

PALOMAR ENERGY PROJECT

ATTACHMENT 22-1
ESCONDIDO RESEARCH AND TECHNOLOGY CENTER
CLEAN WATER ACT SECTION 404
APPLICATION PACKAGE

- Discharge Application
- Jurisdictional Wetland Delineation Report
- Biological Assessment

**JURISDICTIONAL WETLAND
DELINEATION REPORT
FOR THE
ESCONDIDO RESEARCH & TECHNOLOGY CENTER
SPECIFIC PLAN AREA
Escondido, California**

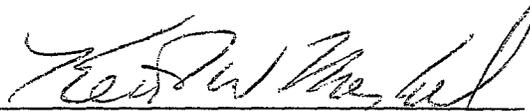
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**JURISDICTIONAL WETLAND DELINEATION
FOR THE
ESCONDIDO RESEARCH & TECHNOLOGY CENTER
SPECIFIC PLAN AREA
ESCONDIDO, CALIFORNIA**

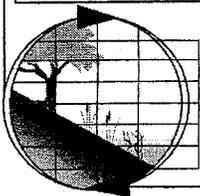
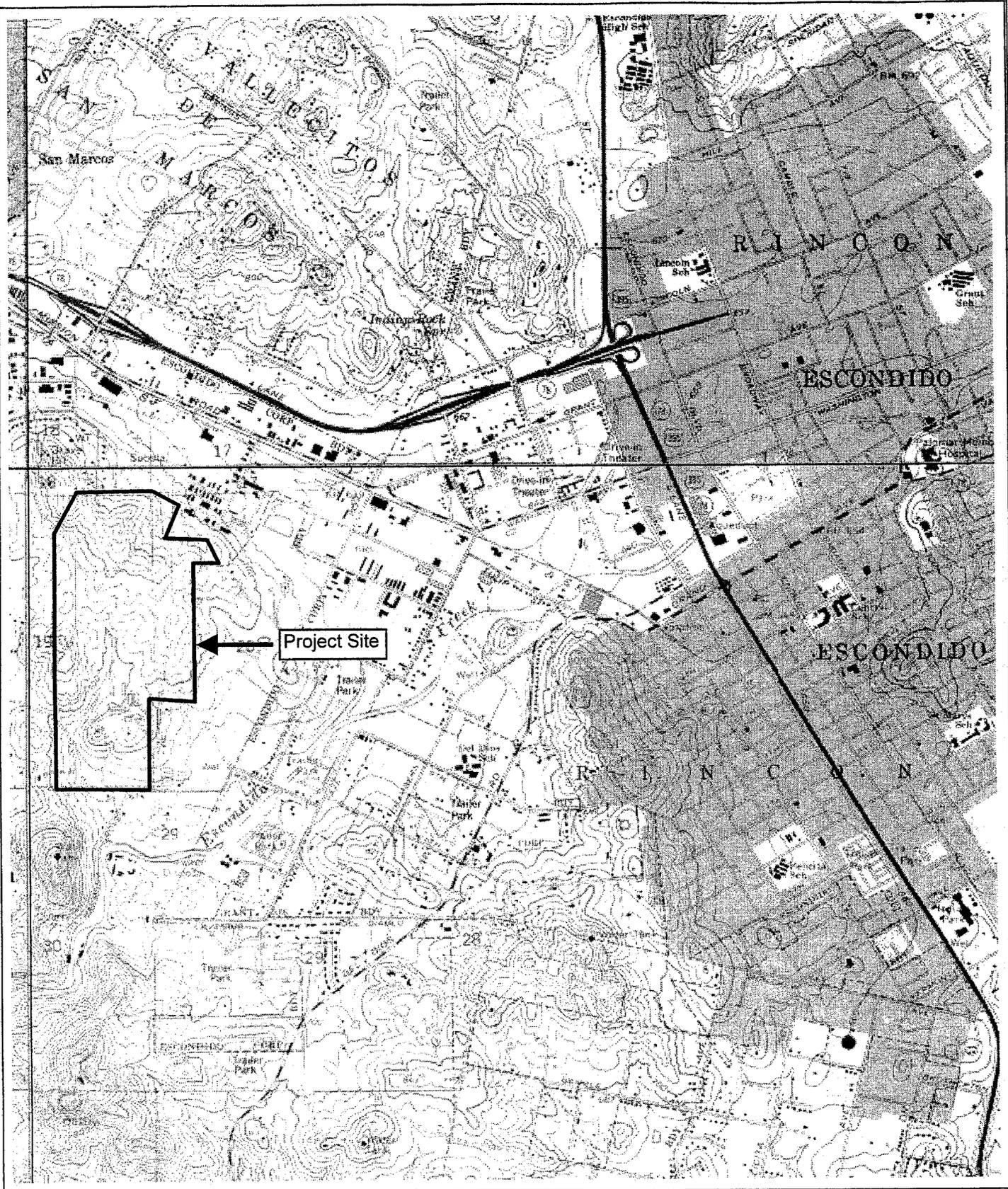
SUMMARY

Merkel & Associates, Inc. conducted a jurisdictional wetland delineation on the Escondido Research and Technology Center Specific Plan Area (SPA) located in Escondido, California (Figure 1). The fieldwork was performed on November 20, 2001 and was conducted in accordance with the 1987 U.S. Army Corps of Engineers' (ACOE) Wetland Delineation Manual (ACOE 1987). The delineation effort was expanded to identify jurisdictional Non-wetland Waters of the U.S. and other wetlands under the jurisdiction of the California Department of Fish and Game. The following two wetland habitats were found on-site: Mixed Willow Series and Mulefat Series. Unvegetated streambeds defined as Non-wetland Waters of the U.S. were also found on-site. Areal coverage of the above listed habitats are as follows: Mixed Willow Series – approximately 52,270 ft² or 1.2 acres, Mulefat Series – approximately 960 ft² or 0.02 acre, and Non-Wetland Waters of the U.S./unvegetated streambeds – approximately 8,710 ft² or 0.2 acre. Jurisdictional waters are distributed across the core of the property in a net of poorly developed water courses.

The SPA is located in the western portion of the City of Escondido, San Diego County, California. The Escondido Research and Technology Center (ERTC) project consists of Planning Areas 1 through 8 of the SPA (186 acres); Planning Areas 9 and 10 of the SPA (22 acres) are existing and proposed residential areas, and are not part of the ERTC project. The 186-acre ERTC project includes the 20-acre Planning Area 1, where a 500 MW power plant is proposed (the Palomar Energy Project). The SPA is located in a region of rapid urban growth with industrial development occurring to the north and east. Land use in the project vicinity also includes urban, suburban, and rural residential development. The Sawyer and Keeler-Wolf (1995) vegetation classification system was used to identify the vegetation on the SPA. This system of identification of vegetation series was used due to its widespread acceptance by state and federal agencies throughout California.

Development of the 186-acre ERTC project would result in direct impacts to portions of the Mixed Willow Series and Mulefat habitat types, as well as to some unvegetated streambeds on-site. Potential indirect impacts could occur as a result of construction and operational activities on the ERTC project site. All impacts are considered mitigable through off-site habitat preservation, and habitat restoration and/or creation combined with construction and design measures to minimize on-site and adjacent habitat impacts.

Impacts to the jurisdictional waters found on the site would require authorizations through sections 404 and 401 of the Clean Water Act, and section 1603 of the Fish & Game Code. Given the diffuse nature of jurisdictional waters over the site and the interdigitated nature of coastal sage scrub occupied by the threatened California gnatcatcher along the drainages, it is also anticipated that consultation between the Army Corps of Engineers and the U.S. Fish & Wildlife Service will be required under section 7 of the Endangered Species Act to authorize take of the gnatcatcher, prior to issuance of a section 404 permit.



1" = 2,000'

Project Vicinity Map
ERTC Property

Escondido, CA

Source: USGS 7.5' Escondido, CA Quadrangle

Figure
1

INTRODUCTION

Merkel & Associates, Inc. (M&A) performed a jurisdictional wetland delineation on the ERTC SPA, Escondido, California, at the request of Mr. James McCann of JRMC Real Estate. The purpose of this investigation was to determine the extent of jurisdictional wetland habitats on-site. Merkel & Associates prepared an earlier report for the SPA entitled “Biological Resources and Impact Assessment for the Escondido Research & Technology Center Specific Plan Area” dated October 12, 2001 (Merkel 2001) which did not include a jurisdictional wetland delineation.

The current focused wetland delineation of the SPA has revealed some minor changes to the boundaries and extent of wetland vegetation previously reported in (Merkel 2001). The Merkel 2001 report incorporated wetland data from a 1998 Dudek investigation of the subject property. The current survey identified several small stands of Mixed Willow Series habitat located within the SPA, not previously mapped in the Merkel 2001 report. Additionally, on-site Mulefat acreage within Planning Area 2 was found to be slightly less extensive during the current wetland investigation. Specific differences between the current wetland delineation report, and the Merkel 2001 report are discussed in the following paragraphs. In comparing differences, one must also bear in mind that in Merkel 2001, acreages refer to vegetation habitat types, and in this wetland delineation report the acreage figures refer to jurisdictional waters, including wetlands that were surveyed and calculated at a more detailed and refined level. While the differences in area are worthy of report, they do not alter the substantive assessment of project impacts as previously reported in Merkel 2000, they only alter the numeric quantification of impacts and the associated appropriate mitigation area required.

- Within Planning Area 1, one small stand of Mixed Willow Series vegetation, approximately 0.05 acre (2,180 ft²), was identified along the eastern fence boundary. This stand of willow vegetation was not identified in the Merkel 2001 report, nor was it identified in the prior 1998 Dudek investigation. Trees here are young and likely were not present when Dudek conducted the prior delineation. The willows were overlooked in the Merkel 2001 assessment.
- Within Planning Area 2, one small stand of Mixed Willow vegetation, approximately 0.01 acre (440 ft²), was identified integrated with a stand of Mulefat vegetation located near the southern property boundary. This willow vegetation was not identified in the Merkel 2001 report. Additionally, the amount of Mulefat Series vegetation within the property boundary was found to decrease from approximately 0.1 acre (4,356 ft²) (Merkel 2001) to approximately 0.02 acre (870 ft²) found during the current investigation.
- Within Planning Area 7 (in an area to be preserved), approximately 0.09 acre (3,920 ft²) of ACOE jurisdiction only, and approximately 0.07 acre (3,050 ft²) of CDFG jurisdiction only Mixed Willow Series vegetation were identified. These areas of Mixed Willow vegetation were not identified in the Merkel 2001 report.
- Within Planning Area 9 (a proposed residential area not to be impacted) two stand of Mixed Willow Series vegetation totaling approximately 0.1 acre (4,360 ft²) were identified. These areas were not mapped in the Merkel 2001 report.
- Within Planning Area 10 (a proposed residential area not to be impacted) several small stands of Mixed Willow Series vegetation and one small stand of Mulefat Series (approximately 0.002 acre (90 ft²)) were found along the north-south running drainage during the current wetland

investigation. The combined acreage of these minute willow stands has not changed the overall acreage of Mixed Willow vegetation (approximately 0.8-acre, (34,850 ft²)) reported for Planning Area 10 in the Merkel 2001 report.

Acreage differences for jurisdiction wetland vegetation within the SPA between the Merkel 2001 report and the current wetland delineation report are summarized in Table 1 below.

Table 1. Acreage differences for wetland vegetation within the SPA between the Merkel 2001 report and the current wetland investigation.

Planning Areas (PA)	Merkel 2001 Report		Current Wetland Investigation	
	Mixed Willow Series (acre)	Mulefat Series (acre)	Mixed Willow Series (acre)	Mulefat Series (acre)
PA 1	0	0	0.05	0
PA 2-8	0.1	0.1	0.22 *0.07	0.02
PA 9	0	0	0.1	0
PA 10	0.8	0	0.8	0.002
Total	0.9	0.1	1.2 *0.07	0.02

* = CDFG jurisdiction only.

As indicated in Table 1 above, a total of 0.9 acre of Mixed Willow Series vegetation was reported in the Merkel 2001 report. However, following a focused wetland delineation of the subject property, a total of approximately 1.2 acres of Mixed Willow Series was found on-site, indicating a net increase of 0.3 acre. Additionally, 0.1 acre of Mulefat Series vegetation was reported in the Merkel 2001 report. The current investigation found approximately 0.02 acre of Mulefat Series vegetation on-site, indicating a net decrease of 0.08 acre. These differences are minor and reflect refinements of previously provided information rather than substantial new information. In the Merkel 2001 report, it was acknowledged that wetland impacts were significant and that due to the age of the prior Dudek investigation a future delineation would be required to identify the specific impacts and to refine the acreage of appropriate mitigation for the impacts. These data provide for that analysis to be completed.

LOCATION

The SPA occupies 208 acres within the western portion of the City of Escondido, San Diego County, California (Figure 1). The property is found within Township 12 South, Range 2 West of the San Bernardino Base and Meridian, USGS 7.5' Escondido, California Quadrangle. Primary access to the SPA is now via the western terminus of Enterprise Street. The SPA is located on the fringe of heavy urban development within a transition zone between lower density residential and agricultural uses to the west and southwest, and industrial development to the east and northeast (Figure 2).

GENERAL PHYSIOGRAPHY

The SPA exhibits rolling to hilly terrain with prominent hills located in the northern and southwestern portion of the property. The landscape is cut by a number of shallow channels with the most prominent drainage traversing from the west central portion of the SPA to the southwestern

corner of the property. The site drains southward to Escondido Creek. The highest elevation on the property, located in the northwestern corner, is approximately 885 feet above mean sea level (MSL); the lowest elevation, located in the southeastern corner of the site, is approximately 625 feet MSL. Major electrical transmission lines bisect the eastern and western portions of the SPA. There is a network of dirt roads and trails on the on-site, some of which are used to access the electrical transmission towers; others are the result of past and continuing recreational off-road vehicle uses.

The soils on the SPA consist of coarse sandy loam of the Vista series (Bowman 1973). A few minor rock outcrops are also present, particularly in the central portion of the SPA. Surficial geology consists of Mesozoic granitic rocks (California Division of Mines and Geology 1966).

METHODS

M&A biologists Kyle L. Ince and Stephen R. Rink conducted wetland delineation work on November 20, 2001. Delineation of the site was performed using the routine on-site determination methods noted in the 1987 United States Army Corps of Engineers' (ACOE) Wetland Delineation Manual (ACOE 1987). The delineation effort was expanded to identify jurisdictional Non-wetland Waters of the U.S. and jurisdictional wetlands under the California Department of Fish and Game (CDFG). Wetlands and other jurisdictional waterways on-site were delineated on a 1" = 40' aerial photograph (Figure 2). Streambed widths were noted on the map to provide true jurisdictional dimensions. Areal coverage was rounded to the nearest tenth for acreage summaries (or to the nearest one-hundredth if under 0.1 acre), and to the nearest ten-square-foot for square-footage summaries. Evidence supporting jurisdictional determinations was recorded on wetland field data forms and depicted in photographs of the project site (Appendix 1 and 2, respectively).

Table 2. Summary of Survey Information

Date	Time	Conditions	Biologists
November 20, 2001	0930-1530	Weather: Sunny Wind (Beaufort) = <1 Temperature: 68-70° F	Kyle L. Ince Stephen R. Rink

The following text describes the three parameters used to determine the presence/absence of wetlands and non-wetland water streambeds occurring on the project site. Additional information on the overall delineation process and regulatory jurisdictions may be found in the federal delineation manual (ACOE 1987), state and federal enacting legislation, or through guidance provided by judicial interpretation, solicitors' opinions, and regulatory guidance issued to District Corps' offices and CDFG field staff.

VEGETATION

Vegetation communities which meet the criteria of wetland-associated vegetation are dominated by a preponderance (>50%) of species classified as obligate wetland plants (OBL), facultative wetland plants (FACW), or facultative plants (FAC) based on the **National List of Plant Species that Occur in Wetlands** (U.S. Fish & Wildlife Service 1991). Obligate wetland plants are defined as occurring almost always in wetlands (estimated probability >99%) under natural conditions. Facultative wetland plants are defined as occurring usually in wetlands (estimated probability 67% to 99%). Facultative plants are defined as having a similar likelihood of occurring in both wetlands and non-wetlands (estimated probability 33% to 67%). Areas defined as Non-wetland Waters of the U.S.

typically lack vegetation or are dominated by annual upland species, but exhibit wetland hydrologic characteristics.

HYDROLOGY

Hydrologic wetland indicators include both surficial characteristics (e.g., visual observation of surface flow, drainage patterns, watermarks, and drift lines) and sub-surficial characteristics (e.g., presence of free water in the test pit). Hydrologic indicators are also used to define Non-wetland Waters of the U.S..

SOILS

In order to confirm the presence of hydric soils, soil test pits are excavated using a shovel. Soils are typically taken from depths ranging from 0 to 18 inches and are examined for physical and chemical evidence of hydric conditions. Excavated soils are evaluated using the chroma indices from the **Munsell Soil Color Charts** (Munsell Color 1974). Additional indicators of hydric soils, such as vertical streaking, high organic matter content in the surface horizon, mottling, and sulfidic odor, are also evaluated during the delineation.

JURISDICTION OF WETLANDS AND WATERWAYS

Wetlands and jurisdictional waters are typically regulated by one or both of the following: Section 404 of the Clean Water Act (ACOE 1987) regarding discharge of dredged or fill materials into the waters of the United States; and Sections 1600 *et seq.* of the California Fish & Game Code which regulate modifications to streambeds. The following text describes each of these jurisdictions in greater detail.

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers has regulatory authority over the discharge of dredged or fill materials into the waters of the United States (1344 USC). The term "waters of the United States" is defined in 33 CFR Part 328(a) and includes: (1) all navigable waters (including all waters subject to the ebb and flow of the tide); (2) all interstate waters and wetlands; (3) all other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries to waters mentioned above; (6) the territorial seas; and, (7) all wetlands adjacent to waters mentioned above. Judicial interpretation under the recent U.S. Supreme Court ruling on the case of Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers has narrowed the historic reading of jurisdiction under 33CFR 328(a)(3).

In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM) which is defined at 33 CFR 328.3(e) as:

... that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of

litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support ... a prevalence of vegetation typically adapted for life in saturated soil conditions."

California Department of Fish and Game

The California Department of Fish and Game regulates alterations of "streambeds" through the development of a Streambed Alteration Agreement pursuant to Division 2, Chapter 6, Sections 1600-1603 of the Fish and Game Code. An Agreement is required whenever a project would "divert, obstruct or change the natural flow or bed, channel or bank of any river, stream or lake designated by the Department."

The breadth of areas subject to regulation by CDFG under Section 1600 are less clearly defined than those regulated by ACOE; however, in general, the policies are fairly consistent. It is clear that the California statutes cover all rivers, streams, lakes and streambeds that may exhibit intermittent flows of water. However, Section 1600 *et seq.* does not extend to isolated wetlands and waters such as small ponds not located on a drainage course, wet meadows, vernal pools, or tenajas (depressions within rock which pond water). Furthermore, CDFG jurisdiction does not extend over tidal waters. However, Section 1600 *et seq.* jurisdiction extends over all riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

Unlike the ACOE process, the Streambed Alteration Agreement is not a discretionary permit, but rather an Agreement developed between an applicant and CDFG with mitigation, impact reduction, or avoidance measures. These measures are subject to acceptance by the applicant or may be countered with alternative measures. If an Agreement cannot be reached between CDFG and the applicant, a formal arbitration process is available.

RESULTS

This investigation covered the entire SPA, and identified two wetland vegetation types within the subject property: Mixed Willow Series and Mulefat Series. Several unvegetated, ephemeral streambeds, or Non-wetland Waters of the U.S., were also found within the study area. The following text describes each jurisdictional wetland in further detail with regard to hydrophytic vegetation, hydric soils, and wetland hydrology, which are three defining characteristics to qualify as an ACOE wetland. Figure 2 depicts the jurisdictional wetlands and waterways found on-site.

MIXED WILLOW SERIES

Approximately 52,270 ft² (1.2 acres) of Mixed Willow habitat was found within the SPA in several areas; primarily along the major north-south running drainage located in the south-central portion of the SPA. This vegetation type consisted primarily of OBL and FACW trees including Goodding's Black Willow (*Salix gooddingii*), Arroyo Willow (*Salix lasiolepis*), and Lance Leaf Willow (*Salix laciniata*). Understory species included FAC plants such as Western Ragweed (*Ambrosia psilostachya*) and OBL species such as Salt Heliotrope (*Heliotropium curvassavicum*). One stand of this vegetation, located along the northwestern property boundary, was observed to be disturbed.

This stand supported several non-native species such as Tamarisk (*Tamarix parviflora*) and Brazilian Pepper Tree (*Schinus terebinthifolius*) in relatively high abundance.

Soil test pits in the Mixed Willow Series habitat exhibited hydric characters including a low chroma color and the presence of mottles. In some areas where the wetland boundary was abrupt, soils test pits were not required given the predominance of FACW and OBL species.

One stand of Mixed Willow vegetation was found to be under CDFG jurisdiction (Adjacent Riparian) only. This small stand of willows (approximately 0.07 ac. or 3,050 ft²) showed only one (*i.e.*, vegetation) of the three characteristics needed to qualify as an ACOE wetland. This area of willows is located in the area to be preserved in Planning Area 7, along the north-south running drainage.

MULEFAT SERIES

Mulefat (*Baccharis salicifolia*), a FACW species, occurred in small clusters along two separate seasonal streambeds within the SPA. This vegetation type was found to be relatively sparse and growing adjacent to areas of Mixed Willow vegetation. Total coverage of this vegetation type was 740 ft² (0.016 acre).

Soils within this vegetation series were similar to soils in the Mixed Willow vegetation, and included a low chroma color with approximately 5% mottles. Drainage patterns indicated wetland hydrology.

NON-WETLAND WATERS OF THE U.S./STREAMBED

Several narrow drainages, devoid of hydrophytic vegetation and/or soils, were found within the SPA. In some areas, these drainages included upland coastal sage scrub plants such as Flat-top Buckwheat (*Eriogonum fasciculatum*) and California Sagebrush (*Artemisia californica*). Coast Live Oak (*Quercus agrifolia*), a Non Indicator species, is abundant along the main drainage that intercepts planning area 7 and 9. Total areal coverage of Non-wetland drainages totaled approximately 8,150 ft² (0.19 acre). These drainage channels show evidence of flow and therefore are jurisdictional under the ACOE as Non-Wetland Waters of the U.S. and the CDFG as Streambed.



ACOE and CDFG Jurisdictional Waters/Streambeds

-  Non-wetland Waters of the U.S.
—#’= Channel Width
-  Mixed Willow Series
-  Mulefat Series
-  Mixed Willow Series (CDFG Only)
-  Escondido Research and Technology Center Specific Plan Area
-  Direction of Drainage Flow



Merkel & Associates, Inc.

Figure 2

ACOE and CDFG Jurisdictional Waters/Streambeds

Escondido Research and Technology Center
Specific Plan Area

Escondido, CA

M & A # 01-024-09

Date: January 25, 2002

Table 3 below summarizes the quantities of wetland vegetation found within the SPA.

Table 3. Acreage Summary of Wetland Vegetation within the SPA.

Planning Areas (PA)	Jurisdictional Wetland Habitats		
	Mixed Willow Series	Mulefat Series	Non-Wetland Waters of the U.S./Streambed
PA 1	0.05 ac. (2,180 ft ²)	----	0.02 ac. (870 ft ²)
PA 2	0.01 ac. (440 ft ²)	0.02 ac. (870 ft ²)	0.01 ac. (440 ft ²)
PA 3-5	0.03 ac. (1,310 ft ²)	----	0.05 ac. (2,180 ft ²)
PA 6	----	----	----
PA 7	0.09 ac. (3,920 ft ²) *0.07 ac. (3,050 ft ²)	----	0.04 ac. (1,740 ft ²)
PA 8	0.09 ac. (3,920 ft ²)	----	----
PA 9	0.1 ac. (4,360 ft ²)	----	0.03 ac. (1,310 ft ²)
PA 10	0.8 ac. (34,850 ft ²)	0.002 ac. (90 ft ²)	0.04 ac. (1,740 ft ²)
Total	1.2 ac. (52,270 ft ²) *0.07 ac. (3,050 ft ²)	0.020 ac. (960ft ²)	0.2 ac. (8,710 ft ²)

*CDFG jurisdiction only.

DISCUSSION

DIRECT IMPACTS TO WETLAND VEGETATION

For the purposes of this assessment, all jurisdictional waters and streambeds, within the limits of the proposed ERTC industrial park site (Planning Areas 1-8) are anticipated to be impacted, with the exception of those wetland resources within the area to be preserved in Planning Areas 6 and 7.

Within Planning Area 1, a west to east running seasonal streambed (approximately 950 ft²), along with a small stand of Mixed Willow vegetation located along the eastern property boundary (approximately 0.05-acre) will be lost. Additionally, within Planning Area 2, a small north to south trending seasonal streambed (approximately 550 ft²), along with two small stands of Mixed Willow (approximately 0.01 acre) and Mulefat vegetation (approximately 0.02 acre) will be impacted by project construction. Lastly, within Planning Areas 3-5, one small stand of Mixed Willow vegetation located along the western property boundary (approximately 0.03 acre) and two separate seasonal streambeds (approximately 2,090 ft²) will be lost due to ERTC project construction. Impacts to wetland vegetation, along with recommended mitigation ratios to offset impacts, are summarized in Table 4 below.

Potential indirect impacts to wetland habitat may occur as a result of inadequate controls in routing of on-site drainage that results in discharges to wetland areas. It is expected that ERTC drainage systems would be designed and constructed in accordance with current, sound professional practice and applicable regulatory requirements, which would be expected to adequately protect areas downstream of the discharge point.

Table 4. Acreage Summary of Jurisdictional Wetland Habitat Impacts and Recommended Mitigation Ratios

Jurisdictional Wetland Habitat	PA 1	PA 2	PA 3-5	Total Impacts	*Recommended Mitigation Ratio	Mitigation Total
Mixed Willow Series	0.05 ac. (2,180 ft ²)	0.01 ac. (440 ft ²)	0.03 ac. (1,310 ft ²)	0.09 ac. (3,920 ft ²)	3:1	0.3 ac. (13,070 ft ²)
Mulefat Series	---	0.02 ac. (870 ft ²)	---	0.02 ac. (870 ft ²)	3:1	0.06 ac. (2,610 ft ²)
Non-Wetland Waters of the U.S./Streambed	0.02 ac. (870 ft ²)	0.01 ac. (440 ft ²)	0.05 ac. (2,180 ft ²)	0.08 ac. (3,480 ft ²)	3:1	0.24 ac. (10,450 ft ²)

* Recommended mitigation ratios are from the Draft Escondido Subarea Plan, dated June 2001.

WETLANDS FUNCTIONS AND VALUES

The functions and values of the wetland habitat and jurisdictional waterways within the SPA are expected to be moderate to low given the state of disturbance of the site and lack of floral and faunal diversity typical of higher quality riparian habitats. The site has undergone a significant amount of disturbance as evidenced by the numerous trash piles throughout the property, invasion of exotic plant species, off-road traffic throughout the area, and encroaching urbanization. The site also lacks a well-developed multiple layer canopy, which would typically provide suitable habitat for a variety of common bird species such as the Song Sparrow (*Melospiza melodia*), Lesser Goldfinch (*Carduelis psaltria*), and the Common Yellowthroat (*Geothlypis trichas*), as well as sensitive species like the Least Bell's Vireo (*Vireo bellii pusillus*). Due to such factors, the biological functions and values of the site are expected to be relatively low.

The physical functions of the study area are expected to be moderate in value. The low-velocity flows and potential ponding areas along with the presence of some herbaceous vegetation allow for higher sediment retention and possible groundwater recharge. However, the conditions of the site are not expected to greatly contribute to streambed stabilization or floodflow alteration.

The site is also expected to have relatively moderate chemical functions. The low-velocity flows, and fine mineral soils allow for higher toxicant retention and nutrient transformation. However, other factors that would also promote these functions are not present within the on-site watercourse, such as an abundant presence of herbaceous vegetation and high plant diversity.

Although the on-site wetlands provide some functional value, they do not exhibit nearly the same overall value of higher quality wetlands in the region.

WETLAND PERMITTING REQUIREMENTS

The project would result in impacts to wetlands as well as Non-wetland Waters of the U.S. that fall under both state and federal regulatory programs. Under section 404 of the Clean Water Act, placement of dredged or fill material within waters of the U.S. requires a permit issued by the U.S. Army Corps of Engineers. The Clean Water Act also requires the issuance of a state water quality certification or waiver under Section 401, which in California would be issued by the Regional Water

Quality Control Board for any action that may result in degradation of the waters of the State. In addition to the federal act requirements, the proposed work would constitute an alteration of a streambed and would fall under the jurisdiction of the California Department of Fish and Game pursuant to section 1600 et seq. of the California Fish and Game Code.

Permits and authorizations must be issued prior to taking actions subject to state and federal control within jurisdictional waters. In addition, it should be noted that the Corps of Engineers may not issue a permit where the issuance may adversely affect a listed species or result in the destruction or adverse modification of its critical habitat without consulting with the U.S. Fish & Wildlife Service under section 7 of the Endangered Species Act. While the proposed project is not located within designated critical habitat for any species, it supports wide spread coastal sage scrub occupied by the federally-listed threatened California gnatcatcher.

During August 2001, a California Gnatcatcher survey was conducted in all appropriate habitat on the entire SPA. During these surveys, up to fourteen individual gnatcatchers were observed, including three adult males, with the remaining birds being females and juveniles. Due to seasonal constraints, the surveyors were unable to precisely assess age or gender beyond inference on all non-adult male birds. It is estimated that four pairs of gnatcatchers established nesting territories on the SPA in 2001. Dudek (1998) reported six pairs of gnatcatchers on the SPA. While speculative, it is possible that the difference in numbers between the 1998 and 2001 surveys is due to population dynamics. Animal populations in general are cyclic in nature, and this phenomenon has been apparent in California Gnatcatcher populations throughout San Diego County, particularly in areas of low-quality habitat, as on the SPA. Therefore the apparent decrease in numbers of breeding gnatcatcher pairs on the SPA over a three-year period does not necessarily indicate a long-term downward trend in the gnatcatcher population. Future gnatcatcher populations on the SPA could increase or decrease.

Gnatcatcher occupied habitat is well distributed across the site, including along the jurisdictional waterways on the site which predominantly support fringing sage scrub rather than riparian vegetation. The distribution of the waters are such that the site could not be developed absent the issuance of permits by the Corps of the fill of waters of the U.S. As a result, it is anticipated that a section 404 permit issuance may not proceed without prior consultation under section 7 of the ESA and the issuance of take authorization through a Biological Opinion prepared by the Service.

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APPENDIX 1. Wetland Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERTC Property, City of Escondido	Date: Nov 20, 2001
Applicant/Owner: JRMC Real Estate Inc/Semptra Energy Resources	County: San Diego
Investigator: Kyle L. Ince and Stephen R. Rink	State: CA
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: Mixed Willow
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: DP1
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: PP1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Salix lasiandra</i>	T	OBL	9.		
2. <i>Cirsium vulgare</i>	H	FACU	10.		
3. <i>Baccharis salicifolia</i>	FACW	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percentage of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: Mixed Willow vegetation leading to recently cleared area.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Described in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to free Water in Pit: _____ (in.) Depth of Saturated Soil: _____ (in.)	
Remarks: Narrow channel.	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERTC Property, City of Escondido	Date: Nov. 20, 2001
Applicant/Owner: JRMC Real Estate Inc/Sempra Energy Resources	County: San Diego
Investigator: Kyle L. Ince and Stephen R. Rink	State: CA
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: Upl./ Dist
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: DP2
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: PP2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Centaurea melatensis</i>	H	-	9.		
2. <i>Hirschfeldia incana</i>	H	NI	10.		
3. <i>Bromus rubens</i>	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percentage of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Upland disturbed vegetation.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Described in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: ----- (in.) Depth to free Water in Pit ----- (in.) Depth of Saturated Soil: ----- (in.)	
Remarks: Data point immediately adjacent to drainage (not within).	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERTC Property, City of Escondido	Date: Nov. 20, 2001
Applicant/Owner: JRMC Real Estate Inc/Sempra Energy Resources	County: San Diego
Investigator: Kyle L. Ince and Stephen R. Rink	State: CA
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: Willow Series
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: DP3
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: PP3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Tamarisk parviflora</i>	T	FAC	9.		
2. <i>Salix lasiolepis</i>	T	FACW	10.		
3. <i>Hirschfieldia incana</i>	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		
Percentage of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%					
Remarks: Disturbed Willow Series vegetation.					

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Described in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: ----- (in.) Depth to free Water in Pit: ----- (in.) Depth of Saturated Soil: ----- (in.)	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Broad drainage basin fed by sheet flow from adjacent slope.	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERTC Property, City of Escondido	Date: Nov. 20, 2001
Applicant/Owner: JRMC Real Estate Inc/Sempra Energy Resources	County: San Diego
Investigator: Kyle L. Ince and Stephen R. Rink	State: CA
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: CLORW
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: DP4
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: PP4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Quercus agrifolia</i>	T	NI	9.		
2. <i>Hirshfeldia incana</i>	H	NI	10.		
3. <i>Ambrosia psilostachya</i>	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percentage of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: Coast Live Oak Riparian Woodland.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Described in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to free Water in Pit: _____ (in.) Depth of Saturated Soil: _____ (in.)	
Remarks: Non-wetland Waters/Streambed.	

SOILS

Map Unit Name (Series and Phase): Vista Series		Drainage Class: Well drained			
Taxonomy (Subgroup): Typic Xerochrepts		Field Observations			
		Confirm Mapped Type? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle (Abundance/Contrast)	Texture, Concretions, Structure, etc.
0-12		5YR 3/2	5YR 5/6	5%	Loam
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in surface layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks: Low chroma soil with mottles.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
					Is this Sampling Point Within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Mixed Willow Series vegetation within braided streambed.					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERTC Property, City of Escondido	Date: Nov. 20, 2001
Applicant/Owner: JRMC Real Estate Inc/Sempra Energy Resources	County: San Diego
Investigator: Kyle L, Ince and Stephen R. Rink	State: CA
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: Mixed Willow
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: DP5
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: PP5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Salix goodingii</i>	T	OBL	9.		
2. <i>Ambrosia psilostachya</i>	H	FAC	10.		
3. <i>Avena barbata</i>	H	NI	11.		
4. <i>Heliotropium curvassavicum</i>	H	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percentage of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: Mixed Willow Series vegetation.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Described in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: ----- (in.) Depth to free Water in Pit: ----- (in.) Depth of Saturated Soil: ----- (in.)	

Remarks: Broad flood plain area adjacent to roadside channel with braided channels.

APPENDIX 2. Wetland Photo Points



Data Point 1. Mixed Willow Series Vegetation



Data Point 3. Disturbed Mixed Willow Series Vegetation



Data Point 4. Non-wetland Waters/Streambed below canopy of Coast Live Oak Riparian Woodland.



Data Point 5. Mixed Willow Series Vegetation
Merkel & Associates, Inc. # 01-024-09

**PLANNING
SYSTEMS**

LAND USE / COASTAL PLANNING
LANDSCAPE ARCHITECTURE • LA3900
POLICY AND PROCESSING
ENVIRONMENTAL MITIGATION

March 14, 2002

The District Engineer
U.S. ARMY CORPS OF ENGINEERS
Los Angeles District
PO Box 2711
Los Angeles, CA 90053-2325

Attn: SPLCO-R

**RE: PROPOSED DISCHARGE OF FILL MATERIALS INTO WATERS OF
THE UNITED STATES – ESCONDIDO RESEARCH AND
TECHNOLOGY CENTER**

Please accept this letter and accompanying application documentation requesting authorization to place fill material into identified "waters of the United States," pursuant to Section 404 of the Clean Water Act. These "waters" have been identified within the development envelope of a proposed industrial office business park to be located in the City of Escondido, San Diego County, California. The subject site is located on attached Exhibit 1.

PROJECT APPLICANT:

JRMC Real Estate Corporation
1040 South Andreasen Dr.
Suite 200
Escondido, CA 92029

Contact: James R. McCann
(760) 781-5300

AGENT:

Planning Systems
1530 Faraday Ave.
Suite 100
Carlsbad CA 92008

Contact: Paul J. Klukas
(760) 931-0780

PROJECT LOCATION:

The project is located in the western portion of the city of Escondido in San Diego County, California. The Escondido Research and Technology Center (ERTC)

The District Engineer
March 14, 2002
Page 2

encompasses 186 acres of land to be developed primarily as an industrial business park. Land uses in the vicinity of the site include industrial, commercial residential development. The subject site is undeveloped, presently possessing non-native grasslands, agricultural and coastal sage scrub vegetation. Impacts to the headwater drainages of three unnamed drainages will result from implementation of the project.

Table 1: Impacts to drainages.

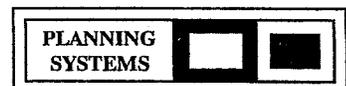
Name of Waterbody	Latitude	Longitude	USGS Quadrangle	Section	Township	Range
Unnamed Drainage A	33°06'50"	117°06'55"	Escondido	20	12S	2W
Unnamed Drainage B	33°06'50"	117°06'55"	Escondido	20	12S	2W
Unnamed Drainage C	33°06'50"	117°06'55"	Escondido	20	12S	2W

LEGAL DESCRIPTION OF PROPERTY:

A portion of the east half of the east half of Section 19, and a portion of the north half of the northwest quarter of Section 20, Township 12 South, Range 2 West, San Bernardino Meridian, in the County of San Diego, State of California, according to the official plat thereof.

PROJECT DESCRIPTION:

The proposed project will involve the development of a maximum 1.2 million square foot business park and a 550 megawatt power generating facility on 186 acres. Also included will be a public access major roadway which will provide access to the site from Vineyard Avenue. The project involves the development of eight planning areas, with ultimate uses involving a variety of office, research and development, industrial (multi-tenant, corporate and distribution), and an electric power generating facility. Public trails, landscaping, parking, accessory buildings and other uses will also be provided for in the project.



SITE DESCRIPTION:

The ERTC property is located in the western portion of the city of Escondido. Elevations on the site range from a low of approximately 630-feet to a high of 880-feet above sea level. Generally the property slopes downward toward the southwest, from a high point in the mid-northern section of the project area.

The property is essentially vacant, however significant portions of the site have been disturbed by former agricultural activities, off-road vehicles and grading. A 200-foot wide electrical transmission easement with towers runs north-south through the center of the property. This easement turns westerly at the project's southerly boundary. Numerous other utility easements cross the site.

Drainage on the site flows toward the lower elevations in the southern and western portions of the site, and eventually flows off-site to Escondido Creek to the south. An ephemeral drainage in which wetland vegetation exists, flows over a portion of the lower elevations in the south-central portion of the site. Other dry and ephemeral drainage courses are located within the boundaries of the site.

Vegetation on the site is predominantly disturbed habitat, non-native grassland and disturbed sage scrub communities. Coastal California gnatcatchers inhabit portions of the site. It is expected that these gnatcatchers will be the subject of a Section 7 Consultation with the U.S. Fish & Wildlife Service for impacts to habitat of the gnatcatcher. The ERTC property contains no blue-line streams as depicted on the U.S. Geological Survey (USGS) topographic map for the Escondido, California Quadrangle. (Exhibit attached)

SUMMARY OF IMPACTS:

Table 2: Impacts to Jurisdictional Waters

Mixed Willow Series	Mulefat Series	Non-wetland Waters of the U.S./Streambed	TOTAL
0.09 ac.	0.02 ac.	0.08 ac.	0.19 ac.

A total of 0.19 acres of jurisdictional waters impacts will result from development of the proposed project.



The District Engineer
March 14, 2002
Page 4

ENVIRONMENTAL DOCUMENTATION:

Pursuant to the California Environmental Quality Act, the City of Escondido will serve as the lead agency for environmental documentation for the development of the proposed project. The City has determined that the project will require an environmental impact report, which is presently being prepared by the City. A draft EIR is anticipated to be available for public review by late-April.

The work proposed within Enterprise Business Center is also the subject of a California Department of Fish & Game Streambed Alteration Permit application. The regional Water Quality Control Board will also be petitioned for a Section 401 Water Quality certification or waiver.

Please contact me if you have any questions regarding this application, or if you require further assistance.

Sincerely,



Paul J. Klukas
Director of Planning

Attachments:

1. Completed Section 404 Application Form
2. Proposed Project Location map
3. Proposed Project Map
4. Addresses of Adjoining Property Owners List
5. Jurisdictional Wetland Delineation
6. Biological Assessment

cc: James McCann [w/attachments]



18. NATURE OF ACTIVITY (Description of project, include all features):

Subdivision into 43 industrial and open space lots, and grading of 2.4 million cubic yards of soil, and development of a business park with associated infrastructure improvements, including installation of the extension of Citracado Ave. and other public facilities improvements.

19. PROJECT PURPOSE (Describe the reason or purpose of the project, see instructions):

Development of a business park project consistent with City of Escondido land use regulations and policies.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. REASON(S) FOR DISCHARGE:

Fill of 0.11 ac. Of wetland habitat and 0.08 ac. Of non-wetland waters of the U.S. drainages. All work is necessary to accommodate proposed development and infrastructure, and the public roadway.

21. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS:

Standard construction quality soil fill material will be discharged. Net fill quantity necessary to fill jurisdictional waters will not total more than 1,000 cubic yards.

22. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (see instructions):

A total of 0.19 ac. of jurisdictional waters will be filled by the proposed business park and infrastructure project.

23. IS ANY PORTION OF THE WORK ALREADY COMPLETE? () Yes (X) No IF YES, DESCRIBE THE COMPLETED WORK:

N/A

24. ADDRESSES OF ADJOINING PROPERTY OWNERS, LESSEES, ETC., WHOSE PROPERTY ADJOINS THE WATERBODY (if more than can be entered here, please attach a supplemental list):

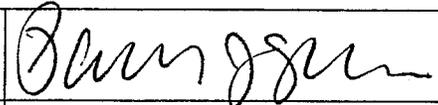
Attached List

25. LIST OF OTHER CERTIFICATIONS OR APPROVALS/DENIALS RECEIVED FROM OTHER FEDERAL, STATE OR LOCAL AGENCIES FOR WORK DESCRIBED IN THIS APPLICATION.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
City of Escondido Ca. Dept. Fish & Game Ca. State RWQCB	CEQA Certification Section 1603 Section 401		10/1/02		

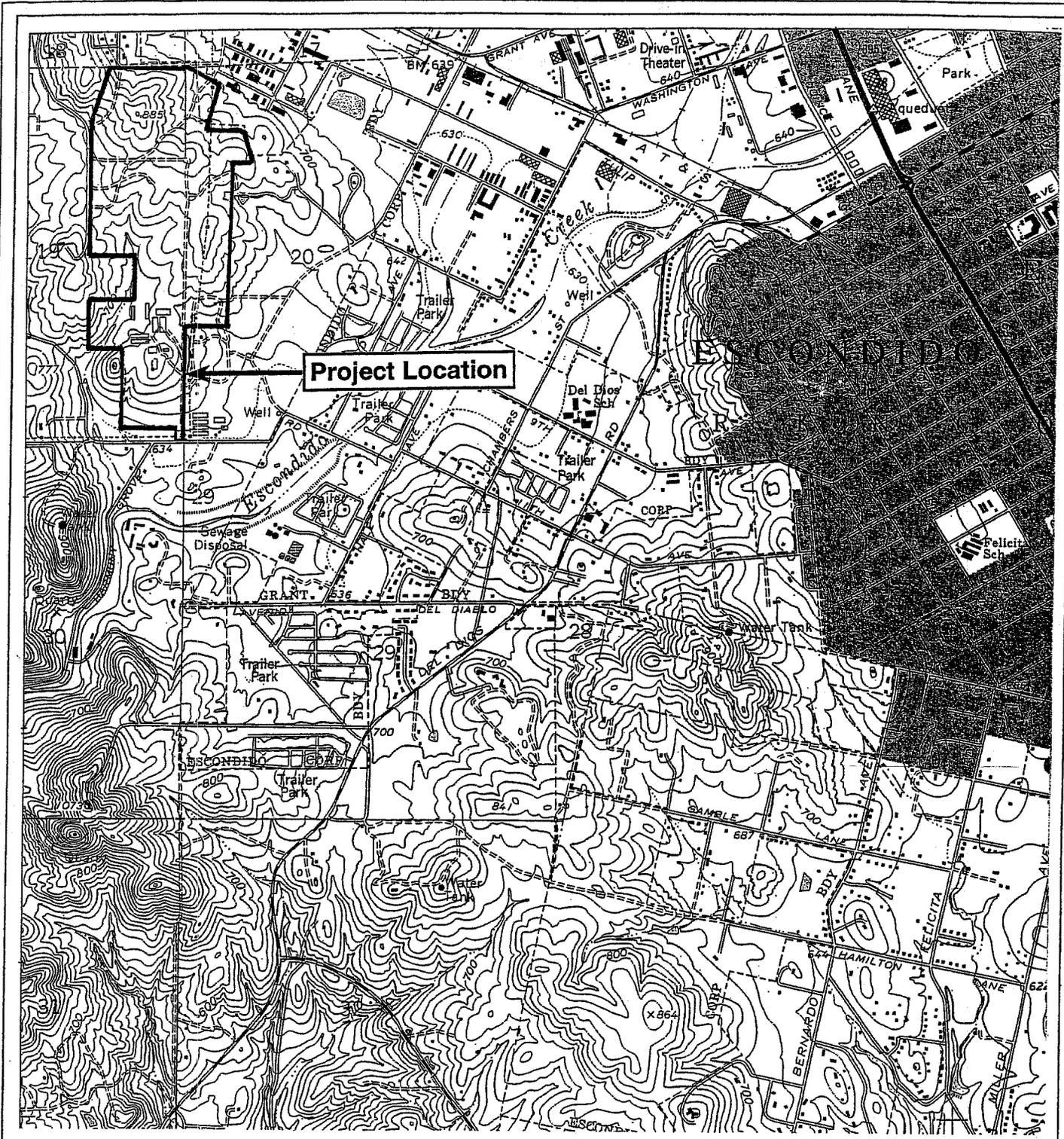
* Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

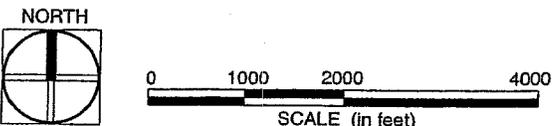
	Feb 19, 2002		3/14/02
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

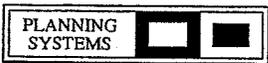
18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing some to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



Base: USGS 7.5 Escondido Quadrangle, CA



Proposed Project Location Map
Escondido Research and Technology Center
 Escondido, California



Escondido Research & Technology Center				
Adjacent Properties				
APN	Name & Address			
228-381-50	Industrial & Diagnostic 10801 Corporate Drive Pleasant Prairie WI 53158			
228-390-19	Stephen Potter 2625 Ginger Way Escondido CA 92029			
228-390-20	Theodore Ferrick 2635 Ginger Way Escondido CA 92029			
228-390-25	Esau Cabrera 618 Ross Drive Escondido CA 92029			
228-390-27	Wendy Williams 2329 Canyon Road Escondido CA 92025			
232-030-14	Eleanor Parker 36342 Big Springs Road Caliente CA 93518			
232-030-16	Jesus Silva 2635 Ginger Way Escondido CA 92029			
232-051-06	2200 West Enterprise LLC 2629 Colibri Lane Carlsbad CA 92009			
232-051-10	Ciro Delgadillo 1346 Via Conejo Escondido CA 92029			
232-051-11	Thomas & Nancy Davidson 1238A Simpson Way Escondido CA 92029			
232-051-12	Hamann Consolidated Inc 475 West Bradley Avenue El Cajon CA 92020			
232-051-18	Palomar Systems & Machine 2310 Aldergrove Avenue Escondido CA 92029			
232-051-29	JRMC 1040 South Andreason Drive #200 Escondido CA 92029			
232-410-45	Ronald Lister 3365 Lake View Terrace Escondido CA 92029			
232-410-46	Enterprise Heights Industrial 5414 Oberlin Drive #140 San Diego CA 92121			
232-512-04	San Diego Gas & Electric PO Box 25111 Santa Ana CA 92799-5111			
232-512-05	John Southworth 2610 Kauana Loa Drive Escondido Ca 92029			
232-512-10	Robert Cogdell 1414 Kona Kai Lane Escondido CA 92029			
232-512-12	Allen Geller 1415 Kona Kai Lane Escondido CA 92029			
232-512-13	Diana Schulman 2530 Kauana Loa Drive Escondido CA 92029			
232-512-16	Janet Kolesnikow 303 Milk Barn Lane Cookeville TN 38506			
232-512-18	Janet Kolesnikow 303 Milk Barn Lane Cookeville TN 38506			
232-512-19	David Buckley 1405 Kona Kai Lane Escondido CA 92029			
232-512-20	Arland & Ruth Wiberg PO Box 1118 Condon MT 59826			
232-512-21	Quailhill Industrial Park 37 Oakmont Drive Rancho Mirage CA 92270			
232-512-23	Quailhill Industrial Park 37 Oakmont Drive Rancho Mirage CA 92270			
232-512-24	Ronald Hammock 1420 Kona Kai Lane Escondido CA 92029			
232-550-01	Lyle Anderson 943 South Andreason Drive Escondido CA 92029			
232-550-09	US Circuit Inc 1526 Sterling Court Escondido CA 92029			
232-550-10	Wayne Powell 1508 East Mission Avenue Escondido CA 92027			
232-550-11	VIT Properties LLC 2063 Wineridge Place Escondido CA 92029			
232-550-12	Zuest Industrial Building 2061 Wineridge Place #150 Escondido CA 92029			
232-550-13	Fornaca Bakeries Inc 2069 Aldergrove Avenue Escondido CA 92029			
232-561-19	Jessie & Yolanda Eads 794 Allenwood Lane Escondido CA 92029			
232-561-20	Edward & Vera Klavzar 764 Allenwood Lane Escondido CA 92029			
232-561-21	Gregory Morrill 724 Allenwood Lane Escondido CA 92029			
232-561-22	Richard Ciberay 640 Allenwood Lane Escondido CA 92029			
232-561-23	James & Nancy Diluca 620 Allenwood Lane Escondido CA 92029			
232-561-24	Larry & Holly Harms 594 Allenwood Lane Escondido CA 92029			
232-561-25	Andrew & Joann Feenstra 835 Chardonney Way Escondido CA 92029			
232-562-13	Gentery McCormick 855 Chardonney Way Escondido CA 92029			
232-562-14	Gerald & Cheryl Kalas 875 Chardonney Way Escondido CA 92029			

Escondido Research & Technology Center				
Adjacent Properties				
APN	Name & Address			
232-562-15	Vincent & Anna Buonanno 895 Chardonney Way Escondido CA 92029			
232-571-16	Calogero Bologna 1174 Oak View Way Escondido CA 92029			
232-571-17	Michael Manry 1261 Oak View Way Escondido CA 92029			
232-571-18	Rosemary Procopio 1288 Oak View Way Escondido CA 92029			
232-572-22	Marie Speltel 1320 Oak View Way Escondido CA 92029			
232-572-23	Steven & Rosa Pronko 1334 Oak View Way Escondido CA 92029			
232-572-24	Shawn Dolan 1356 Oak View Way Escondido CA 92029			
232-572-25	Gary & Rebecca Stimac 1376 Oak View Way Escondido CA 92029			
232-572-26	John & Barbara Rossi 1398 Oak View Way Escondido CA 92029			
232-573-04	Bruce & Amy Barnes 1444 Oak View Way Escondido CA 92029			
232-573-05	Frank & Merri Adams 1466 Oak View Way Escondido CA 92029			
232-573-06	David & Rosa Newman 1488 Oak View Way Escondido CA 92029			
232-573-07	Connell TR 1492 Oak View Way Escondido CA 92029			
232-573-08	Rick Ray 2680 Kuana Loa Drive Escondido CA 92029			
232-573-09	Denton & Josie Miller 2674 Kuana Loa Drive Escondido CA 92029			
235-040-14	Hellen Vigg 2529 Kuana Loa Drive Escondido CA 92029			
235-040-15	Thomas & M Escher 2615 Sunset Hills Escondido CA 92025			
235-040-27	Nicolo Cucinella 3147 Mount Whitney Road Escondido CA 92029			
235-040-34	Antonio Dasilva 2573 Kuana Loas Drive Escondido CA 92029			

Biological Assessment
for the Escondido Research and Technology Center (ERTC)
Escondido, San Diego County, California

Prepared for:

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Los Angeles Division, Regulatory Branch
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Applicant for 404 Permit:
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Escondido CA 92029

March 29, 2002

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BIOLOGICAL ASSESSMENT FOR THE ESCONDIDO RESEARCH AND TECHNOLOGY CENTER

LOCATION:

San Diego County, California
Township 12 south, Range 2 West
USGS 7.5' Escondido Quadrangle

Contact Person: Adam Koltz, Merkel & Associates, Inc.
Phone Number: (858) 560-5465
Email: akoltz@merkelinc.com

March 29, 2002

INTRODUCTION

JRMC Realty is applying for a 404 permit to develop the Escondido Research and Technology Center (ERTC). The purpose of this biological assessment is to review the proposed ERTC project in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, proposed, or sensitive species listed below. This biological assessment is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)(ESA).

This document describes current environmental conditions in the vicinity of the project site. It outlines proposed project actions, and it addresses species listed or proposed for listing under the ESA that occur in the project area and which are potentially affected by the proposed action. Measures have been included in the project to minimize impacts, and compensate for adverse effects to listed species through controls on habitat clearing, timing, and offsite habitat based mitigation.

SPECIES CONSIDERED

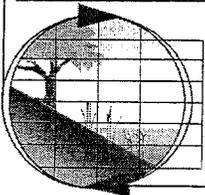
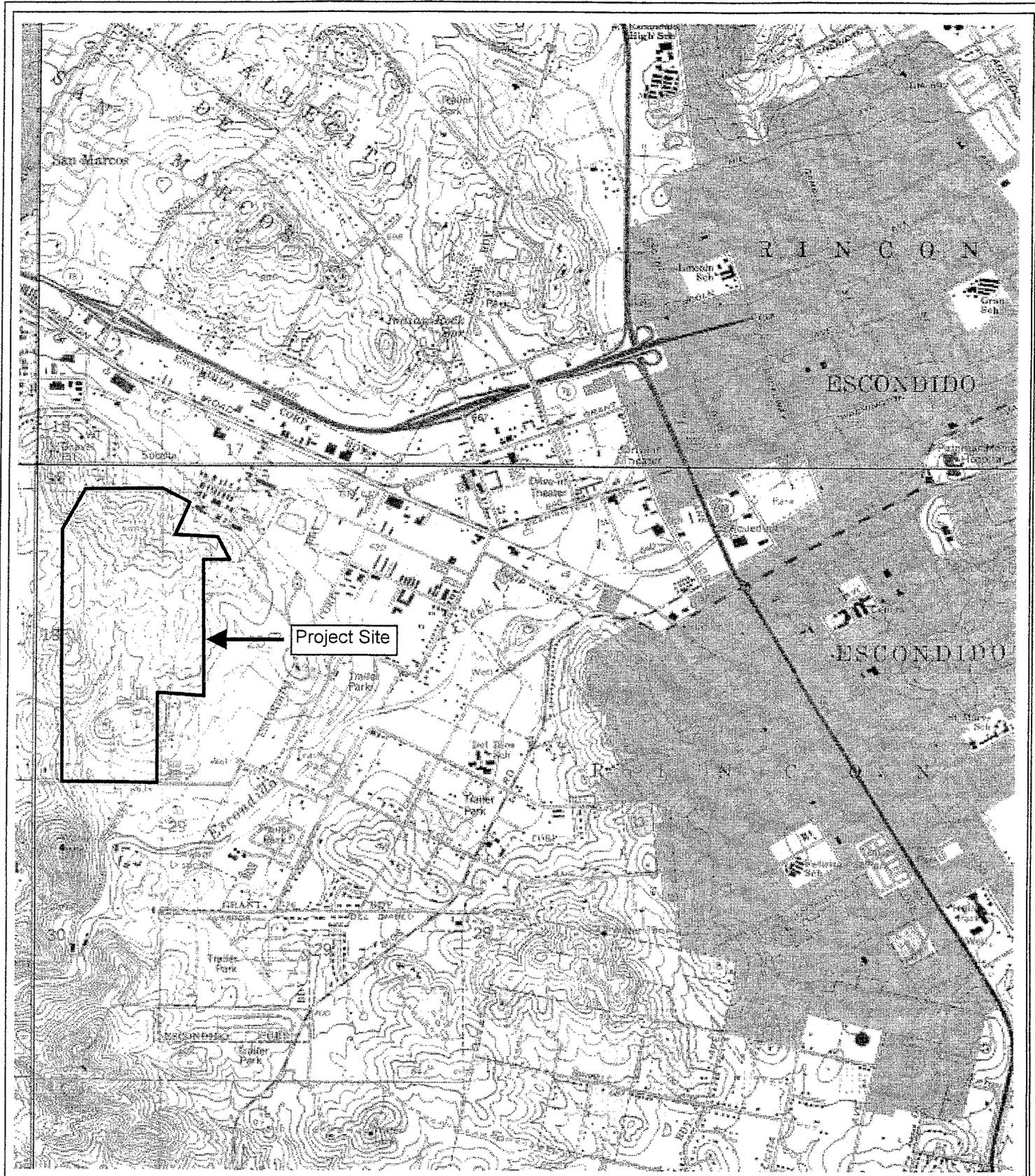
THREATENED, ENDANGERED, PROPOSED THREATENED, OR PROPOSED ENDANGERED SPECIES

The Coastal California Gnatcatcher (*Polioptila californica californica*) is the only species considered in this document:

Focused survey for the endangered Quino Checkerspot butterfly (*Euphydryas editha quino*) were conducted in accordance with published protocols in 2001. Results from these surveys were negative for the presence of this animal on the project site. No other listed species are expected to occur, based on habitat conditions and surveys.

CANDIDATE SPECIES, SENSITIVE SPECIES, AND SPECIES OF CONCERN

Not applicable.



↑
1" = 2,000'

Project Vicinity Map
ERTC Property
Escondido, CA
Source: USGS 7.5' Escondido, CA Quadrangle

Figure
1

CRITICAL HABITAT

The ERTC project site addressed in this biological assessment does not fall within critical habitat for the California Gnatcatcher, or any other species critical habitat or proposed critical habitat. Critical habitat for the California Gnatcatcher was established by the U.S. Fish and Wildlife Service (USFWS) on November 24, 2000 (USFWS 2000).

CONSULTATION TO DATE

No consultation has taken place on this project to date. However, on July 17, 2001 a meeting took place that was attended by representatives of JRMC Real Estate, Sempra Energy Resources, the City of Escondido, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. This meeting was followed by a field meeting on the ERTC site on November 6, 2001, with the same parties in attendance. Discussion centered around processing of Coastal Sage Scrub take via Section 7, Section 10(a), and Section 4(d). One option considered was waiting until the Escondido Draft Subarea Plan was approved in its final version. No recommendations were made by agency representatives and no decisions were reached.

CURRENT MANAGEMENT DIRECTION

One City planning document has primary relevancy to the proposed project: The draft Escondido Subarea Plan, implementing the Multiple Habitat Conservation Program.

The draft Escondido Subarea Plan, Implementing the Multiple Habitat Conservation Program

The City of Escondido is a participant in regional resource conservation planning efforts being undertaken in northern San Diego County pursuant to the California Natural Community Conservation Planning (NCCP) Act of 1991 and the California and Federal Endangered Species Acts (CESA and ESA, respectively). This subregional plan is identified as the Multiple Habitat Conservation Plan (MHCP). Under the umbrella planning framework of the MHCP, the City of Escondido has prepared a draft subarea conservation plan (Escondido Subarea Plan) that addresses land conservation plans under the land-use authority of the City of Escondido.

The ERTC project site is located within the Southwestern Habitat Area, as identified in the draft Escondido Subarea Plan of the Multiple Habitat Conservation Plan (1999). Although the Southwestern Habitat Area does support stands of native habitat including California sagebrush, chaparral, live oak woodland, and small extents of riparian communities, these habitats are generally degraded, fragmented, and isolated from regional core areas identified for conservation within the draft Escondido Subarea Plan. Within the region, known special status species occurrences are highest along the San Dieguito River corridor to the south of the property for wildlife and within the unincorporated County lands around Rancho Cielo to the southwest for plants. Surrounding rural development, habitat fragmentation, and the lack of suitable soil types limits the potential occurrence of special status plants and animals in the immediate vicinity of the site.

Neither the ERTC site nor the overall Quail Hills Specific Plan Area (which is being retitled the Escondido Research and Technology Center as part of the ongoing City of Escondido-led process to

revise the 1988 Quail Hills Specific Plan), are identified in the draft Escondido Subarea Plan as conservation areas. The nearest MHCP designated conservation areas are located approximately 1.2 miles to the south and 1.8 miles to the west.

The Escondido Subarea Plan guidelines and policies, which are relevant to the proposed project, include the following:

Mitigation actions for unavoidable impacts should be selected from the following, arranged in order of preference:

- "If impact is located inside the focused planning area (FPA), onsite conservation and/or revegetation."
- "If offsite mitigation is required, then from Daley Ranch Conservation Bank, if applicable from within the city's FPA."
- "Offsite mitigation in core gnatcatcher habitat in unincorporated San Diego County."
- "Offsite mitigation within the city's General Plan area that provides connectivity to the city's FPA."
- "Other areas as directed by the city consistent with the biological goals of the subarea plan and the MHCP."

DESCRIPTION OF PROPOSED ACTION

PROJECT LOCATION

The ERTC site is located in the western portion of the City of Escondido, San Diego County, California. The ERTC site is located within the roughly 200-acre Quail Hills Specific Plan Area (SPA) as identified in the Escondido Subarea Plan. (As stated above, the Specific Plan for the area is being revised and the Quail Hills SPA is being retitled the ERTC SPA in the new Specific Plan.) The property is found within Township 12 South, Range 2 West of the San Bernardino Base and Meridian, USGS 7.5' Escondido, California Quadrangle. Access to the site is via the western terminus of Enterprise Avenue. The site is located on the fringe of heavy urban development within a transition zone between lower density residential and agricultural uses to the west and southwest and industrial development to the east and northeast (Figure 1). The ERTC itself consists of, planning areas one through eight; Planning Areas 9 and 10 of the Specific Plan area are residential areas (Figure 2).

BIOLOGICAL SETTING

The prominent natural habitat on the site is the California Sagebrush Series. However, off-road vehicle uses, trash dumping, and invasive alien plant species have degraded this habitat. Open areas in the north and northwest portion of the project site recently supported avocado and citrus orchards, but apparently maintenance of these orchards has been abandoned and the majority of the trees are currently dead. Weedy vegetation now dominates these fallow lands.



300 0 300 600 Feet

- G = Locations of Coastal California Gnatcatcher (Merkel 2001)
- PP = Photo Point
- DP = Data Point
- Non-wetland Waters of the U.S.
— # ' = Channel Width
- Mixed Willow Series
- Mulefat Series
- Mixed Willow Series (CDFG Only)
- Escondido Research and Technology Center Specific Plan Area
- Direction of Drainage Flow



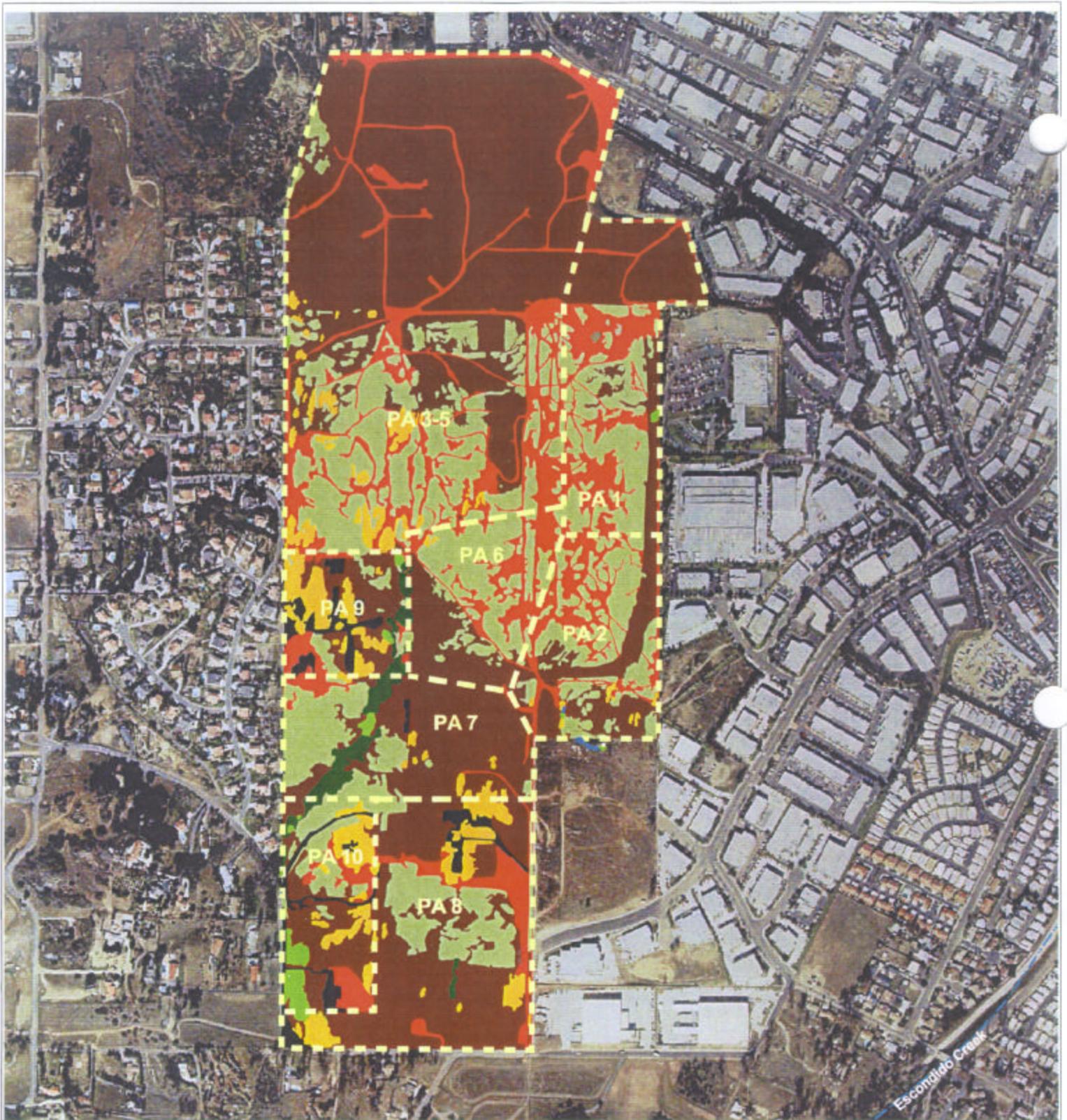
Merkel & Associates, Inc.

Figure 3

**ACOE and CDFG Jurisdictional
Waters/Streambeds of the United States
and Locations of Coastal California Gnatcatchers**

**Escondido Research and Technology Center
Specific Plan Area**

Escondido, CA



500 0 500 Feet



Merkel & Associates, Inc.

Figure 2

ERTC Project Site Vegetation Map

Escondido Research and Technology Center
Specific Plan Area

Escondido, CA

PA # Planning Areas

-  ERTC Project Boundary
-  California Annual Grassland Series
-  California Sagebrush Series
-  Coast Live Oak Series
-  Disturbed Habitat
-  Eucalyptus Series
-  Mixed Willow Series
-  Mulefat Series
-  Urban

PROPOSED ACTION

The proposed ERTC project would be developed within eight individual planning areas, each developed on a graded pad. The Palomar Energy Project, a 500 MW natural gas-fired combined cycle power plant, has been proposed as a potential use for Planning Area 1 of the ERTC.

Other prospective tenants or uses for the proposed ERTC have not been identified at the time of the preparation of this report.

PROJECT TIMING

It is anticipated that construction of the ERTC project would begin in 2003. Construction of all elements would be completed by 2006- 2008.

RESPONSIBLE PARTIES

Project construction would be completed under the local land use authority of the City of Escondido. The name and address of the project applicant is:

**Mr. James R. McCann
JRMC Real Estate Corp.
1040 South Andreasen Dr., Suite 200
Escondido, CA 92029**

PROJECT IMPACTS

For the purposes of this assessment, all biological resources within the limits of the ERTC site are anticipated to be fully lost by project development, with the exception of 5-10 acres of oak woodland, some riparian vegetation, and approximately 3.8 acres of coastal sage scrub that will be preserved in the southwestern portion of the site. Therefore, direct impacts occurring as a result of project implementation would include removal of all vegetation and habitat elements within the project footprint, except for the area planned for preservation.

Direct Impacts to Vegetation

Development of the project will result in direct impacts to native vegetation communities. These impacts are outlined in Table 1 below.

Table 1. Vegetation and Habitat Impacts of the ERTC Project

Vegetation Communities	Impact Acreage
California Sagebrush Series	45.1
Coast Live Oak Series	0.1
Mixed Willow Series	0.09
Mulefat Series	0.02
California Annual Grassland Series	94.0
Seasonal Ponds/Drainages	0.1
Disturbed Ruderal Lands	31.5
Total	170.9

The Coastal California Gnatcatchers present on site are generally associated with the California Sagebrush Series habitats.

California Gnatcatcher Status On-site

It is Merkel & Associates' best estimate that the ERTC site currently supports four pairs of breeding gnatcatchers. Three years earlier, however, the site supported six breeding pairs. It is uncertain if this decline is cyclic or directional in nature, but it is not unusual for gnatcatcher populations to fluctuate over time. The 2001 surveys indicate that a substantial number of newly fledged young were present on the site. If these birds survive to adulthood, they may establish territories and attempt to breed in the spring of 2002. Conversely, many of these birds may disperse from the site or suffer high mortality.

Wildlife Migration Routes and Movement Corridors

The ERTC site is not located on lands that are considered important in terms of regional landscape connectivity. The section of Escondido Creek within the study area and near the proposed off-site parallel waterlines is used as a foraging area for local mid-sized mammals, such as the Raccoon (*Procyon lotor*); Raccoon tracks were observed in the creek bed. However, this section of the creek is not expected to be important in the regional movements of large mammal species due to the lack of connectivity through the extensive concrete lined sections of channel that traverse the urbanized core of Escondido upstream of the project vicinity. Further, the proposed work would not impact the Escondido Creek channel area, thus further reducing any concerns relative to wildlife movement in this area. As a result, the proposed project is not anticipated to result in significant impacts to wildlife movement patterns, including those of the Coastal California Gnatcatcher.

CONSERVATION AND IMPACT MINIMIZATION MEASURES INCLUDED IN PROJECT

The following conservation and impact minimization measures have been included in the project:

1. ERTC would acquire land or conservation credits equal a 2:1 replacement ratio for gnatcatcher occupied sage scrub acreage of an equal number of gnatcatchers as are being impacted by the project. This acquisition will occur within the Subarea Plan Focused Planning Areas (FPAs) or in the gnatcatcher core habitat that has been identified by the MHCP within the unincorporated San Diego County core area.
2. Construction activities shall be initiated during the non-breeding season for California Gnatcatchers (September 1 through February 28) unless later work is specifically agreed to by the USFWS after a qualified biologist determines CAGN nesting activities have not started or have ceased for the breeding season. Work that should be completed during this period includes site boundary demarcation with construction fencing along the edge of retained sage scrub and all clearing and grubbing.
3. Any night construction activities shall be initiated prior to the onset of the gnatcatcher breeding season, or prior to conducting any night construction activities, a qualified biologist shall determine that no gnatcatcher breeding is occurring within 300 feet of areas that would be lighted. In the event that gnatcatchers are found in proximity to areas to be lighted, a

verification of adequate light shielding shall be made by a qualified biologist prior to commencing night work.

4. At the time of project completion, if occupied California Gnatcatcher habitat is present adjacent to the construction site, facility lighting shall be shielded such that no direct lighting falls within the adjacent habitat.
5. Adequate requirements for dust and drainage control shall be incorporated into project plans and grading permit conditions. In addition construction storm water management plans shall be prepared and followed through the implementation of a Storm Water Pollution Prevention Plan (SWPPP).
6. Construction monitoring and construction training shall be accomplished by a qualified biologist to further ensure minimization of impacts. A post-construction biological report shall be submitted to quantify any impacts incurred from the project, including unanticipated impacts.

SPECIES ACCOUNTS AND STATUS OF SPECIES IN THE ACTION AREA

The only Federally listed species which has been identified within the ERTC project site through recent survey efforts is the Coastal California Gnatcatcher (*Polioptila californica californica*).

SPECIES ACCOUNTS

Coastal California Gnatcatcher

Listing Status

The U.S. Fish and Wildlife Service (Service) listed the coastal California gnatcatcher as threatened on March 30, 1993 (Federal Register 58: 16742). As part of the Federal listing, the Service issued a special rule, pursuant to section 4(d) of the Act, defining the conditions under which take of the gnatcatcher would not be a violation of section 9. This special rule recognized the State's Natural Community Conservation Planning (NCCP) Program, and several local governments' ongoing multi-species conservation planning efforts (e.g., the MHCP) that intend to apply Act standards to activities affecting the gnatcatcher. An interim process was established whereby jurisdictions actively involved in NCCP planning would be allowed to take up to five percent of the remaining coastal sage habitat for projects that were consistent with the NCCP conservation guidelines.

Species Description

The coastal California gnatcatcher is a small (length: 11 centimeters; weight; 6 grams), long-tailed member of the old-world warbler and gnatcatcher family *Syviidae* (American Ornithologists; Union 1998). The bird's plumage is dark blue-gray above and grayish-white below. The tail is mostly black above and below. The male has a distinctive black cap which is absent during the winter. Both sexes have a distinctive white eye-ring.

The coastal California gnatcatcher is one of three subspecies of the California gnatcatcher (*Polioptila californica*) (Atwood 1991). Prior to 1989, the California gnatcatcher was classified as a subspecies of the Black-tailed gnatcatcher (*Polioptila melanura*). Atwood (1980, 1988) concluded that the species was distinct from *P. melanura*, based on differences in ecology and behavior. Recent

mitochondrial DNA sequencing confirmed the species-level recognition of the California gnatcatcher (Zink and Blackwell (1998).

Distribution

Gnatcatchers occur on coastal slopes in southern California, ranging from southern Ventura southward through Palos Verdes Peninsula in Los Angeles County through Orange, Riverside, San Bernardino and San Diego Counties into Baja California to El Rosario, Mexico, at about 30 degrees north latitude (Atwood 1991). In 1990 Atwood reported that ninety-nine percent of all gnatcatcher locality records occurred at or below an elevation of 300 meters (m) (984 feet (ft)) (Atwood 1990). In 1992, Atwood and Bolsinger reported that, of 324 sites of recent occurrence, 272 (84 percent) were located below 250 m (820 ft) in elevation, 315 (97 percent) were below 500 m (1,640 ft), and 324 (100 percent) were below 750 m (2,460 ft) (Atwood and Bolsinger 1992). Since that time, additional data collected at higher elevations shows that this species may occur as high as 912 m (3,000 ft) and that more than 99 percent of the known gnatcatcher locations occurred below 770 m (2,500 ft) (U.S. Fish and Wildlife Service 2000).

Habitat Affinities

Gnatcatchers typically occur in or near coastal sage scrub habitat. Coastal sage scrub is patchily distributed throughout the range of the gnatcatcher and the gnatcatcher is not uniformly distributed within the structurally and floristically variable coastal sage scrub community. Rather, the subspecies tends to occur most frequently within California sagebrush (*Artemisia californica*)-dominated stands on mesas, gently sloping areas, and along the lower slopes of the coast ranges (Atwood 1990). An analysis of the percent gap in shrub canopy supports the hypothesis that gnatcatchers prefer relatively open stands of coastal sage scrub (Weaver 1998). The gnatcatcher occurs in high frequencies and densities in scrub with an open or broken canopy while it is absent from scrub dominated by tall shrubs and occurs in low frequencies and densities in low scrub with a closed canopy (Weaver 1998). Territory size increases as vegetation density decreases and with distance from the coast, probably due to food resource availability.

Gnatcatchers also use chaparral, grassland, and riparian habitats where they occur adjacent to sage scrub (Campbell *et al.* 1998). The use of these habitats appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the breeding season. These non-sage scrub habitats are used for dispersal, but data on dispersal use are largely anecdotal (Campbell *et al.* 1998). Linkages of habitat along linear features such as highways and power-line corridors may be of significant value in linking populations of the gnatcatcher (Famolaro and Newman 1998). Although existing quantitative data may reveal relatively little about gnatcatcher use of these other habitats, these areas may be critical during certain times of year for dispersal or as foraging areas during drought conditions (Campbell *et al.* 1998). Breeding territories have also been documented in non-sage scrub habitat. Campbell *et al.* (1998) discuss likely scenarios explaining why habitats other than coastal sage scrub are used by gnatcatchers including food source availability, dispersal areas for juveniles, temperature extremes, fire avoidance, and lowered predation rate for fledglings.

Critical Habitat

On October 24, 2000, the Service published the final determination of critical habitat for the gnatcatcher (Federal Register 65:63680), including 207,868 hectares (ha) (513,650 acres (ac)) of Federal, state, local, and private land in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Primary constituent elements for the gnatcatcher are those habitat components that are essential for the primary biological needs of foraging, nesting, rearing of young, intra-specific

communication, roosting, dispersal, genetic exchange, or sheltering. Primary constituent elements are provided in (1) undeveloped areas, including agricultural lands, that support or have the potential to support, through natural successional processes, various types of sage scrub, or (2) undeveloped areas that support chaparral, grassland, or riparian habitats where they occur proximal to sage scrub and where they may be utilized for the biological needs of dispersal and foraging, and (3) undeveloped areas, including agricultural areas, that provide or could provide connectivity or linkage between or within larger core areas, including open space and disturbed areas that may receive only periodic use (Federal Register 65:63680).

Life History

The California Gnatcatcher is primarily insectivorous, nonmigratory, and exhibits strong site tenacity (Atwood 1990). Diet deduced from fecal samples resulted in leaf-and plant-hoppers and spiders predominating the samples. True bugs, wasps, bees, and ants were only minor components of the diet (Burger et al. 1999). Gnatcatcher adults selected prey to feed their young that was larger than expected given the distribution of arthropods available in their environment. Both adults and young consumed more sessile than active prey items (Burger et al. 1999).

The California gnatcatcher seems to become highly territorial by late February or early March each year, as males become more vocal during this time period (Mock et al. 1990). In southwestern San Diego County the mean breeding season territory size ranged from 5 to 11 ha (12 to 27 ac) per pair and non-breeding season territory size ranged from 5 to 17 ha (12 to 42 ac) per pair (Preston et al. 1998). During the nonbreeding season, gnatcatchers have been observed to wander in adjacent territories and unoccupied habitat increasing their home range size to approximately 78 percent larger than their breeding territory (Preston et al. 1998).

The breeding season of the gnatcatcher extends from mid-February through the end of August, with the peak of nesting activity occurring from mid-March through mid-May. The gnatcatcher's nest is a small, cup-shaped basket usually found 0.3 to 1 m (1 to 3 ft) above the ground in a small shrub or cactus. Clutch sizes range between three and five eggs, with the average being four. Juvenile birds associated with their parents for several weeks (sometimes months) after fledging (Atwood 1990). Nest building begins in mid-March with the earliest recorded egg date of March 20 (Mock et al. 1990). Post-breeding dispersal of fledglings occurs between late May and late November. Nest predation is the most common cause of nest failure (Grishaver et al. 1998). Gnatcatchers are persistent nest builders and often attempt multiple broods, which is suggestive of a high reproductive potential. This is, however, typically offset by high rates of nest predation and brood parasitism (Atwood 1990). Nest site attendance by male gnatcatchers was determined to be equal to that of females for the first nest attempt and then decline to almost a third of female nest attendance for later nesting attempts (Sockman 1998).

Gnatcatchers typically live for two to three years, although ages of up to five years have been recorded for some banded birds (Dudek and Associates 2000). Observations indicate that gnatcatchers are highly vulnerable to extreme cold, wet weather (Mock et al. 1990). Predation occurs in greater proportion in the upper and lower third of the nest shrub. Predation is lower in nests with full clutch sizes (Sockman 1997). Potential nest predators are numerous, and include snakes, raccoons, and corvids (Grishaver et al. 1998). The Californiagnatcatcher also is known to be affected by nest parasitism of the brown-headed cowbird (*Molothrus ater*). Nest parasitism apparently has resulted in earlier nesting dates of the gnatcatcher which may help compensate for the negative effect of parasitism (Patten and Campbell 1998). However, the gains in nest success from

decreased nest parasitism appear to be negated by increased nest abandonment due to predation before cowbirds have migrated into an area (Braden et al. 1997).

The natal dispersal, for a nonmigratory bird, such as the gnatcatcher, is an important aspect of the biology of the species (Galvin 1998). The mean dispersal distance of gnatcatchers banded in San Diego County is reported at less than 3 kilometers (km) (1.9 miles (mi)) (Bailey and Mock 1998). Although the mean dispersal distances that have been documented above are relatively low, dispersal of juveniles is difficult to observe and to document without extensive banding studies. Therefore, it is likely that the few current studies underestimate the gnatcatcher's typical dispersal capacity (Bailey and Mock 1998). Juvenile gnatcatchers are apparently able to traverse highly man-modified landscapes for at least short distances (Bailey and Mock 1998). Natural and restored coastal sage scrub habitat along highway corridors is used for foraging and nesting by gnatcatchers and may serve important dispersal functions (Famolaro and Newman 1998). Typically, however, the dispersal of juveniles requires a corridor of native vegetation which provides foraging and cover opportunities to link larger patches of appropriate sage scrub vegetation (Soule 1991). These dispersal corridors may facilitate the exchange of genetic material and provide a path for recolonization of areas from which the species has been extirpated (Soule 1991, Galvin 1998).

Population Trend

The gnatcatcher was considered locally common in the mid-1940's, but by the 1960's this subspecies had declined substantially in the United States owing to widespread destruction of its habitat (Atwood 1990). By 1980, Atwood (1980) estimated that no more than 1,000 to 1,500 pairs remained in the United States. In 1993, at the time the gnatcatcher was listed as threatened, the Service estimated that approximately 2,562 pairs of gnatcatchers occurred in the United States. Of these, 30 pairs occurred in Los Angeles County, 757 pairs occurred in Orange County, 261 pairs occurred in Riverside County, and 1,514 pairs occurred in San Diego County. In 1997, the total number of gnatcatchers in the United States was estimated at 2,899 pairs with two-thirds occurring in San Diego County (U.S. Fish and Wildlife Service 1996), after subtracting out all gnatcatcher pairs authorized for take under Habitat Loss Permits, approved Natural Community Conservation Plans, Habitat Conservation Plans, and Section 7 consultations. These population estimates were intended to represent a coarse approximation of the number of gnatcatchers in southern California. Confidence intervals have not been calculated for these estimates and therefore, precision is not assured.

Threats

The loss, fragmentation, and adverse modification of habitat are the principal reasons for the gnatcatcher's federally threatened status (*Federal Register* 58: 16742). The amount of coastal sage scrub available to gnatcatchers has continued to decrease during the period after the listing of the species. It is estimated that up to 90 percent of coastal sage scrub vegetation has been lost as a result of development and land conversion (Westman 1981a, 1981b, Barbour and Major 1977), and coastal sage scrub is considered to be one of the most depleted habitat-types in the United States (Kirkpatrick and Hutchinson 1977, O'Leary 1990). The fragmentation of habitat may artificially increase populations in adjacent preserved habitat; however, these population surpluses may be lost in subsequent years due to crowding and lack of resources (Scott 1993). In addition, agricultural use, such as grazing and field crops, urbanization, air pollution, and the introduction of non-native plants have all had an adverse impact on extant sage scrub habitat. A consequence of urbanization that is contributing to the loss, degradation, and fragmentation of coastal sage scrub is an increase in wildfires due to anthropomorphic ignitions. High fire frequencies and the lag period associated with recovery of the vegetation may significantly reduce the viability of affected subpopulations (Dudek

and Associates 2000). Furthermore, nest-parasitism by brown-headed cowbird (Unitt 1984) and nest predation threaten the recovery of the gnatcatcher (Atwood 1980, Unitt 1984).

Status within the Escondido Research and Technology Center Site

Merkel & Associates conducted a presence/absence survey for the Coastal California Gnatcatcher within the Escondido Research and Technology Center Site in August 2001. The project area is within a jurisdiction which is signatory to a pending Natural Community Conservation Plan; therefore, a three-visit focused presence/absence survey was performed.

Four breeding pairs were found to occupy coastal sage scrub habitat on-site at the time. This would include a one-day total of 14 individuals comprising mostly juveniles.

It is Merkel & Associates' best estimate that the ERTC site currently supports four pairs of breeding gnatcatchers. Three years earlier, however, the site supported six breeding pairs. It is uncertain if this decline is cyclic or directional in nature, but it is not unusual for gnatcatcher populations to fluctuate over time. The 2001 surveys indicate that a substantial number of newly fledged young were present on the site. If these birds survive to adulthood, they may establish territories and attempt to breed in the spring of 2002. Conversely, many of these birds may disperse from the site or suffer high mortality.

EFFECTS OF PROJECT ON CONSIDERED SPECIES

DIRECT EFFECTS

Direct effects are those that are caused by the proposed action and occur at the time of the proposed action. Direct effects occur when biological resources are altered, disturbed, destroyed or removed during the course of project implementation. Direct effects may include the loss of individual species from habitat clearing or construction-related mortalities; loss of foraging, nesting, or burrowing habitat for wildlife species; and habitat disturbance that results in unfavorable vegetative recovery conditions. Direct effects are classified as either temporary or permanent. Temporary effects have a reversible effect on biological resources, such as the removal of vegetation from areas that will be revegetated following project completion. Permanent effects are those that result in the irreversible damage or destruction of biological resources.

California Gnatcatcher

The primary direct effect on the Coastal California Gnatcatcher from the proposed action would be a permanent loss of habitat for foraging, shelter, and dispersal of juveniles presently supporting four pairs of gnatcatchers. As discussed above, the proposed action would impact a total of approximately 45.1-acres of Coastal Sage Scrub habitat.

INDIRECT EFFECTS

Indirect effects may be permanent or temporary in nature and may persist following project construction. Because the full build-out of the ERTC would not be expected to allow continued persistence of gnatcatchers on the subject site, any indirect effects are anticipated to extend only through the period of construction. Indirect effects may include:

- Temporary artificial lighting during construction periods that deters nocturnal wildlife activity or artificially increases predation rates on vulnerable species;
- Temporary activity, noise, and vegetation dusting effects that reduce suitability of adjacent habitats as a result of disturbance or reduced food supply associated with impacts to insect populations as a result of dust accumulation on plants;

Indirect effects to resident wildlife, including the Coastal California Gnatcatcher, are expected to occur as a result of construction activities at the ERTC site. Construction has the potential to result in short-term indirect effects associated with noise, activities, dust, and lighting. These temporary effects are discussed below.

Construction Activity, Dust, Lighting, and Noise

During construction, various stages of work have the potential to generate high activity levels of disturbance in close proximity to the approximately 15 acres of remaining Gnatcatcher habitat to the northwest of the project site and adjacent to the off-site waterline alignment. Noise has often been identified as the metric for activity levels and may possibly result in measurable influences on some wildlife. In addition, some dust generated within the project area is expected to drift outward and settle on adjacent vegetation. This can reduce plant vigor, alter insect population levels, and affect plant reproduction. In general, construction activities would be expected to result in a temporary reduction in some wildlife usage on adjacent lands and may have a moderate effect on reproduction in plants. In general, construction related effects would not be considered significant unless they impaired an important life-history activity of a highly special status species.

Effects to California Gnatcatcher breeding could result from construction adjacent to Gnatcatcher habitat areas. The potential for these effects would be greatest if construction in adjacent areas is initiated following commencement of nesting by gnatcatchers in the adjacent habitat areas. Gnatcatchers that proceed to nest after construction has begun in the adjacent lands have the capacity to select a nest site under an affected environmental condition and thus are less likely to choose a site that would be abandoned as a result of indirect disturbance associated with construction. Given the proximity of suitable gnatcatcher habitat adjacent to the northwest portion of the site it is anticipated that significant indirect effects to California Gnatcatchers may occur if construction were to be initiated within 300 feet of an active gnatcatcher nest during the breeding season of this species.

Lighting

Lighting during construction periods is viewed much the same way as other construction-associated effects. Construction lighting would result in temporary illumination of adjacent lands and could result in some avoidance of these lighted areas by some species or may promote success of predators on other species. These effects would not be considered significant unless they exposed California Gnatcatchers to greater risk of predation by nocturnal predators. This would be the case if proximate nesting were to occur prior to initiation of night-time work and lighting was not adequately shielded or oriented away from nest occupied habitat areas.

CUMULATIVE EFFECTS

Future actions that are unrelated to the proposed action considered in this Biological Assessment are not discussed in this document. Future federal actions would be subject to separate consultation

pursuant to Section 7 of the Endangered Species Act. Projects that would lawfully and directly affect listed species are generally subject to permitting either under federal wetland permits or the City's subarea plan, an NCCP/HCP conservation plan. The ERTC project is being processed under the City of Escondido draft Subarea Plan; therefore, no additional analysis of cumulative impacts is required.

CONCLUSION AND DETERMINATION

COASTAL CALIFORNIA GNATCATCHER

Based on the above analysis of effects, the proposed project may affect, but would not be likely to adversely affect the status of the Coastal California Gnatcatcher species or its critical habitat. This determination is based on the following rationale:

- Impacts have been minimized and compensated for by conservation and minimization measures incorporated into the project
- The sage scrub habitat that would be impacted by the proposed action is not considered to be high-quality habitat for gnatcatchers. The project site currently consists of degraded sage scrub habitat that has been brushed in the past.
- The site is isolated from other habitat and is not considered to be essential for the conservation of this species under the draft Escondido NCCP/HCP Subarea plan. The nearest MHCP designated conservation areas are located approximately 1.2 miles to the south and 1.8 miles to the west.
- The proposed action would not occur within designated critical habitat for the Coastal California Gnatcatcher.
- The individual birds located during 2001 surveys likely represent 4 nesting pairs, and do not represent a large portion of the populations of California Gnatcatchers within San Diego or southern California as a whole.
- Mitigation for the proposed action would preserve approximately 90.2 acres of gnatcatcher occupied sage scrub within the identified proposed preserve area.

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PERSONAL COMMUNICATION

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