



**COUNTY OF SAN BERNARDINO**  

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**CALIFORNIA**

# **SAN SEVAINE CREEK WATER PROJECT**

**INITIAL STUDY**

**FEBRUARY 1994**

**SUBMITTED  
UNDER THE STATUTES AND GUIDELINES OF THE  
CALIFORNIA ENVIRONMENTAL QUALITY ACT  
GOVERNOR'S OFFICE OF PLANNING AND RESEARCH  
STATE OF CALIFORNIA**



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**SOUTHWESTERN  
FIELD BIOLOGISTS**  
**BIOLOGICAL CONSULTANTS**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT  
INITIAL STUDY CHECKLIST**

**I. BACKGROUND**

1. **Name of Proponent:** San Bernardino County  
Department of Transportation/Flood Control  
825 East Third Street  
San Bernardino, CA 92415-0835
  
2. **Date Submitted:**
  
3. **Name of Proposal:** San Sevaine Creek Water Project
  
4. **Location:** USGS Quad: Devore, Guasti, Fontana  
  
Township, Range, Section:  
T1N, R6W, sec.:13,14,15,16,21,22,  
23,24,26,27,28,33,34;  
T1N, R5W, sec.:18;  
T1S, R6W, sec.:3,4,9,10,11,12,16  
21,22,23,24,28,33;  
T1S, R5W, sec.:7,19.  
  
Thomas Bros: pp. 4, 5, 13, 14, 24, 25  
  
Planning Area: West Valley Foothills  
  
OLUD: Various districts, consisting primarily of  
WF/FW (Floodway), WF/PD (Planned  
(Development), WF/RC (Resource Conservation).  
  
Improvement Level: 4, 2, and 1

**PROJECT CHARACTERISTICS:** The proposed San Sevaine Creek Water Project comprises the watersheds of San Sevaine and tributary Etiwanda Creek in San Bernardino County, California (see Figure 1). The proposed project will mitigate existing flood hazards in a rapidly developing area of Southern California. Long-time rural development in the Etiwanda and San Sevaine Creek watersheds has resulted in the historical construction of undersized channels, inadequate for regional and urbanized flood control requirements.

A primary purpose of the project is to provide improved groundwater recharge through percolation of mountain and foothill runoff. Project facilities could provide for groundwater percolation into the Chino Groundwater Basin of an estimated 25,000 acre-feet of water per year. Project features are displayed on Figure 2 and summarized in Table 1.

The San Sevaine Creek Water Project was first proposed for funding to the Bureau of Reclamation in 1989. The project was subsequently redesigned to address comments received on the original proposal. Environmental and recreational enhancement were added as significant components of the reformulated design. The previous proposal to construct debris basins at the mouths of Etiwanda and San Sevaine Canyons has been modified by relocating the Etiwanda debris basin to the south and further removed from the canyon mouth thereby preserving 98 acres of a sensitive plant community along Etiwanda Creek. The project now completely avoids all impacts along Upper San Sevaine Creek. In addition to the preservation of wildlife habitat, the conservation facilities will also be redesigned to accommodate recreational use as linear parkways. Over six miles of parkway will be provided to complement regional plans.



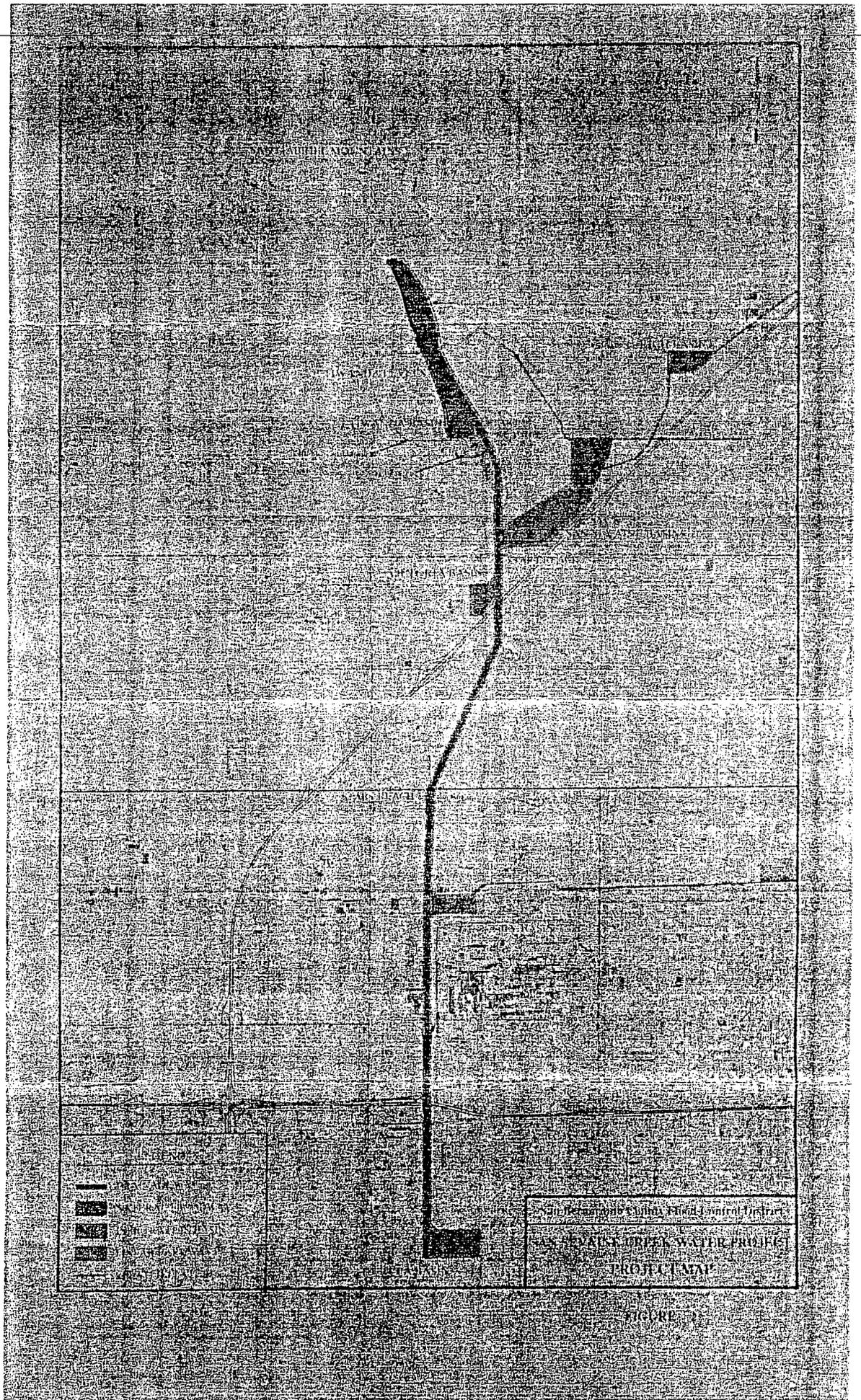


FIGURE 1

TABLE 1

PROPOSED PROJECT FACILITIES SUMMARY

<u>Facility</u>	<u>Length (miles)</u>	<u>Area (acres)</u>	<u>Storage Capacity (ac/ft)</u>
<b>New:</b>			
Etiwanda West Levee	0.8		
Etiwanda East Levee	1.6		
Habitat Preservation	1.5	98	
Etiwanda Debris Basin	0.2	26	840
Linear Parkway	2.5	8.8	1,881
<b>Improved Conservation Basins:</b>			
San Sevaine Basins	1.0	132	2,550
Victoria Basin	0.2	19	235
Rich Basin	0.3	14	26
Hickory Basin	0.4	16	220
Jurupa Basin	0.4	56	1,200
<b>Improved Flood Channel:</b>			
Reach 1 -			
Etiwanda Basin to Highland Avenue	0.8		
Reach 2 -			
Highland Avenue to Foothill Boulevard	1.9		
Reach 3 -			
Foothill Boulevard to Jurupa Avenue	4.0		
Linear Parkway	6.7	24	

Etiwanda Levees: The proposed levees will extend from the mouth of Etiwanda Canyon downstream to the proposed debris basin at Summit Avenue. The primary purpose of the levees is to prevent lateral movement of the stream bed outside the existing floodway and maintain the effectiveness of the planned debris basin. The levees will extend for approximately 1.5 miles alongside the natural drainage channel and protect the natural habitat occurring in the floodplain. The levees will be located between 800 and 1,100 feet apart to accommodate meandering stream flows necessary to sustain the existing plant community. The upper 1,500 feet of the existing Etiwanda Spreading Grounds, representing about 98 acres, will be preserved between the levees. The west levee will be constructed along an existing dirt road, and both levees will be constructed using fill material excavated from a downstream basin.

} 137 Acres  
in Loan  
Document

The compacted fill will range in height of 10 to 20 feet with facing side slopes of 3:1. Back slopes may be flattened to 5:1 if adequate material is available or through a levee maintenance program. Facing slopes will be rip-rap armored. All areas impacted by construction will be revegetated with Riversidian alluvial sage scrub species. The top surface of the levees will be open to public access as part of the regional linear parkway system, although the County property will be fenced to prevent motorized access. Public use will be monitored daily to prevent vandalism and other unauthorized activities.

Etiwanda Debris Basin: A debris basin within Etiwanda Creek is required for effective operation of downstream conservation facilities. The basin will extend from the proposed levees and be constructed using a balanced cut/fill design with an earthen dam located north and adjacent to Summit Avenue--the location of the existing Etiwanda Spreading Grounds. The height of the proposed dam is approximately 50 feet with a facing side slope of 5:1. Outlet works will convey 100 cfs through the dam and the emergency spillway will be designed to accommodate flows greater than the maximum probable (approx. 15,000 cfs). The sides of the dam and disturbed area surrounding the basin will be vegetated with native plant species. The total construction area of approximately 32 acres will take place over previously disturbed land. The basin will also provide infiltration capacity in excess of that lost by the displacement of the spreading grounds, although the basin will not normally be

operated as a conservation pool to store runoff.

The basin will be designed to accommodate debris from the tributary drainage area of approximately 3 square miles. The debris storage volume will be approximately 1 million cubic yards--which should be more than adequate to accommodate a repeat 100-year storm under burn conditions. The large storage capacity is necessary to ensure adequate operational capability under worst-case conditions. The debris material is marketable and will be removed from the project site or used to maintain the levees.

Lower San Sevaime Conservation Basin (Basin 5): A series of five percolation basins exist along the San Sevaime Creek Channel between Summit Avenue and Interstate 15. These are flow-through basins providing debris catchment and water conservation. Basin 5 will be expanded to approximately 2,350 acre-feet of storage capacity. The existing basin will be redesigned with an improved inlet, outlet, and spillway works. The outlet is sized to accommodate 1,200 cfs, while the emergency spillway will handle up to 35,300 cfs. The depth of the proposed basin will range from 0 to 12 feet with side slopes of 2.25:1 and extend for 7,560 feet. The area will be revegetated after construction and safety features provided to allow public use of the area as an extension of the regional linear parkway system.

The linear parkway will be extended to include basins 1-4. All upstream features above Summit Avenue, including the previously proposed spreading grounds and debris basin, have been eliminated.

Victoria Basin: Victoria Basin is located north of Interstate 15 on the western edge of the Etiwanda Channel. The inlet and outlet structures of this existing basin will be modified for improved operation. Some earthwork will be required to complete the improvements, however there will be no excavation to increase the existing 235 acre-feet of storage capacity.

Rich Basin: Rich Basin is located northeast of the San Sevaine Basins along the existing Hawker-Crawford Channel. This flow-through basin will be deepened by approximately 3 feet to provide 26 acre-feet of storage capacity.

Hickory Basin: Hickory Basin is a partially developed flow-through basin located east of the San Sevaine Channel and south of the Santa Fe Railroad. The basin serves as the terminus of the West Fontana Channel and covers an area of about 16 acres although its existing storage capacity is minor. The basin will be deepened and inlet/outlet works will be added to provide for approximately 220 acre-feet of storage. Existing eucalyptus trees will be removed and replaced with indigenous species.

Jurupa Basin: Jurupa Basin is located on about 60 acres east of the existing unlined channel at Jurupa Avenue, the southern project boundary. This basin will be excavated and designed as a bypass basin to receive peak flows from the channel for up to 1,200 acre-feet of storage. A spillway will direct excess flows back into the channel. The basin will also serve as an outlet for proposed storm drains, which would drain the area to the northeast. Low channel flows would also be directed into the basin for water percolation purposes.

Etiwanda/San Sevaine Floodway Channel: The existing floodway will be improved for effective operation of the conservation basins and recreational use. The floodway is referenced in three sections for the purposes of this report:

Reach 1, from the proposed Etiwanda Levees to Highland Avenue

Reach 2, from Highland Avenue to Foothills Boulevard

Reach 3, from Foothill Boulevard to Jurupa Avenue

Most of the floodway will be constructed as a trapezoidal channel with 1.5:1 side slopes. Rectangular sections are required at some road crossings. Chain link fencing will isolate the channel from the adjacent linear parkways.

Reach 1 (Etiwanda Channel): Reach 1 will include approximately 4,000 feet of lined channel from the Etiwanda Basin outlet to the existing lined channel north of Highland Avenue and Interstate 15 with a design capacity of 6,300 cfs. The existing earthen Etiwanda channel is maintained with heavy equipment. A concrete box structure will replace the present Summit Avenue dip section.

Reach 2 (San Sevaine Etiwanda Double Channel): Reach 2 begins near the outlet of Basin 5, upstream from Interstate 15, and extends approximately 9,800 feet to Foothills Boulevard. The existing channel is actually two separate but parallel concrete-lined channels to maintain separate flows in Etiwanda and San Sevaine Creek. Channel lining is complete, however modifications are needed to provide public access as part of the linear parkway. The channel capacity at the end of Reach 2 is 12,200 cfs.

Reach 3 (San Sevaine Channel): This existing earthen channel extends approximately 21,000 feet from Foothills Boulevard to Jurupa Avenue and accommodates flows from 15,000 to 24,000 cfs. Hickory and Jurupa Basins are located along this reach. Three reinforced concrete box structures have been constructed to conduct creek flows under Arrow Highway, Whittram Avenue, and the Santa Fe Railway.

A concrete-lined channel will be constructed from the Santa Fe Railway south to Interstate 10. The Metropolitan Water District Lower Feeder crosses beneath the channel approximately 1,000 feet south of the railroad. A concrete pad will be constructed over the pipeline for added protection. A transition (drop structure) will be constructed immediately downstream of the pipeline because of the grade change, and a rectangular channel will be required for a short distance downstream.

Triple box structures are proposed at channel crossings at San Bernardino Avenue, Valley Boulevard, and possibly at the railroad spur south of San Bernardino Avenue. Mulberry Channel, located immediately south of Valley Boulevard, is proposed for connection to San Sevaine Creek. At Interstate 10, two converging rectangular concrete-lined channels will be constructed under the freeway. The eastern

channel will intercept Mulberry Channel flows, and the two channels will join immediately south of the freeway. Freeway traffic should not be affected by the proposed construction.

Because of the proposed rectangular channel under Interstate 10 and the proximity of the Southern Pacific Railroad, a rectangular concrete-lined channel will be built between these two crossings. A triple box structure will be located at the rail-line crossing. A bypass track may be necessary to keep the line in operation during construction. A trapezoidal concrete-lined or covered box channel is proposed downstream of the railroad crossing to Slover Avenue. A triple box structure is planned for the Slover Avenue crossing.

Recharge Aspects: The proposed project plan involves modifications to five percolation basins and the Etiwanda Spreading Grounds to enhance recharge to the Chino Groundwater Basin. Etiwanda Spreading Grounds, Etiwanda Basin, San Sevaine Basins (1 through 5), and Rich Basin are located near the upper end of the proposed project. Victoria, Hickory, and Jurupa Basins are located in the middle and lower end of the project. Groundwater recharge will be accomplished by the capture, storage and percolation of runoff originating in the mountains to the north of the service area and the valley area within the San Sevaine Creek Watershed area. The major water conservation facilities are located at the upper end (north) of the project close to the runoff sources and where the percolation rates are the highest.

Urban runoff will be conducted to the basins by a system of existing or proposed storm drains which are not part of this project. Several of the percolation basins exist as flow-through areas with limited storage capacity. The proposed project will significantly increase the storage volume and subsequently the groundwater recharge capability of the existing facilities.

Etiwanda Basin, the San Sevaine Basins, Lower San Sevaine Retention Basin, and Victoria Basin overlie porous soils and have correspondingly high potential percolation rates. Percolation basins located lower on the alluvial fan (Hickory and Jurupa Basins) occur in areas of relatively less permeable soils and have lower potential percolation

rates. Filtration rates of 2 to 3 feet/day for Rich and Hickory Basins, and 1 to 1.5 feet/day for Jurupa Basin are expected.

The State of California Department of Water Resources (DWR) and the Metropolitan Water District of Southern California (MWD) completed a conjunctive use study of the Chino Basin for the storage of imported water from the State Water Project. The study included the potential use of the Etiwanda Spreading Grounds, San Sevaine Spreading Grounds, and Victoria Basins for water spreading purposes. The DWR/MWD analysis of the three facilities indicated a potential recharge capacity of 22,800 - 34,200 acre-feet/year based on a filtration rate of 2 to 3 feet/day and 100 days of spreading. Percolation tests by the Chino Basin Municipal Water District (CBMWD) in the San Sevaine Spreading Grounds and San Sevaine Basins indicate a sustained percolation rate of 2.5 feet/day. Current use of project facilities by CBMWD for artificial recharge will not be affected by the proposed improvements except for possible short-term interruptions to accommodate construction activities.

Previous Environmental Review: Previous environmental documentation was completed during development of the proposed project. An EIR/EIS was prepared for the Day Creek Water Project/Day, Etiwanda, and San Sevaine Creeks Drainage Plan/and Master Plan for the San Sevaine Channel (SCH #84082015), which assessed the environmental effects on a program level approach of the flood control improvements within these drainages. An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) (SCH #87031603) were completed by the San Bernardino County Flood Control District and the Bureau of Reclamation for Upper Etiwanda and San Sevaine Creeks Drainage Plans, for the purpose of evaluating site specific environmental impacts of a previously proposed plan. This initial study has been prepared to evaluate environmental impacts of a plan reformulated in 1992. A biological report (SFB, 1992, contained as Appendix A) has also been prepared for the redefined project.

Relationship to Previous Environmental Review: The currently proposed San Sevaine Creek Water Project is significantly altered from the 1989 design. The previous proposal with debris basins located at the mouths of Etiwanda and San Sevaine

Canyons was submitted as part of the Army Corps of Engineers 404 permit application. The debris basin previously located in Etiwanda Canyon has been relocated downstream on the alluvial fan, and the previously proposed San Sevaine debris basin has been omitted. The reformulated plan provides for the protection of 98 acres of Riversidian alluvial fan sage scrub and recreational use. This initial study is tiered from environmental documents for the Day, Etiwanda, and San Sevaine Creeks Drainage Plan/Master Plan. This initial study will accompany the environmental assessment and loan application report through the Federal review and approval process after its public review and adoption by the San Bernardino Board of Supervisors.

**ENVIRONMENTAL/EXISTING SITE CONDITIONS:** The proposed San Sevaine Creek Water Project will consist of construction along San Sevaine and Etiwanda Creeks in San Bernardino County. All proposed project features involve the improvement of existing facilities except for the Etiwanda Levees and debris basin which will protect the 98-acres of sensitive natural habitat. Improvements to existing drainage channels will include the construction of recreational facilities. The project is located within the cities of Rancho Cucamonga and Fontana and unincorporated portions of San Bernardino County. These drainages are served by watersheds from the southern slopes of the San Gabriel Mountains within the San Bernardino National Forest.

The major vegetation cover types within the project area consist of coastal sage scrub and holly-leaved cherry woodland below 2,000 feet elevation, chaparral between 2,000 feet and 5,000 feet elevation, and a transitional zone between. Corresponding riparian elements of these plant communities are present within the major drainages of the mountain slopes. The upper watersheds of these creeks have steep gradients, generally thin soils, and variable groundcover conditions. At the foot of the mountains, the streams discharge onto a broad alluvial fan of highly permeable, gravelly material. During most minor storms, flows from the upper watersheds percolate into the alluvial fans shortly after the creeks emerge from the mountains. During major flooding, substantial amounts of debris clog channels and basins causing overflow. A preliminary calculation of the debris production by Etiwanda Canyon for a hundred-year event is approximately 135,000 cubic yards of debris per square mile of drainage area (Planning Network/Bill Mann Associates, 1986).

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The San Bernardino County Flood Control District has fee ownership or easement over all of the affected channels and basin areas. An extension of flood control improvements is also being undertaken by Riverside County south of the county line.

## II. ENVIRONMENTAL IMPACTS

The checklist presented in this section is intended to provide a concise overview of possible environmental impacts resulting from the proposed project and indicate the significance of effect. The arrows indicate that a possible effect can be mitigated to a level of non-significance. Substantiation for all determinations (including mitigation measures) is included in Section III, Discussion of Environmental Evaluation.

	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
<b>1. Earth. Will the proposed project result in:</b>			
a. Unstable earth conditions or in changes in geologic substructures?	—	—	<u>X</u>
b. Disruptions, displacements, compaction or over-covering of the soil?	—	—	<u>X</u>
c. Change in topography or ground surface relief features?	—	—	<u>X</u>
d. The destruction, covering, or modification of any unique geologic or physical features?	—	—	<u>X</u>
e. Any increase in wind or water erosion, either on or off site?	—	<u>X</u> →	<u>X</u>
f. Changes in the deposition or erosion of beach sands, or changes in siltation, deposition, or erosion, which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	—	—	<u>X</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	<u>X</u> →	—	<u>X</u>
<b>2. Air. Will the proposed project result in:</b>			
a. Substantial air emissions or deterioration of ambient air quality?	<u>X</u> →	—	<u>X</u>
b. The creation of objectionable odors?	—	—	<u>X</u>
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	—	—	<u>X</u>

3. Water. Will the proposal result in:

YES      MAYBE      NO

a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?

—      —      X

b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?

—      —      X

c. Alterations to the course or flow of flood waters?

—      —      X

d. Change in the amount of surface water in any water body?

—      —      X

e. Discharge into surface waters, or in any alteration of surface water quality, including, but not limited to temperature, dissolved oxygen or turbidity?

X —————→ X

f. Alteration of the direction or rate of flow of ground waters?

X —————→ X

g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

—      —      X

h. Substantial reduction in the amount of water otherwise available for public water supplies?

—      —      X

i. Exposure of people or property to water related hazards such as flooding or dam inundation?

—      —      X

4. Plant Life - Will the proposal result in:

a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?

—      X —————→ X

b. Reduction of the numbers of any unique, rare, or endangered species of plants?

—      X —————→ X

d. Reduction in acreage of any agricultural crop?

—      —      X

c. Introduction of new species of plants into an area, or result in a barrier to the migration or movement of animals?

—      —      X

	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
5. <b>Animal Life.</b> Will the proposed project result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic, organisms or insects)?	—	<u>X</u> —————>	<u>X</u>
b. Reduction of the numbers of any unique, rare, or endangered species of animals?	—	<u>X</u> —————>	<u>X</u>
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	—	<u>X</u>
d. Deterioration to existing fish and wildlife habitat?	—	<u>X</u> —————>	<u>X</u>
6. <b>Noise</b> - Will the proposed project result in:			
a. Increases in existing noise levels?	—	<u>X</u> —————>	<u>X</u>
b. Exposure of people to severe noise levels?	—	—	<u>X</u>
7. <b>Light and Glare</b> - Will the proposed project produce new light or glare?	—	—	<u>X</u>
8. <b>Land Use</b> - Will the proposed project result in a substantial alteration of the present or planned use of the area?	—	—	<u>X</u>
9. <b>Natural Resources</b> - Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	—	—	<u>X</u>
b. Substantial depletion of any nonrenewable natural resource?	—	—	<u>X</u>
10. <b>Risk of Upset.</b> Will the proposed project involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?	—	—	<u>X</u>
b. Possible interference with an emergency response plan or an emergency evacuation plan?	—	—	<u>X</u>

	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
11. <b>Population.</b> Will the proposed project alter the location, distribution, density, or growth rate of the human population in the area?	—	<u>X</u> →	<u>X</u>
12. <b>Housing.</b> Will the proposed project affect existing housing, or create a demand for additional housing?	—	<u>X</u> →	<u>X</u>
13. <b>Transportation/Circulation.</b> Will the proposed project result in:			
a. Generation of substantial additional vehicular movement?	—	—	<u>X</u>
b. Effects on existing parking facilities, or demand for new parking?	—	—	<u>X</u>
c. Substantial impact upon existing transportation systems?	—	—	<u>X</u>
d. Alterations to present patterns of circulation or movement of people and/or goods?	—	<u>X</u> →	<u>X</u>
e. Alterations to waterborne, rail, or air traffic?	—	<u>X</u> →	<u>X</u>
f. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	<u>X</u> →	—	<u>X</u>
14. <b>Public Services.</b> Will the proposal have an effect upon or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	—	—	<u>X</u>
b. Police protection?	—	—	<u>X</u>
c. Schools?	—	—	<u>X</u>
d. Parks or other recreational facilities?	—	<u>X</u> →	<u>X</u>
e. Maintenance of public facilities, including roads?	<u>X</u> →	—	<u>X</u>
f. Other government services?	—	—	<u>X</u>

	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
15. Energy - Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	—	—	<u>X</u>
b. Substantial increase in demand upon existing sources or energy, or require the development of new sources of energy?	—	—	<u>X</u>
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the existing public utilities?	—	—	<u>X</u>
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	—	—	<u>X</u>
b. Exposure of people to potential health hazards?	—	—	<u>X</u>
18. Aesthetics. Will the proposed project result in the obstruction of any scenic vista or view open to the public, or will the proposed project result in the creation of an aesthetically offensive site open to public view?	—	<u>X</u> →	<u>X</u>
19. Recreation. Will the proposed project result in an impact on the quality or quantity of existing recreational opportunities?	—	—	<u>X</u>
20. Cultural Resources.			
a. Will the proposed project result in the alteration or destruction of a prehistoric or historic archaeological site?	—	<u>X</u> →	<u>X</u>
b. Will the proposed project result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	—	<u>X</u>
c. Does the proposed project have the potential to cause a physical change which would affect unique ethnic cultural values?	—	<u>X</u> →	<u>X</u>

YES      MAYBE      NO

d. Will the proposed project restrict existing religious or sacred uses within the potential impact area?

—      —      X

**21. Mandatory Findings of Significance.**

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

—      X —————> X

b. Does the project have the potential to achieve short-term, to the disadvantage of long-term environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definite period of time while long-term impacts endure well into the future.)

—      —      X

c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant. Also considered are effects of other past projects, current projects, and probable future projects.)

—      X —————> X

d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

—      —      X

YES      MAYBE      NO

22. EIR Tiering Determination.

a. Is this project consistent with a program, plan, policy or ordinance for which an EIR has been prepared and certified?

X      —      —

b. Is this project consistent with applicable local land use plans and zoning of the city and county in which it is located?

X      —      —

c. May this project cause significant effects on the environment that were not examined in the prior EIR?

—      X —————> X

### III. DISCUSSION OF ENVIRONMENTAL EVALUATION

This initial study has been prepared to discuss the impacts of a water resource improvement project, and to meet the requirements of the California Environmental Quality Act. This environmental compliance document is tiered from a prior EIR/EIS, and it is related to the 1987 San Sevaine Creek Environmental Assessment only with regards to the environmental setting. The environmental assessment addressed a different implementing project than analyzed in this initial study.

Significant changes from the previously proposed plan include: relocating the Etiwanda debris basin downstream; the omission of a debris basin at the mouth of San Sevaine Canyon; the omission of approximately 2 miles of hardened flood channels through the alluvial fan; the addition of approximately 1 mile of diked area along the naturally occurring upper Etiwanda Channel to limit bank erosion and protect approximately 98 acres of a sensitive plant community; and the addition of linear parkways along the floodways for public recreation. In addition to the growing concern to preserve and protect Riversidian alluvial fan sage scrub and provide improved recreational opportunities; the California gnatcatcher was listed as a threatened species under the Federal Endangered Species Act since preparation of the previous initial analysis, although none have been found in the project area.

#### SUBSTANTIATION:

##### 1. Earth:

Excavation activities may result in increased wind and water erosion of soils in graded areas. Impacts may also result from stockpiling and erosion of excavated material and the deposition of this material and eroded soil in other areas. Revetment and concrete lining will prevent additional erosion by storm flows and are part of project design. Erosion impacts can be reduced to a level of non-significance by the revegetation of temporary construction staging areas and roadways, stockpiling excavated construction material, sediment, and debris, and using excavated material from within the project boundaries to the extent feasible. Biodegradable dust binding agents will be used on soil stockpiles during periods of high winds to minimize wind erosion (Section IV, mitigation measures 2-6).

Development of the proposed project will result in the disruption of minor amounts of soil. Since the facilities proposed as part of the project would be primarily located within existing rights-of-way and fee owned property, no existing agricultural land uses would be displaced for project construction. The project would contribute indirectly to the on-going conversion of "prime" agricultural land to urban uses on a regional scale. The flood control improvements are necessary infrastructure needed to meet the long-term goals of the County General Plan (see also discussion under Land Use). Some of the soils which would be excavated during construction of the project have been classified as unique farmlands or farmlands of local importance. Although the project could cause a minimal loss of agricultural soils, it would also contribute to the long-term preservation of other land within the Chino Basin that is planned by local governments to be retained in agricultural use by reserving a significant percentage of

project water supplies for agricultural use. As a result, no significant impact to soils and agriculture are anticipated as a result of the proposed project.

The proposed project will require construction and modification to existing stream-courses. The limited amount of excavation included in the project will not result in unstable earth conditions or changes in geologic substructure, nor cause any significant impacts to topography, ground surface relief, or unique geologic or physical features. The proposed debris basin at 24th Street will require the construction of an earthen dam across the Etiwanda Channel. Although the height of the dam will be a maximum of approximately 50 feet, the face will be gently sloped (from 3:1 to 5:1) and landscaped to blend with the natural setting.

The northern portions of the proposed project, including the Etiwanda Levees and Basins, lie within the Geologic Hazards Overlay District. The Cucamonga Fault Zone, which passes through this area, is potentially active and has been zoned for special studies under the Alquist-Priolo Act. Proposed debris and conservation basins were sited outside of setbacks established in the preliminary geotechnical investigations of the Cucamonga Fault Zone (Moore and Taber, 1981). However, the earthen levees would cross at least two strands of this fault zone (Morton and Matti, 1987) and would be subject to damage from ground rupture during a seismic event. The levees and all other project facilities would be subject to varying degrees of groundshaking during a seismic event on the Cucamonga Fault or other major fault zones in the region. Other earthquake-related hazards which could significantly impact the proposed project include: seismically-induced landsliding in the southern San Gabriel Mountains, liquefaction within water saturated sediments below and around channels and in basins, and seiching within the channels and basins which. These potential problems will be considered during final design and in preparation of operations and maintenance plans.

Final siting, design and construction of the basins and levees will be based on detailed geologic investigations, structural calculations, fault setback requirements, and specific seismic design criteria. Also, all applicable design and construction criteria established by the Federal government and the State of California will be followed (Section IV, mitigation measure 1). While seismic hazards cannot be avoided in Southern California, measures included in project design will reduce these impacts to a level of non-significance. With regular inspection and maintenance, and prompt repairs in the event of facilities damage, the project features pose no reasonable threat to public safety as result of seismic hazards.

## **2. Air:**

Direct air quality impacts would result from the disturbance of the soil due to clearing, grading, and soil removal operations, as well as from gaseous emissions of construction equipment. These impacts would be temporary and limited to the construction phase of the proposed project. Clearing, grading, and travel on unpaved portions of a development project can generate 1.2 tons of fugitive dust per acre of disturbed soil for each month of activity (CEQA air quality handbook, South Coast Air Quality Management District, 1993). The proposed construction area of 295.8 acres (Table 1) is mostly void of vegetation and generates significant amounts of dust under existing conditions.

However, assuming a zero existing base, the proposed construction schedule, and the 1.2 tons per acre-month estimate, construction activities could generate 3,002 tons of fugitive dust over a period of four years. This rate can be reduced by about 50 percent through the use of dust control measures, such as regular watering, or use of biodegradable dust binding agents. These measures are currently recommended by the South Coast Air Quality Management District for all construction.

In addition to dust generation, operation of heavy-duty construction equipment and mobile emission sources such as equipment hauling dirt, cement trucks, and construction worker traffic would add to local pollutant emissions. Future maintenance activities would also generate emissions from vehicular traffic and temporary use of clearing equipment. These emissions would probably be dispersed over a wide area, and while mobile-source construction and maintenance might create temporary impacts, their impacts would not be discernable above the impacts created by existing and future sources, such as automobile traffic. Air quality impacts can be reduced to below a level of significance by the following: using biodegradable dust binding agents at a minimum of once per working day, or more frequently as needed, to minimize fugitive dust; temporarily shutting down grading activities during periods of high wind conditions; and timing the clearing and excavation to minimize exposure of cleared areas (Section IV, mitigation measures 7-9). Specific mitigation measures for dust control may be included in the permit required by the San Bernardino County Agricultural Commissioner for grading activities.

### **3. Water:**

The Chino Groundwater Basin is the focal point of water resources management in western San Bernardino County. This basin was adjudicated in 1978. Groundwater in the basin is replenished by natural rainfall subsurface inflow, stormwater runoff that is percolated in recharge basins, and other types of artificial recharge. The currently established safe yield of the basin has often been exceeded in the past. The proposed project would alter the hydrology of the area by providing groundwater recharge to the Chino Basin and flood control facilities within the San Sevaine and Upper Etiwanda Creek watersheds. Urban runoff would be recharged to the groundwater basin and would carry pollutants associated with urban runoff. Currently, urban runoff from the area either percolates naturally in open areas and existing channels or is directed toward the Santa Ana River. Urban runoff should not comprise more than 60 percent of the water entering the proposed recharge facilities according to the Phase II Project Report for the Day, Etiwanda, and San Sevaine Creeks Drainage Plan. The balance of the water to be recharged would be high-quality mountain runoff and runoff from open valley areas. The California Regional Water Quality Control Board, Santa Ana Region, has indicated that it sees no problem with the proposed project from a water quality standpoint. As part of the proposed project, a monitoring program would be developed and conducted to eliminate water quality problems from urban runoff entering channels and basins. This program would be developed and conducted by local city and county governments and involved agencies and funded, in part, by future development projects (Section IV, mitigation measure 10).

#### 4. Plant Life:

The proposed project area has been surveyed for biological resources on numerous occasions in 1983, 1986, 1990, and 1992 (Marsh, 1983, 1986a, 1986b, 1990; SFB, 1992). The continual revision and additions to the lists of species to target for surveys provided by federal and state agencies and the frequent revisions in the project description have made it necessary to update and revise the field surveys for biological resources. The 1992 biological surveys, included in Appendix A of this document, were based on data provided by the California Natural Diversity Data Base (CNDDDB, 1992) and followed survey guidelines of the Coastal Sage Scrub NCCP Scientific Review Panel.

Federally listed endangered plant species that had the potential to occur in the project area include the slender-horned spineflower and the Santa Ana River woollystar. Marginally appropriate habitat exists within the project area for the spineflower and the woollystar. Neither of these species have been observed in the project area by Marsh or Southwestern Field Biologists in 1983, 1986, 1990, or 1992. No impacts to these species are anticipated.

Several additional plant species under consideration for listing as federally and state endangered or threatened, and many plants considered of special interest by the Coastal Sage Scrub NCCP Scientific Review Panel, were also targeted for survey. Mitigation for Parry's spineflower and Plummer's mariposa lily are developed in Section IV (mitigation measure 16). These species, and project impacts, are described in detail in the biological report in Appendix A.

Existing plant communities of concern to the California Department of Fish and Game within the project area which may be impacted by the proposed project include: holly-leaved cherry woodland, alluvial coastal sage scrub, coastal sage scrub. Direct impacts in the majority of the project area are anticipated to be minimal because of the disturbed nature of the existing channels. Specific areas of potential impacts: the Etiwanda Levees and Debris Dam, where about 20 acres of alluvial sage scrub will be lost; and the western end of San Sevaine Basin 5, where a holly-leaved cherry woodland and an extensive stand of native needle grass are located.

Coastal Sage Scrub NCCP Scientific Review Panel guidelines for vegetation analysis and polygon delineation were followed during SFB surveys in 1992. Methods and results of the analysis are described in detail in Appendix A.

Mitigation measures will reduce the impacts of the proposed projects on existing habitats (Section IV, mitigation measure 12, 13, 14, and 15). Design of the proposed project facilities has taken into account the sensitivity of the alluvial fan scrub habitat. Efforts have been made to minimize disturbance to, and loss of, this vegetation. These efforts have included relocation of the debris dam and basin north of Summit Avenue, preservation of 98 acres of undisturbed portions of alluvial fan scrub vegetation, minimizing construction within the spreading grounds, and specifying contractor work areas and haul routes. Areas stripped of vegetation, such as temporary construction

staging areas and roadways, will be revegetated with native stock as soon as possible after construction (Section IV, mitigation measures 12). Final siting of the Etiwanda Debris Basin will minimize disturbance to coastal sage scrub vegetation areas. Alluvial fan habitat with scattered walnut will be avoided. Mitigation measures to preserve habitat in San Sevaine Basin 5 include designing the proposed dam to avoid as much of the holly-leaved cherry woodland as possible (Section IV, mitigation measure 14). Fencing would be added at the south terraced end of the basin to protect the remaining holly-leaved cherry woodland from off-road vehicle intrusion. The population of native needle grass will be salvaged prior to excavation of the basin (Section IV, mitigation measures 15).

Additional mitigation measures for biological resources include the preparation of a Revegetation Plan that emphasizes use of native plants for the entire project, and acquisition of appropriate federal, state and local permits, including a 1601 Agreement with the California Department of Fish and Game and a 404 Permit from the Army Corps of Engineers (Section IV, mitigation measures 12).

#### **5. Animal Life:**

The proposed project area has been surveyed for biological resources on numerous occasions in 1983, 1986, 1990, and 1992 (Marsh 1983, 1986a, 1986b, 1990; SFB, 1992). The continual revision and additions to the lists of species to target for surveys provided by federal and state agencies and the frequent revisions in the project description have made it necessary to update and revise the field surveys for biological resources. The 1992 biological surveys, attached as Appendix A of this document, were based on data provided by the California Natural Diversity Data Base (CNDDDB, 1992) and followed survey guidelines of the Coastal Sage Scrub NCCP Scientific Review Panel.

The federal and state listed endangered Least Bell's vireo was observed along Etiwanda Creek immediately north of the project, but no suitable habitat exists in areas likely to be directly or indirectly affected by project construction. Construction on the northern end of the Etiwanda east Levee will be done only during the period from September through January to avoid the possible effects of noise disturbance. No effects to Least Bell's vireos are expected.

Some areas within the proposed project support populations of the San Diego horned lizard, a California Species of Special Concern and Federal Category 2 threatened/endangered listing candidate (San Sevaine Basins and San Sevaine Channel between I-10 and the county line, as mapped by Marsh, 1990). Several of these lizards were observed during field surveys in 1992 (SFB, 1992). The species likely occurs in low numbers throughout the project area (SFB, 1992). Mitigation for loss of habitat will be accomplished by permanent preservation of 98 acres of high-quality habitat between the two Etiwanda Levees.

The federally and state listed endangered American peregrine falcon, was observed in the project vicinity in 1983 (Marsh, 1983). Peregrine falcons may nest on high cliffs in the nearby San Gabriel Mountains, but the immediate project area where

improvements will be constructed contains no suitable nesting habitat. The project area may serve as a portion of the foraging habitat for these species. Other species of special status that have been observed, are expected, or that have the possibility of occurring in the project area include three mammals, one reptile, and twelve birds. These include birds considered by the National Audubon Society to be declining in population through all or part of their ranges, and animals listed in the California Department of Fish and Game Natural Diversity Data Base: Special Animals of the California Fauna. Results of these surveys are described in detail in the biological report in Appendix A.

Specific field surveys for California gnatcatcher were conducted by SFB in the spring of 1992. The methods and results of the surveys are described in detail in Appendix A. No California gnatcatchers have ever been observed in or near the project area and the site supports, at best, extremely marginal habitat.

Some displacement to the local mule deer population could occur as the result of the combined construction of the proposed project and development of locally owned land. The flood control project has, however, been redefined to preserve habitat in the upper Etiwanda Creek area. The natural area to be preserved between the levees will also provide access to surface water available in the conservation basins above Interstate 15 (Section IV, mitigation measure 17, 18, 19). This is a non-significant impact.

#### **6. Noise:**

Operation of excavation and construction equipment will increase noise levels above ambient background levels. Noise impacts would be limited to areas near project facilities. Since these areas generally lack urban development, few persons would be affected. These potential impacts can be reduced below a level of significance by limiting construction activities to normal daylight hours, but not before 7 a.m. or after 7 p.m. and by developing access routes for trucks that avoid residential areas to the maximum extent practical (Section IV, mitigation measures 20-22).

#### **7. Light and Glare:**

Implementation of the proposed project may result in a temporary increase in light and glare during construction. Nighttime construction activities will be limited to minor vehicle maintenance and the establishment of traffic control barricades. No significant or permanent impacts to light and glare are anticipated and no specific mitigation is proposed.

#### **8. Land Use:**

Land use in the project vicinity is generally characterized by multi-centered urban development with extensive agricultural and dairy farming areas. Secondary land uses include currently developed hillside areas along the base of the San Gabriel Mountains. Future land use is anticipated to include a significant increase in urbanization and a concurrent decrease in agricultural uses. The facilities proposed as a part of the San Sevaine Creek Water Project, with minor exceptions, would be located within existing rights-of-way and fee owned properties; no existing land uses would be displaced for project construction.

The proposed project would not be directly responsible for land use changes within the project area, but would contribute to on-going changes to presently underdeveloped land use by providing improved water percolation and downstream drainage facilities. These changes include the conversion of "prime" agricultural land to urban uses which has already been accounted for in adopted local and regional plans and growth projections. Eliminating flooding hazards and thereby creating new buildable area has the potential to result in new growth not previously identified in adopted local and regional plans. Indirect impacts could also result from other projects made feasible by the proposed project. Local agencies have concluded that the projected growth can be accommodated and associated environmental consequences can be reduced to acceptable levels. Potential secondary impacts would be addressed in updates of adopted local and regional plans.

The facilities proposed in this project are part of the planned infrastructure necessary to support development addressed in the EIR prepared for the 1988 County General Plan Update (SCH #88102411). Construction of the flood control improvements actually serve as implementation of a portion of the mitigation measures identified in the General Plan EIR to lessen the effects that natural flood hazards pose to development. Completion of project improvements will eliminate the potential of flood inundation to several hundred acres of land currently identified in the General Plan Official Land Use Designation system as Floodway. This designation precludes essentially all development.

The areas that are no longer subject to flood hazards as a result of flood control improvement construction would become potentially developable, but no development can occur on these areas until a General Plan Amendment is approved by the County Board of Supervisors and Federal Emergency Management Agency (FEMA) maps are revised. An action by the Board would require appropriate CEQA compliance for the discretionary actions under consideration, at which time issues of growth inducement and other environmental documents referenced in this Initial Study would be addressed.

#### **9. Natural Resources:**

No significant resource depletion will occur as a result of this project. Limited quantities of rock, sand, and gravel will be used for construction of the project improvements. Much of the surplus material excavated from the debris and retention basins are already scheduled to be used in constructing levees and dikes. The remainder will probably be sold to the California Department of Transportation for use in construction of the proposed Foothills Freeway (Section IV, mitigation measure 23).

#### **10. Risk of Upset:**

Hazardous substances or materials which may result in explosion in the event of an accident will not be stored or used at the proposed project. The project involves improvements to existing natural and modified streamcourses and basins, and would not interfere with emergency response or evacuation plans. Hazardous or toxic materials which may result in potential health hazards are not, and will not, be stored or used on the project site.

### **11. Population:**

The proposed project would not result directly in any impacts to population, housing, economic activity, or employment within the area. The facilities would be located within existing rights-of-way, and no current residents would be displaced for project construction. In accordance with local governmental planning efforts, the proposed project would accommodate area population, housing, economic activity, and employment increases as the result of removing existing flood hazards from certain lands, and providing an outlet for the increased runoff. Approximately 80 acres and residences supporting up to 300 people may be indirectly allowed by the proposed development. The adverse effects of this are expected to be more than offset by the linear parkways and permanent open space areas which are integral to the proposed project.

### **12. Housing:**

Approximately 80 acres and residences supporting up to 300 people may be indirectly allowed by the proposed development. The adverse effects of this are expected to be more than offset by the linear parkways and permanent open space areas which are integral to the proposed project.

### **13. Transportation/Circulation:**

The primary traffic and transportation impacts of the proposed project would be related to construction activity. Traffic would be generated by workers commuting to construction sites. In addition, trucks would be delivering materials to construction sites. The amount of this traffic would be variable, as would the roads used. A second primary impact of the proposed project would be temporary disruptions to rail lines and roadways as channel crossings were constructed. These roadways would either be temporarily closed with detours provided, or have one or more lanes closed during construction of channel crossings. Temporary bypasses would be provided for rail lines that would be affected to allow for continued operation (Section IV, mitigation measure 27). Project facilities have been designed so that existing and proposed Caltrans facilities along major highway routes would not be affected (Section IV, mitigation measure 24). Ultimately, the effect of the proposed project would be to provide all weather access to roads and rail lines by reducing the potential for flood damage. Mitigation measures included in the proposed project to reduce impacts to transportation/circulation include: the planning of construction to minimize the number of roads to be closed; scheduling construction to minimize the amount of time each road is to be closed; posting notice to motorists of road closure and alternate routes; and circulating railroad closure notices and constructing temporary bypasses (Section IV, mitigation measures 24, 25, 26, 27).

### **14. Public Services:**

The proposed project would have no direct adverse effect on school facilities or parks and other recreational facilities. Impacts on police and fire services would be minimal, generally related to protection of equipment yards during construction and surveillance of the linear parkway. The County will also inspect the parkway periodically. In the event that additional development results from flood control provided by the project, responsible local agencies will review individual projects for their impact on services.

The project would not have immediate effects on emergency services, however, the project could potentially reduce the demand for emergency services during large storms by protecting large areas from flood hazards. Because the proposed project would accommodate only urban development for which local agencies have already planned, development of the project would probably not lead to short or long-term deficiencies in public services. As part of the project review function of responsible local government agencies, individual development projects within the watersheds would be reviewed for impacts on the availability and adequacy of public services and utilities (Section IV, mitigation measure 28).

#### **15. Energy:**

Implementation of the proposed project would result in the consumption of nonrenewable energy resources during project construction. In particular, the project would consume significant amounts of aggregate to produce the concrete needed for channel construction. While this amount is not significant when compared to active and potential aggregate reserves, construction of the project would incrementally add to projected shortages of aggregate materials in Southern California. Implementation of the proposed project would also have a beneficial impact on energy resources by reducing the need for imported water supplies. Since these supplies are brought over the Tehachapi Mountains from northern California, annual energy consumption would be reduced.

#### **16. Utilities:**

Engineering profiles of the proposed project identify all known potential interferences with large buried utility lines. Where necessary, major utility lines would be relocated as part of the proposed project, however, relocation of utilities is not expected. There might also be some minor relocations required for smaller water and sewer lines. Indirect, secondary impacts may result if any utility lines are required to be relocated. Impacts on utilities would be minimal, because existing flood control rights-of-way would be utilized. Final engineering plans will be submitted to all utility companies operating within the vicinity of the proposed facilities to determine the specific extent of potential interferences with utility lines, and to identify precise measures that would avoid interruption of service (Section IV, mitigation measure 29).

It is anticipated that approval would be required from the California Department of Transportation (Caltrans) for construction of channels that connect with or cross under Caltrans bridges, and from the Metropolitan Water District to cross over the transmission line located north of Highland Avenue. An agreement or license would be necessary to cross under the Southern Pacific rail line south of Highland Avenue and the Santa Fe line south of Foothill Boulevard.

Construction activities would generate solid waste. Solid wastes would consist of discarded construction material (i.e., wood and metal), which would be disposed of at the Milliken Landfill site per established procedures. Generation of solid wastes would be a temporary impact and not significant in terms of current and projected solid waste generation within the area.

### **17. Human Health:**

Final design of concrete channels and other rigid structures (e.g. bridges) will meet all applicable federal and state design criteria.

Potential safety problems related to unauthorized entry into project construction areas may occur, and after completion, project facilities may act as "attractive nuisances". Provision for linear parkways might encourage the public to enter restricted areas, thereby exposing themselves to associated safety hazards and incurring liability implications for the operating agency. This potential safety impact can be reduced by adequately fencing, regularly patrolling, and maintaining project facilities to avoid unauthorized entry (Section IV, mitigation measures 30 and 31).

By spreading water over the relatively large area included within the basins, the project could encourage breeding of mosquitos and gnats, a potential health and nuisance issue. Maintaining a regular program of inspection and treatment to prevent mosquitos and other vectors would reduce this potential impact to insignificance (Section IV, mitigation measure 32).

### **18. Aesthetics:**

The natural environment within and adjacent to the project area provides three visual resources: hillside vistas, numerous stands of mature trees, and largely undeveloped open space. Of these resources, only hillside vistas would be adversely impacted by the proposed Etiwanda Debris Basin. However, this would be limited to a location within a narrow-banded area south of the basin. The present unobstructed view would partially interrupted following completion of the basin. Land near the proposed dam site is uninhabited, therefore construction will not significantly alter the existing viewshed. With mitigation, the aesthetic impact due to the small change in topography will be non-significant.

Construction of the Etiwanda Levees and debris basin would result in the temporary removal of native vegetation and the creation of manmade landforms. These are unavoidable impacts associated with implementation of the proposed project, but are not interpreted to be significant, since there are few existing uses/residences that would be affected. Temporary storage of construction materials could also potentially affect the visual character of the project site. The prompt removal of unneeded construction equipment from construction staging areas would reduce this impact to insignificance (Section IV, mitigation measure 33). The storage of debris and sediments removed from project facilities would occur immediately below the debris basins. This potential visual impact can be reduced to insignificance by limiting the temporary storage of excavated materials below the debris basins to plant material, soil, and rock. Because the proposed debris basin is designed and proposed to capture debris, storage of materials would occur throughout the life of the project facilities.

### **19. Recreation:**

Linear parkways are included as major components of the proposed project. The parkways will provide regional recreational opportunities currently unavailable to the general public (Section IV, mitigation measure 35). Open space created by the project

will complement wildlife use and enhance recreation. Public access will be limited to authorized uses that are compatible with nearby urbanization (hunting, shooting, and motorized vehicles will be expressly prohibited).

#### **20. Cultural and Paleontological Resources:**

A Class III cultural resources inventory and impact evaluation was conducted for the San Sevaine Creek Water Project (Lerch, 1986). No prehistoric archaeological sites were identified within the project area, however, three sites have previously been recorded in the project vicinity. The areas around the Etiwanda Spreading Grounds and the San Sevaine Spreading Grounds and the banks of East Etiwanda Creek have a moderate potential for yielding archaeological resources, although no resources were identified in these areas during this study. The Kaiser Steel Plant, a San Bernardino County Historic Point of Interest, is crossed by the San Sevaine Channel. No known fossil locality would be impacted by the proposed project, however, the Quaternary alluvium in the southern part of the project area, particularly south of Interstate 10, is considered highly sensitive for paleontologic resources. A qualified archaeologist will be retained for periodic spot checks during the construction phase of the project, especially during initial grading (Section IV, mitigation measures 36, 38).

Potential impacts to cultural and paleontological resources may be reduced to a level of non-significance by monitoring construction for cultural resources during initial grading in the Etiwanda levees, basin, and channel, during grading in the San Sevaine basins, evaluating sites by a qualified archaeologist if artifacts are found, and evaluating sites by a qualified paleontologist if fossil remains are uncovered (Section IV, mitigation measures 37, 39).

#### **21. Mandatory Findings of Significance:**

From the information discussed in this Initial Study Checklist, it is concluded that the proposed project will not cause significant adverse impacts to the environment either regionally or locally with mitigation as described here and set out in the Mitigation Monitoring Plan.

The proposed project has the potential to reduce Riversidian coastal sage scrub plant communities, cited as highest priority special plant communities by the California Natural Diversity Data Base Division of the California Department of Fish and Game. The project has the potential to destroy habitat and disturb populations of the San Diego horned lizard, a California Species of Special Concern and a Federal candidate for listing as endangered or threatened. Additional plant and animal species of special status, that are not listed as threatened or endangered, have been observed, or have the possibility of occurring in the project area and would be adversely impacted by the proposed project (see Appendix A). The project also has the potential to disturb a documented historical site. Mitigation measures which are part of project siting, design, and construction will avoid and maintain critical or sensitive habitat or mitigate their loss to an non-significant level. The historic site would be avoided during construction.

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Implementation of the proposed project would lead to a variety of impacts to the natural and man-made environments of the area, including landform modifications, alteration of drainage patterns, loss of natural vegetation and habitat, displacement of wildlife and disturbance of wildlife habitat. Efforts have been made to avoid or minimize loss of sensitive natural resources, including special status plant and wildlife species, and sensitive plant communities, within the project area. In addition, the natural drainage area north of Summit Avenue has been eliminated from the project scope. The project would also result in long-term positive environmental goals by increasing the availability of local water supplies and reducing the existing flood hazards in this area. The cumulative project impacts are not expected to significantly impact the environment if the described mitigation measures are implemented. The proposed project will ultimately have direct beneficial effects on human beings by accommodating the ongoing development feasibility of the area as envisioned under the County Plan.

#### **IV. SUMMARY OF MITIGATION FEATURES:**

The following is a list of mitigation measures to be included in project conditions of approval and the Mitigation Monitoring Program. The individual mitigation measures are numbered consecutively throughout the section, but are grouped according to the numbered headings in Section III, Environmental Impacts.

##### **1. Earth:**

1. Final siting, design, and construction of the Etiwanda Debris Basin and lower San Sevaine (Basin 5) Retention Basin will be based on detailed geologic investigations, structural calculations, fault setback requirements, and specific seismic design criteria.
2. Prepare an approved Revegetation Plan for the proposed project by a qualified biologist. The Revegetation Plan will emphasize use of native plants. Implement the Revegetation Plan as soon as possible after construction.
3. Stockpile excavated material not needed for construction, as well as debris and sediments removed from basins and other project facilities following project completion, in areas not containing sensitive habitat or soils, protect from storm flows, and stabilize to minimize the possibility of erosion and downstream siltation.
4. Use excavated material from the project on-site to the extent feasible.
5. Use biodegradable dust binding agents once per working day, and more frequently as needed, to minimize fugitive dust and wind erosion. During periods of high wind conditions (greater than 30 mph at duration of 15 minutes), grading activities will be temporarily shut down.
6. Clear vegetation only immediately prior to excavation and grading activities to minimize exposure of cleared areas at any given time.

##### **2. Air:**

7. Use biodegradable dust binding agents once per working day, and more frequently as needed, to minimize fugitive dust and wind erosion. During periods of high wind conditions (greater than 30 mph at duration of 15 minutes), grading activities will be temporarily shut down.
8. Prepare an approved Revegetation Plan for the proposed project by a qualified biologist. The Revegetation Plan will emphasize use of native plants. Implement the Revegetation Plan as soon as possible after construction.
9. Clear vegetation only immediately prior to excavation and grading activities to minimize exposure of cleared areas at any given time.

3. **Water:** The proposed project would provide security from flood hazards from residents, business, and infrastructure downstream. The debris dam, flood

conveyance channels, and modifications to the San Sevaine basins and outlet features will all combine to create a safer environment. The proposed project is in itself mitigation for groundwater overdrafts and reduction of groundwater recharge capacity due to urbanization. To this extent, it is expected that the groundwater recharged in the percolation basins included in the proposed project will migrate south (downslope) and either enter the Santa Ana River or be intercepted and used in wells along the way.

10. Develop a monitoring program to detect and eliminate water quality problems from urban runoff entering channels and basins. This program would be developed and conducted by local city and county governments and involved agencies, and funded in part, by future development projects.
11. Stockpile excavated material not needed for construction, as well as debris and sediments removed from basins and other project facilities following project completion, in areas not containing sensitive habitat or soils; protect from storm flows, and stabilize to minimize the possibility of erosion and downstream siltation.

#### **4. Plant Life:**

12. Prepare an approved Revegetation Plan for the proposed project by a qualified biologist. The Revegetation Plan will emphasize use of native plants. Implement the Revegetation Plan as soon as possible after construction.
13. Limit construction work along upper Etiwanda Creek to that necessary for construction of levees in order to avoid and/or minimize disturbance to alluvial fan scrub. Avoid mass removal of natural vegetation and slope habitat. Contractor work areas and haul routes will be specified to avoid disturbance to areas of concern.
14. Design San Sevaine Basin 5 retention basin to avoid as much holly-leaved cherry woodland as possible. Protect remaining woodland from off-road-vehicle intrusion by adding low, smooth wire-topped fencing at the south terraced end of the basin. Revegetate approximately 5 acres of holly-leaved cherry woodland with plantings derived from local stock. The woodland aspect of the community will be duplicated.
15. Salvage native needle grass prior to excavation of San Sevaine Basin 5 and transplant under the direction of the California Department of Fish and Game (this mitigation measure has been accomplished).
16. Three Parry's spineflower and most of the 150 Plummer's mariposa-lily plants in the Etiwanda Creek area would be lost. Prior to construction activities, these areas will be marked and contractors will be required to avoid the plants to the extent feasible. A suitable number of Mariposa lily plants that cannot be avoided will be transplanted to an appropriate site within the 98-acre conservation area.

**5. Animal Life:**

17. Integral project features include establishment of a wildlife corridor between San Sevaine and Etiwanda creeks, corridor preservation, and restoration of sagescrub and holly-leafed cherry woodland plant communities.
18. Prepare an approved Revegetation Plan for the proposed project by a qualified biologist. The Revegetation Plan will emphasize use of native plants. Implement the Revegetation Plan as soon as possible after construction.
19. Limit construction work along upper Etiwanda Creek to that necessary for construction of levees in order to avoid and/or minimize disturbance to alluvial fan scrub. Avoid mass removal of natural vegetation and slope habitat. Contractor work areas and haul routes will be specified to avoid disturbance to areas of concern.

**6. Noise:**

20. Limit construction activities to normal daylight hours--not before 7 a.m. or after 7 p.m. Monday through Saturday. There will be no noise producing construction on Sundays or federal holidays.
21. Identify access routes for construction-related truck traffic prior to commencing construction activities for any project facility. Develop access routes that avoid residential areas to the maximum extent practical.
22. Require contractors to ensure that all internal combustion engine machines are properly muffled.

8. **Land Use:** The creation of a linear parkway along Etiwanda and San Sevaine creeks is considered a part of the environmental enhancement aspect of the proposed project. Although significant open space exists in the northern portions of the proposed project, there are currently no designated open space preserves in the immediate project area.

**9. Natural Resources:**

23. Use excavated material from the project on-site to the extent feasible.

**10. Risk of Upset:** No mitigation needed.

**11. Population:** No mitigation needed.

**12. Housing:** No mitigation needed.

**13. Transportation/Circulation:**

24. Plan project construction, including railroad shoeflies around channel and bridges, to minimize number of roads completely closed to public access.

25. Schedule construction so that partial or full road closure occurred over a minimal amount of time.
26. Provide adequate notice to motorists of road closure through use of signs indicating approximate dates. Alternate routes would be provided and clearly marked.
27. Provide adequate notice to responsible railroad company if construction would require relocating rail lines. Construct temporary bypasses to keep rail lines in service.

**14. Public Services:**

28. Have responsible local agencies review individual development projects within the Upper Etiwanda and San Sevaine Creek watersheds for impacts on the availability and adequacy of public service and utilities.

**15. Energy:** No mitigation needed.

**16. Utilities:**

29. Submit final engineering plans to all utility companies operating within the project vicinity to determine specific extent of potential interferences with utility lines and to identify measures that would avoid interruptions of service.

**17. Human Health:**

30. Fence and maintain project facilities to minimize the possibility of unauthorized entry.
31. Fence outdoor material storage areas during project construction to minimize the potential of unauthorized entry.
32. Conduct a regular program of inspection and treatment to prevent mosquitos and vectors.

**18. Aesthetics:**

33. Promptly remove unneeded construction material and equipment from construction staging areas.
34. Temporary storage of excavated materials below debris basins would be limited to plant material, soil and rock; transport discarded household items found in project facilities to Milliken Landfill.

**19. Recreation:**

35. Linear parkways are an important environmental enhancement feature of the proposed project. Public access and enjoyment of the open space created by the proposed project will provide a recreation resource for area residents which has not previously existed. More importantly, this resource will not be

continually threatened by various developments.

**20. Cultural Resources and Paleontology:**

36. Monitor construction for cultural resources during initial grading of the Etiwanda Debris Basin and Basin 5.
37. Monitor construction for paleontologic resources during initial grading of the Etiwanda Debris Basin and Basin 5.
38. Have site evaluated by archaeologist if artifacts or historic resources are found during construction.
39. Have site evaluated by paleontologist if fossil remains are uncovered during construction.

V. DETERMINATION -

PREPARED BY:

2-11-94  
Date

Frank Reichenbacher  
Frank Reichenbacher, President  
Southwestern Field Biologist

2/14/94  
Date

Roger Shintaku  
Roger Shintaku, P.E.  
JVR, Planning and Engineering Consultants

on behalf of  
THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT HAVE** a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

I find that although the proposed project **COULD HAVE** a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described above have been added to the project. A **NEGATIVE DECLARATION** will be prepared.

I find that the proposed project **MAY HAVE** a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

2/14/94  
Date

Dwight Scott  
Signature

for  
THE COUNTY OF SAN BERNARDINO

REFERENCES:

CNDDDB (California Natural Diversity Data Base)

- 1992 Natural Diversity Data Base element occurrence records for the Cucamonga Peak, Devore, Fontana, and Guasti 7.5 min. USGS topographic quadrangles. Calif. Dept. of Fish and Game, Sacramento. Calif. 36 pp.

Lerch, M.K

- 1986 Class III Cultural Resources Inventory: San Sevaine Creek Water Project, San Bernardino County, Calif. Michael K. Lerch & Assoc. report to Engineering Science, Pasadena, Calif.

Marsh, K.G.

- 1983 Biological Resources Assessment, Physical Setting Reconnaissance San Sevaine and Etiwanda Creeks for Proposed Channel Improvements, Levee Reinforcements and Debris Dams. Report prepared for The Planning Network.

- 1986a Results of survey of Upper Etiwanda Creek Debris Dam and Spreading Basin Site, Upper San Sevaine Creek Debris Dams and Spreading Basin and Lower San Sevaine Basin for Federal Candidate and Proposed Rare/Endangered Biota Species. June 1, 1986 report to San Bernardino County Flood Control District.

- 1986b Supplemental Information Attachment to Biological Resources Assessment, Physical Setting Reconnaissance San Sevaine and Etiwanda Creeks for Proposed Channel Improvements, Levee Reinforcements and Debris Dams. June 4 and August 21, 1986 report to San Bernardino County Flood Control District.

- 1989 Results of San Sevaine East Levee Tangential Shift Survey. June 9, 1989 report to San Bernardino County Flood Control District.

Planning Network/Bill Mann and Associates

- 1984 Draft Environmental Impact Report Statement: Day Creek Water Project-Day, Etiwanda, and San Sevaine Creeks Drainage Plan, and Master Plan for the San Sevaine Channel. Prepared for San Bernardino County, Calif.

- 1986 Draft Environmental Assessment: Day Creek Water Project. Prepared for San Bernardino County and U.S. Bureau of Reclamation.

Southwestern Field Biologists

- 1992 Biological report for the San Sevaine Creek Water Project San Bernardino County, California. Prep. for San Bernardino Co., Dept. Trans/Flood Control Dist., San Bernardino, California.

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**APPENDIX A. BIOLOGICAL REPORT**

**BIOLOGICAL REPORT  
FOR THE  
SAN SEVAINE CREEK WATER PROJECT  
SAN BERNARDINO COUNTY, CALIFORNIA**

December 1992

Southwestern Field Biologists  
8230 East Broadway Boulevard, Suite W-8  
Tucson, Arizona 85710-4002

Prepared for:

San Bernardino County  
Department of Transportation/Flood Control District  
825 East Third Street, Room 101  
San Bernardino, California 92415-0835

1. Report No. CLE9201-BR	2.	3. Recipient's Accession No.
4. Title and Subtitle BIOLOGICAL REPORT FOR THE SAN SEVAINE CREEK WATER PROJECT SAN BERNARDINO COUNTY, CALIFORNIA	5. Report Date December 1992	
6. Author(s) Frank W. Reichenbacher Susan J. Bainbridge Joshua D. Taiz	7. Purchase Order No.	
8. Performing Organisation Southwestern Field Biologists 8230 East Broadway Boulevard, Suite W-8 Tucson, Arizona 85710-4002 (602) 886-4303 FAX: (602) 886-4392	9. Type of Report Final Report	
10. Sponsoring Organization San Bernardino County Department of Transportation/Flood Control District 825 East Third Street, Room 101 San Bernardino, California 92415-8035	11.	
12. Supplementary Notes		

3. Abstract  
San Bernardino County Department of Transportation and Flood Control District is planning to construct flood control and groundwater recharge facilities in Etiwanda and San Sevaime Creeks, in southwestern San Bernardino County, California. The facilities include a debris basin in Etiwanda Creek, flood conveyance channels, and modifications to several existing recharge basins. Extensive biological surveys were conducted in the area from April to June, 1992, under the guidelines of the Coastal Sage Scrub, NCCP, Scientific Review Panel. The California Natural Diversity Data Base was consulted for occurrence information for sensitive communities and species. Vegetation transects were done and coastal sage scrub polygons were delineated. A breeding bird survey was conducted. Sensitive species surveys focused on California gnatcatcher, San Diego horned lizard, San Diego cactus wren, slender-horned spineflower, Santa Ana woollystar, and numerous other species. At least two pairs of least Bell's vireos were discovered in Etiwanda Creek, but no project effects are anticipated. San Diego horned lizards are widely scattered in the area. Several other lower priority species were discovered. Several hundred acres of Riversidian alluvial fan sage scrub occurs in the study area, as well as more limited acreages of Southern sycamore-alder riparian woodland and mainland cherry forest.

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## **INTRODUCTION**

The proposed project is needed to provide flood protection and up to 25,000 acre-feet annual groundwater recharge to the Chino Groundwater Basin. Features of the proposed project include Etiwanda Levees and Debris Basin, minor to extensive improvements to five existing recharge basins, improvements to Etiwanda and Etiwanda/San Sevaine flood channels, wildlife habitat enhancement, and outdoor recreation.

### **1. Etiwanda Levees and Debris Basin**

The Etiwanda Levees will extend downstream from the mouth of East Etiwanda Canyon to stabilize the natural drainageways and direct debris-laden runoff into Etiwanda Basin. The proposed debris basin will be located on Etiwanda Creek north of Summit Avenue replacing most of the existing spreading grounds.

### **2. Lower San Sevaine Retention Basin (Basin 5)**

The Lower San Sevaine Retention Basin is an existing facility that combines flood control and percolation functions. This component of the project will include a new outlet conduit, a new chute spillway, and the basin will be excavated for additional storage capacity.

### **3. Victoria Basin**

Victoria Basin is an existing basin, but has no inlet from the Etiwanda Channel to receive storm flows. Inlet and outlet structures with some embankment modifications would be completed under the proposed project.

### **4. Rich Basin**

Rich Basin is an existing retention basin connected to the San Sevaine Basins by an existing concrete-lined channel. The basin will be excavated deeper to provide additional storage.

### **5. Hickory Basin**

Hickory Basin is an undeveloped flow-through basin with very little existing storage capacity. The basin would be modified to provide a true recharge capability by additional excavation and embankment work, and by appropriately sized and configured inlet and outlet works.

**6. Jurupa Basin**

Jurupa Basin is undeveloped and is presently used to spread flows turned out from San Sevaine-Etiwanda Channel during very low storm flows. The proposed project calls for excavation and embankment modifications, as well as outlet and inlet features.

**7. Conveyance Channels**

No new conveyance channels will be constructed, but under the proposal, existing channels will be modified as necessary to accommodate specified flow volumes and will be concrete-lined. The Etiwanda Creek Channel will be lined from the proposed Etiwanda Basin to the existing trapezoidal Etiwanda Channel contiguous with the San Sevaine Channel at Basin 5. A dirt and rip-rap channel for the combined San Sevaine-Etiwanda Creek flows extends from Foothills Boulevard to Jurupa Basin and will also be concrete-lined.

**8. Wildlife Enhancement**

A wildlife corridor will be established through private land adjacent to the San Bernardino National Forest. The corridor will provide habitat for birds and small animals while connecting the forest with infiltration basins located north of Interstate 15.

**9. Linear Parkways**

The existing flood control and recharge facilities are largely inaccessible to the public and wildlife. The proposed project calls for extensive revegetation, landscaping, and recreational facility construction to incorporate enhancement features into the project. Native plant species and bicycle/jogging paths, horse trails, exercise facilities, and picnic areas will be included in the project along all major floodways, some infiltration basins, and the Etiwanda Debris Basin.

Project alternatives considered in the planning process include:

- A. No federal action.** The proposed federal action is U.S. Bureau of Reclamation approval of a low-interest loan to the County of San Bernardino, California (County). Without the loan, the County is likely to construct all flood control aspects of the project piecemeal through private developers or with funds provided by private developers as the need arises.

- B. No project.** No additional groundwater recharge of high-volume flows from Etiwanda and San Sevaine Canyons and no improved or modified flood control.
- C. Direct conveyance for flood control.** Flood control needs of private landowners and existing downstream improvements in the San Sevaine Creek area could be met by channelizing Etiwanda Creek and by lining the currently unlined channels.
- D. Two-basin system.** Debris basins would be located at the mouths of Etiwanda and San Sevaine Canyons and concrete-lined channels would be constructed from the debris basins to retention basins located downstream. The two-basin system was the preferred project in the previous SRPA Loan Application for the San Sevaine Creek Water Project (Engineering Science and Bill Mann Associates, October 1989).
- E. Single-basin system.** A single debris basin would be located on Etiwanda Creek for water conservation/flood control only, without environmental or recreational enhancements.
- F. The preferred project.** A single debris basin on Etiwanda Creek incorporating existing facilities to minimize impacts to sensitive vegetation and additional right-of-way and special features to create added recreational and environmental benefits.

## VEGETATION

Southwestern Field Biologists' botanical staff visited the study area on three occasions in spring, 1992. Survey guidelines of the Southern California Coastal Sage Scrub, Scientific Review Panel were used in designing a vegetation survey of the project area. A total of eight, 25 m x 25 m line-intercept, vegetation transects were used to describe the vegetation of the Etiwanda/San Sevaine alluvial fan and wash. A summary of the results of the vegetation transects is presented in Table 1 and Appendix A contains the polygon survey forms for each transect. Figure 1 is a vegetation map of the project area, and Figure 2 shows delineated coastal sage scrub polygons and lists the plant associations characteristic of each polygon.

The project area is dominated by two coastal sage scrub plant associations -- Riversidian alluvial fan sage scrub (RAFSS) and Riversidian upland sage scrub (RUSS) on the alluvial fan on which the northern portions of the project area are located. The foothills of the San Gabriel Mountains to the north support stands of coastal sage-chaparral scrub and soft (chamise) chaparral. Riparian plant communities include mule fat scrub, southern sycamore-alder riparian woodland, and southern cottonwood-willow riparian forest.

Much of the natural vegetation of the area was destroyed by a major wildfire in the mid-1980's (Sharon Dougherty, San Bernardino N.F. pers. comm., June 1992,). The remaining shrubs and trees are greatly reduced in cover and height. Areas severely disturbed by wildfires on the alluvial fan and in a few places on the lower foothills have been converted from coastal sage scrub to nonnative grassland.

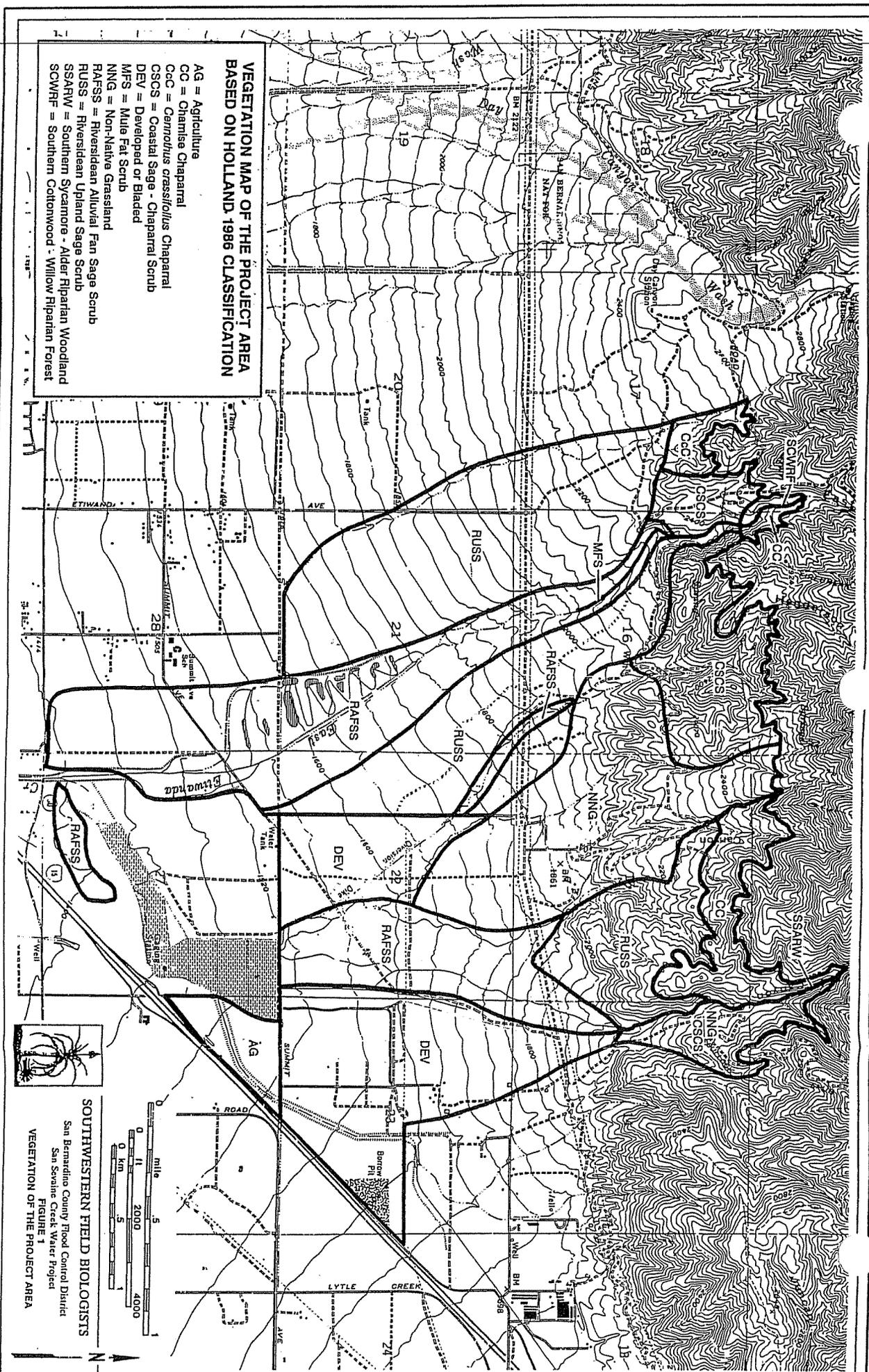
Detailed descriptions of each plant community found in the study area are provided below. Each community is listed according to Holland (1986) and CNDDB (California Natural Diversity Database 1992) with the classification code.

### **California Coastal Scrub (NC32000)**

California coastal scrub associations dominate the intermountain valleys and dry sites on the lower slopes of the Transverse and Peninsular Ranges. At the study area, coastal sage scrub occurs on the lower slopes, alluvial fans and washes of San Sevaine and East Etiwanda Creeks. The characteristic species of this association are low, shallow-rooted, often aromatic shrubs, including California sagebrush (*Artemisia californica*), white and black sage (*Salvia apiana*, *S. mellifera*), California buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*) (Pase and Brown 1982; Mooney 1988; O'Leary 1989). Two types of coastal sage

AG = Agriculture  
 CC = Chamise Chaparral  
 CcC = *Ceanothus crassifolius* Chaparral  
 CSCS = Coastal Sage - Chaparral Scrub  
 DEV = Developed or Bladed  
 MFS = Mule Fat Scrub  
 NNG = Non-Native Grassland  
 RAFSS = Riversidean Alluvial Fan Sage Scrub  
 RUSS = Riversidean Upland Sage Scrub  
 SSARW = Southern Sycamore - Alder Riparian Woodland  
 SCWRF = Southern Cottonwood - Willow Riparian Forest

**VEGETATION MAP OF THE PROJECT AREA  
 BASED ON HOLLAND, 1986 CLASSIFICATION**



0 5 10 2000 4000  
 0 1 2 5  
 mile  
 km

**SOUTHWESTERN FIELD BIOLOGISTS**  
 San Bernardino County Flood Control District  
 San Sivaline Creek Water Project  
 FIGURE 1  
 VEGETATION OF THE PROJECT AREA

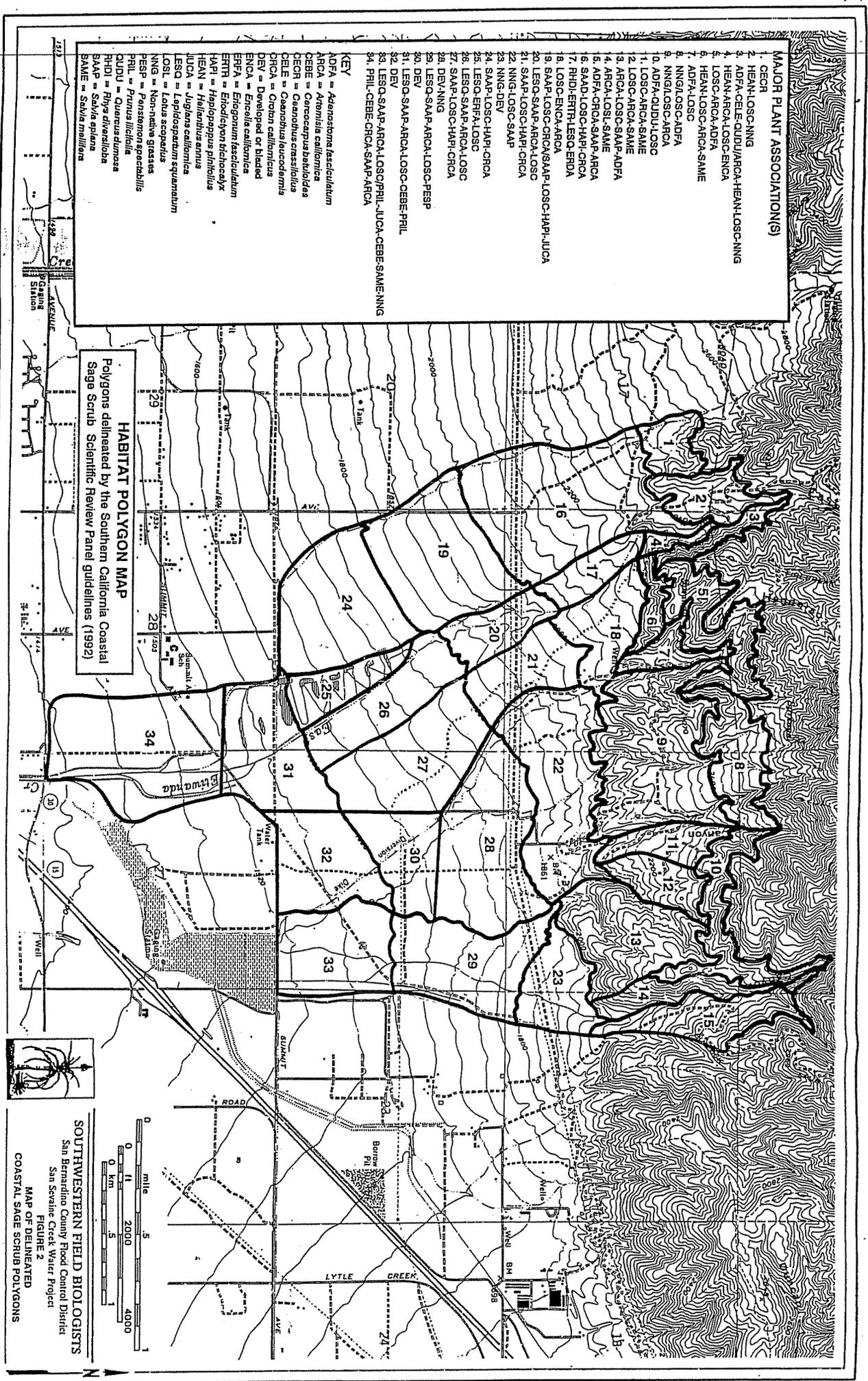
**MAJOR PLANT ASSOCIATIONS(S)**

1. CEER
2. HEAN-LOSC-NING
3. ADFA-CELE-QUDU/ARCA-HEAN-LOSC-NING
4. HEAN-ARCA-LOSC-ENCA
5. LOSC-ARCA-ADFA
6. HEAN-LOSC-ARCA-SAME
7. ADFA-LOSC
8. NNG/LOSC-ADFA
9. NNG/LOSC-ARCA
10. ADFA-QUDU-LOSC
11. LOSC-ARCA-SAME
12. LOSC-ARCA-SAME
13. ARCA-LOSC-SAMP-ADFA
14. ARCA-LOSC-SAME
15. ADFA-CRCA-SAMP-ARCA
16. SAAD-LOSC-HAP-CRCA
17. RHDI-ENTR-LESC-ERDA
18. LOSC-ENCA-ARCA
19. SAAP-LOSC-CRCA/SAP-LOSC-HAP-JUCA
20. LE5Q-SAAP-ARCA-LOSC
21. SAAP-LOSC-HAP-CRCA
22. NNG-LOSC-SAMP
23. NNG-DEV
24. SAAP-LOSC-HAP-CRCA
25. LE5Q-ERRA-LOSC
26. LE5Q-SAAP-ARCA-LOSC
27. SAAP-LOSC-HAP-CRCA
28. DEV-NING
29. LE5Q-SAAP-ARCA-LOSC-RESP
30. DEV
31. LE5Q-SAAP-ARCA-LOSC-CEBE-PRL
32. DEV
33. LE5Q-SAAP-ARCA-LOSC-PRL-JUCA-CEBE-SAME-NING
34. PRL-CEBE-CRCA-SAMP-ARCA

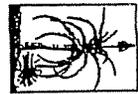
**KEY**

- ADFA = *Adenostoma fasciculatum*
- ARCA = *Artemisia californica*
- CEBE = *Cercocarpus betuloides*
- CECR = *Ceanothus crassifolius*
- CELE = *Ceanothus leucodermis*
- CRCA = *Croton californicus*
- DEV = Developed or bleached
- ENCA = *Encelia californica*
- ERRA = *Eriogonum fasciculatum*
- ENTR = *Eriodolyon bichocalyx*
- HAP = *Haplophragma pinnatifidum*
- HEAN = *Hesperis matronalis*
- JUCA = *Juglans californica*
- LE5Q = *Lepidosaphale squamatum*
- LOSC = *Lotus scoparius*
- NNG = Non-native grasses
- NING = *Non-Grass*
- PARC = *Parsonsia pacifica*
- PRL = *Prunella laevis*
- QUDU = *Quercus dumosa*
- RHDI = *Rhipidolobos*
- SAAP = *Salvia apiana*
- SAME = *Salvia mellifera*

**HABITAT POLYGON MAP**  
 Polygons delineated by the Southern California Coastal Sage Scrub Scientific Review Panel guidelines (1992)



**SOUTHWESTERN FIELD BIOLOGISTS**  
 San Bernardino County Flood Control District  
 San Sepulveda Creek Water Project  
 MAP OF DELINEATED  
 COASTAL SAGE SCRUB POLYGONS



**Table 1.** Summary of vegetation transect data for San Sevaine Creek Project study area. Percent cover of dominant species and values for key features (according to survey guidelines of the Southern California Coastal Sage Scrub, Scientific Review Panel). Vegetation transects locations shown on Figure 2. See Appendix A for complete transect data.

Polygon	14	15	19	24	26	26	26	26	20
Transect	1	2	3	4	5	6	7	8	
<b>Species</b>									
<i>Adenostoma fasciculatum</i>	2	15							
<i>Artemisia californica</i>	18	5	1	1	13	9			12
<i>Corethrogyne filangifolia</i>					3				
<i>Croton californicus</i>		1	5	5	1				
<i>Ericameria pinifolia</i>			5	5	4	1			
<i>Eriodictyon trichocalyx</i>					8				
<i>Eriogonum fasciculatum</i>	+		1	1	1	1			12
<i>Gnaphalium bicolor</i>									1
<i>Haplopappus squarrosus</i>		3							
<i>Juglans californica</i>		7							
<i>Lepidospartum squamatum</i>					13	10	4		
<i>Lotus scoparius</i>	23		20	16		8			23
<i>Penstemon spectabilis</i>						8			
<i>Rhus diversilobium</i>		4							
<i>Salvia apiana</i>			26	26		6			
<i>Salvia mellifera</i>	4								4
<i>Senecio douglasii</i>	2								2
<i>Yucca whipplei</i>	2					1			
<b>Percent Shrub Cover</b>	49	35	48	54	43	43	17		41
<b>Mean Shrub Height (m)</b>	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0
<b>Percent Herbaceous Cover</b>	51	65	5	5	1	1	1		2

scrub were identified in the San Sevaine/Etiwanda study area: Riversidian alluvial fan sage scrub in the active floodplains of the major washes, and Riversidian upland sage scrub, generally on the alluvial fan between the major washes.

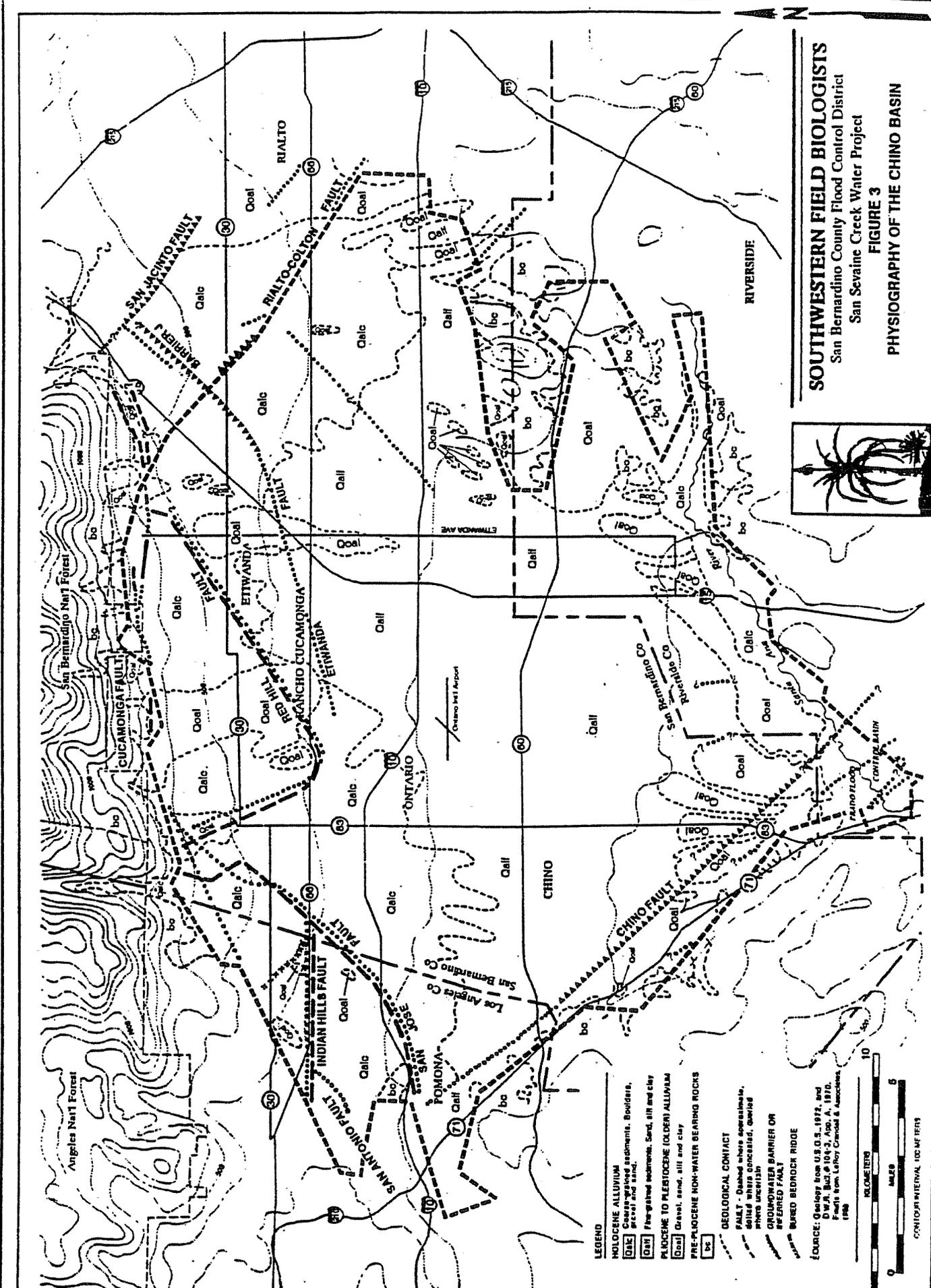
Coastal scrub polygons on Figure 2 were delineated according to the recommended Coastal Sage Scrub Scientific Advisory Panel procedure (Murphy et al. 1992). Primary polygons were based on five aspect classes (SW, SE, NW, NW, flat). These were further divided by elevation classes in 800 foot intervals. Polygons three times or more larger than the average polygon size were subdivided until each approximated the average size for a polygon. Qualitative observations of soil types were made to further subdivide polygons. A vegetation association best describing the dominant species was assigned to each polygon. Thirty-four polygons were delineated in the San Sevaine/Etiwanda study area. Polygons shown in Figure 2 are based on vegetation associations distinguished on 1:1,200 scale aerial photographs and as ground-truthed by the field crew.

#### Riversidian Alluvial Fan Sage Scrub (NC32720)

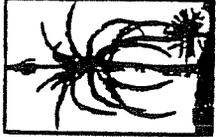
East Etiwanda, Henderson, Morse, and San Sevaine Creeks debauch from the San Gabriel Mountains at elevations from 2,000 feet to 2,240 feet out of active floodplains no more than 200 feet wide in narrow rocky canyons. The stream gradients immediately change from 12% to 6% and flood events fan out across the alluvial apron to widths up to 5,000 feet. Figure 3 shows the extent of the alluvial fan south of the San Gabriel Mountains, indicated by 'Qalc'. Figure 4 is a view of RAFSS in Etiwanda Creek.

It has been incorrectly assumed by some previous investigators that all the vegetation of the alluvial fans at the bases of the Transverse Ranges is properly classified as RAFSS. This is not the case: RAFSS is the vegetation of more or less active floodplains of the canyons, such as San Sevaine and East Etiwanda, debauching from these ranges (Smith 1980; Hanes et al. 1989). The plant species which comprise RAFSS are involved in a continuing cycle of ecological succession as a result of infrequent catastrophic floods captured in the watersheds of the mountains above. Although the active floodplains migrate across the fan in time, such movement is extremely slow and the vegetation dominating the alluvial fan between the major washes shows no evidence of the cycle of ecological succession which characterizes RAFSS.

RAFSS is a high inventory priority plant community for the California Natural Diversity Data Base. RAFSS is restricted to the southern bases of the San Gabriel, San Jacinto and San Bernardino Mountains where about 25,000 acres (CNDDDB, pers comm, 1992) are remaining.



**SOUTHWESTERN FIELD BIOLOGISTS**  
 San Bernardino County Flood Control District  
 San Seavine Creek Water Project  
**FIGURE 3**  
**PHYSIOGRAPHY OF THE CHINO BASIN**



**LEGEND**

**NEOGENE ALLUVIUM**  
 Qalc Caliche, silt and clay  
 Qoal Coarse sand, gravel and sand  
 bo Fine-grained sediments, sand, silt and clay

**PLIOCENE TO PLEISTOCENE (OLDER ALLUVIUM)**  
 Qoal Gravel, sand, silt and clay

**PRE-PLIOCENE NON-WATER BEARING ROCKS**  
 bo

**GEOLOGICAL CONTACT**  
 FAULT - Dashed where approximate, solid where concealed, quartered where uncertain  
 GROUNDWATER BARRIER OR REFERRED FAULT  
 BARRED BEDROCK RIDGE

SCALE: 1:50,000  
 0 10 KILOMETERS  
 0 5 MILES  
 CONTOUR INTERVAL: 100 METERS

SOURCE: Geology from U.S.G.S. 1972, and D.W.R. Bull. # 104-3, App. A, 1976. Faults from LeRoy Crumold & Associates, 1980.

This rare vegetation type is the result of periodic flooding and scouring of alluvial fans where sage scrub normally occurs. RAFSS sites are more mesic than typical coastal sage scrub sites such that evergreen species can grow. Lack of perennial water prevents alluvial woodlands from establishing. A rich floristic mixture of coastal sage scrub and evergreen species results from these site conditions. Scale broom (*Lepidospartum squamatum*) and California brickelbush (*Brickellia californica*) are species found only in the wash habitat and are indicators of RAFSS.

Three stages have been identified in the successional cycle of this plant community: pioneer, intermediate and mature. The pioneer stage of RAFSS occurs in active portions of the wash and follows severe flooding or fire. This stage is characterized by low shrub cover, immature shrubs and large boulders and coarse soils. Dominants of the pioneer stage in East Etiwanda and San Sevaine Creeks, near the mouth of the canyons, are poison oak (*Toxicodendron radicans diversilobium*), California buckwheat and yerba santa (*Eriodictyon trichocalyx*). Downstream from the canyon mouth, the pioneer stage is dominated by broom scale, California buckwheat, blue penstemon (*Penstemon spectabilis*) and yerba santa. Hanes et al (1989) reported that the pioneer stage is absent from East Etiwanda Creek, suggesting that severe flooding and or fire has occurred the area since their study.

Farther downstream, where the channel widens and braids, soil textures are finer and distinct terraces form. On these terraces the intermediate stage of RAFSS is dominant. Percent vegetative cover ranges from 40 to 50 percent. Pine goldenbush (*Haplopappus pinifolius*), white sage, California buckwheat, blue penstemon, scale broom and deerweed are the dominant shrubs. Evergreen shrubs are scattered throughout this area but never occur in dense stands. The composition and structure of the pioneer and intermediate stages result from scouring and flooding. Shrub species found only in the wash, such as scale broom and California brickelbush, may require scouring of seeds to germinate.

The mature stage develops when lack of flooding allows establishment of dense stands of evergreen shrubs and coastal sage scrub species. On San Sevaine and East Etiwanda Creeks, mountain mahogany (*Cercocarpus betuloides*), holly-leaved cherry (*Prunus ilicifolia*), chamise (*Adenostoma fasciculatum*), rock rose (*Helianthemum scoparium*), white buckthorn (*Ceanothus leucodermis*), little-leaved coffeeberry (*Rhamnus crocea*) and squaw bush (*Rhus trilobata*) are the common components of the mature stage. On East Etiwanda Creek, one stand of mature scrub is comprised of an extensive stand of chamise, rock rose, and coastal sage scrub species. Another stand on East Etiwanda Creek is below the spreading grounds.

This extensive and floristically diverse stand of evergreen shrubs is dominated by holly-leaved cherry and mountain mahogany and persists despite flood control activities. It grades into a mainland cherry woodland. On San Sevaine Creek the mature stage is widely scattered, but is most extensive near the junction of Henderson, Morse, and San Sevaine Creeks, where an alluvial woodland develops. This stand of mature RAFSS could be classified as a separate plant community because there are no understory shrubs. The mature stage of RAFSS is vulnerable to flood control activities that limit subsurface moisture.

#### Riversidian Upland Sage Scrub (NC32710)

Riversidian Upland Sage Scrub occupies the lower slopes and alluvial deposits flanking the washes of San Sevaine and East Etiwanda Creeks. There are two associations of RUSS in the San Sevaine/East Etiwanda project area, one occurring on the alluvial fans flanking the washes, the other on the slopes surrounding the canyons. Figure 5 is a view of RUSS west of San Sevaine Creek.

The RUSS vegetation on the alluvial fans in the project area has been erroneously classified as RAFSS in several previous studies. Like RAFSS, RUSS is a high inventory priority natural community to CNDDB (1991). Although RUSS is the most common coastal sage scrub type in southern California, fire suppression and urban and agricultural development have extirpated and endangered significant stands of this natural community. The range of RUSS includes the bases of the Transverse and Peninsular Ranges where it typically occupies the most xeric sites of any coastal sage scrub; soils are either severely drained or have low water availability. RUSS once occurred on all the alluvial fans south of the San Gabriel Mountains but development has restricted this community to the East Etiwanda/Day/San Sevaine watersheds.

The RUSS vegetation on the alluvial fans of San Sevaine/Etiwanda study area reaches heights of up to 1.5 meters and attains canopy coverage of nearly two-thirds. Species composition of this association is nearly consistent within the study area although a few evergreen shrubs or succulents are dispersed throughout. White sage, deerweed and California croton are the dominant species, in that order. This association is not included in the study sites of Kirkpatrick and Hutchinson (1980).

California walnut and elderberry trees occur in an even age stand near the edge of the washes and at the top of the fans within the RUSS vegetation. Canopy cover of California walnut averages less than ten percent and therefore can not be considered a woodland.



**Figure 4.** Riverside Alluvial Fan Sage Scrub (NC32720) in East Etiwanda Creek south of the Los Angeles Department of Water and Power Transmission Line right-of-way.



**Figure 5.** Riverside Upland Sage Scrub (NC32710) with widely scattered California walnut trees south of the Los Angeles Department of Water and Power Transmission Line right-of-way.

However, the trees occur in significant numbers and are an important biological resource as a reproductively viable stand of a local endemic.

RUSS vegetation in the study area was severely burned in the mid-1980's. The effects of the fire on RUSS are not clear because the previous floristic composition is unknown. Charred stumps of an unidentified shrub or shrubs are common throughout the area suggesting the fire was severe or a non-sprouting species was present before the fire. White sage is the only coastal sage scrub dominant known to sprout following severe fire (Kirkpatrick and Hutchinson 1980). Riversidian sage scrub is generally slower to recover from fire than other coastal sage scrub associations because many of the dominants other than white sage do not stump-sprout. Frequent burning of this area would result in conversion to grassland.

On steeper slopes (10-15%) and siltier soils the vegetation is a different association of RUSS dominated by California sagebrush, black sage, California buckwheat and deerweed. These species readily reseed following fire and are often a pioneer stage following fire in low elevation chaparral burns. This association is common on the lower inland slopes of the Transverse and Peninsular Ranges. Shrub cover is often 100 percent but, if less, exotic herbaceous species cover any remaining bare ground. This RUSS association intergrades with chaparral in a plant community known as coastal sage-chaparral scrub.

#### Chaparral (NC3700)

Chaparral vegetation is not extensive in the Etiwanda/San Sevaive study area. The south-facing slopes of the mountain front once supported very dense stands of California Chaparral. Fires in the mid-1980's devastated large areas of chaparral. Remnant patches are found in the upper reaches of both watersheds and in small areas of the drainages of the East Etiwanda alluvial fan. At lower elevations the dominant chaparral species is chamise and several characteristic coastal sage scrub species (Pase 1982; Hanes 1988). At higher elevations the coastal sage scrub species finally drop out and are replaced with typical chaparral species such as scrub oak (*Quercus dumosa*), white buckthorn, mountain mahogany, silktassel (*Garrya* spp.), buckthorn (*Rhamnus* spp.), and sugarbush (*Rhus ovata*).

#### Chamise Chaparral (NC37200)

Chamise chaparral is the predominant chaparral type in the Southern California and perhaps the predominant vegetation type in southern California on low elevation, xeric sites. At the project site this community occupies ridges and slopes and was more common before the

fires. Figure 6 shows chamise chaparral on the lower mountain foothills. Chamise, the dominant shrub, and other component species form impenetrable thickets where untouched by fire. Chamise is adapted to frequent fires by stump sprouting. Other component species in this plant community at the project site are bigberry manzanita (*Arctostaphylos glauca*), buck brush (*Ceanothus cuneatus*), scrub oak, snowdrop bush (*Styrax officinalis*) and sugarbush. Where former stands of this plant community have burned, RUSS species have pioneered the site until the chaparral recovers.

#### Ceanothus crassifolius Chaparral (NC37830)

Hoary-leaved ceanothus (*Ceanothus crassifolius*) chaparral is a common chaparral type found on the coastal side of the Transverse and Peninsular Ranges below 4,000 feet. Less than forty acres of this vegetation type occur in several patches on steep slopes of East Etiwanda Canyon and small drainages of the upper alluvial fan within the RUSS belt. Establishment of hoary-leaved ceanothus is fire dependent because it can only establish by seed in openings following fire.

#### Coastal Sage - Chaparral Scrub (NC37G00)

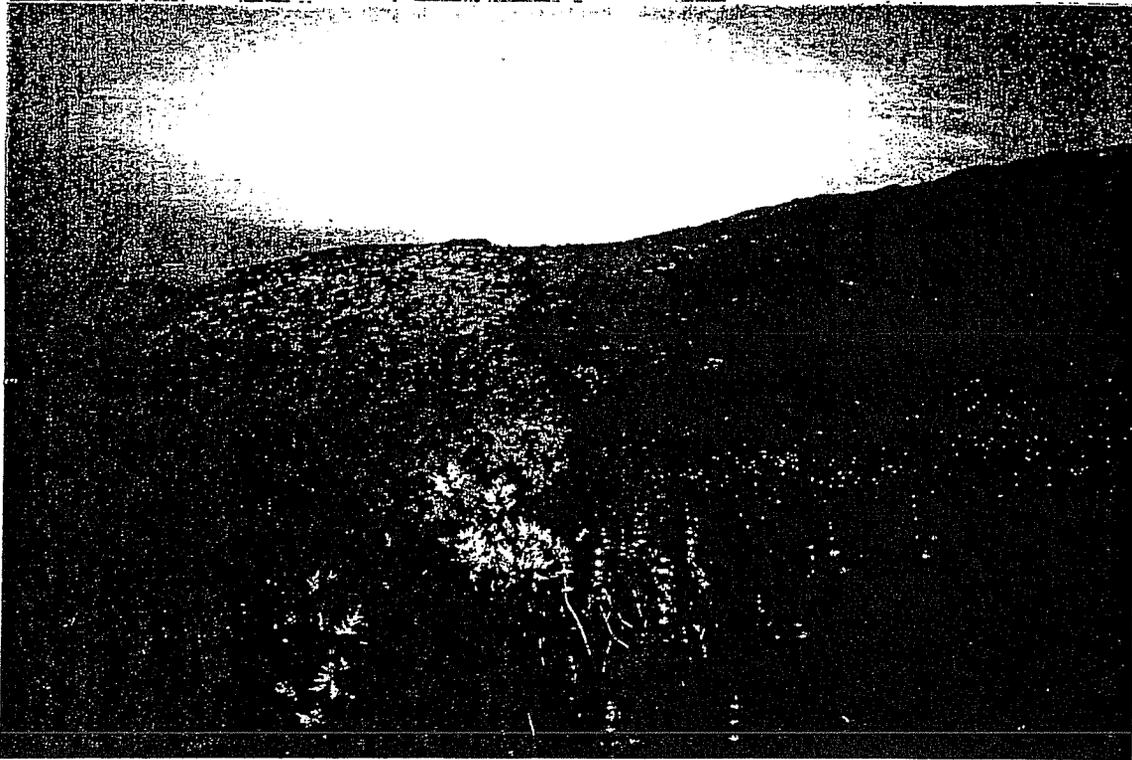
Coastal sage - chaparral scrub is a successional community following fire. It is common throughout the interface of coastal sage scrub and chaparral in the outer Coast and Peninsular Ranges. It is common at the project site on slopes between 2,200 and 2,400 feet (Figure 7). A mixture of chamise, deerweed, California sagebrush, black sage and white buckthorn occurs in this scrub type.

#### Non-native Grassland (NC42200)

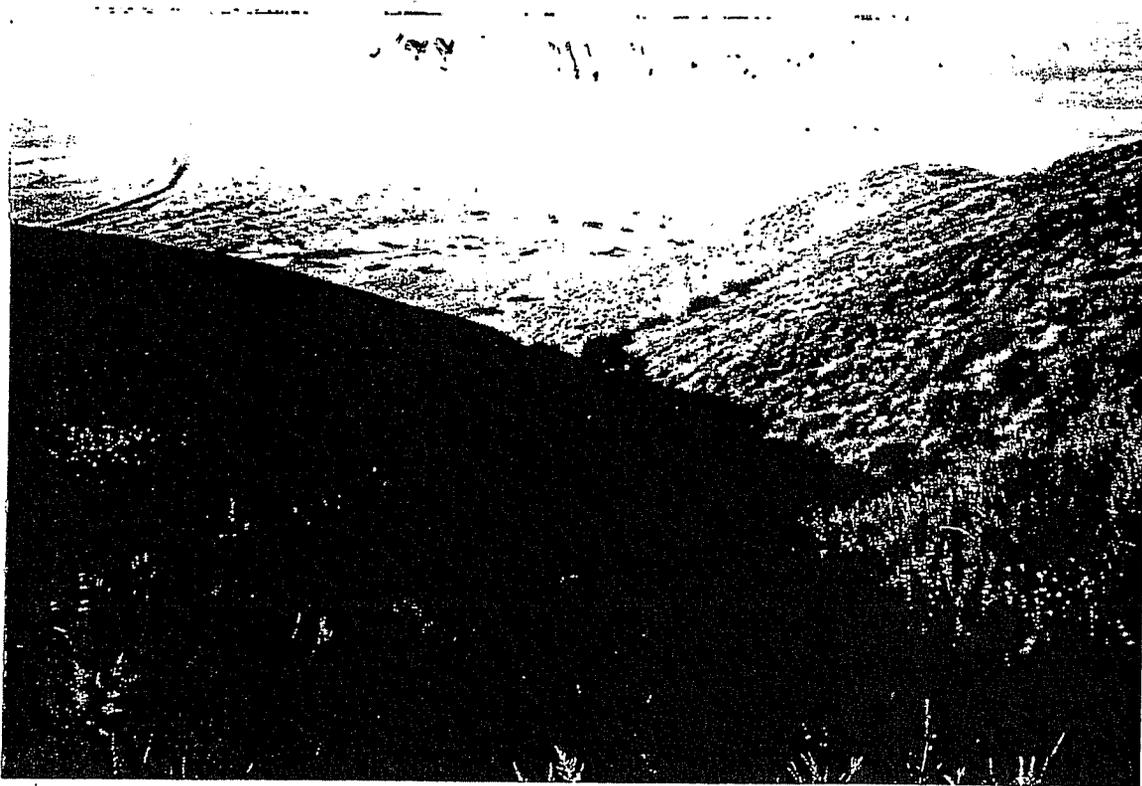
Non-native grassland is a widespread adventive plant community which occupies areas that have been disturbed or that formerly supported valley needlegrass grassland or other native perennial grasslands. At the project site, non-native grassland occurs on the top of the alluvial fan west of San Sevaine Creek, where agricultural activity formerly occurred. The dominant species are slender wild oat (*Avena barbara*), wild turnip (*Brassica tournefortii*), bromegrass (*Bromus* spp), tidy-tips (*Layia platyglossa*), yellow pincushion (*Chaenactis glabriuscula*), red-stemmed filaree (*Eriodinium cicutarium*), black sage and deerweed.

#### Riparian and Bottomland Habitats (NC60000)

There are three riparian habitats other than RAFSS that occur on the project site along the main water channels. They are Southern cottonwood-willow riparian forest, Southern sycamore-alder riparian woodland and mule fat scrub.



**Figure 6.** Chamise Chaparral (NC37200) on foothill slopes of San Gabriel Mountains between San Sevaine and East Etiwanda Canyon. Photograph faces west towards East Etiwanda, note evidence of recent fire scar.



**Figure 7.** Coastal Sage - Chaparral Scrub (NC37G00) post-fire regeneration. Photograph faces south toward San Sevaine Creek with Riversidian Alluvial Fan Sage Scrub in drainageway, Riversidian Upland Sage Scrub in middle foreground, and Non-native Grassland (NC42200) and urban development to the west of the dike.

#### Southern Cottonwood-Willow Riparian Forest (NC61310)

Southern cottonwood-willow riparian forest is a natural community of high inventory priority to CNDDB (1991). Its geographic range is from northern Baja California through the Transverse and Peninsular Ranges to Santa Barbara County, California. At the project site, this riparian forest is located in East Etiwanda Canyon. Large portions of the forest have been burnt and only cottonwood (*Populus* spp.) snags remain. Cottonwood and willows (*Salix* spp.) are the typical dominants of this community but in this stand, white alder (*Alnus rhombifolia*) is emerging from the remains of the fire-destroyed canopy, suggesting that the forest may develop into a Southern sycamore-alder woodland. California bay (*Umbellularia californica*), canyon live oak (*Quercus chrysolepis*) and California walnut occur on the banks of East Etiwanda Canyon.

Understory species, in unburned areas, are mugwort (*Artemisia douglasiana*), nettle (*Urtica holosericea*), round-leaved boykinia (*Boykinia rotundifolia*), hedgenettle (*Stachys ajugoides*), yellow and red monkeyflowers (*Mimulus guttatus* and *M. cardinalis*) and eupatorium (*Eupatorium* sp.).

#### Southern Sycamore-Alder Riparian Woodland (NC62400)

Southern sycamore-alder riparian woodland is a natural community of high inventory priority to CNDDB (1991). Its geographic range is from northern Baja California to the Transverse and Peninsular Ranges of California. It occupies canyons with rocky creeks and is maintained by frequent flooding. At the project site, Southern sycamore-alder riparian woodland occupies the creekbed of San Sevaine Canyon. At least the lower portion of the riparian woodland (ca. 2,100-2,500 feet) is closed- canopy white alder and sycamore (*Platanus racemosa*) canyon live oak (*Quercus chrysolepis*) becomes dominant upstream. California bay and sandbar willow (*Salix hindsiana*) are also present. Scattered canyon live oak and California walnut occupy small tributaries and the canyon walls. Understory species are poison oak, California mugwort and nettle.

#### Mule Fat Scrub (NC63310)

Mule fat scrub is a common riparian plant community ranging from northern Baja California to the Sierra Nevada foothills and lower elevations of the North Inner Coast Range. It occupies alluvial deposits and banks of usually intermittent streams at low elevations (usually less than 2,000 feet). The dominant species of this community is mule fat (*Baccharis glutinosa*). At the project site sycamore, tree tobacco (*Nicotiana glauca*), nettle, arroyo willow (*Salix lasiolepis*) and California mugwort are less common components (Figure 8). Mule fat

scrub is maintained by frequent flooding. In the absence of flooding this community will succeed to a cottonwood or sycamore dominated community.

At the project site, this community is best developed along the permanent watercourses and intermittent channels beginning in the mouth of San Sevaine Canyon and just below the mouth of East Etiwanda Canyon. The community continues for approximately three-quarters of a mile downstream on each creek or becomes intermittent. Mule fat scrub occurs in an artificial situation on East Etiwanda Creek, bordering several of the spreading basins.

### **Mainland Cherry Forest (NC81820)**

Mainland cherry forest is a natural community of high inventory priority to CNDDDB (1991). The holly-leaved cherry stand on the project site occurs on the floodplain of lower Etiwanda Creek below the spreading grounds and above Highland Avenue (Figure 9). Canopy cover varies from less than 10% to about 90% and individual trees are less than 15 feet tall. This community occupies approximately 180 acres of the project site. The understory consists of California sagebrush, deerweed, California croton and numerous herbaceous species. Holly-leaved cherry is also located throughout the wash on stable terraces as a component of the RAFSS.

Holly-leaved cherry is common below 5000 feet most of its range but tall dense stands forming forests are rare or non-existent. Mainland cherry forest was originally described in reference to tall, closed canopy stands of holly-leaved cherry in a riparian setting. Little else is known about this community type because the original and possibly the only stands have been extirpated.

The holly-leaved cherry stand below the spreading grounds may have formed as a result of stabilization resulting from the spreading basins and the area now occupied by this stand may have been RAFSS when flows were natural. Hence the cherry stand on the project site may be an artificial example of mainland cherry forest.

Extensive plantings of holly-leaved cherry trees derived from local stock will be made as part of the linear parkway design. The woodland aspect of the community will be duplicated.



**Figure 8.** Mule Fat Riparian Scrub (NC63310) in East Etiwanda Canyon north of the Los Angeles Department of Water and Power Transmission Line crossing, with patches of Southern Sycamore-Alder Riparian Woodland (NC62400) in the background and middleground. Photograph faces north and upstream.



**Figure 9.** Mainland Cherry Forest (NC81820) and a mixed association of Riversidian Upland Sage Scrub and Riversidian Alluvial Fan Sage Scrub in the floodplain of East Etiwanda Creek near Highland Avenue.

## WILDLIFE

Southwestern Field Biologists' personnel conducted wildlife surveys in the project area on three occasions in spring 1992: (1) 28 April - 2 May, (2) 19-22 May, and (3) 16-19 June. Field work was conducted in all habitats throughout the project area, and surveys were conducted according to the Southern California Coastal Sage Scrub, Scientific Review Panel, Survey Guidelines.

The primary goal of the wildlife surveys was to conduct searches for species on federal and state lists of threatened and endangered species as well as for California Species of Special Concern (an informal designation used by the California Department of Fish and Game). All threatened, endangered, or otherwise rare species are hereafter referred to as special status species. In addition, a vertebrate species list of all wildlife identified was maintained and a breeding bird survey was conducted during each field outing. Species nomenclature is based on the work of Laudenslayer *et al.* (1991).

Facilities at the San Bernardino County Museum were visited for the purpose of identifying specimens and conferring with biologists who have worked in the project area. In addition, biologists with the San Diego Natural History Museum, California Department of Fish and Game, and U.S. Fish and Wildlife Service were consulted for their knowledge of previous research in the project area.

Some previous wildlife surveys have been useful in assembling this report. Dr. des Lauriers of Chaffey Community College, Alta Loma, California, has compiled the most extensive species lists for the Day Creek watershed area, "Vertebrates of Day Canyon" (1989a) and "Birds of Day Canyon" (1989b). Day Creek or Day Canyon Wash is approximately 0.75 miles west of the project area. In addition, various environmental compliance documents and consulting reports were reviewed prior to conducting our field surveys (e.g. Marsh 1983, 1986a, 1986b, 1989; Engineering Science and Bill Mann Associates 1989; LSA Assoc. 1989a; Michael Brandman Associates 1992).

Wildlife of the study area is described in relation to four major habitat types: (1) alluvial fans or bajadas, containing primarily California coastal scrub vegetation, (2) uplands, comprised mostly of chaparral vegetation, (3) ruderal habitat that includes non-native grassland, and (4) riparian and bottomland habitats. The overall characteristics of these habitat types are defined in the plant community discussion, which includes thorough descriptions of key physiographic and floristic features.

The habitat classifications incorporate only the major physiographic and biotic characters and were defined by qualitative observations and using the results of line transects for perennial plant cover and density. The habitats of the study area are diverse, and sometimes intergrade through broad transitional areas. For the most part, the wildlife habitats identified for field surveys correspond to the plant communities identified in the vegetation and flora section of this document. In some cases, however, we have chosen to define habitat types in terms of vegetation form or physiographic features rather than floristics.

For all but the most abundant species, the following information was recorded at the time of sighting: species, date, time, location, habitat, substrate, elevation, relative age, sex, and behavior. In addition, voucher records of each of the less abundant species was documented when possible with 35-mm slide photographs. A complete list of the vertebrate animals identified during the 1992 Etiwanda/San Sevaine Project field surveys are presented in Appendix C.

### Fish

The perennial sections of East Etiwanda and San Sevaine creeks support no native or introduced fish.

### Reptiles and Amphibians

Reptiles identified in the area included collard lizard (*Crotaphytus collaris*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), granite spiny lizard (*Sceloporus orcutti*), western fence lizard (*Sceloporus occidentalis*), California side-blotched lizard (*Uta stansburiana elegans*), coastal whiptail lizard (*Cnemidophorus tigris multicutatus*), southern alligator lizard (*Elgaria [= Gerrhonotus] multicaudatus*), coachwhip (*Masticophis flagellum*), striped racer (*Masticophis lateralis*), coast patch-nosed snake (*Salvadora hexalepis virgulata*), San Diego gopher snake (*Pituophis melanoleucus annectens*), garter snake (*Thamnophis cf. couchi*), and southern pacific rattlesnake (*Crotalus viridis helleri*). The most common reptile species observed were the western fence lizard, California side-blotched lizard, coastal whiptail lizard, and striped racer.

The only reptile observed that is associated with a specific habitat type in the area was the garter snake. In arid and semi-arid western North America, the garter snake is considered an obligate riparian species. Other reptiles expected, but not seen in or near the project area

include western skink (*Eumeces skiltonianus*), rosy boa (*Lichanura trivirgata*), common kingsnake (*Lampropeltis getulis*), and long-nosed snake (*Rheinocheilus lecontei*).

Amphibians identified in the area included arboreal salamander (*Aneides lugubris*), California tree frog (*Hyla cadaverina*), and western toad (*Bufo boreas*). The California tree frogs were very common north of the SCE powerline crossing in the perennial sections of East Etiwanda and San Sevaine creeks. Other amphibians expected, but not observed in the area include California slender salamander (*Batrachoceps attenuatus*), western spadefoot toad (*Scaphiopus hammondi*), and Pacific treefrog (*Hyla regilla*). All of the amphibian sightings were found in or near riparian habitat. See des Lauriers (1989a) for a current checklist of the reptiles and amphibians that could be expected in the project area.

Herpetological sampling methods included walking through an area, searching exposed surfaces, looking in and under bushes, road driving, and listening for the tell-tale sounds of small animals dashing for cover. In addition, rocks, logs, boards, and other objects providing suitable cover were systematically turned and examined. Identifications were made by hand capture or through direct observation after patiently waiting in silence for a disturbed animal to emerge from cover. The majority of reptile and amphibian searches were conducted while performing the sensitive bird and breeding bird surveys.

### Birds

Common breeding birds identified in the project area include red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californicus*), mourning dove (*Zenaida macroura*), great horned owl (*Bubo virginianus*), lesser nighthawk (*Chordeiles acutipennis*), greater roadrunner (*Geococcyx californianus*), Costa's hummingbird (*Calypte costae*), Nuttall's woodpecker (*Picooides nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), scrub jay (*Aphelocoma coerulescens*), common raven (*Corvus corax*), rock wren (*Salpinctes obsoletus*), blue-gray gnatcatcher (*Polioptila caerulea*), Northern mockingbird (*Mimus polyglottus*), California thrasher (*Toxostoma redivivum*), loggerhead shrike (*Lanius ludovicianus*), lazuli bunting (*Passerina amoena*), brown towhee (*Pipilo fuscus*), rufous-sided towhee (*P. erythrophthalmus*), lark sparrow (*Chondestes grammacus*), sage sparrow (*Amphispiza belli*), lesser goldfinch (*Carduelis psaltria*), and house finch (*Carpodacus mexicanus*).

Other species of birds that can be found in the settling ponds and recharge basins at

different times of the year may include such migratory waterfowl as great blue heron (*Ardea herodias*), killdeer (*Charadrius vociferus*), black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), as well as numerous species of ducks, geese, and other waterfowl. Stilts and avocets successfully nested in the larger settling ponds. Des Lauriers (1989b) has compiled a thorough checklist of birds for Day Creek area that is comparable to those birds expected in the project area.

Other bird species identified in or near the project area that are habitat specific include black phoebe (*Sayornis nigricans*), least Bell's vireo (*Vireo bellii pusillus*), yellow warbler (*Dendroica petechia*), and song sparrow (*Melospiza melodia*). The least Bell's vireo is discussed in more detail in the Special Status Species section.

Other species not necessarily dependent on riparian growth, but often associated with this habitat type include Bullock's orioles, ash-throated flycatchers, rufous-sided towhee, western tanager (*Piranga ludoviciana*), and black-headed grossbeaks (*Pheucticus chrysopleus*).

Avian surveys were conducted by direct count, aided by playing tapes of California gnatcatcher vocalizations, to which gnatcatchers and many other species are responsive. A breeding bird survey was conducted during each field outing in accordance with procedures suggested by Hall (1964), Van Velzen (1972), and Weaver (1982, 1991). Summarized results of the breeding bird survey conducted on three separate site visits from April through May, 1992, are presented in Table 2. Although the primary purpose of these surveys was to provide a systematic framework for focused surveys of California gnatcatcher and San Diego cactus wren. Useful information on the relative quality of different habitats to support bird populations can be obtained from these data.

### Mammals

No habitat specific mammal species were identified in the project area. Native mammals identified in the area by direct and indirect observation include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), pocket mouse (*Perognathus cf. californicus*), California ground squirrel (*Spermophilus beecheyi*), Rock squirrel (*Spermophilus variegatus*), western gray squirrel (*Sciurus griseus*), Botta's pocket gopher (*Thomomys bottae*), Pacific kangaroo rat (*Dipodomys agilis*), woodrats (*Neotoma* spp.), brush mouse (*Peromyscus cf. boylii*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), mule deer (*Odocoileus hemionus*), and unidentified bats.

**Table 2. Summary of breeding bird survey of the San Sevaine Creek Project area, April-May, 1992 (according to survey guidelines of the Southern California Coastal Sage Scrub, Scientific Review Panel). Results are the numbers of species of birds in each group and the number of observations of individual birds in each group -- species/individuals.**

	Mule Fat		Riversidian		Etiwanda		San Sevaine		Sycamore		Artificial		Cherry	
	Scrub	Upland Sage Scrub	Riversidian	Sage Scrub	Riversidian	Alluvial Fan	Riversidian	Alluvial Fan	Alder	Riparian	Ponds	Woodland	Woodland	Woodland
Birds of Prey	1/3		3/11		1/3		2/9		2/9		0/0		0/0	
Blackbirds, Orioles, Tanagers & Allies	2/39		2/63		1/78		2/51		2/18		2/18		1/3	
Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows, & Allies	6/227		8/452		5/87		6/174		9/279		1/27		3/27	
Cuckoos, Goatsuckers, Hummingbirds, & Allies	4/90		4/90		2/39		2/60		2/48		0/0		1/6	
Flycatchers, Larks, Swallows, & Allies	4/81		5/91		4/33		5/180		4/54		0/0		2/15	
Chickens, Quails, Doves, & Allies	2/51		2/183		2/108		2/207		2/27		0/0		1/9	
Jays, Crows, and Titmice	1/21		3/19		2/36		1/3		1/21		0/0		1/6	
Nuthatches, Wrens, Thrashers, & Allies	3/21		6/131		2/208		3/219		3/54		0/0		1/12	
Shorebirds	0/0		1/15		0/0		1/3		0/0		5/45		0/0	
Thrushes, Kinglets, & Allies	0/0		0/0		0/0		0/0		0/0		0/0		0/0	
Wagtails, Shrikes, Vireos, & Allies	1/6		1/27		1/45		1/81		1/3		0/0		0/0	
Wild Fowl	0/0		0/0		0/0		0/0		0/0		2/11		0/0	
Wood Warblers	2/12		0/0		0/0		1/3		0/0		0/0		1/3	
Woodpeckers	2/21		1/6		0/0		0/0		1/3		0/0		0/0	

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Mammal species identified in nearby Day Creek (des Lauriers 1989a), and therefore to be expected in the San Sevaine/Etiwanda area, include pallid bat (*Antrozous pallidus*), western pipistrelle (*Pipistrellus hesperus*), Townsend's long-eared bat (*Plecotus townsendii*), ornate shrew (*Sorex ornatus*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), southern grasshopper mouse (*Onychomys torridus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Felis rufus*), and others.

## **SPECIAL STATUS SPECIES**

Southwestern Field Biologists compiled a list of federal and state listed threatened, endangered, proposed species likely to occur in the project area (Table 2). Prior to initiating the 1992 spring biological surveys, no occurrences of federally listed threatened, endangered, or proposed and candidate species were reported in the area of the proposed project. Field surveys conducted by Southwestern Field Biologists in 1992 involved searches of the proposed project site for potential habitat of any of the targeted special status species. Field surveys and literature search results were reviewed within the context of the proposed action to determine whether the project may effect species listed or officially proposed for listing under the Endangered Species Act of 1973, as well as Candidate Category 1 species.

A report of occurrences of all special status species in and near the project area was received from the California Department of Fish and Game, California Natural Diversity Data Base (CNDDDB 1992) on 28 April 1992. The list includes all species covered under the California Endangered Species Act (CESA), California Fully Protected Species List (CFPS), and the California Native Plant Protection Act (CNPPA). The special status species identified in Table 2 are listed as endangered by both the federal and state governments with the exception of the California gnatcatcher (a CESA candidate species). Figure 10 shows localities of special status wildlife species and Figure 11 shows special status plant species.

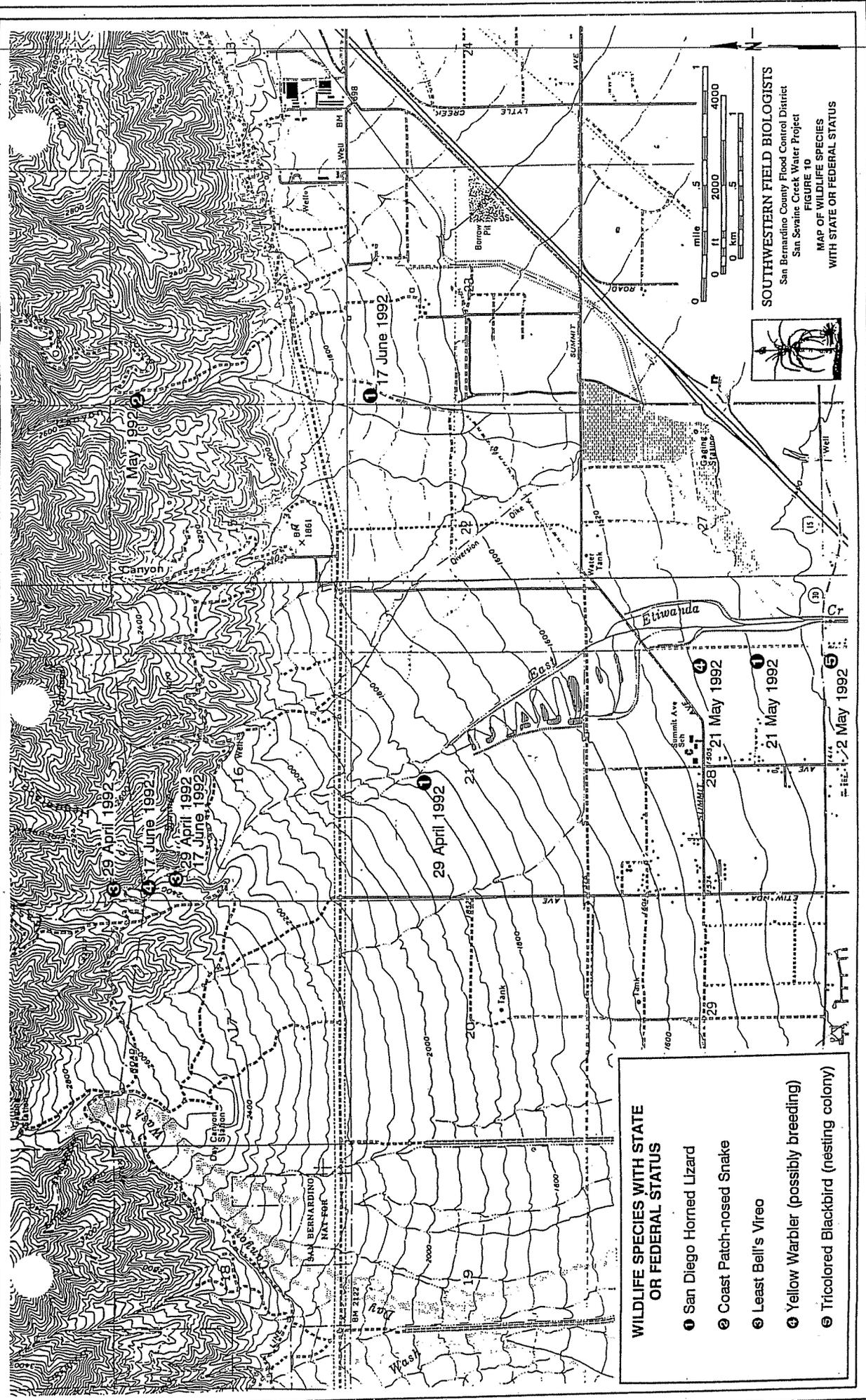
In addition to federal and state listed and proposed species, a list of special status species in the California Natural Diversity Data Base (CNDDDB 1992) was obtained for the Cucamonga and Devore 7.5 minute, USGS, Topographical Quadrangles (CNDDDB 1992). The CNDDDB species are included in Table 2.

The NCCP Scientific Review Panel guidelines (March 1992) contained a list of plant and wildlife species to be considered in projects involving coastal sage scrub. These were also considered for this project. Results of project area surveys for species considered important by NCCP are presented in Figure 12.

### **Wildlife**

#### **American Peregrine Falcon - Listed Endangered**

The U.S. Fish and Wildlife Service (USFWS) in 1984 (Federal Register 3-20-84) reclassified the Arctic peregrine from endangered to threatened and provided added protection to all free flying peregrine falcons in the contiguous 48 states under the classification of

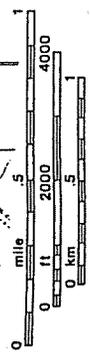


**WILDLIFE SPECIES WITH STATE OR FEDERAL STATUS**

- ① San Diego Horned Lizard
- ② Coast Patch-nosed Snake
- ③ Least Bell's Vireo
- ④ Yellow Warbler (possibly breeding)
- ⑤ Tricolored Blackbird (nesting colony)



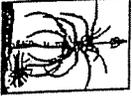
**SOUTHWESTERN FIELD BIOLOGISTS**  
 San Bernardino County Flood Control District  
 San Sevaine Creek Water Project  
**FIGURE 10**  
**MAP OF WILDLIFE SPECIES**  
**WITH STATE OR FEDERAL STATUS**



Map labels and dates for sightings:

- ① 17 June 1992
- ② 29 April 1992
- ③ 17 June 1992
- ④ 21 May 1992
- ⑤ 21 May 1992
- ⑤ 2 May 1992

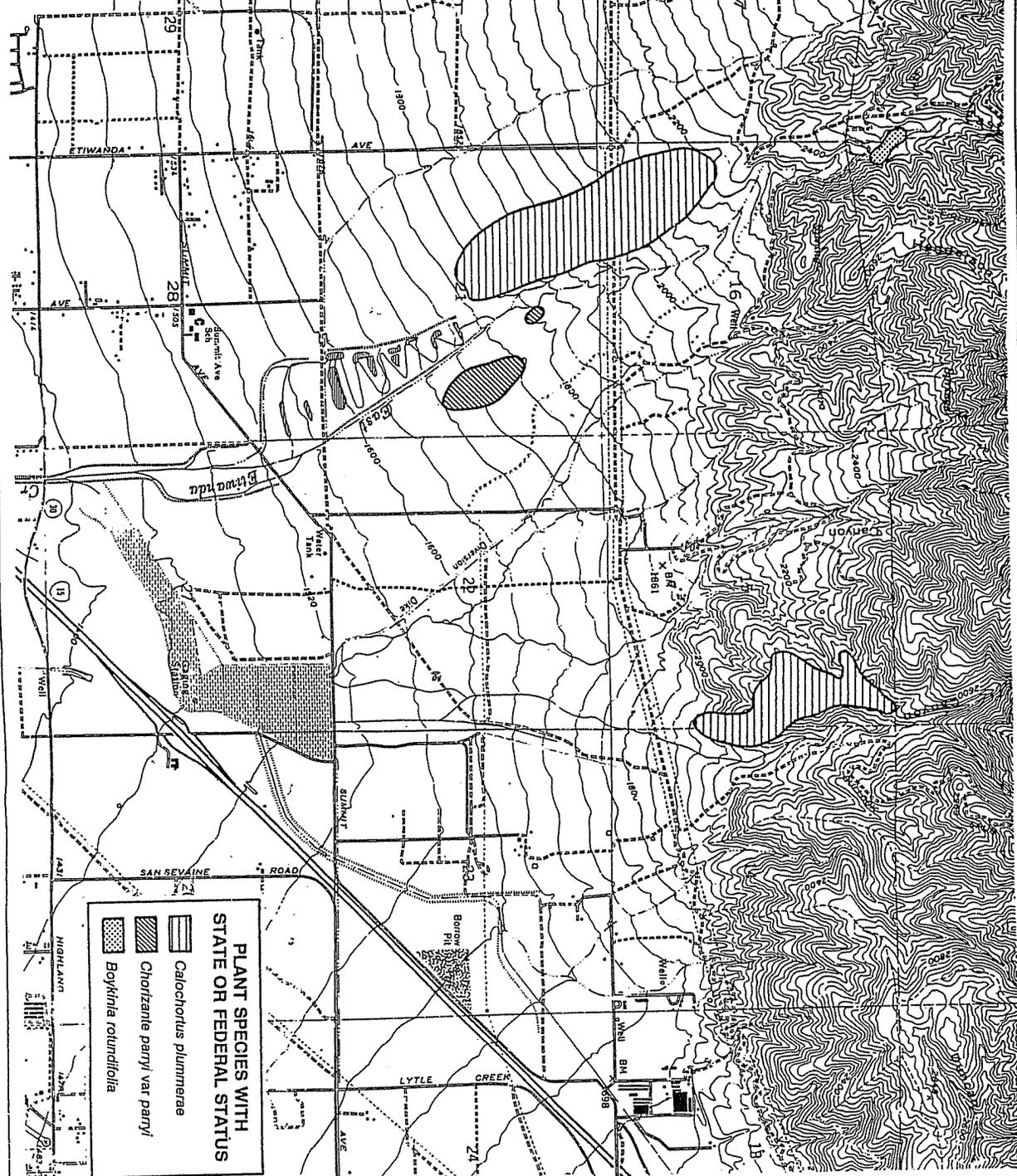
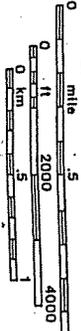
Map features and labels include: Canyon, Summit Ave, Division Dike, Vireo Tank, Gaging Station, Well, and various contour lines (e.g., 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000).



**SOUTHWESTERN FIELD BIOLOGISTS**

San Bernardino County Flood Control District  
San Sotomayor Creek Water Project

MAP OF PLANT SPECIES  
WITH STATE OR FEDERAL STATUS

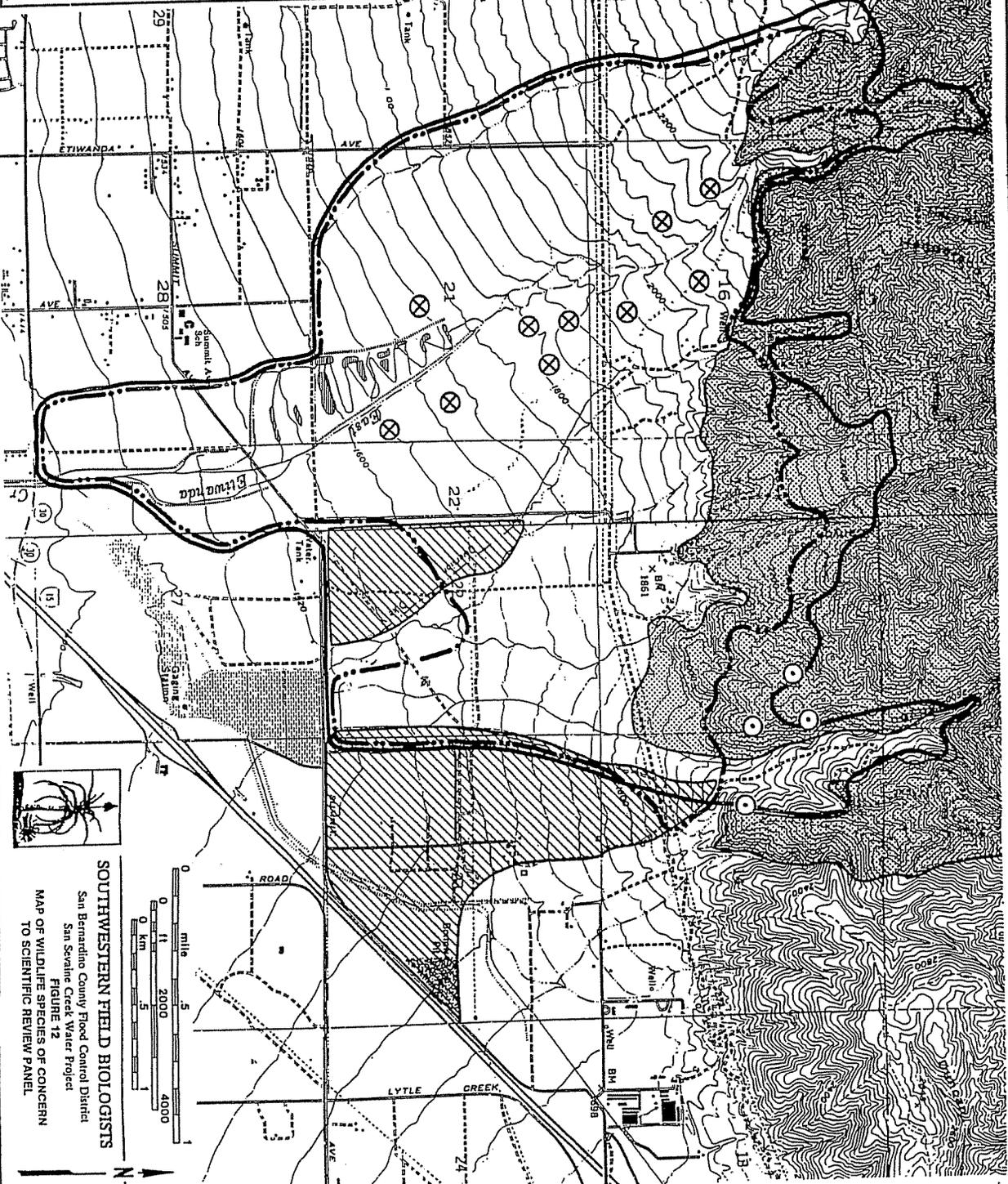


**PLANT SPECIES WITH STATE OR FEDERAL STATUS**

- Calochortus plummerae*
- Chorizanthe parryi* var *parryi*
- Boykinia rotundifolia*

**SENSITIVE SPECIES UNDER CONSIDERATION  
BY THE SCIENTIFIC REVIEW PANEL**

- Coastal Western Whipball Lizard (widespread) 
- California Horned Lark (uncommon) 
- Southern California Rufous-crowned Sparrow (uncommon to fairly common but localized) 
- Localized pairs or individuals 
- Bell's Sage Sparrow (uncommon to fairly common) 
- Localized pairs or individuals 



0 5 10  
0 1 2 3 4 5  
0 1000 2000 4000  
0 1 2 3 4 5  
mile  
ft  
2000  
0 km

**SOUTHWESTERN FIELD BIOLOGISTS**  
San Bernardino County Flood Control District  
San Swetline Creek Water Project  
FIGURE 12  
MAP OF WILDLIFE SPECIES OF CONCERN  
TO SCIENTIFIC REVIEW PANEL

**Table 3.** Federal and California listed threatened, endangered, or proposed species, California Dept. of Fish and Game "Species of Special Concern", and California Native Plant Society (CNPS) species, and Scientific Review Panel Guideline species targeted for literature study and field surveys for the San Sevaine/Etiwanda project area.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
<b>Reptiles</b>		
San Diego horned lizard	<i>Phrynosoma coronatum blainvillii</i>	C2,CSC
Belding Orange-throated whiptail	<i>Cnemidophorus hyperthrus</i>	C2,CSC
<b>Birds</b>		
American peregrine falcon	<i>Falco peregrinus anatum</i>	FE,SE
California gnatcatcher	<i>Polioptila californica californica</i>	FPE,CSC
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE,SE
Willow flycatcher	<i>Empidonax traillii extimus</i>	C1,SE
Coastal cactus wren	<i>Campylorynchus brunneicapillus sandiegoense</i>	CSC
<b>Mammals</b>		
Nelson's bighorn sheep	<i>Ovis canadensis nelsoni</i>	FP*
<b>Plants</b>		
Santa Ana River woollystar	<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	FE,SE,1B
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE,SE,1B
Parry's spineflower	<i>Chorizanthe parryi</i> var. <i>parryi</i>	C2,1B
Plummer's mariposa-lily	<i>Calochortus plummerae</i>	1B
Round-leaved boykinia	<i>Boykinia rotundifolia</i>	4
California muhly	<i>Muhlenbergia californica</i>	4

**Status Codes:** FE = Federally Endangered, FT = Federally Threatened, FPE = Federally Proposed Endangered, C1 and C2 = Candidate for Federal Listing; SE = State Endangered, ST = State Threatened, FP\* = Fully Protected Species with a limited hunt program; CSC = "Species of Special Concern"; 1B = Rare, Threatened or Endangered Plants and 4 = Plants of limited distribution (CNPS Category, "Rare and Endangered Vascular Plants").

"similarity of appearance" in order to facilitate enforcement of conservation rules for the listed forms (USFWS 1984).

Eggshell thinning as a result of pesticide contamination is the primary threat to peregrine falcons. Some western populations may be at sufficient levels to warrant downlisting to threatened (Cade 1990; R.L. Glinski, pers. comm. April 1992). In the Pacific Northwest and northern California, however, the long range projection of peregrine falcons is uncertain (Pagel and Jarman 1991). In southern California, nesting populations of peregrine falcons are unstable (Walton 1992). No peregrine falcon eyries are known from the San Bernardino National Forest near the project area (Dr. Laszlo Szijj, California State Polytechnic Institute, pers. comm. June 1992).

No peregrine falcons were observed in the project area during the 1992 biological surveys and no specific peregrine falcon surveys were conducted. An individual immature American peregrine falcon has been observed in upper San Sevaine Canyon on U.S. Forest Service lands, but no nesting peregrines have been identified in the San Gabriel Mountains (S. Dougherty, Cajon Ranger District Biologist, San Bernardino National Forest, pers. comm. June 1992).

#### **Least Bell's Vireo - Listed Endangered**

Least Bell's vireo has been extirpated from the majority of its breeding range due to loss of riparian habitat and nest parasitism by the brown-headed cowbird (Franzreb 1989). Least Bell's vireo was listed as a federally endangered species by the U.S. Fish and Wildlife Service (USFWS) in 1986 (Federal Register 51:16474-16482). In 1980 it was listed as endangered under the California Endangered Species Act of 1970 by the California Fish and Game Commission. The largest subpopulation of least Bell's vireo outside of San Diego County is found at the Prado Reservoir in Riverside County, approximately 30 miles southwest of the San Sevaine-Etiwanda flood control project area (San Diego Association of Governments 1990).

At least two singing male least Bell's vireo were identified near the project area in East Etiwanda Creek close to the San Bernardino National Forest boundary during the 1992 biological surveys (Figure 10). Nesting was not confirmed but was suspected. The two observations were approximately 0.6 and 0.8 miles north (upstream) of the proposed Etiwanda East Levee. Riparian habitat in East Etiwanda and San Sevaine Canyons appears to be marginally suitable for nesting LBVI according to what is known about its habitat requirements (Goldwasser 1981; Franzreb 1989; San Diego Association of Governments 1990).

#### **California Gnatcatcher - Proposed Endangered**

Its range in the United States is restricted to areas of Coastal Scrub in southern California. Average canopy height of occupied scrub habitat is about one meter and is usually located on arid hillsides, mesas and washes below about 2,000 feet. The historic range of the species has been reduced as a result of habitat loss due to urban and agricultural development (Atwood 1990, 1992). Because of the decline in coastal sage scrub habitat, this species has been proposed for listing as endangered (Federal Register 56:47053-47060). The species is considered essentially extirpated from San Bernardino County (Atwood 1990, 1992). Because a combination of fires burned out of control in the project area during the 1980's, the coastal sagescrub and chaparral habitat in the project area was modified. Prior to these catastrophic fires the area may have supported suitable California gnatcatcher habitat.

No California gnatcatcher have been positively identified in the project area (Carlson 1992; B. Carlson, U.C. Riverside, pers. comm., May 1992; L. Salata, USFWS, pers. comm., May 1992).

### **Willow Flycatcher - Candidate Category 1**

Willow flycatcher was formally a common summer resident of California, where it bred in areas of extensive willow thickets (Harris et al. 1986). The *extimus* subspecies is currently considered extirpated from most of its southern California range (Unitt 1987). Threats to the species include progressive loss of riparian habitat and brown-headed cowbird nest parasitism.

L.R. Hays (in McCaskie 1986) reported four pairs in the Prado Basin along the Santa Ana River, near Corona, Riverside County in 1986. These observations represent the first reported for the area in over 30 years (Unitt 1987). The project area is approximately 20 miles north of the Prado Basin willow flycatcher population.

No willow flycatchers were identified in or near the project area during the breeding bird surveys in 1992. In nearby Day Creek no willow flycatchers have been identified since 1981 in an ongoing study of the avifauna of that drainage way by des Lauriers (1989a).

### **San Diego horned lizard - Species of Special Concern**

San Diego horned lizard inhabits valleys, mesas, and foothills with scattered low shrubs and sandy open spaces, primarily west of the deserts of southern California, from southwestern San Bernardino County to northwestern Baja California del Norte, Mexico (Smith 1946; Stebbins 1985). Habitats include chaparral, coastal sagebrush, and valley needlegrass grassland. Threats to this subspecies of coast horned lizard include agricultural and urban developments.

Three observations of San Diego horned lizard were made in the project area during the 1992 wildlife surveys (Figure 10). All observations were made along roadways. In addition, the CNDDDB (1992) identifies nine records in the general vicinity of the proposed project. This species is probably fairly common in the area.

### **Belding orange-throated whiptail - Species of Special Concern**

Belding orange-throated whiptail is a small whiptail lizard of the Pacific Coast of Southern California west of the Peninsular Range crest, from southwestern San Bernardino County to central Baja California Sur, Mexico (Smith 1946; Stebbins 1985). It is found from sea level to roughly 2,000 feet in open chaparral and coastal sagebrush, primarily in areas of sand, loose soil, rocks, and patchy brush. Threats to this lizard species include agricultural and urban developments. The nearest known record for this lizard is near Colton, approximately 10 miles southeast of the project area (Stebbins 1985).

No Belding orange-throated whiptail were observed in the project area in 1992.

### **Coastal cactus wren - Species of Special Concern**

The distribution of the coastal cactus wren is restricted to the southern California coastal region, west of the Peninsular Ranges from San Juan Creek, southern Orange County, south through San Diego County to the Tijuana and Valle de las Palmas regions in northwestern Baja California del Norte (Rea 1986; Rea and Weaver 1990). Field observations and museum records indicate that the coastal cactus wren's current distribution is highly fragmented and does not include Riverside or San Bernardino Counties. The subspecies of cactus wren that is located in San Bernardino and Riverside Counties is *C. b. anthonyi*, a more widely distributed subspecies. Threats include widespread urbanization that has caused direct habitat destruction and subsequent distribution fragmentation (Rea and Weaver 1990).

No coastal cactus wrens and no suitable cactus wren habitat was identified in the project area during 1992.

### **Nelson's Bighorn Sheep - Fully Protected and Limited Hunt Program Species**

Nelson's bighorn sheep is a large short-haired sheep (Jameson and Peters 1988). The San Gabriel Mountains is the western-most portion of Nelson's (Desert) bighorn sheep's range in California (Graham 1971). The population in the San Gabriel Mountains is approximately 715 individuals (CNDDDB 1992). Threats to bighorn sheep in the San Gabriel Mountains area includes urbanization and illegal hunting (Graham 1971).

Although Nelson's bighorn sheep have been known to wander down onto the alluvial fans to forage and move between mountain ranges, it is an unusual occurrence and the sheep are inclined to remain in the more protected foothills (S. Torres, Calif. Dept. Game and Fish, pers. comm. July 1992). Critical habitat features that are important to bighorn sheep include known water use areas, known and potential movement corridors, distribution of high quality physical habitat, and special use areas including sites used by lamb-ewe nursery bands and for pre-rut staging areas by rams.

No bighorn sheep or sheep sign were identified in the project area during the 1992 biological surveys.

### **Plants**

#### **Santa Ana River Woollystar - Listed Endangered**

Santa Ana River Woollystar is a summer-flowering, perennial subshrub. This species is both state and federally-listed as endangered. The habitat it occupies, Riversidian alluvial fan sage scrub, is naturally rare and is also vulnerable to urbanization, agriculture, gravel mining and hydrologic alterations. Historically, this plant was found in the river washes and floodplains in Orange and San Bernardino Counties. Its current range is restricted to a small portion of the Santa Ana River drainage. Experts disagree on the taxonomy of the Cajon-Lytle Creek populations, which are the closest occurrences to East Etiwanda and San Sevaine Creeks (Dave Bramlet, per. comm., 1992).

This species was not located in the project site.

#### **Slender-horned Spineflower - Listed Endangered**

Slender-horned spineflower is a prostrate, often diminutive, annual member of the buckwheat family. This species is listed as Endangered by both the State of California and the U.S. Fish and Wildlife Service. The species has been extirpated from at least two-thirds of its historic habitat. Extant populations are small and threatened by urban and agricultural development, off-road vehicle use and hydrologic alterations. This plant is limited to mature stages of Riversidian alluvial fan sage scrub (RAFSS) in Los Angeles, Riverside and San Bernardino Counties.

This species was not located on the project site. Habitat on the project site has been heavily grazed by sheep and has been severely degraded relative to sites where populations do occur.

#### **Parry's Spineflower - CNPS Rare, Threatened, or Endangered Plant**

Parry's spineflower is a diminutive annual member of the buckwheat family that is a federal candidate for listing as an Endangered or Threatened species in Category 2 and has been proposed as a List 1B species in the 5th edition of the CNPS Inventory of Rare and Endangered Plants. It grows in low elevation habitats which are threatened by urbanization. Populations are known from the foothills of the San Gabriel, San Bernardino, and San Jacinto

Mountains, in chamise chaparral, coastal sage scrub and alluvial fan scrub plant communities. A population is known from near Devore on Cajon Creek.

Two population totaling 450 individuals of this species were located in East Etiwanda Creek northeast of the upper end of the spreading basins (Figure 11). Habitat of the larger site supporting 447 individuals includes stable benches along washes. Associated tree and shrubs species include chamise, rock rose, California buckwheat, deerweed and blue penstemon. The smaller population, comprised of three individual plants, was associated with sycamore, deerweed and blue penstemon. Associated herbaceous species included chia sage (*Salvia columbariae*), southern suncups (*Camissonia bistorta*) and schismus grass (*Schismus barbatus*).

#### **Plummer's mariposa-lily - CNPS Rare, Threatened, or Endangered Plant**

Plummer's mariposa-lily is a late spring to early summer-blooming herbaceous perennial plant species. It has been proposed as a list 1B species in the 5th edition of the Inventory of Rare and Endangered Vascular Plants of California. Habitat for this plant includes chaparral and coastal sage scrub in the foothills of the Transverse and Peninsular Ranges. Historic populations have been extirpated by urban and agricultural development. This plant may require fire to break its dormancy and changes in the natural frequency of fire may adversely affect this species.

Two populations were found, one each on the alluvial fan west of East Etiwanda Creek and on the ridge above San Sevaine Creeks (Figure 11). Habitat on the alluvial fan consisted of RUSS and approximately 150 individuals were observed. On the ridge, where about 100 individuals were observed, habitat includes coastal sage-chaparral scrub and chamise chaparral. At both these populations there is evidence of recent fire.

#### **Round-leaved boykinia - CNPS Plant of Limited Distribution**

Round-leaved boykinia is an erect perennial herb known from riparian habitats and moist places in the chaparral zone. This species is a List 4 species in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants, 4th edition. It occurs in small numbers at scattered locations throughout low elevations of the Transverse Ranges and in the Cuyama Valley of Santa Barbara County.

Less than 25 Round-leaved boykinia plants were found in the project site on East Etiwanda Creek in the understory of the riparian forest.

#### **California muhly - CNPS Plant of Limited Distribution**

California muhly is a densely tufted perennial grass. It has been proposed as an addition to List 4 in the 5th edition of the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants. This species occurs in cismontane areas of Los Angeles and San Bernardino Counties and most occurrences are in the vicinity of San Bernardino Valley. Habitat includes wet places in coastal sage scrub, chaparral, and yellow pine forest. This species has been reported to occur in the Day/San Sevaine/East Etiwanda area (exact location unknown) by LSA (1989a) but was not reported by Michael Brandman Associates (1992). A population of California muhly is known from Lytle Creek.

California muhly was not located by Southwestern Field Biologists during the 1992 field work.

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**APPENDIX SOUTHERN CALIFORNIA COASTAL SAGE SCRUB POLYGON  
SURVEY FORMS**



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**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

30 m to chaparral  
0 m to grassland  
? m to oak woodland  
0 m to riparian zone  
1500 m to agricultural area  
90 m to developed area  
0 m to alluvial scrub

**Other Habitats or Vegetation Types Occurring in Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

**Polygon number: 15  
Transect number: 2**

**Site name: San Sevaine  
CNDDDB Natural Community: Coastal sage-chaparral scrub**

**PHYSICAL HABITAT**

**Habitat surveyor's names and affiliations: S. Bainbridge, R. Duncan, J. Welch, Southwestern Field Biologists Tucson, Arizona**

**Dates of physical habitat surveys: 28 April- 2 May, 1992**

<b><u>Aspect</u></b>	<b><u>Elevation</u></b>	<b>Ave. distance from coast (In km): ca. 90 km</b>
SE	1600-2400 ft	<b>Mean annual precipitation (In cm):</b>
		<b>Moisture: dry</b>

<b><u>Slope</u></b>	<b><u>Topographic Position</u></b>	<b><u>Soil Texture</u></b>	<b><u>Substrate Type</u></b>
10-35 %	Mid slope	Silt	

**Vegetation**

**Vegetation surveyors' names and affiliations: same as above.**

**Dates of vegetation surveys: 28 April- May 2, 1992.**

**Percentage of polygon containing CSS: 25% Area(ha): 0.82 ha**

**Successional Status (evidence of regeneration of dominant taxa): No evidence of fire.**

**Exotic species noted: *Brassica geniculata*, *B. tournefortii*, *Sisymbrium altissimum*, *Avena* spp., *Bromus* spp.**

**Dominant Plant Species (provide % cover or a "+" if only outside transects):**

15	<i>Adenostoma fasciculatum</i>
5	<i>Artemisia californica</i>
1	<i>Croton californicus</i>
3	<i>Haplopappus squarrosus</i>
7	<i>Juglans californica</i>
4	<i>Rhus diversilobium</i>

**Percent bare ground: ca. 0%**

**Percent shrub cover (canopy cover): 35%**

**Shrub cover variability: moderate**

**Average length of gaps between shrubs on transects: 0.9m Standard Deviation: 0.9**

**Average shrub height: 1.0-1.5m**

**Shrub height variability: moderate**

**Percent herbaceous cover: ca. 65%**

**Herbaceous cover variability: uniform**

**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

30 m	to chaparral
0 m	to grassland
?	to oak woodland
0 m	to riparian zone
200 m	to agricultural area
90 m	to developed area
0 m	to alluvial scrub

**Other Habitats or Vegetation Types Occurring in Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

Polygon number: 19  
Transect number: 3

Site name: San Sevaine  
CNDDDB Natural Community: Riversidean upland sage scrub

**PHYSICAL HABITAT**

Habitat surveyor's names and affiliations: S. Bainbridge, R. Duncan, J. Welsh, Southwestern Field Biologists Tucson, Arizona

Dates of physical habitat surveys: 28 April- 2 May, 1992

<b><u>Aspect</u></b>	<b><u>Elevation</u></b>	<b>Ave. distance from coast (In km): ca. 90 km</b>
SE	1600-2400 ft	<b>Mean annual precipitation (In cm):</b>
		<b>Moisture: dry</b>

<b><u>Slope</u></b>	<b><u>Topographic Position</u></b>	<b><u>Soil Texture</u></b>	<b><u>Substrate Type</u></b>
10-35%	Upper slope	Silt	

**Vegetation**

Vegetation surveyors' names and affiliations: same as above.

Dates of vegetation surveys: 28 April- May 2, 1992.

Percentage of polygon containing CSS: 100 Area(ha): 0.43 ha

\*Successional status (evidence of regeneration of dominant taxa): No evidence of fire. Slope somewhat disturbed from road building.

Exotic species noted: *Brassica geniculata*, *B. tournefortii*, *Sisymbrium altissimum*, *Avena* spp., *Bromus* spp.

Dominant Plant Species (provide % cover or a "+" if only outside transects):

1	<i>Artemisia californica</i>
5	<i>Croton californicus</i>
5	<i>Ericameria pinifolia</i>
1	<i>Eriogonum fasciculatum</i>
20	<i>Lotus scoparius</i>
26	<i>Salvia apiana</i>

Percent bare ground: ca. 47%

Percent shrub cover (canopy cover): 48%

Shrub cover variability: moderate

Average length of gaps between shrubs on transects: 0.83m Standard Deviation: 0.75

Average shrub height: 0.5-1.0m

Shrub height variability: moderate

Percent herbaceous cover: ca. 5%

Herbaceous cover variability: moderate

**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

30 m	to chaparral
0 m	to grassland
? m	to oak woodland
0 m	to riparian zone
1500 m	to agricultural area
90 m	to developed area
0 m	to alluvial scrub

**Other Habitats or Vegetation Types Occurring in Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

Polygon number: 24  
Transect number: 4

Site name: East Etiwanda  
CNDDDB Natural Community: Riversidean upland sage scrub

**PHYSICAL HABITAT**

Habitat surveyor's names and affiliations: S. Bainbridge, R. Duncan and J. Welsh, Southwestern Field Biologists, Tucson, Arizona

Dates of physical habitat surveys: 28 April 1992

<u>Aspect</u>	<u>Elevation</u>	Ave. distance from coast (In km): ca. 90 km
SE	1600-2400 feet	Mean annual precipitation (In cm):
		Moisture: dry

<u>Slope</u>	<u>Topographic Position</u>	<u>Soil Texture</u>	<u>Substrate Type</u>
0-10	Lower slope		

**Vegetation**

Vegetation surveyors' names and affiliations: same as above

Dates of vegetation surveys: 28 April 1992

Percentage of polygon containing CSS: 100 Area(ha): 1.6

Successional status (evidence of regeneration of dominant taxa): Charred stumps present.

Exotic species noted: *Schismus barbatus*, *Lamarkia aurea*, *Arundo donax*, *Brassica geniculata*, *Bromus* sp.

Dominant plant species (provide % cover or a "+" if only outside transects):

1	<i>Artemisia californica</i>
5	<i>Croton californicus</i>
5	<i>Ericameria pinifolia</i>
1	<i>Eriogonum fasciculatum</i>
16	<i>Lotus scoparius</i>
26	<i>Salvia apiana</i>

Percent bare ground: 49

Percent shrub cover (canopy cover): 54

Shrub cover variability: moderate

Average length of gaps between shrubs on transects: 0.83m Standard Deviation: 0.75

Average shrub height: 0.5-1.0m

Shrub height variability: moderate

Percent herbaceous cover: ca. 5%

Herbaceous cover variability: moderate

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**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

2000 m      to chaparral  
1500 m      to grassland  
  ? m        to oak woodland  
  0 m        to riparian zone  
2500 m      to agricultural area  
  0 m        to developed area  
  m          to alluvial scrub

**Other Habitats or Vegetation Types Occurring In Polygon** (with estimated % of polygon area covered by each type): None



**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

- m to chaparral
- m to grassland
- m to oak woodland
- 0 m to riparian zone
- m to agricultural area
- m to developed area
- 0 m to alluvial scrub

**Other Habitats or Vegetation Types Occurring In Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

Polygon number: 26  
Transect number: 6

Site name: East Etiwanda  
CNDDDB Natural Community: Riversidean alluvial fan sage scrub

**PHYSICAL HABITAT**

Habitat surveyor's names and affiliations: S. Bainbridge, R. Duncan and J. Welsh, Southwestern Field Biologists, Tucson, Arizona

Dates of physical habitat surveys: 29-30 April 1992

Aspect                      Elevation                      Ave. distance from coast (In km): ca. 90 km  
SE                              1600-2400 feet                      Mean annual precipitation (In cm):  
Moisture: dry

Slope                      Topographic Position                      Soil Texture                      Substrate Type  
0-10                              Lower slope

**Vegetation**

Vegetation surveyors' names and affiliations: same as above

Dates of vegetation surveys: 29-30 April 1992

Percentage of polygon containing CSS: 100 Area(ha): 1.05

Successional status (evidence of regeneration of dominant taxa): active wash, pioneer stage of RAFSS

Exotic species noted: *Schismus barbatus*

Dominant plant species (provide % cover or a "+" if only outside transects)

9	<i>Artemisia californica</i>
1	<i>Ericameria pinifolia</i>
1	<i>Eriogonum fasciculatum</i>
10	<i>Lepidospartum squamatum</i>
8	<i>Lotus scoparius</i>
8	<i>Penstemon spectabilis</i>
6	<i>Salvia apiana</i>
1	<i>Yucca whipplei</i>

Percent bare ground: 66

Percent shrub cover (canopy cover): 43

Shrub cover variability: high

Average length of gaps between shrubs on transects: 1.05m Standard Deviation: 0.77

Average shrub height: 0.5-1.0m

Shrub height variability: high

Percent herbaceous cover: ca. 1

Herbaceous cover variability: high

**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

2200 m	to chaparral
1200 m	to grassland
? m	to oak woodland
0 m	to riparian zone
2500 m	to agricultural area
1000 m	to developed area
0 m	to alluvial scrub

**Other Habitats or Vegetation Types Occurring In Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

Polygon number: 26  
Transect number: 7

Site name: East Etiwanda  
CNDDB Natural Community: Riversidean alluvial fan sage scrub

**PHYSICAL HABITAT**

Habitat surveyors' names and affiliations: S. Bainbridge, R. Duncan and J. Welsh, Southwestern Field Biologists, Tucson, Arizona

Dates of physical habitat surveys:

<b><u>Aspect</u></b>	<b><u>Elevation</u></b>	<b>Ave. Distance from coast (in km): ca. 90 km</b>
SE	1600-2400 feet	<b>Mean annual precipitation (in cm):</b>
		<b>Moisture: dry</b>

<b><u>Slope</u></b>	<b><u>Topographic Position</u></b>	<b><u>Soil Texture</u></b>	<b><u>Substrate Type</u></b>
0-10	Lower slope		

**Vegetation**

Vegetation surveyors' names and affiliations: same as above

Dates of vegetation surveys: 29-30 April 1992

Percentage of polygon containing CSS: 100 Area (ha): 1.05

Successional status (evidence of regeneration of dominant taxa): in wash, pioneer stage of RAFSS

Exotic species noted: *Schismus barbatus*, *Nicotiana glauca*, *Phalaris canariensis*

Dominant plant species (provide % cover or a "+" if only outside transects):

12	<i>Eriogonum fasciculatum</i>
1	<i>Gnaphalium bicolor</i>
4	<i>Lepidospartum squamatum</i>

Percent bare ground: 82

Percent shrub cover (canopy cover): 17

Shrub cover variability: high

Average length of gaps between shrubs on transects: 1.7m Standard Deviation: 1.8

Average shrub height: 0.5-1.0m

Shrub height variability: moderate

Percent herbaceous cover: ca 1

Herbaceous cover variability: moderate

**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

2000 m	to chaparral
1000 m	to grassland
? m	to oak woodland
0 m	to riparian zone
2000 m	to agricultural area
1500 m	to developed area
0 m	to alluvial scrub

**Other Habitats or Vegetation Types Occurring in Polygon** (with estimated % of polygon area covered by each type): None

**SOUTHERN CALIFORNIA COASTAL SAGE SCRUB  
POLYGON SURVEY FORM**

**Polygon number: 20  
Transect number: 8**

**Site name: East Etiwanda  
CNDDDB Natural Community: Riversidean alluvial fan sage scrub**

**PHYSICAL HABITAT**

**Habitat surveyor's names and affiliations: S. Bainbridge, R. Duncan and J. Welsh, Southwestern Field Biologists, Tucson, Arizona**

**Dates of physical habitat surveys: 30 April 1992**

<b><u>Aspect</u></b>	<b><u>Elevation</u></b>	<b>Ave. distance from coast (in km): ca. 90 km</b>
SE	1600-2400 feet	<b>Mean annual precipitation (in cm):</b>
		<b>Moisture: dry</b>

<b><u>Slope</u></b>	<b><u>Topographic Position</u></b>	<b><u>Soil Texture</u></b>	<b><u>Substrate Type</u></b>
0-10%	Lower slope		

**Vegetation**

**Vegetation surveyors' names and affiliations: same as above**

**Dates of vegetation surveys: 30 April 1992**

**Percentage of polygon containing CSS: 100 Area(ha): 0.6**

**Successional status (evidence of regeneration of dominant taxa):**

**Exotic species noted: *Schismus barbatus*, *Nicotiana glauca*, *Phalaris canariensis***

**Dominant plant species (provide % cover or a "+" if only outside transects):**

12	<i>Artemisia californica</i>
23	<i>Lotus scoparius</i>
4	<i>Salvia mellifera</i>
2	<i>Senecio douglasii</i>

**Percent bare ground: 57**

**Percent shrub cover (canopy cover): 41**

**Shrub cover variability: moderate**

**Average length of gaps between shrubs on transects: 0.99m Standard Deviation: 1.0**

**Average shrub height: 0.5-1.0**

**Shrub height variability: moderate**

**Percent herbaceous cover: ca 2%**

**Herbaceous cover variability: moderate**

**Proximity to Ecotone** (from edge of polygon closest to particular habitat; indicate "0" if habitat is directly adjacent or occurs within polygon):

- 1500 m to chaparral
- 1000 m to grassland
- ? m to oak woodland
- 0 m to riparian zone
- 2200 m to agricultural area
- 0 m to developed area
- 0 m to alluvial scrub

**Other Habitats or Vegetation Types Occurring in Polygon** (with estimated % of polygon area covered by each type): None



# CHINO BASIN WATERMASTER

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April 12, 2007

I, Paula S. Molter, am an employee of the Chino Basin Watermaster ("Watermaster"). As part of its normal course of business, Watermaster maintains a library of documents relevant to the Chino Groundwater Basin and Watermaster's role as the arm of the Court administering the Chino Basin Judgment. It is part of my regular duties to retrieve such documents from the library in response to requests from various parties.

I hereby certify that the attached document, titled **San Sevaine Creek Water Project Initial Study**, is a full, true and accurate copy of that document, on file and of record in the Watermaster library.

  
Paula S. Molter