in the FSEIR that provide for increased prey densities and SH populations in the mitigation foraging lands[6]. Three primary aspects of SH habitat will be enhanced by the proposed program: (1) permanent SH foraging lands will be provided and maintained in compatible farm uses; (2) cover and

[6] Notwithstanding this HMP, agricultural land conversion and SH impacts may be mitigated through mechanisms other than the HMP should they become available. For example, for the SH this may take the form of fee participation in a County-sponsored or approved multi-species conservation program or similar effort.

burrowing habitat for small mammals will be provided in non-crop areas; and (3) crop production may be enhanced by irrigation with nutrient-rich reclaimed wastewater.

The current agricultural regime of the mitigation areas will not be significantly altered by the proposed mitigation program. Irrigation and cropping regimes, crop rotations, field sizes, and crop types, will remain essentially as they currently exist. A minimum of 35 percent of the mitigation area shall be in alfalfa in a rotation of other crop types as occurs on the project site today. Acquisition of the mitigation lands will ensure that they remain in agricultural use.

For each 80 acres of farmland, this HMP proposes the planting of 1.0 acre of riparian associated vegetation. This area will be provided adjacent to irrigation and feeder ditches or alongside farm fields (*Figure 3*). Fast-growing and ultimately large species used by the SH like the Fremont cottonwood will be used along with slower growing but also important species such as the valley oak, as well as native shrubs and grasses.

The project wastewater treatment facility may deliver reclaimed water to the existing field delivery systems in the mitigation area, replacing the water sources currently used for irrigation. Treated wastewater has been shown to enhance raptor and prey populations at other sites in the Central Valley, as well as supplying an assured water source for continued farming operations. Wastewater ponds, required to hold irrigation water for pumping will be designed to include tri-colored blackbird habitat.

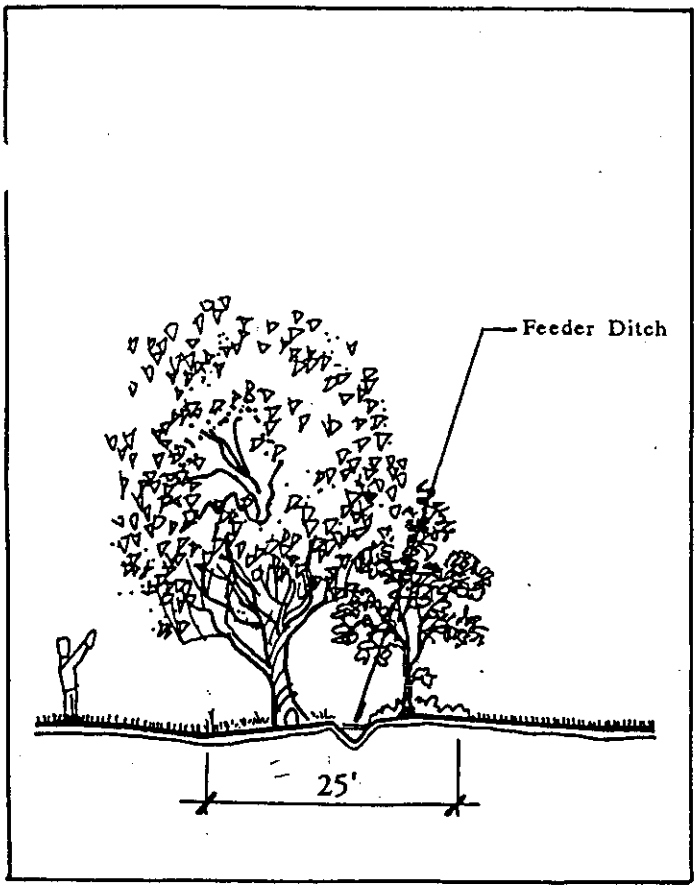
F. ENSURING SUCCESS

This HMP provides for increased assurance of success through the use of performance standards and monitoring protocols for a 5 year monitoring period. Mortality rates, vigor, and height of all planted trees and shrubs will be evaluated. The herbaceous cover, woody plant cover, cover per species, and non-plant cover shall be recorded. Annual crop reports shall be provided to the County detailing the type and acreage of crops grown in the mitigation lands and the yields. Wastewater use shall be monitored in accordance with the requirements of the Regional Water Quality Control Board. The results of the

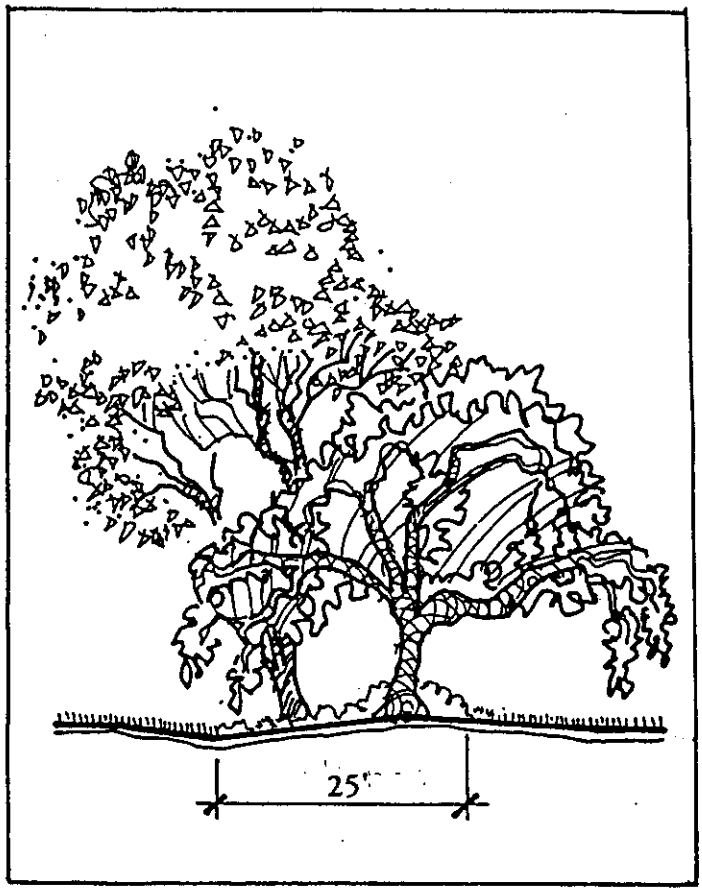
monitoring program shall be submitted in an annual report to the relevant county and state agencies by August 15 of each year.

The HMP also includes performance standards requiring that riparian and related native vegetation shall have been established at specific densities with specific survival rates by the end of the five year monitoring period. Additionally, plant cover of native shrubs and grasses must meet specific standards. Finally, within the agricultural areas of the mitigation site, the crop record shall show that crops suitable for SH use shall have been planted and harvested at a rate comparable to neighboring farms for at least four of the preceding five years, and that a minimum of at least 35% of the acreage each year was planted to alfalfa.

If annual monitoring indicates inadequate progress toward a final performance criterion for all or any portion of the mitigation project, or if the final success criteria are not met, the applicant must prepare an analysis of the cause(s) of failure which will be submitted to the County. If determined necessary by the County, the applicant will then propose remedial actions for County approval.



SECTION A-A



SECTION B-B

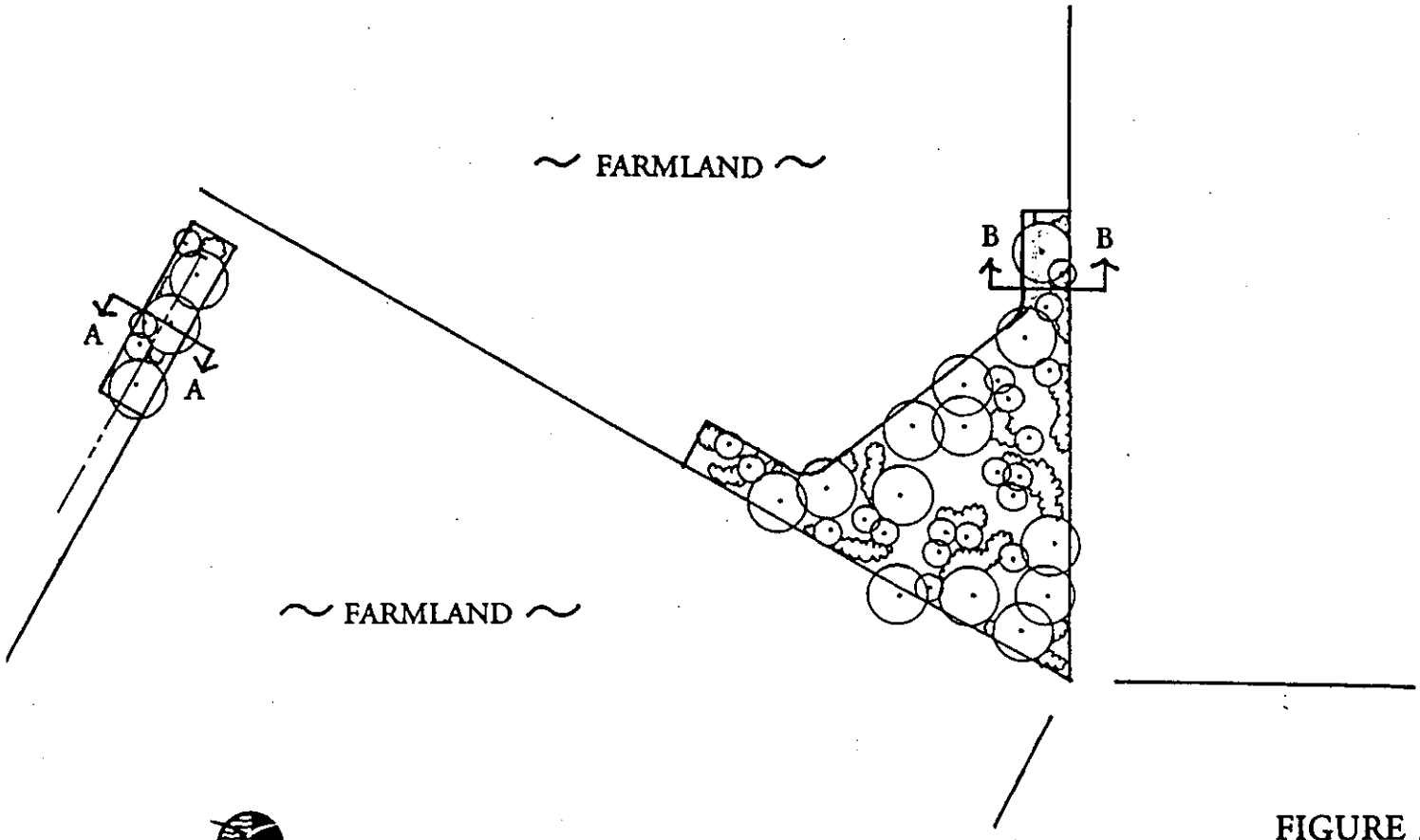


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FIGURE 3
Plan Views and Cross-Sections of Typica
Swainson's Hawk Non-Crop Cover Habitat

Chapter 1
Setting

A. SWAINSON'S HAWK

1. Status

The SH is a state-listed, federal candidate species that nests in western North America and winters in southern South America. In 1983, California listed the Swainson's hawk as a threatened species, affording it protection under the California Endangered Species Act ("CESA"). Appendix A contains a legal analysis of the level of protection afforded by CESA for the SH. In 1989, the SH was designated as a candidate species for listing by the U.S. Fish and Wildlife Service ("FWS") under the federal Endangered Species Act of 1973, as amended ("ESA"). Candidate species such as the SH are not afforded the legal protection of a listed species or a species which has been proposed for listing as threatened or endangered under the ESA.

2. Ecology

SH typically appears in California in March and completes nesting by August with out-migration usually occurring in September (Jones & Stokes, 1990). SH forages for small mammals by soaring 100 to 300 feet above relatively open fields (Estep, 1989). Typical prey include California voles, (*Microtus californicus*) valley pocket gopher (*Thomomys bottae*), and deer mice (*Peromyscus maniculatus*) (DFG, 1993a). The northern harrier forages in a similar manner (DFG, 1993a).

Unlike many raptors, the SH appears highly adapted to human activities. SH pre-European foraging grounds of native grasslands were replaced almost entirely with non-native croplands. It is unclear at this point how this has affected population levels of the SH. The SH also actively seeks suitable fields where farming or other activities force small mammals from their burrows (DFG, 1993a). In one study, harvesting, discing, mowing, and flooding of fields accounted for 73% of all prey captures by the SH (Estep, 1989). SH have been observed following tractors other farm equipment that disturb the soil surface and force small mammals into the open (ibid).

The SH, like all raptors, seeks to minimize flight distance to prey (Terres, 1980). DFG (1993b) notes that SH may forage up to eighteen (18) miles from a nest. However, these relatively long flights were uncommon; telemetry data shows that the majority of all SH foraging occurs within one to two miles of nests and approximately 80 to 90% of all foraging occurs within five miles of a nest (Estep, 1989). Additionally, the 18 mile flights reported by DFG apparently occurred where SH flew from nest trees along the Sacramento River over urbanized areas (West Sacramento) to forage in suitable crop lands, a reflection of SH fidelity to nest trees rather than a willingness to engage in long-distance foraging.

Fledgling foraging appears to typically occur within 1/2 mile of the nest (Estep, 1989). Fledgling mortality has not been well-studied for the SH and this limited foraging radius may be a crucial element in SH survival as fledgling mortality may be one of the more important factors in current low population levels. Fledgling mortality among raptors may reach 80% and is often at least 60% (Newton, 1979). The Swainson's Hawk Technical Advisory Committee, (SHTAC; 1993) and Buechner (1993) determined that fledgling mortality in California may be at least as or more critical than supposed impacts in South America described by Sugnet and Associates (1992).

3. Historic Distribution in California

The SH once occurred through much of central and southern California. Although the population decline in California has been amply documented, the reasons for this decline have not been clear (Bloom, 1980; Estep, 1989; DFG, 1993a, 1993b). For example, the SH disappeared from southern California's interior valleys, where it at one time was common, when the interior valleys' oak savannas were converted first to citrus orchards and then to urban areas (Garrett & Dunn, 1981). Whether the loss of SH in this area was due to a loss of foraging habitat, nesting trees, or both is not known. The SH also disappeared from California's central coastal counties when these areas where converted to agriculture. However, the form of agriculture practiced in this region is known to be suitable for SH foraging. Bloom (1980) noted that the loss of the cottonwood and valley oak riparian zone in the central coast which occurred at approximately the same time and was also due to agriculture conversions may have been the primary factor in the elimination of SH in this region.

Setting

The elements of the native landscape that have long made portions of the Central Valley one of the most significant regions of California for SH nesting are very scarce but still evident in certain preserves. Estep found in 1989, for example, that 71.9% of the Central Valley SH nests are in native valley oaks (*Quercus lobata*), the only tree on the floor of the valley that regularly forms savannas (Holstein, 1984). Relict examples of such savannas are still extant at the Nature Conservancy's Cosumnes River Preserve in Sacramento County in an area of high SH nesting density (Jones & Stokes, 1990). At this preserve, valley oak savannas occur at the outer edge of riparian forests dominated by Fremont cottonwoods (*Populus fremontii*) and Black willows (*Salix goodingii*). An understory at the Cosumnes savannas dominated by the native grass creeping wildrye (*Leymus triticoides*) completes a plant community that closely replicates the one described by Jedediah Smith as typifying much of the interior of the Central Valley in 1826 (Burcham, 1957).

Many parts of the Central Valley always have been void of oaks and most other trees, however, due to a variety of ecological factors. For example, trees were excluded from most of the San Joaquin Valley region by its desert climate, and from the Delta and many flood basins because of their former lack of drainage. Extensive acreage with soil hardpans that do not support any significant woody vegetation also occur in the Central Valley (Storie & Weir, 1951). Consequently, Central Valley riparian forests and associated oak savannas were most extensive in the Sacramento and northern San Joaquin Valley regions and even there they were relatively localized, occurring on the fringes of perennial waterways in relatively young alluvium (Kahrl, 1979). These areas undoubtedly were the primary location of SH nesting in the Central Valley in pre-European times.

The SH has probably declined in the Central Valley because of land use changes that have altered the vegetation of foraging areas and removed nesting trees (Bloom, 1980), leaving areas such as the Cosumnes River Preserve even more rare. However, the loss of foraging habitat alone probably does not explain SH declines. Although many crops such as corn (*Zea mays*) and cotton (*Gossypium hirsutum*) are largely or completely incompatible with SH foraging (Estep, 1989), many areas of once-forested land or relatively barren lands have been converted to irrigated pasture or similar crops that are now suitable for SH foraging (DFG, 1993a). These crop types often support higher prey populations than do the native grasslands due to the higher productivity. Prey visibility is

variable in croplands, high when newly sown or being harvested while prey visibility in the native grasslands would have been moderate but relatively constant. Consequently, European settlement may not have had a significant, deleterious affect on the extent of SH foraging habitat (Jones & Stokes, 1990).

However, the early removal of valley oaks and other riparian trees during the initial cultivation of the prime agricultural soils in the state greatly reduced SH nesting habitat (Bloom, 1980; Holstein, 1984). By some estimates, riparian woodlands have declined by 90% over the past century (Katibah, 1983). DFG (1993b) cites the loss of suitable nesting trees as one of the primary factors in SH decline. The example of the central coastal region has been cited above. Consequently, the loss of nesting trees appears to be the primary reason for the decline of SH populations in California notwithstanding unknown impacts outside of the State.

4. Current US and California Distribution

SH occur throughout most of western North America. The largest contiguous population and nesting area of SH is centered in western North America and includes both the Great Basin and Great Plains regions (Johnsgard, 1990). Other nesting populations occur in disjunct areas with similar vegetation including the Prairie Peninsula of northern Illinois, the northern edge of taiga vegetation in Alaska and northern Canada, and the Central Valley of California (*Figure 4*).

The Central Valley contains California's largest concentration of SH today. The Modoc population is the second largest and only other significant SH population in California and is a peripheral part of the large and contiguous Great Basin-Great Plains population. California's Central Valley and Modoc SH populations are genetically isolated but not considered taxonomically distinct (Jones & Stokes, 1990).

SH typically nests today in large native trees (approximately 41' to 82' tall) in riparian areas adjacent to agricultural land which supports accessible prey (Bent, 1937). In a recent report, EIP Associates (1993) found all SH nests in North Sacramento to occur in riparian habitat. Jones & Stokes (1990) reported that SH typically nested in the following trees (in decreasing order of

importance): valley oak; Fremont cottonwood; black walnut (*Juglans hindsii*); and willows (*Salix* spp.). Wilkinson and Levy (1993) reported that 87% of the 31 SH nests found along the Sacramento River were in Fremont cottonwoods, probably reflecting the loss of valley oaks in this area. These all are native trees generally confined to riparian woodlands with fairly permeable soils. Each of these trees also is relatively salt-intolerant.

For these reasons, nesting is generally thought to be confined presently to the "floor of the Central Valley" (DFG, 1993a) rather than occurring along the valley perimeter where soils tend to be less suitable for native riparian trees (*Figure 5*). As noted above, nesting distribution might more accurately be characterized as typically found in those areas of relatively recent alluvium adjacent to perennial rivers and streams along the Valley floor (Jones & Stokes, 1990). These riparian systems have the ability to transport relatively coarse-grained sediment. This sediment is deposited along the waterways, often in the form of a natural levee, which is then suitable for the growth of native riparian trees, especially valley oaks. These conditions do not occur on the Valley edges where much older soils and less water will not support native riparian trees.

And, although the SH will fly some distance from the nest tree to forage, most will seek foraging habitat near the nest. Consequently, the Central Valley SH population is clustered in areas "where suitable nesting and foraging habitat occur together" (Jones & Stokes 1990, p. 1-1).

5. SH Distribution in San Joaquin County

The correlation between suitable nesting trees and foraging habitat evident statewide is also found at a local scale in San Joaquin County, where all SH nesting habitat areas typically contain both native riparian trees and compatible crops of either mixed row, grain, and hay crops or mixed valley pasturelands (Jones & Stokes, 1990). As shown in *Figure 6*, the five areas identified as SH subpopulation areas in the County by Jones & Stokes (1990) all share these two essential elements: (1) the presence of native riparian trees; and (2) suitable forage crops.

The absence of SH nesting in areas of incompatible soil type is particularly dramatic when both are mapped together. *Figure 6* also illustrates this correlation. The location of SH nests in this figure were developed by Jones & Stokes (1990) based on existing information and County-wide surveys. Crop patterns were derived from aerial photographs. The following areas within the County are not reported to support significant use by the SH:

1. A portion of the Sacramento-San Joaquin Delta that was formerly marshlands with drainage historically too poor to support riparian trees (SHTAC, 1993). This area occupies the westernmost portion of the County north of the project site. Some portions of this region are now used by the SH. At this time, SH foraging appears limited to those areas that also have nesting trees (author's observations). These trees are a more recent addition to the landscape than are suitable foraging crops and are growing on the island levees. Prior to levee formation, the soils of this region were too saturated to support such trees.

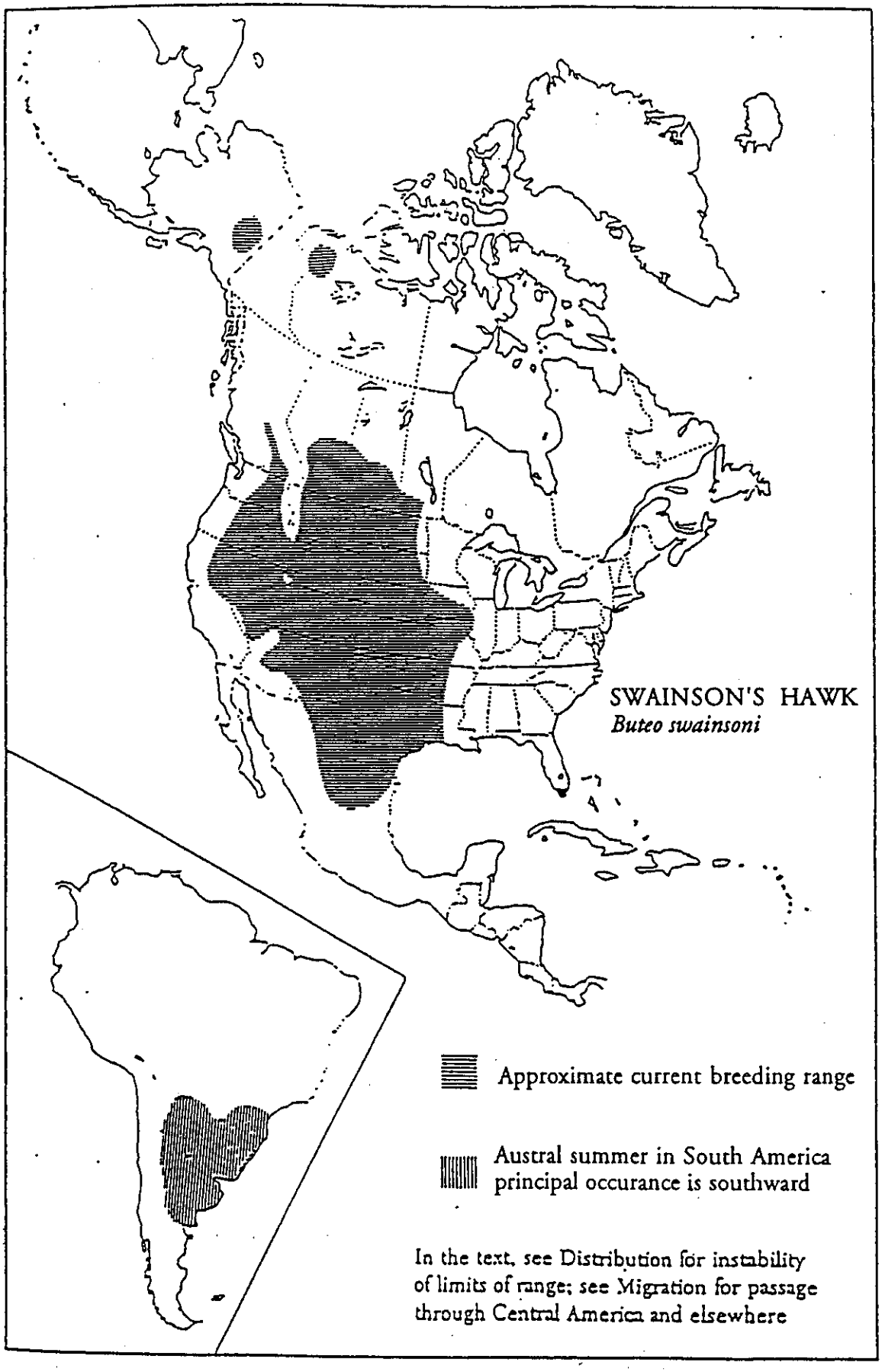
2. An area in the southwestern part of the County that lies in the rain shadow of the Diablo Range (SHTAC, 1993). This area is too climatically dry and has soils too saline to support native riparian trees. It includes a majority of the Mountain House site. These areas are not typically described as SH habitat (Bent, 1937; Bloom, 1980).

3. The eastern foothill grasslands that are too dry to support native riparian trees (DFG, 1993a).

4. Lands around Lodi, Stockton, and Manteca that all have incompatible crops, *e.g.*, orchards and vineyards.

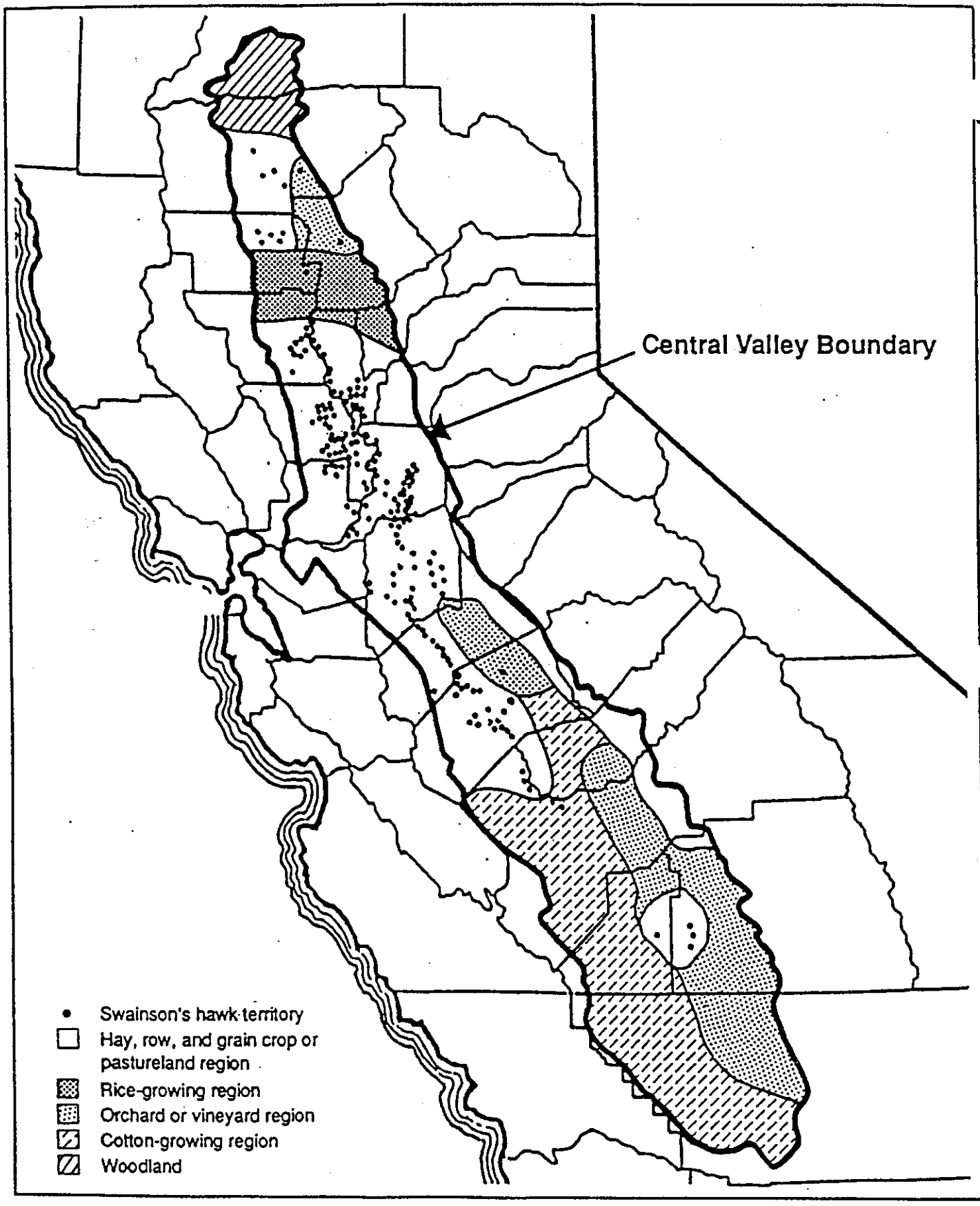
6. Summary

The SH has a strong fidelity to native riparian trees in proximity (within 1 mile or less) to suitable croplands. These conditions may be critical for fledglings and, in turn, critical for SH survival. Historically, the SH was



Source: Handbook of North American Birds, Vol. 5 Edited by Ralph S. Palmer

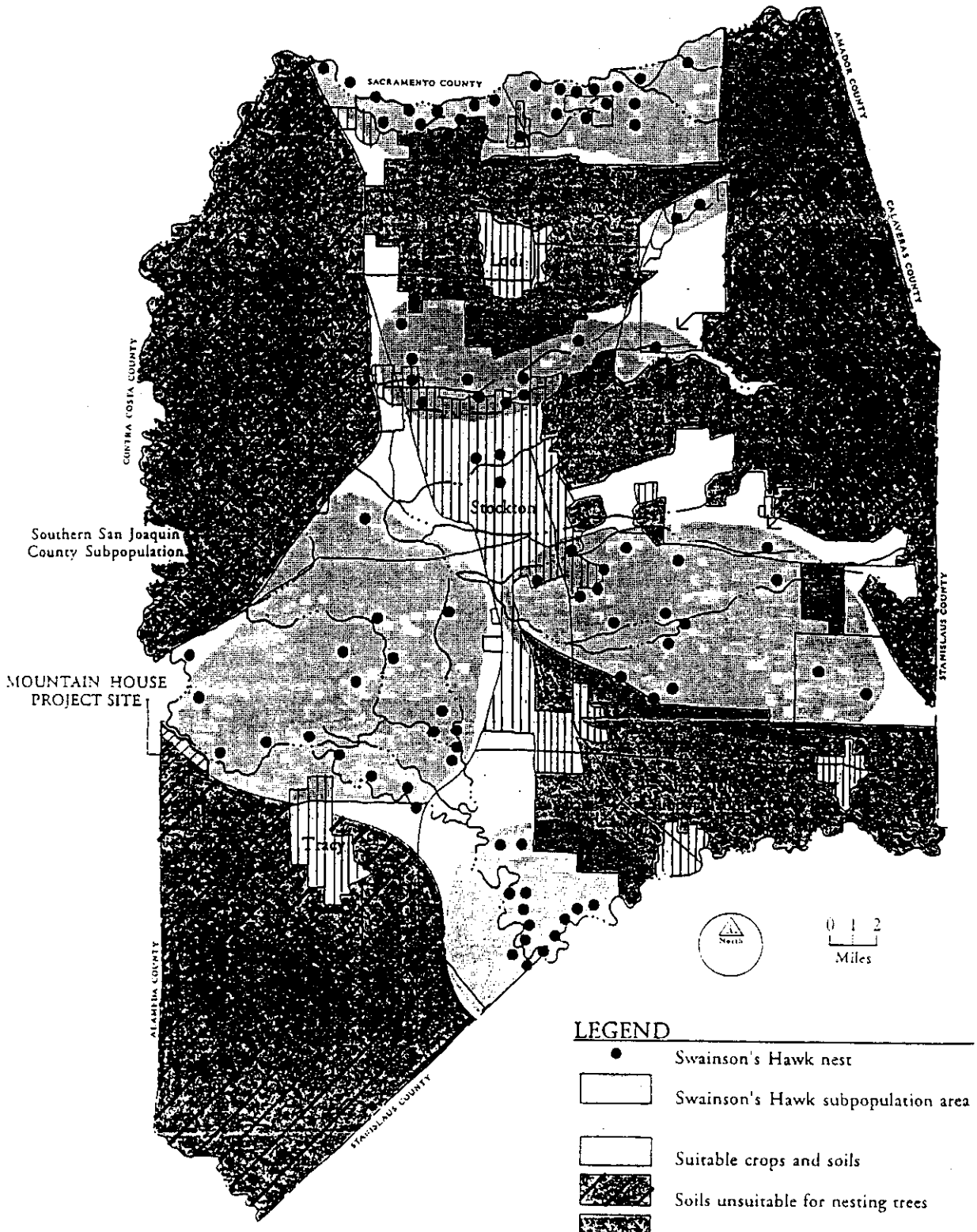
FIGURE 4
Swainson's Hawk Distributio



Source: Jones and Stokes, 1990.

FIGURE

Central Valley Swainson's Hawk Nesting Distributio
in Relation to Generalized Cropping Pattern



SOURCES

Nesting and Crops:

Jones & Stokes Associates, 1990. Preliminary administrative draft habitat conservation plan for the Swainson's hawk in San Joaquin County. Figures 4.2 and 4.3.

Soils: R. Storie & W. Weir, 1951. Generalized soil map of California.

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FIGURE 6
Swainson's Hawk Nesting Distribution in San Joaquin County, 1990

probably found in numerous locations in central and southern California where nesting trees occurred near open grasslands. Today, the SH no longer occurs in parts of southern California where both foraging and nesting habitat has disappeared, or in coastal central California where suitable crops are grown but the nesting trees have been lost. These patterns are observable in San Joaquin County also, where SH use is confined to areas with nesting trees in proximity to suitable foragelands.

The project site was not historically an area of nesting for the SH and historic foraging on the site was probably limited to the lands immediately adjacent to Old River. More recently, though, it appears that the SH may expand its range into presently suitable areas, even if such areas do not have both the native nesting tree and foraging habitat characteristics of historic and current SH habitat. The presence of suitable crops and trees, native or non-native, may be sufficient to support SH use, which indicates that similar areas and trees may provide useful mitigation lands as well as potential habitat.

B. THE PROJECT SITE

1. Introduction

The project site consist of 4784 acres and is located at the western edge of San Joaquin County, California, approximately five miles northwest of the City of Tracy (*Figure 1*). The project site is just southwest of the Delta and just east of the Diablo Range. It is the northernmost extension of the dry, somewhat saline alluvial flats found along the western edge of the San Joaquin Valley (Storie and Weir, 1951).

Any proposed off-site mitigation lands must be located within the Region and meet the objectives for the HMP stated herein and in the Master Plan. A final decision on the mitigation site(s) may be determined by the feasibility of treated wastewater disposal.

2. Historic Conditions

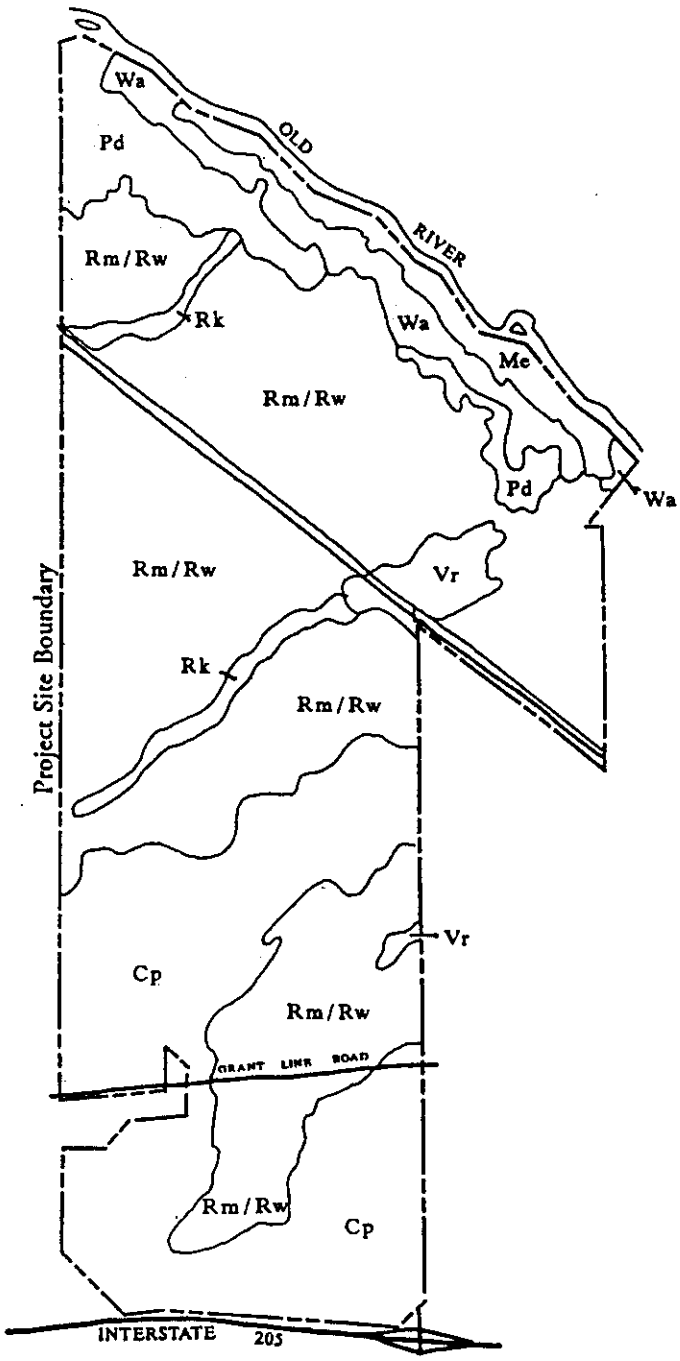
Soils provide a useful guide to the pre-European conditions of many areas as they remain relatively intact while water and vegetation conditions change significantly. On the Mountain House site, the soil series change appreciably south of Old River. Most of the project site consists of Stomar clay loams or Capay clays (*Figure 7*), soil series defined by the SCS as unsuitable for riparian trees (SCS, 1992). These soils also contain significant amounts of salt, a testament to their marine origins, and are heavy clays that are relatively poor for small mammal burrow establishment. In contrast, the area near Old River on the project site is dominated by a series of more permeable, neutral soils, derived from riparian action: the Peltier, Merritt, and Grangeville series, all of which are described by SCS as suitable for riparian trees and which provide friable soils for burrowing by small mammals. The soils on the Fabian Tract north of the project site across the Old River also contain these more permeable soils.

The quantity and duration of stream flows and groundwater levels are also important in determining the extent of riparian vegetation in central California. The project site prior to European settlement was characterized by desert-like conditions due to the Diablo Range rainshadow. Mountain House Creek, the primary waterway on the site, would have been an ephemeral to intermittent stream due to the limited watershed and rainfall.

Due to these factors, the project site probably was dominated by salt-tolerant grasses and dry prairie forbs prior to the European entry to California. Kuchler (1985) designates the pre-European vegetation in this area as "California prairie", highlighting the absence of native trees and relative sparsity of vegetative cover. Primary productivity and the concomitant rodent production would have been relatively low in these conditions (Holstein 1984).

3. Current Site Conditions

Soil conditions have not changed appreciably. The soils in the southern three-quarters of the site are relatively heavy clays that have become somewhat more dense due to stock grazing and the accompanying compaction. Soils near Old River are significantly less dense and more friable.



Legend	
Cp	Capay
Rk	Reiff
Me	Merritt
Pd	Pescadero
Rm/Rw	Stomar
Vr	Vernalis
Wa	Willows

North

SOURCE:
U.S. Dept. of Agriculture, SCS, 1990.

SCALE: 1" = 4000'-0"

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FIGURE 7
Site Soil Series

Site hydrology has changed considerably. The use of irrigation water provides significantly more moisture than under historic conditions. Additionally, leakage from various canals upstream from the project site provide near-perennial flows to Mountain House Creek (Zentner and Zentner, 1993).

With regards to vegetation, the project site is now used primarily for irrigated row crops, with small areas of heavily grazed pasture. Approximately 3,600 acres of the project site are considered "prime farmland" (Baseline Environmental 1993). Approximately 3,860 acres were farmed in crops suitable for SH foraging during 1993. However, preferred nesting trees for SH are not present. A number of non-native trees are growing on the site but none of these have been considered suitable for SH nesting. A few willows can be found along Mountain House Creek but these are not of a size or species suitable for SH nesting. Additionally, the banks of Old River adjacent to the site and for some distance up- and down-stream have been cleared and are apparently kept cleared; these areas also do not support suitable SH nesting trees. Other non-native trees are scattered throughout the site but these have generally not been considered suitable for nesting. Despite these conditions, however, SH did nest on the site in the spring of 1994 in one of the willows overhanging Old River and in a lone eucalyptus in the middle of an alfalfa field.

The vegetation on-site is also subject to periodic discing, planting, irrigation, spraying, rodent control, and harvesting or other aspects of farming operations for crops (such as ditch maintenance). Non-crop habitats are extremely limited. Zentner and Zentner completed a survey of the project site in spring, 1994 and found that, of 40 locations reviewed, non-crop plant cover averaged 30% with a range from 100 to 0%. Only locations north of Byron Road had non-crop cover greater than 25%. "Locations" were defined as a randomly selected strip or patch of unfarmed ground between 100 and 400 square feet in extent.

The intensity of agricultural practices severely limits wildlife use of the site. Wildlife that persists in such landscapes tend to be either small rodents and insects which feed on the agricultural crops, or highly mobile species (such as raptors and coyotes) that feed on the small rodents and insects but can escape and/or utilize the farming activities. However, the small rodents have limited breeding site availability due to cropping patterns, the near absence of cover and suitable soils for nest construction, and the active efforts of farmers to eliminate

rodents through pest control programs.

These conditions vary over the project site, though. As noted above, non-crop cover is more abundant near the Old River. The soils in this area are also more friable and more suitable for small mammal burrow construction. Additionally, due to the size of the Old River levee and the larger ditches (and side berms) necessitated by greater drainage requirements the relatively steep levee and ditch banks are too steep for farming and are awkward to clear of vegetation, hence they often support large briar patches and areas of dense weeds. The patches of dense cover, combined with ditch berms conducive to small mammal burrowing, provide habitat for voles, gophers, ground squirrels, and cottontails.

Prey studies completed for kit fox surveys performed by Biosystems (1992) found small mammals throughout the site but in relatively low concentrations outside the northernmost portion of the site. *Figure 8* shows the distribution of California ground squirrels (*Spermophilus beecheyi*) on the project site as derived by Zentner and Zentner from the Biosystems data. Concentrations of other SH prey species, such as the California vole and the Botta pocket gopher, are similar based upon the Biosystems data.

4. Existing SH Habitat

Figure 2 shows SH use of the project site over one breeding season as identified in the FSEIR. Twelve surveys for the SH were carried out for the FSEIR from April 18 to May 23, 1991. Each survey lasted approximately 3 hours in either mid-morning or late afternoon. No nest trees were discovered on-site despite a "thorough search of the relatively few large trees on the site" (p. 4.13-21, FEIR)

The data also show that SH use of the project site south of Byron Road was practically non-existent. Most (65%) of the SH sightings on the project site were directly adjacent to the Old River. Two clusters of SH use between Old River and Byron Road marked farm activities that exposed SH prey (Arunado, personal communication; Baseline Environmental, 1993). These two clusters of SH use accounted for 44% of the total sightings. One pair of SH were seen just south of Byron Road, approximately 7500 feet from Old River. The southern

two-thirds of the site was not visited by SH during the survey period despite the presence of suitable crop types and the farming activities that should have drawn the SH into this area (ibid).

The near-absence of the SH on the project site south of Byron Road is probably due to a number of factors. First, the SH likely did not use the site prior to European settlement with the exception of the area immediately adjacent to the Old River. Consequently, foraging on the Mountain House site south of the Old River would be a departure from historic patterns for the SH. While the SH has shown itself to be opportunistic with regards to foraging habitat, this opportunism seems to be combined with a continuing affinity for native nesting trees. The example of the Delta was noted above; there the SH has begun foraging in areas that were probably not historically used but the construction of levees has promoted the growth of native nesting tress that were not present in the region prior to the past century. The presence of the trees and not the forage crops (which have been grown in the Delta for almost a century) appear to have prompted SH use of this area.

Second, the current distribution of SH in the Central Valley and San Joaquin County correlates with the presence of suitable nesting trees and forage crops in proximity to those trees (Jones & Stokes, 1990). While the Mountain House site contains potentially suitable foraging crops, it does not provide preferred nesting trees.

Third, the small mammal populations that the SH prey upon are much higher near the Old River than in the areas south of Byron Road. The higher small mammal numbers are due to the more friable soil and greater amount of non-crop cover.

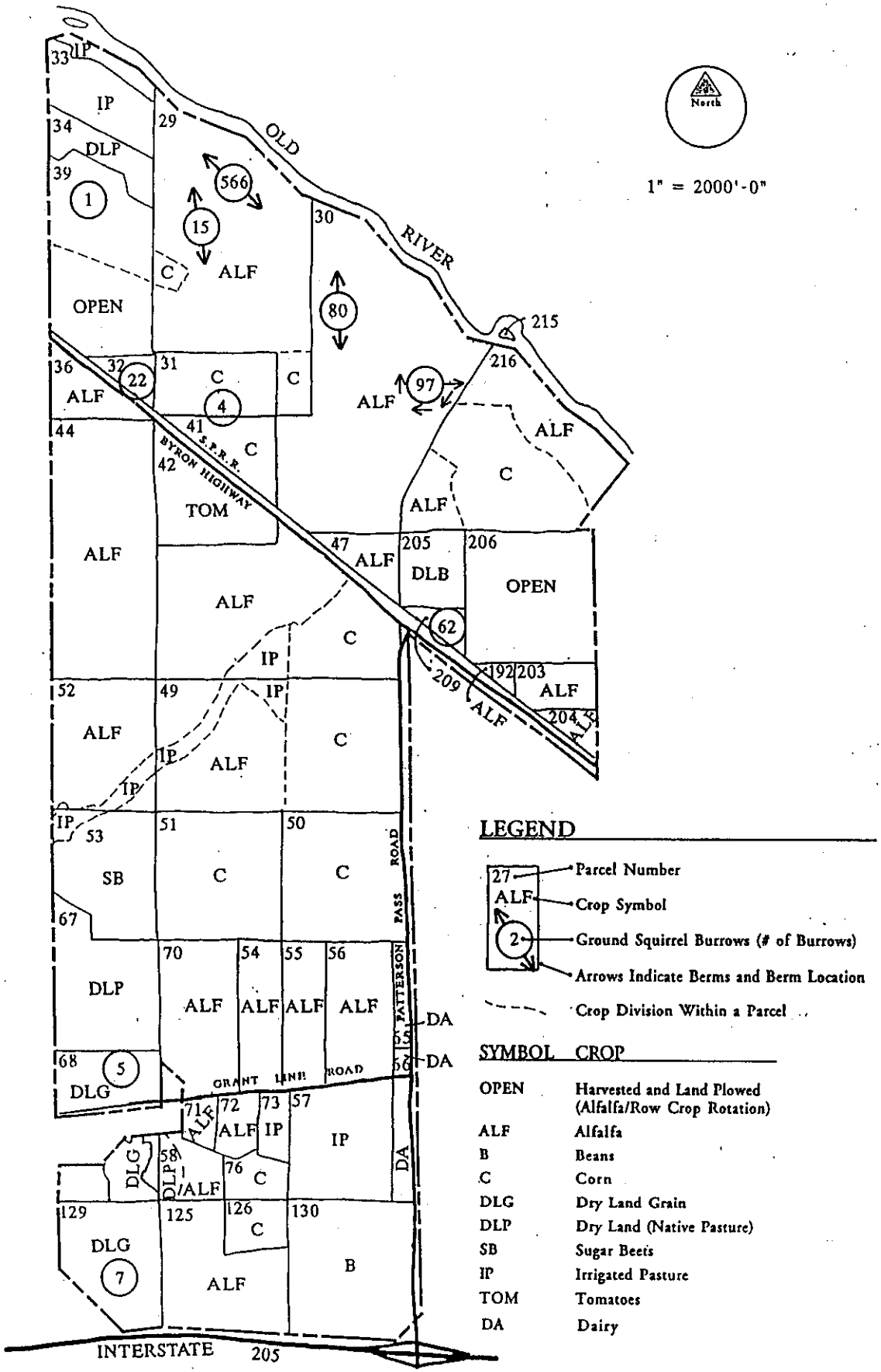
Finally, as demonstrated by Jones & Stokes (1990), the SH in this region have extensive foraging opportunities north of Old River (see p. 4-16, Figures 4-8). Both Union Island and the Fabian Tract contain extensive areas of suitable crops with relatively lower density nesting (compared to either the San Joaquin or Cosumnes River corridors). Consequently, SH may have little need of the potential foraging habitat found at the project site, although the presence of SH on the project site may be the result of young birds seeking new territories.

Spring and summer 1994 surveys by California Department of Fish and Game (DFG) and Zentner and Zentner have documented two active SH nests on the Mountain House site (see *Figure 2*). Neither of these SH nests occur in preferred tree species: one SH nest is located in a willow tree which over-hangs the water in Old River; and the other SH nest occurs in a lone eucalyptus tree surrounded by fields recently converted to alfalfa in the southern third of the site. These fields were formerly in corn, a crop type unfavorable to SH.

The significance of this recent DFG survey is unknown. Wildlife use often fluctuates significantly and the timing of any survey is important. The FSEIR survey data was gathered over a 35-day period, from mid-April to mid-May. The period of use by the SH of the Central Valley is typically April through August. Consequently, the survey period represents about 20% of the optimal survey time. However, as the EIR consultants noted, the survey period actually witnessed a "peak" in SH use (due to small mammal numbers) that would not re-occur for several years. And, as shown in Figure 2, survey data for the northern harrier, a species whose foraging patterns mimic the SH (DFG, 1993), shows the same pattern of foraging as the SH. The 1994 surveys were done later in the year (June-July) and may have been more intensive than past effort. Certainly more nest sites have been recently discovered in previously unconsidered locations than would have been thought possible given previous work.

C. OTHER RAPTORS ON THE PROJECT SITE

Two other special-status raptor species also are known to forage in the northern portion of the project site. Northern harrier (*Circus cyaneus*) and black-shouldered kite (*Elanus caerulea*). As discussed in the FSEIR, these raptors as well as the SH and the more common red-tailed hawks and barn owls, were closely associated with the portion of the site north of Byron Road, near the Old River levee and adjacent alfalfa fields (*Figure 2*). Again, this concentration of raptors within the area near the levee appears to be the result of a combination of suitable forage crops and adequate prey despite the presence of similar crops only a short distance away to the south. This lack of significant use of the project site south of Byron Road by these other raptors lends support to the analyses contained in this HMP.



SOURCES

Crop Information: The McCarty Company
Ground Squirrels: Biosystems, 1992.

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FIGURE 8
Crop and Ground Squirrel Map (1992)

Chapter 2
Proposed Mitigation Plan

A. DEVELOPMENT PROJECT

The Mountain House project site will include residential, commercial, office, industrial, and open-space uses. Phase One is anticipated to commence by 1996. Full development is expected to span 20 years.

B. DEVELOPMENT IMPACTS

1. Avifauna Impacts

The development project will impact up to 3860 acres of potential SH foraging habitat, including alfalfa fields, dry land grain crops, irrigated pasture, and open fields on the project site Since use of the development site by northern harrier and black-shouldered kite closely parallels use by SH, the assessment of impacts to SH will be considered a reasonable assessment of the impacts of development of the project site on northern harrier and black-shouldered kite. Possible impacts to the tri-colored blackbird would be mitigated through construction of suitable freshwater marshes within the proposed wastewater ponds and will be discussed in a later section.

2. Agricultural Impacts

Most of the 4,784 acres of the project site are farmed. Approximately 3,600 acres of the project site are considered "prime farmland" (Baseline Environmental 1993). See the FSEIR for more detail.

3. Wastewater Impacts

The FSEIR and the Master Plan contemplate a complete treatment system for the proposed project. See the FSEIR and accompanying documents for more detail. The FSEIR mitigation measures allow off-site treatment of the entire treated wastewater flow, leading to the potential for approximately 300 acres of wastewater ponds on the off-site area and the accompanying SH impacts noted above.

C. MITIGATION REQUIREMENTS

1. Context of the Requirements

The FSEIR included several mitigation measures that provide general guidance on appropriate mitigation for the above impacts. Mitigation measure 4.1-1 (b), for example, stated that "land set aside for Swainson Hawk Mitigation that is also prime agricultural land could be credited as mitigating both impacts". Similarly, measure 4.4.2-2 (b) states that wastewater impacts should be mitigated through development of an "off-site reclamation system that is sized to [treat] as much wastewater as possible up to the entire annual flow". Finally, the FSEIR requires that an HMP for the SH be prepared that would include consideration of the northern harrier and black-shouldered kite and that the extent of mitigation for the SH "could be as high as 4,290 acres".

Accordingly, the FSEIR promotes the use of a multi-purpose HMP as a mechanism for providing appropriate mitigation for SH and other raptor impacts. Additionally, if an agricultural impact fee is adopted by the County for impacts stemming from the conversion of agricultural lands to non-farm uses that is applicable to this project, then any agricultural lands dedicated pursuant to the HMP shall satisfy any obligation of this project to pay a fee or otherwise comply with the relevant County agricultural impact ordinance.

The FSEIR did not identify a specific amount of required mitigation for these impacts although it did set an upper limit of 4,290 acres for SH mitigation. This relatively general approach to mitigation is entirely consistent with the role of an EIR for a General Plan Amendment; more specific mitigation measures are typically left to either later stages or other mechanisms.

Identifying a specific amount of mitigation and/or a specific process for defining the required mitigation is the primary role of this HMP. Additionally, this HMP focuses on impacts to and mitigation for the SH. Other raptor impacts can be mitigated through the provision of SH habitat, as noted in the FSEIR. Additionally, the added level of scrutiny provided for the SH by the California Endangered Species Act (CESA) beyond that provided by County policies mandates additional focus.

2. SH Mitigation Requirements

a. Precedents

DFG has actively sought SH mitigation since 1988 and its first draft mitigation guidelines were issued in 1990 (Jones & Stokes, 1990). However, no SH mitigation project has been built to date in California (Mensch, personal communication; Rempel, personal communication).

From 1988 to the present, large development projects have been approved and built that have replaced suitable crop lands with developed lands near active nest sites. DFG (1993a) cite a highway widening project in eastern Sacramento County as creating impacts but "no suitable mitigation for lost habitat." The Laguna West and Elliott Ranch projects are both in Sacramento County. These projects encompass more than 500 acres each and developed potentially suitable foraging grounds. Both sites are also within 1 mile of the Beach/Stone Lakes Refuge, a significant nesting and foraging area for the SH and other raptors.

SH mitigation programs that have been initiated to date have either been terminated without mitigation implementation, such as the A.G. Spanos agreement, or have involved only the dedication of fees for additional studies, such as the City of Stockton agreement (Jones & Stokes, 1990).

Accordingly, little or no practicable guidance exists for mitigation requirements. Without practicable guidelines, identifying a mitigation program for wildlife species is extremely difficult. This is especially evident in the case of the SH. While the need for nesting habitat mitigation is relatively clear, the use and value of foraging habitat is not. SH, like all raptors, forages as close to nest trees as possible. A telemetry study sponsored by DFG showed that the SH may forage as far as eighteen miles from a nest. This study has been used to justify protection by DFG of suitable croplands within 10 miles of an active nest site, an area equal in extent to 200,000 acres. However, the same study (and others) show that the vast majority of SH forage no more than five miles from a nest and most forage within one mile (Estep, 1989). Similarly, Estep (ibid) found the average foraging area (the "home range") of the SH to be just over 6200 acres with 83% of all home ranges under 7500 acres, which translates to a 2-mile foraging range.

b. DFG Guidelines

The FSEIR depended solely on the 1992 Guidelines to define mitigation levels. It states that depending on various factors, replacement habitat requirements for SH impacts could be as much as 4,290 acres. This level of mitigation represents a 1:1 ratio (acquired to lost), without regard to the type of mitigation provided, the distance of the mitigation site from a nesting tree, or the relative value to the SH of the impact area.

The 1993 Guidelines revised mitigation ratios significantly, devising a "sliding scale" of mitigation depending on the distance of the impact area from an active nest site[7]. The 1993 Guidelines provide for a 1:1 ratio for impact areas within one mile of an active nest; 0.75:1 for impact areas between one and five miles of an active nest; and 0.5:1 for impact areas greater than five and within ten miles of an active nest. Based on current documentation, all of the site is within either 1 or 2 miles of an active nest tree. Under the 1993 Guidelines, the impact would result in a 1:1 or 0.75:1 mitigation ratio, depending on the location on the site.

Despite these modifications, the 1993 Guidelines do not address the location of the mitigation lands relative to active nesting sites. Dedication of lands that are more than 10 miles from a nest site are not likely to be of high value to the SH. Additionally, although these guidelines state that "revegetation of historical nesting habitat with suitable native nest trees" is an important priority and that 73 to 93% of the pre-European riparian habitat in the Central Valley has been lost, no credit for nesting tree preservation or restoration is provided. Schlorff and Bloom (1985) state that preservation and, by extension, restoration of existing riparian forests is a critical concern for preserving current SH populations. The 1993 Guidelines also note that 95% of the SH habitat is privately owned, making preservation and restoration of nesting habitat through an incentive program extremely important. Finally, while restoration is defined as an important goal, the accompanying costs are not recognized. Guinon (1989) notes that such restoration work may reach $100,000 per acre.

[7] The 1993 Guidelines define "active nest site" as a "nest or territory which has been used within the past 5 years" (p. 10, 1993 Guidelines).

However, as noted above, these guidelines have been withdrawn from public use. For other large projects, the DFG has recognized the difficulties in defining the exact location of the impact area relative to nest sites and now is proposing an overall 0.5:1 mitigation ratio (Zezulak, personal communication).

c. HMP Proposed Mitigation Guidelines

This HMP proposes that the 1993 Guidelines, subsequent guidance from DFG and additional guidance reflecting the need for foraging habitat in proximity to nesting trees and the need for additional nesting opportunities be used for this project. Table One provides a summary of the HMP proposal. Please note that the habitat dedication requirements of the HMP provide a "menu" from which the developer of SH habitat (as defined in this HMP) will choose. However, the choice of mitigation options is limited by certain restrictions, such as a cap on the amount of nesting habitat.

For foraging habitat acquisition, these mitigation ratios are based upon the distance of the acquired foraging habitat from an active nesting tree. The Guidelines (both 1992 and 1993) do not address this subject. The 1993 Guidelines propose varying levels of mitigation based upon the distance of the impact area from an active nest site.

In addition, the developer will enhance and restore native riparian habitat at Old River and Mountain House Creek (Zentner and Zentner, 1993). These two habitat enhancement measures will add more than 100 acres of native riparian habitat to the SH mitigation program. As these measures are described in more detail elsewhere (i.e., the project Master Plan and related documents), they are not discussed further in this document.

Proposed Mountain House SH Mitigation Program[8]

Type of Habitat Acquired[9]	Distance of Mitigation Land from Active Nest	Nest Trees Planted	Habitat Enhanced	*Mitigation Ratio[10]
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	N/A	Yes	Yes	0.25:1
Existing Nesting	N/A	No[11]	Yes	0.17:1

*Mitigation Ratio represents the ratio of acquired habitat to impacted area.

[8] This program assumes a 3,860-acre impact area on the project site. Mitigation also may be required for approximately 300 additional acres of foraging habitat if off-site agricultural acreage is used and for wastewater storage.

[9] See Appendix B for habitat descriptions and other definitions. Mitigation lands may be dedicated in fee or through appropriate conservation easements. Foraging habitat must be at least 100 acres in size and, subject to reasonable land availability, contiguous; nesting habitat must be at least five (5) acres in size.

[10] The mitigation ratios represent the amount of land, by habitat type, to be acquired to mitigate for each acre of impact.

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

For the acquisition of foraging habitat, the HMP proposes the following mitigation ratios.

* 0.5:1 where the acquired foraging habitat is between 5 and 10 miles from an active nest. This is consistent with later, informal mitigation proposals from DFG for large projects where defining the center of the impact area may be problematic. Note, however, that the HMP mitigation ratios focus on the distance of the mitigation land from the nesting site while the DFG Guidelines focus on the distance of the impact area from the mitigation site.

* 0.33:1 where the acquired foraging habitat is within 0 to 5 miles of an active nest. This lower level of mitigation is justified due to the relative proximity of the mitigation lands to an active nest site.

In addition, specific enhancement measures for all acquired foraging lands are provided in the HMP, including the use of treated wastewater to increase productivity, restrictions on rodenticides, and the provision of cover plants to increase small mammal populations. These added enhancement measures (discussed in more detail below) and the costs associated with these measures justify a lower mitigation ratio than might be identified through strict application of one of the DFG Guidelines.

The HMP mitigation program also promotes the provision of nesting habitat as it may be the critical "weak link" in the survival of SH in the County (DFG, 1993a). SH preferentially nests in native riparian trees, especially the valley oak. The 1993 Guidelines state that preserving nesting trees is a high priority for SH preservation, noting that much of the Central Valley's riparian woodlands have been lost (up to 90% in some estimates) and the remaining areas are under a continuing threat. European settlement may have actually increased available foraging habitat for the SH while it certainly led to the destruction of much of the nesting habitat. Consequently, a combined program that emphasizes both foraging and nesting habitat for the SH is the most logical approach.

The HMP proposes to include mitigation ratios of 0.25:1 or 0.17:1 for, respectively, the purchase of potential nesting habitat and the planting of suitable trees and assurances for their continued growth or the purchase and preservation of existing nesting habitat. These ratios are the lowest proposed but they

recognize the importance of nesting habitat and the additional costs required to purchase or provide nesting habitat. Although nesting habitat is extremely important, the extent of nesting habitat for a typical SH pair is relatively small compared to the extent of foraging habitat used. Consequently, only 6% of the total mitigation commitment may be in the form of nesting habitat (potential and existing combined).

Based upon this mitigation formula, the HMP would provide for the acquisition of between 1220 and 1930 acres of SH mitigation land, assuming a 3860-acre impact area. The figure of 1220 acres is based on a mitigation program that acquires 1150 acres of foraging habitat less than 5 miles from an active nest site (a 0.33:1 mitigation ratio which therefore mitigates for 3450 acres of SH impact area) and 70 acres of existing nesting habitat (a 0.17:1 mitigation ratio). The larger figure noted above of 1930 acres is based on a mitigation program that acquires only foraging habitat that is between 5 and 10 miles from an active nest site, thereby requiring a 0.5:1 mitigation ratio.

d. Relationship of HMP to DFG Guidelines

The Mountain House site contains two active nests as of spring 1994. [12] Strict adherence to the 1993 Guidelines would result in a 1.0:1 or 0.75:1 mitigation ratio for the project site impact area, depending on the location on-site. However, this HMP provides a reasonable range of mitigation ratios for the SH impact area that reflects the type of mitigation provided as well as the distance of the impact area from a nest site. The DFG mitigation ratios provide for the dedication of foraging lands only. In addition, because the characteristics of these mitigation lands are undefined by the DFG guidelines, these lands may be in potentially unsuitable areas, *e.g.*, more than ten miles from an active nesting site or on sites that have not historically supported SH. The proposed Mountain House mitigation program provides a range of mitigation ratios that reflect the dedication of foraging habitat within reasonable foraging distances from nesting trees, the dedication or restoration of nesting habitat, and the provision of additional securities (performance standards, monitoring protocols, etc.).

[12] All references in this chapter to nest site mean active nest site unless otherwise specifically stated.

e. FSEIR Compared to the HMP Guidelines

The FSEIR states that off-site replacement habitat requirements could be as much as 4,290 acres[13]. However, the FSEIR considered in its assessment the loss of almost the entire site as SH foraging habitat. The analysis presented here shows that most of the project site was not historically SH habitat and that the most valuable area currently for the SH is confined primarily to that area north of Byron Road. The FSEIR also used a 1:1 mitigation ratio in accordance with certain elements of the then-current DFG SH mitigation guidelines. The 1993 Guidelines propose various levels of mitigation effort depending upon proximity of the impact area to an active nest site; these ratios are, for the most part, less than 1:1. However, as stated above, although these guidelines recognize the importance of nesting habitat, no mitigation credit is given for the provision of such habitat. As planting and ensuring the survival of nesting trees is an undertaking of considerable effort, this plan has proposed mitigation ratios based in large part on the project applicant's ability to provide an appropriate balance between nesting and foraging habitats. Finally, the dedication of farmlands managed with an understanding of SH requirements will promote enhanced SH foraging. The provision of significant amounts of alfalfa and other suitable crops is likely to reduce SH foraging flights considerably, resulting in a much smaller home range per nesting tree. The reduced home range and foraging where suitable prey populations are observable has been noted by Woodbridge (1991), England (1991) and others. These measures were not considered in the FSEIR.

Accordingly, this mitigation program is an important first step in SH conservation. Potential off-site mitigation lands can be enhanced to provide (either on that site alone or in conjunction with a neighboring site) the necessary combination of SH nesting and foraging habitat.

[13] The FSEIR also states that the enhancement associated with off-site mitigation (which is proposed here) also must be considered in determining the mitigation acreage required.

D. MITIGATION PROGRAM

1. Objectives

a. Operation of the mitigation site as a viable farm operation, leased at market rates, including the potential application of treated wastewater so as to maximize SH habitat to the extent practicable.

b. Provide non-crop habitat, particularly vegetation that serves as cover for prey species.

c. Ensure an ownership and financing mechanism that provides appropriate implementation of the management program.

d. Prepare a monitoring program that is integrated with the management and financing programs, providing for practicable assessments of the progress of the HMP.

2. Agricultural Operations

The current agricultural regime of the mitigation areas will not be significantly altered by the proposed mitigation program. Irrigation and cropping regimes, crop rotations, field sizes, and crop types, will remain essentially as they currently exist. The only substantial changes will be a long-term commitment to the provision of crops suitable for SH use; potential use of reclaimed wastewater; and the use of alternative methods to control certain rodents.

a. Suitable Crops

Alfalfa is a particularly significant crop for enhancing rodent, and consequently raptor, productivity because of its suitable structure and high protein content resulting from its ability to fix atmospheric nitrogen. Particularly high raptor populations are known where high concentrations of nest sites are juxtaposed with irrigated alfalfa fields as at Snake River Birds of Prey Natural Area in southwestern Idaho (Terres 1980).

Woodbridge (1987) has quantified a similar effect in California, where he documented a 400% enhancement of SH nesting in irrigated alfalfa fields relative to unirrigated historic SH foraging areas. He attributed alfalfa-dependent increases in SH nesting density to a greater prey base resulting from enhanced primary productivity, despite the standard agricultural practices prevalent on these sites, *e.g.* the use of rodenticide and the near-elimination of non-crop cover.

Accordingly, a minimum of 35 percent of the mitigation area should be in alfalfa at all times, in a rotation of other crop types as occurs on the project site today. Fields should generally be no larger than 160 acres in extent (current average is between 80 to 160 acres). Fledgling SH are known to forage for up to 0.25 miles from a nest tree. Requiring that all points in a field be within a 1320-foot (or 0.25 mile) radius from a tree at the edge of a field allows for a maximum of 160 acres of potentially foragable habitat within any one field.

b. Wastewater Use

It is presently anticipated that the treatment facility will deliver reclaimed water to the existing field delivery systems in the mitigation area, and will simply replace the water sources currently used for irrigation. Class A waste water is suitable for all crops except those to be eaten raw and can be used in golf courses parks and other areas accessible to the public (Corbitt, 1990).

Irrigation delivery methods and quantities will remain essentially the same as now. Standard irrigation is similar to the slow-rate method used in land treatment of wastewater. Slow-rate land application of wastewater (Corbitt 1990) is based on the water balance equation:

$$P + W = E + S$$

Precipitation (P) is 11.1 inches/year at Mountain House.

Wastewater (W) is anticipated to be about 60 inches/year.

P + W is consequently 71.1 inches.

Evapotranspiration (E) is 65 inches (pan evaporation) at Mountain House

(Kahrl 1979), leaving 6.1 inches to be removed by percolation (S), a relatively conservative estimate, as percolation rates of 10 to 12 inches per year are common in this region.

The S parameter is site-specific and should be determined by field-testing prior to system construction.

Pan evaporation typically exceeds evapotranspiration from vegetation (Kahrl 1979), and irrigation of crops in the Mountain House area consequently adds less than 65 inches. Central Valley water use is typically 53 inches/year for irrigated pasture and 44.4 inches/year for alfalfa because multi-species pastures can grow longer each year than alfalfa monocultures. Water application rates of 48 inches/year on extant Merced area irrigated pastures (Zentner & Zentner 1993) are comparable. When precipitation is added to irrigated pasture totals, however, pan evaporation is closely approached.

A minimum depth to water table for slow-rate systems of 2 to 3.3 feet should be investigated as a possible constraint (Corbitt 1990). Another potential constraint on slow-rate systems is salt release since salts can reduce the percolation parameter S (Corbitt 1990). Salts, however, are often lower in domestic wastewater than in local irrigation water. Further, slightly elevated salt should not be a problem as many irrigated crops in California, including alfalfa, are partially salt-tolerant.

Except for minor ditching that may be used to support non-crop cover, the field irrigation systems and drainage systems will remain unchanged. Minor modifications of drainage systems might be required to assure quality of any adjacent waters should piping of drain waters to existing natural waterways appear likely to occur.

Enhancing crop production by irrigation with nutrient-rich reclaimed wastewater should result in increased rodent productivity and, hence, increased raptor production. Evidence that rodent and resulting raptor populations are enhanced by irrigation with treated wastewater in the Central Valley is available in Yolo County, where land treatment areas for wastewater from the City of Davis and a Hunt-Wesson food processing plant are also raptor foraging areas. They support the densest raptor populations in Yolo County, which has the highest number of SH nests of any California county (DFG 1993a, Gaines and

Beedy 1987). Raptor foraging enhancement by the two facilities is possible because wastewater used for modern land treatment is sufficiently nutrient-rich to significantly enhance plant, rodent, and raptor production.

The Davis wastewater land treatment system is a particularly relevant model since it produces a volume of wastewater (729,122,550 liters/month) similar to that projected for the Mountain House new town (740,000,000 l/month). Davis land treats its wastewater entirely on 170 acres. Davis consequently treats 141,000 l/acre/day, an equivalent of 500 inches of precipitation a year. The project site, in contrast, anticipates land treating only 27,000 l/acre/day, assuming 900 acres are in use for land treatment, an equivalent of 96 inches of precipitation a year.

c. Rodent Control

A viable SH foraging program must be compatible with current farming operations. Any large-scale SH mitigation program is likely to involve leased land. No farmer will lease land for agricultural operations unless the terms of the lease allow for reasonable farm practices. Further, as the current farming practices are at least allegedly productive for SH, postulating some new and untried operation that maximizes SH prey production without regard to farming requirements seems illogical. Accordingly, agricultural operations will be conducted in a manner closely comparable to that occurring today on the project site. One of the primary issues with regards to "joint use" of farm lands by an agricultural operation and SH is rodent control. A primary prey of the SH is the California vole (*Microtus californicus*) with an important secondary prey being valley pocket gophers (*Thomomys bottae*) (Jones & Stokes 1990). These are both species that can destroy an alfalfa crop or irrigation ditch network when their populations reach certain levels. However, their depredations are less than those resulting from large populations of squirrels or mice, species that are relatively minor prey for the SH.

To ensure that SH populations are encouraged to feed in the mitigation area, this plan proposes non-chemical means as the first step in controlling voles and gophers. Non-chemical farm practices such as flooding fields in spring and summer to control voles and discing and plowing in the winter and during crop rotation to control gophers will be given primacy in farm operations. No

rodenticide will be used to control voles or pocket gophers unless significant population increases of these species occur (defined as a burrow or run every 10 feet along any 100 feet of the edge of a field or comparable measurement in the field center). Control of mice and squirrel populations using standard farming practices will be allowed. Allowing populations of these species to rapidly increase would result in significant impacts to adjacent farms, thereby jeopardizing any SH mitigation efforts.

3. Planting Program

For each 80 acres of farmland, this HMP proposes 1.0 acre of riparian associated vegetation. This area will be provided: (1) adjacent to the irrigation ditches; (2) adjacent to feeder ditches dug by trenching from an irrigation ditch; or (3) alongside farm fields in other locations (*Figure 3*). Planting areas will be a minimum of 0.10 acres (4,000 square feet).

Native habitats most suited to conditions on the mitigation lands are riparian woodlands. These are native habitats of streamsides and associated areas, are characterized by occasional inundation during flood flows, rapid draw down of waters following the floods, and by shallow year-round ground water which sustains the prominent tree, shrub, and grass cover, similar to the conditions found on the potential mitigation lands. Species to be planted include:

Common Name	Botanical Name	Form
Slender Wheatgrass	*Agropyron trachycaulon*	seed
Meadow Barley	*Hordeum brachyantherum*	seed
Creeping Wildrye	*Elymus triticoides*	plug
Knot Grass	*Paspalum distichum*	plug
Reed Canary Grass	*Phalaris arundinacea*	plug
Scouring-rush	*Equisetum hyemale*	plug
Narrow-leaf milkweed	*Asclepias fascicularis*	container
Wild Licorice	*Glycyrrhiza lepidota*	container
Coyote Bush	*Baccharis pilularis var c*	container
Button Willow	*Cephalanthus occidentalis*	container
Black Willow	*Salix goodingii*	cutting
Blue Elderberry	*Sambucus caerula/mexicana*	container
California Sycamore	*Platanus racemosa*	container
Fremont Cottonwood	*Populus fremontii*	cutting
Valley Oak	*Quercus lobata*	container
Black Walnut	*Juglans hindsiana*	container

Plugs will be distributed evenly on 10-foot centers. Seed will be distributed evenly. Tree cuttings and containers will be planted in single- and multi-species clusters of one to four plants, 40 to 70 feet apart, creating an initial density of approximately 100 trees per acre. The target woodland will consist of clusters of native trees spaced along the field edges with the understory dominated by native grasses. Fast-growing and ultimately large species used by the SH like Fremont cottonwood and black willow will initially dominate the native habitat while slower growing but important species such as the valley oak mature.

The basic habitat unit will preserve considerable SH foraging and nesting habitat while also providing considerably more non-crop habitat (for SH nesting and prey refuge) than currently exists on the development or mitigation sites. This ratio provides a mix of foraging and future nesting habitat for SH, and also provides valuable non-crop cover to sustain SH prey and SH usage during periods between crop management activities and following harvests.

4. Existing Nest Sites on the Project Site

Finally, the project will mitigate for the loss of the one nesting tree (discovered in spring 1994) that exists south of Byron Road through this program and the additional measures described below. Consequently, upon acceptance of the mitigation program by the County, the tree south of Byron Road will be removed at a time when no SH occupy the project site (generally, between September 15 and March 1, but the lack of occupancy will be verified by a biologist prior to elimination of the tree). This tree may not be removed during the period between March 1 and September 15 and if this tree still stands during this period and construction is occurring on the project site, then no disturbance or other project-related activities that may cause nest abandonment or forced fledgling shall occur within 1/2 mile of the tree between March 1 and August 15, or until fledglings are no longer dependent upon nest habitat, a determination that must be made in writing by a biologist. The other known nest tree on the project site occurs on the banks of the Old River and is not proposed for disturbance, although the adjacent lands will be enhanced as part of the restoration and other activities carried out in the development of the Old River Park. For this tree, no grading or other activities requiring the use of heavy equipment will not occur between March 1 and September 15 within 1/4 mile of the tree. Other activities that do not require heavy equipment, e.g. planting, may occur during this period.

5. Financing and Ownership

All financing issues are outlined in the project financing plan, completed as a part of the project Master and Specific Plans. Costs in this phase will include land or easement acquisition; a wastewater delivery system from the treatment facility to the first phase mitigation area, construction of minor waterways; planting of the non-crop habitats; and agricultural activities. If acquired in fee,

this land will be subject to the terms of this plan which terms will be implemented by the Community Services District (CSD). Otherwise, conservation easements or similar mechanisms satisfactory to the County shall be acquired. These easements shall provide for the use of these lands as viable agricultural lands in accordance with the terms of this HMP.

Long-term financing will be the responsibility of the CSD created as a result of the Mountain House project. The CSD will collect revenue through one or a series of Assessment Districts (Lighting and Landscape District or similar mechanism) that will be applied to the project site. Assessments collected by the CSD shall be disbursed for maintenance and management of the mitigation lands. A yearly budget shall be prepared for the mitigation lands that shall be reviewed by the County. The budget shall be prepared by the CSD in accordance with the management program developed in this HMP and revisions to that program recommended in the yearly monitoring reports.

Ownership of the mitigation lands or the easements shall be vested in the CSD or another management entity approved by the County at Trimark's request. Other management entity's could include public agencies, such as the DFG, or semi-public agencies, such as the Nature Conservancy. It is likely that any management entity will lease the purchased agricultural lands to local farmers. Most of the operation and maintenance of the mitigation site, with the exception of the waterways and riparian woodlands, would then be under the operational control of these farmers, subject to the restrictions on the conservation easements.

6. Phasing

The first phase of development on the Mountain House project, proposed for construction between 1993 and 1995, will convert roughly 985 acres of existing farmland south of Byron Road to residential, commercial, office, industrial, and open-space uses. Another 175 acres of agricultural land north of Byron Road will be developed as an industrial park and wastewater treatment facility as a part of the first phase of development. The 985 acres of land to be developed south of Byron Road in Phase One shall be subject to the SH mitigation in accordance with this HMP The wastewater treatment facility includes 175 acres that will also be mitigated for in accordance with the requirements noted above.

The first phase of mitigation will occur concurrent with or before development of the first phase on the project site. The mitigation site will occur on lands north of Old River on the Fabian Tract, lands adjacent to the project site in Alameda County, or similar lands in accordance with this HMP. Future development and mitigation phases will follow the same pattern. The acquisition and initial development of mitigation lands will occur concurrent with or before each development phase. Alternatively, the developer or the management entity may choose to acquire and develop larger areas of mitigation land than might be required under the Master Plan for any specific phase and then sell these over time to builders active at the project site, in essence creating a local "mitigation bank" for implementing this HMP .

7. Tri-colored Blackbird Specific Mitigation

Although not currently known from the project site, the tri-colored blackbird may occur. If it is found in subsequent surveys, it is most likely to occur in one of the perennial marshes found behind the earthen dams along Mountain House Creek. If discovered, an area equal to 2 times the area of perennial marsh habitat shall be created on the periphery of the wastewater ponds. The tri-colored prefers perennial marsh dominated by emergent vegetation such as cattails (*Typha* spp.) or tules (*Scirpus* spp.). Similar habitat created through appropriate hydrology and salvage and placement of the marsh plants should provide suitable habitat.

Chapter 3
Performance and Monitoring Standards

A. GENERAL REQUIREMENTS

1. The results of the monitoring program shall be submitted in an annual report to the relevant county and state agencies by August 15 of each year. The annual reports shall also include any recommendations regarding the management of the mitigation lands.

2. All post-construction monitoring shall be completed at the direction of an Ecological Monitor (EM) whose duty is to ensure that the project is monitored and maintained in accordance with this HMP. The EM shall be under contract directly to the CSD and not to any other contractor or applicant working on the site.

3. To ensure long-term maintenance practices continue that support the purposes of the mitigation program, a maintenance manual shall be developed during the fifth year of the monitoring program and circulated to the relevant agencies for comments. The manual shall then be finalized and submitted to the county or its designee with the fifth year monitoring report. The manual shall detail long-term maintenance procedures and performance standards needed to ensure the HMP continues in its progress.

B. MONITORING PARAMETERS AND METHODS

1. Vegetation of the Wildlife Habitats

Mortality rates, vigor, and height of all planted trees and shrubs will be evaluated by field surveys during the fall prior to dormancy or leaf drop in the deciduous species. Each planted tree will be assigned to one of several height classes: Class 1 plants will be trees 48 inches or less in height; Class 2 plants

will be trees from 49 to 120 inches in height; Class 3 plants will be trees greater than 120 inches in height. Succeeding height classes shall be based on 10-foot increments, *e.g.* a Class 4 tree shall be at least 20 feet tall; a Class 5 tree at least 30 feet tall; etc.

The EM will concurrently assign each plant to a category of healthy, unhealthy, or dead. Photographs of each type of plant for a representative sample will be included in the monitoring reports.

The herbaceous cover, woody plant cover, cover per species, and non-plant cover shall be recorded by Braun-Blanquet cover classes each spring for the ditches. This data will be collected from a series of permanent 10 ft x 10 ft plots. One plot will be established for every one acre of ditch-centered habitat.

2. Agricultural Uses

Annual crop reports shall be provided to the County detailing the type and acreage of crops grown in the mitigation lands and the yields.

3. Wastewater Reuse

Wastewater use shall be monitored in accordance with the requirements of the Regional Water Quality Control Board. These requirements have not been finalizes as yet.

C. PERFORMANCE STANDARDS

For any phase, the following performance standards shall be met:

1. Within one year of initiation, riparian and related native vegetation shall have been established in the new ditch-centered habitats of the mitigation area, with plantings of the target woodland species at a rate of 100 trees per acre.

2. Within five years of the initiation of any phase, at least 10 trees per acre of the woodland plantings of that phase shall have reached a height of at least 35 feet.

3. Within five years of the initiation of any phase, plant cover within the non-crop planted habitats should approach 80%, and the relative cover by native species should approach 25%. Other parameters noted above shall be monitored, and any trends assessed annually.

4. Within the agricultural areas of the mitigation site, the crop record shall show that crops suitable for SH use shall have been planted and harvested at a rate comparable to neighboring farms for at least four of the preceding five years, and that a minimum of at least 35% of the acreage each year was planted to alfalfa.

D. ANNUAL REPORTS

The results of the monitoring, including selected photographs and field data, shall be submitted in an annual progress report to the County by October 30th of each year.

The annual progress reports shall include all monitoring data, an analysis of all quantitative data, and assessment of the status of the mitigation efforts during the previous year and the progress toward final success criteria. The monitoring reports shall note where an area is trending towards an unsuccessful conclusion, and shall recommend corrective actions to be taken by the developer.

The annual report shall also include a list of all persons (with titles, company and phone numbers) who prepared the content of the annual report and who participated in monitoring activities for that year. Prints of all monitoring photographs and maps (identifying monitoring areas, transects, planting zones, etc as appropriate) shall be included. Copies of relevant Agency permits, attached Special Conditions, and any subsequent Letters of Modification shall be attached as an appendix. Copies of all field data sheets shall be available for review.

After meeting the fifth-year standard as described above, that portion of the mitigation lands shall be deemed successfully established. Any portion that does not meet this standard shall begin the five-year monitoring program anew. After being deemed successfully established, the mitigation land (or portion thereof) shall enter the long-term maintenance phase and shall be subject to the provisions of the maintenance manual described below.

E. CONTINGENCY MEASURES

If annual monitoring indicates inadequate progress toward a final performance criterion for all or any portion of the mitigation project, or if the final success criteria are not met, the applicant responsible for that phase of the mitigation shall prepare an analysis of the cause(s) of failure which will be submitted to the County. If determined necessary by the County, the applicant will propose remedial actions for County approval.

Chapter 4
Preliminary Implementation Plan

A. ORDER OF OPERATIONS AND SCHEDULE

Final plans and specifications will identify a schedule of operations that accounts for construction constraints and biological windows. The general sequence of tasks is shown below.

1. Affirm plant growers and seed suppliers contracts according to anticipated planting schedule.

2. Identify buried infrastructure, if any.

3. Salvage desirable plants from development site, if any.

4. Handling and storage of salvaged plants.

5. Site preparation (trash removal, weed control, seed bed preparation, augering of planting holes).

6. Plant salvaged species in designated habitats according to specifications.

7. Plant container species in designated habitats according to specifications.

8. Broadcast seed according to specifications.

Grading, if any, and transplanting work can occur simultaneously. Augering will occur immediately following the final excavation work. This will be followed by planting any cuttings and commercially grown native plant container stock. Revegetation work should start as soon as practicable after excavation concludes. All revegetation activities should be performed in the fall or winter months to enhance survival.

All tasks will be overseen by a qualified ecologist, with experience in the areas of habitat development, termed the 'Ecological Monitor' (hereafter EM). The EM will monitor all construction activities on site, is responsible for any changes made to the implementation plan, and approves all work before the step is taken.

B. SITE PREPARATION

Creation of the new non-crop habitats will be accomplished with a combination of limited excavation and plantings. Planting and some minimal management will be necessary to successfully establish the desired habitats. The following sections describe the activities necessary to meet the project goals.

Invasive exotic plants, if present within the proposed habitats, will be removed manually or mechanically, prior to any revegetation work. Such exotic species are often able to out compete the California natives for light, water and space and can spread aggressively in suitable habitats which have been recently disturbed. If deemed necessary by the EM, an aggressive eradication effort will proceed prior to revegetation in order to give the natives a much needed competitive edge and to reduce future maintenance efforts.

All garbage on the mitigation site or discovered during excavations or grading shall be removed to an approved disposal site. This includes old barbed wire fences, debris, concrete, etc.

Prior to planting, holes will be augered. The planting holes will be twice as deep and wide as the root ball of the plant. Slow-release fertilizer, such as agriform or osmocote, and a water-holding polymer may be added to planting holes prior to planting, if deemed necessary by the EM.

C. CONSTRUCTED CONDITIONS

A report will be submitted to the County within 6 weeks of completion of site preparation and planting, which describes the status of the mitigation project. This report shall detail any deviations from the original plan which have potential to impact the created habitats. The report will include maps that shall indicate locations of plantings and any other installations or structures.

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APPENDIX A

MOUNTAIN HOUSE MULTI-PURPOSE HABITAT MANAGEMENT PLAN ANALYSIS OF LEGAL CONSIDERATIONS

I.

INTRODUCTION

This section addresses the legal requirements for mitigating project impacts to the Swainson's Hawk. Specifically, this section discussed the legal considerations attending any decision by the County to impose mitigation measures directed at the Swainson's Hawk for the Mountain House project.

Initially, it is important to note that the FSEIR found that project implementation could result in the elimination of all existing and potential foraging habitat for the Swainson Hawk on the site. To respond to this potential impact, the FSEIR recommended preparation of this HMP as a means of further quantifying project impacts and providing appropriate mitigation.

From a legal perspective, two statutes and at least one constitutional provision are at issue here. The first statute is the California Environmental Quality ACT (CEQA), California Public Resources Code (Resources Code) §21000, et seq. The second statute is the California Endangered Species ACT (CESA), California Fish and Game Code §2050, et seq. The major constitutional provision involved is the Fifth Amendment to the U.S. Constitution, more commonly referred to as the "Takings Clause". The remainder of this section of the HMP discusses the application of these governing laws to the project.

II.

CEQA

A. General Discussion.

CEQA requires that an EIR be prepared "on any project (a local agency) intends to carry out or approve which may have a significant effect on the environment." (Resources Code §21151.) A significant effect on the environment is defined as "substantial or potentially substantial, adverse changes in physical conditions which exist within the area as defined in §21060.5." Section 21060.5 of CEQA defines "environment" as the "physical conditions which exist within an area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic

significance." If the FSEIR identifies significant environmental impacts, the lead agency must certify that those impacts have been mitigated or that unmitigated effects are outweighed by the project's benefits. (See Resources Code §§21002, 21002.1, 21081; 14 California Administrative Code (Guidelines) §§15090 - 15093.)

B. Quantification of Impacts.

Under CEQA, it is the lead agency (in this case, the County) which identifies and quantifies project impacts and identifies and implements mitigation measures to alleviate project impacts. In quantifying project impacts, while lead agency must use a "worst case" analysis, the agency is not required to speculate, consider or mitigate every conceivable impact. The analysis of project impacts instead is limited to actual physical changes to the existing environment. (See Resources Code §21060.5, "environment" defined as "the physical conditions which exist within an area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, object of historic or aesthetic significance.") (Emphasis added.) See discussion, supra. Appendix G of the CEQA Guidelines provides that a project will normally have a significant effect on the environment if it "substantially affects a(n) . . . endangered species of . . . the habitat of the species."

In other words, CEQA is clear that if the SH or any other species does not exist in an area, it is irrelevant that, under other circumstances, one could introduce - successfully or unsuccessfully - that species into that area. CEQA, like the CESA and ESA, addresses itself to impacts on actual habitats. While one may create a chain of reasoning that could be used to argue that a given use causes an "impact," such speculative reasoning, and lengthy and convoluted reasoning, is not required by, or appropriate under, CEQA or CESA.

C. Mitigation of Impacts.

As stated previously, the lead agency is empowered to specify which mitigation measures are adopted for a given project, which measures are to be rejected as infeasible, and which significant environmental effects of a project cannot be substantially mitigated. (Pub. Res. Code §21081; Guidelines § 15091.) CEQA is also clear that any mitigation measures or conditions adopted or proposed for development must bear a close relationship to impacts on public facilities which will actually be caused by that development. The conditions or mitigation measures must be proportional to the actual impacts of the project, and cannot be used to remedy the impacts of prior development or of development by other parties, unless the agency wishes to pay just compensation to the landowner. (Nollan v. California Coastal Commission, 1987, 483 U.S. 825; Lucas v. South Carolina Coastal Council, 1992, __ U.S. __, 112 S.Ct. 2886.) As such, the lead agency is required to undertake a fact intensive, project specific inquiry to determine whether this project is likely to have significant effects on the Swainson Hawk.

The issue of proportionality of mitigation is particularly important in this case where it is alleged that the Swainson's Hawk will be affected by the Mountain House project. The data strongly support the conclusion that any significant impact on the Hawk is not and will not be the result of the implementation of this project. Rather, the present and future status of the Hawk in this region was and will be almost exclusively a result of past actions beginning when man first began to alter the use of land in the Central Valley. Imposition of mitigation measures intended to "benefit" that Hawk (i.e., improving its situation as opposed to mitigating the effects of this project) therefore do not have any relationship to this project, and may run afoul of the constitutional prohibitions against taking property without just compensation, particularly since the burden of providing a solution to the problem will be imposed on persons having little or nothing to do with creating the problem in the first instance.

Aside from proportionality issues, it is important to note that CEQA, in and of itself, does not confer upon any public agency independent authority to levy fees, impose exactions, or take other actions to mitigate environmental effects. In other words, according to Pub. Res. Code §21004, "in mitigating or avoiding a significant effect of a project on the environment, a public agency may exercise only those express or implied powers provided by law other than this division." According to the Declaration of Legislative Intent which follows §21004, the provisions of CEQA are intended to be used in conjunction with discretionary powers granted to a public agency by other law in order to achieve the objective of mitigating or avoiding significant effects on the environment when it is feasible to do so. Mitigation measures which have no basis or source in other provisions of law may not be imposed upon a project, using CEQA as the sole source of authority.

CEQA is also clear that mitigation measures which go beyond the powers conferred bylaw on lead and responsible agencies are legally infeasible. Kenneth Mebane Ranches v. Superior Court, 1992, 10 Cal. App. 4th 276, 291, 12 Cal. Rptr. 2d 562, 572. The CEQA Guidelines, at §15364, define feasible mitigation measures as mitigation measures which are capable of being accomplished in a reasonable time, considering various matters, including legal factors. The purpose of setting forth mitigation measures in an FSEIR is to identify mitigation measures which could minimize significant adverse impacts (see Guidelines §15126(c)). Therefore, the County should not be required to describe or evaluate mitigation measures that are legally infeasible, because such measures could not be used to mitigate the adverse impacts. A common example of the problems created by legally infeasible mitigation measures is found in the area of school impacts. Legislation enacted in 1986 (Gov. Code §§65995-65997) puts restrictions on the amount of school impact fees that may be collected from new development. The Legislation was intended to occupy the field of school fees to the exclusion of any local measure and to prescribe the exclusive means of mitigating impacts on schools under CEQA. (Gov. Code §§65995 (e), 65996.) A leading CEQA treatise takes the position that agencies should be entitled to

limit an FSEIR's analysis of mitigation measures to the fees set forth in the foregoing statutes as the sole method of limiting school impacts because other measures would not be legally feasible. (See CEB, Practice Under the California Environmental Quality Act §14.20, citing caselaw to this effect.) The analogy is particularly apt here, where the only legal authority for requiring mitigation to impacts on the Swainson's Hawk is found in the California Endangered Species Act. Since CESA in no way applies to "potential" habitat losses, and arguably does not apply to habitat losses at all, the County as lead agency is entitled to reject most, if not all, of the original mitigation measures in the FSEIR as legally infeasible.

Thus, in the context of the Mountain House project, any mitigation of impacts to the Swainson's Hawk must find legal justification and authority in other provisions of State or Local law. Since there are no local police power ordinances in effect with respect to the Swainson's Hawk in San Joaquin County, any authority for mitigation must be found in the provisions of State law. The only State law arguably providing justification for mitigation of impacts to the Swainson's Hawk is the California Endangered Species Act.

III.

THE CALIFORNIA ENDANGERED SPECIES ACT

A. The "Take" Prohibition.

In many ways, the California Endangered Species Act (CESA) is patterned after the Federal Endangered Species Act (ESA). Both Acts, for example, prohibit any person from importing, exporting, taking, possessing or purchasing or selling any species determined to be listed as endangered or a threatened species (Fish and Game Code §2080). However, there are significant difference between CESA and the ESA, which have profound consequences to the Mountain House project. First, unlike the ESA, there is no statutory definition of the term "take" in CESA. The department of Fish and Game (DFG) has asserted that the acts prohibited by §2080 include modification of habitat of a listed species. However, it is critical to note that there is no legal precedent supporting DFG's internal interpretation. For example, the decision in Department of Fish and Game v. Anderson-Cottonwood Irrigation District 8 Cal.App.4th 1554 (1992) recognized that the definition of "take" extends beyond hunting and fishing related activity, but did not address the issue of whether or when habitat modification could fall within the scope of a "take" as prohibited by §2080. Thus, while DFG has attempted to assert that habitat modification, in and of itself, constitutes "take" under the CESA, this position finds no support in CESA or the case law interpreting CESA. In fact, a recent opinion by the Legislative Counsel (opinion #19094) confirms that habitat modification cannot be construed as a "take" under CESA.

Despite the lack of legal authority supporting its position, DFG nonetheless asserts that "take" under CESA is to be interpreted in the same manner as "take" under the ESA. Under the ESA, federal agencies and some courts have construed the modification of critical habitat which is essential to the survival and recovery of an endangered species as a "take" under the ESA. See Palila v. Hawaii Department of Land and Natural Resources, 639 F.2d 495 (9th Cir. 1981). Regulations promulgated by the Fish and Wildlife Service of the Interior Department under the ESA have defined the term "harm" as used in the ESA (16 U.S.C. §1532 (19)) in such a way as to encompass any "significant " habitat modification that leads to an injury of an endangered species of wildlife. See 50 C.F.R. 17.3. However, a very recent decision of the United States Court of Appeals, District of Columbia Circuit, invalidated the Fish and Wildlife Service's regulation defining "harm" as embracing habitat modification.

That case, Sweet Home Chapter of Communities For a Great Oregon v. Babbitt, 1994 WL 71984 (D.C. Cir.) is the first reported decision in which a direct challenge was made to the Service's "harm" regulation (50 C.F.R. 17.3 as including habitat modification. The Court concluded that the Fish and Wildlife Services' definition of "harm" was neither clearly authorized by Congress nor a reasonable interpretation of the Endangered Species Act. Accordingly, the highest Federal Court in the land to ever consider the issue has determined that habitat modification, in and of itself, doe snot constitute "take" in violation of the Endangered Species Act. An example of the Court's reasoning is found in the second page of the opinion where the Court takes issue with the Fish and Wildlife Service's position with respect to the term "harm":

> "By the same token, it is linguistically possible to read "harm" as referring to a landowner's withholding of the benefits of a habitat that is beneficial to a species. A farmer who harvests crops or trees for which a species may depend harms it in the sense of withdrawing a benefit; if the benefit withdrawn be important, then the Service's regulation sweeps up the farmer's decision."

The Sweet Home decision is also significant for it's discussion of the relative burdens placed upon government, as opposed to private individuals. After a careful review of the legislative history of the ESA, the Court concluded:

> "Thus, on a specific segment of society, the federal government, the Act imposes very broad burdens,including the avoidance of adverse habitat modifications; on a broad segment, every person, it imposes relatively narrow ones." (i.e., the prohibition against direct "take" of endangered species.)

The Sweet Home decision has obvious ramifications for the Mountain House project, particularly with respect to State-listed species such as the Swainson's Hawk. Even if the County were to endorse the notion that DFG's

legal authority is concurrent with that of federal agencies interpreting and applying the ESA, there is no authority under either ESA or CESA for the proposition that habitat modification, in and of itself, constitutes a "take" of endangered species under either ESA or CESA.

B. Protection of "Potential Habitat".

Even if the lead agency were to endorse the concept that a "take" may under some circumstances include an impact on the habitat of a listed species, there is no basis for asserting that the prohibition extends to "potential" habitat, which is the term used in the FSEIR to describe the area of the Project Site south of Byron Road. Assuming habitat modification is prohibited in some instances, (a proposition which is now severely jeopardized by recent case law) that limitations should apply only to habitat which is essential to the species in question, and where the effects on the habitat would result in direct effects on the species. To the extent that certain areas of the Project Site south of Byron Road are not utilized by the Swainson's Hawk or are utilized on a very sporadic basis, it is clear that whatever the area's "potential" use, it is in no way essential habitat to the Hawk. It is also clear that the elimination of this potential but not actual habitat will not have a significant effect on the species.

In addition, to constitute a "take" the harm or threatened harm to the species must be immediate. (California By Brown v. Watt, 520 F.Supp. 1359 (C.D. Cal. 1981), affirmed in part and reversed in part on other grounds, vacated in part on other grounds, 683 Fed. 2d 1253 (9th Cir.), reversed in part on other grounds, 464 U.S. 312 (1984).) Irrespective of the type of project under review, i.e., a master plan or specific plan for the actual construction of a development project, there can be no violation of the ESA or the CESA where the site is not actually being used as habitat by the species. Despite claims to the contrary, the loss or destruction of "potential habitat" (much less habitat which is actually used by the species) cannot violate the CESA or the ESA by the explicit terms of the statute and its implementing regulations.

Finally, even if the destruction of actual or potential habitat could be considered a violation of the ESA or the CESA, the adoption of a general or specific land use plan does not come close to creating an immediate harm or threat as is required by the ESA or CESA. There are simply too many steps between the adoption of a plan and implementation out of the project for the approval to supply the necessary immediacy. These steps include, but are not limited to, further review, and, if appropriate, applications for further permits and authorizations from a variety of governmental agencies. In short, a determination of whether "take" will occur is a decision that must be made in the face of a concrete development proposal. It is impossible to decide whether a "take" will occur in a vacuum. At most, the planning agency, whether it be a county or a municipality or some other governmental body, can impose a general condition on all development that it comply with all applicable local state, and federal laws and regulations, including the obtaining of an incidental "take" permit when and

if required. This is sufficient as a mitigation measure pursuant to Laurel Heights Improvement Association v. Regents of the University of California, 47 Cal 3d 376 (1988).

C. The "Non -Regulatory" DFG 1993 Guidelines.

Since the certification of the FSEIR, DFG has substantially revised the Department's 1992 Mitigation Guidelines, issuing a new document in 1993. These Guidelines have subsequently been withdrawn from public use and have been replaced with "Non-regulatory Guidelines for Determining Appropriate Mitigation for Impacts To Swainson's Hawks in the Central Valley of California." These "non-regulatory" guidelines perpetuate the Department's overly broad interpretation of "take". More importantly, however, the new guidelines, like the 1992 Guidelines, have never been formally adopted using the procedures mandated by the Administrative Procedures Act, and cannot be considered regulation of general applicability. See Government Code §§11342 (b), 11346, 11347.5 (a). The administrative Procedures Act contains a number of procedural and substantive requirements designed to give the public an opportunity to comment on the proposed regulations, as well as to analyze the regulations' probable costs and burdens on both the public and private sector. In short, without compliance with the Administrative Procedures Act, the Department's new "non-regulatory" guidelines must be considered advisory only, and need not be imposed by the Lead Agency. This conclusion is supported by a recent Legislative Counsel opinion dated May 19, 1994 (opinion #19094, Assembly Daily Journal, Monday, May 23, 1994, Pages, 6825-6833).

IV.

LEGALLY FEASIBLE MITIGATION FOR SWAINSON'S HAWK IMPACTS

The available data in the FSEIR establishes that virtually all of the Swainson's Hawk usage on the site is in the area north of Byron Road. A recent sighting of a Swainson's Hawk nesting on the site south of Byron Road, while providing evidence of some usage of that portion of the site, does not alter the FSEIR's basic conclusion regarding Swainson's Hawk usage of the site.

The FSEIR recommends mitigation through the development of a plan which addresses on site protection or replacement habitat in compliance with DFG's "Mitigation Guidelines For Swainson's Hawks in the Central Valley of California (1992)". Since the certification of the FSEIR, substantial new information has been generated and the existing data has been re-evaluated to provide a more comprehensive and logical description of Swainson's Haw usage of the site. This new information justifies a complete re-opening of the CEQA discussion and analysis of Swainson's Hawk impacts. The new information consists of the following:

1. New biological data, and a comprehensive re-evaluation of existing data relative to the Swainson's Hawk usage of the site.

2. The replacement of the 1992 Draft Mitigation Guidelines with the Department's most recent "Non-Regulatory" Guidelines. The Non-Regulatory Guidelines contain a significant revision of the mitigation ratios used in previous guidelines. For the most part, the new ratios recognize that the distance of the impact area from active nest sites should result in different mitigation ratios. This HMP provides a range of mitigation ratios for the Swainson's Hawk impact area that reflect the distance of the impact area from an active nest site in accordance with the DFG 1993 draft guidelines.

3. The opinion of the Legislative Counsel (discussed infra) stating that habitat modification does not constitute "take" under CESA.

Based upon this new information, the lack of evidence in the FSEIR to support the conclusion that development of the Mountain House project will "harm" the Swainson's Hawk, and the questionable legal authority for the imposition of mitigation measures for habitat modification only, this HMP meets and exceeds the requirements of State law, and fully satisfies the County's obligations under CEQA to implement all feasible mitigation measures.

It should also be recognized that the Board of Supervisors retains the ability to modify or delete certain mitigation measures in the event new information warrants such changes. In fact, the mitigation program set forth in this HMP is expressly predicated upon the applicant's and the County's current understanding s to the Department's apparent (and disputed) authority under CESA to require mitigation for habitat modifications under CESA. Obviously, the extent of the Department's actual authority is unclear at best. Therefore, if the applicant and the County later determine that the Department does not have the authority to require its currently-demanded mitigation for Swainson's Hawk impacts, any mitigation obligations which are thereby rendered unnecessary will be eliminated so that unnecessary fees or exactions are not imposed upon the Project. The removal of unnecessary fees or exactions, of course, serves other important project goals, such as the provision of affordable housing, and preserving the fiscal integrity of the Project.

Therefore, for example, if the Swainson's Hawk is removed from the Endangered Species list, the applicant's mitigation obligation will be entirely eliminated. Also, if caselaw, quasi-judicial decisions, or statutory changes eliminate legal protection of Swainson's Hawk nesting or foraging habitat, the applicant's mitigation obligation should be changed to a general condition requiring avoidance of direct impacts to Swainson's Hawks, but removing any other mitigations, fees or exactions for Swainson's Hawk impacts. In addition, in the event a County-wide or regional Swainson's Hawk mitigation program is implemented, the applicant will retain the option to participate in such a program in lieu of the mitigations set forth in this HMP. Finally, if the applicant

negotiates an agreement which is mutually acceptable to the applicant and the Department, such an agreement will supersede the provisions of this HMP.

It should also be clear, based upon the analysis contained in this HMP of the data presented in the FSEIR, that any impacts to "potential" habitat on the project site are speculative at best. In view of the lack of any legal justification or authority for the imposition of mitigation requirements for impacts to these lands, any mitigation measures contained in the FSEIR for these alleged "impacts" must be rejected as infeasible.