

RIVERSIDE COUNTY  
HABITAT CONSERVATION AGENCY  
and  
METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA

**MULTI-SPECIES  
HABITAT CONSERVATION PLAN**

for

**SOUTHWESTERN RIVERSIDE  
COUNTY,  
CALIFORNIA**

October 1992

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CALIFORNIA**

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**October 1992**

# MULTI-SPECIES HABITAT CONSERVATION PLAN FOR SOUTHWESTERN RIVERSIDE COUNTY, CALIFORNIA

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# SOUTHWESTERN RIVERSIDE COUNTY MULTI-SPECIES HABITAT CONSERVATION PLAN

## Preface and Definitions

### Preface

This Multi-Species Habitat Conservation Plan (MSHCP) consists of a main report and its associated technical appendices (Appendices A-1 through A-16), as well as a Cooperative Management Agreement (Appendix B) which sets forth the principles and guidelines for implementation of the MSHCP by a management committee consisting of representatives of five parties:

- Metropolitan Water District of Southern California (Metropolitan)
- The United States Department of Interior, Fish and Wildlife Service (Service)
- The California Department of Fish and Game (Department)
- The Riverside County Habitat Conservation Agency (RCHCA)
- The Riverside County Regional Park and Open Space District (District)

The MSHCP also includes, by reference, two Memoranda of Understanding (MOUs) which describe agreements among the various parties to the MSHCP regarding their respective rights and responsibilities relative to conservation easements and the future incidental take of sensitive species related to the Domenigoni Valley Reservoir Project.

The MSHCP, with its appendices and the above MOUs and any documents referenced therein, is the basis for a State of California Fish and Game Code Section 2081/2835 Agreement regarding take of sensitive species found in the impact area of Metropolitan's Domenigoni Valley Reservoir and its associated support facilities in the event that these species become listed under the California Endangered Species Act (CESA).

In addition, the MSHCP is the basis for a Federal Section 7(a) conference opinion regarding the Domenigoni Valley Reservoir's impacts to the California gnatcatcher. Finally, the MSHCP is the planning document which will, with appropriate NEPA documentation, be the basis for future Section 10(a) permits for incidental take of other sensitive species found in the project impact area, should any or all of these species be listed under the Federal Endangered Species Act (FESA).

The MSHCP contains numerous illustrations depicting the general boundaries and resources of the area the plan covers and its various components. Although they have been prepared to represent the features of the MSHCP accurately, these maps are for illustration purposes only. The Cooperative Management Agreement (Appendix B) includes two maps (Exhibits 1 and 2 of Appendix B) which define the boundaries of lands covered by this MSHCP; interpretation of the MSHCP should be made with reference to these exhibits only.

For purposes of legal description of the lands covered by this MSHCP, this document makes reference to a number of distinct areas (see definitions below). These distinctions are necessary for the definition of fee title and easement ownership. When referring to lands within the Reserve proposed under this MSHCP, these distinctions should not be interpreted as implying separate *management* of Reserve lands;

the proposed Reserve, consisting of various portions of lands owned by several of the parties to the MSHCP, will be managed as a single ecological unit by the committee described above.

### **Scope and Organization of this MSHCP**

This MSHCP is intended to address the mandatory elements of an HCP to the extent feasible given the status of knowledge about the sensitive species covered. The multi-species focus of the MSHCP and the fact that it is a pre-listing planning document have, however, resulted in some variation on the standard HCP format, which is intended for single-species HCPs. In addition, this MSHCP is intended to meet State of California requirements for an Agreement under Section 2081 of the Fish and Game Code. Finally, prior mitigation actions taken for the Domenigoni Valley Reservoir Project and previously established reserves affect the overall "ledger" of mitigation for the project. Accordingly, the MSHCP varies from the standard organization. The MSHCP has been organized to:

- Provide a general introduction to the MSHCP, including a general background statement which describes the general conceptual framework for the MSHCP as well as prior mitigation actions. This includes a general description of the plan area. (Chapter 1).
- Provide an overview of the legal and planning framework for the MSHCP, including an overview of existing reserve agreements and plans in the plan area. (Chapter 2)
- Provide a description of the actions proposed, and the funding available to ensure their successful implementation, to minimize and mitigate impacts to sensitive species, including a discussion of the proposed management strategies for the Reserve. Procedures to deal with unforeseen circumstances are addressed; the strategy discussed is adaptive management of the Reserve. (Chapter 3)
- Provide a description of the general level of impacts to sensitive species which would result from the Domenigoni Valley Reservoir Project. (Chapter 4)
- Provide a discussion of the basis for a finding that the level of impacts to sensitive species will be mitigated by the actions proposed in the MSHCP, including a discussion of both Federal and State mitigation requirements. (Chapter 5)
- Provide data about the sensitive species covered by the MSHCP, and the level of incidental take and mitigation which can be anticipated, based on a review of current literature and an analysis of potentially suitable habitat within the impact and mitigation areas. (Appendices A1-A16)



## Definitions

The following definitions shall govern the interpretation of this MSHCP, the Cooperative Management Agreement, the Memoranda of Understanding, and other documents associated with the MSHCP. Words in capital letters may be used in upper and lower case in the text of the MSHCP:

1. "CMA" means the Cooperative Management Agreement, set forth as Appendix B.
2. "Code" means the California Fish and Game Code.
3. "COUNTY" means the County of Riverside.
4. "DEPARTMENT" means the Department of Fish and Game of the State of California.
5. "Designated Agent" means the RCHCA or any non-profit entity organized for conservation purposes, which is acceptable to the DEPARTMENT.
6. "DISTRICT" means the Riverside County Regional Park and Open-Space District.
7. "District Reserve Area" means the area owned by the Facilities Corporation as depicted on Exhibit "1" to Appendix B.
8. "Domenigoni Reserve Area" means the portion of the lands encompassed within the MSHCP not included within the MWD Operational Area, Lake Skinner Reserve Area, Shipley Reserve Area, Domenigoni Valley and Lake Skinner Reservoir Recreation Areas, and the District Reserve Area as depicted in Exhibit "1" to Appendix B.
9. "Domenigoni Reserve Director" means Director of the entire Multi-Species Reserve except for the areas managed by the Shipley Reserve Director.
10. "Domenigoni Valley Reservoir Area" means a portion of the lands encompassed within the MSHCP, but not a part of the Multi-Species Reserve, which is set aside for the construction, maintenance, and operation of a major reservoir to assist in serving the water requirements of southern California and is depicted as the northern portion of the MWD Operational Area on Exhibit "1" to Appendix B.
11. "Domenigoni Valley Reservoir Recreation Area" means those portions of the lands encompassed within the MSHCP which are not a part of the Multi-Species Reserve, and which were acquired for the construction, maintenance, and operation of certain recreational facilities to be constructed in conjunction with the Domenigoni Valley Reservoir, as depicted in Exhibit "1" to Appendix B.
12. "FACILITIES CORPORATION" means the Riverside County Park Facilities Corporation.

13. "Habitat" is used in its ecological sense, referring to communities or assemblages of plants and animals with characteristics generally recognized by the scientific community as representing a distinct type or grouping.
14. "Impact area" means the project impact area for the Domenigoni Valley Reservoir project in western Riverside County.
15. "Lake Skinner Lease" means the Lease Agreement Between the Metropolitan Water District and the County of Riverside for Recreational Development of Lake Skinner, dated January 2, 1973, and any amendments thereto.
16. "Lake Skinner Recreation Area" means the area at Lake Skinner set aside for recreation as more particularly shown on Exhibits "1" and "2" to Appendix B.
17. "Lake Skinner Reserve" means the area at Lake Skinner Recreation Area set aside for protection of the Stephens' kangaroo rat under the Shipley Agreement and the area set aside for reserve purposes under this Multi-Species Habitat Conservation Plan, as depicted in Exhibit "1" to Appendix B.
18. "Lake Skinner Reservoir Area" means that portion of the lands encompassed within the MSHCP which are not a part of the Multi-Species Reserve, and which were acquired for the construction, maintenance, and operation of the Lake Skinner Reservoir and is depicted as the southern portion of the MWD Operational Area on Exhibit "1" to Appendix B.
19. "Lake Skinner Subordination Agreement" means the Subordination and Non-disturbance Agreement by and among the COUNTY, RCHCA, and METROPOLITAN.
20. "Management," when referring to management activities on the Multi-Species Reserve, refers to activities to conserve, protect, restore, and enhance wildlife habitat for the benefit of natural communities.
21. "Management Committee" means the Reserve Management Committee, comprised of representatives of the five parties (METROPOLITAN, DEPARTMENT, SERVICE, RCHCA, and DISTRICT).
22. "METROPOLITAN" means The Metropolitan Water District of Southern California.
23. "Metropolitan Conservation Easements" means the conservation easements conveyed by METROPOLITAN to the Designated Agent affecting the Shipley Reserve Area, the Lake Skinner Reserve Area, and the Domenigoni Reserve Area.
24. "Metropolitan Endowment" means the One Million Twenty-One Thousand Dollar (\$1,021,000) endowment previously created by METROPOLITAN for future protection and restoration of the plants, wildlife, and their habitats on the Shipley and Lake Skinner Reserves.
25. "MSHCP" means the Multi-Species Habitat Conservation Plan, entitled "Multi-Species Habitat Conservation Plan for southwestern Riverside County, California."

26. "MSHCP Lands" means lands included within the MSHCP for conservation, preservation, restoration and enhancement of wildlife habitat as set forth in Exhibit "1" to Appendix B.
27. "Multi-Species Reserve" means the entire Reserve provided for in the MSHCP consisting of the District Reserve Area, Lake Skinner Reserve Area, Domenigoni Reserve Area, and Shipley Reserve Area.
28. "Multi-Species Reserve Account" means the separate account established by the Resource Director's Treasurer for the sole and exclusive purpose of the management of the Multi-Species Reserve.
29. "MWD Operational Area" means the Domenigoni Valley Reservoir Area and the Lake Skinner Reservoir Area, as depicted in Exhibit "1" to Appendix B.
30. "RCHCA" means the Riverside County Habitat Conservation Agency.
31. "RCHCA Endowment" means the Five Hundred Thousand Dollar (\$500,000) endowment previously created by RCHCA for the management of those portions of the Shipley and Lake Skinner Reserves occupied by the Stephens' kangaroo rat.
32. "Resource Director" means the entity responsible for administering the MSHCP.
33. "Sensitive species" means a federal Candidate Category 2 species, a species being considered for listing as threatened or endangered under either the FESA or the CESA, and/or a species listed under either FESA or CESA.
34. "SERVICE" means the Fish and Wildlife Service of the United States Department of Interior.
35. "Shipley Management Agreement" means the May 31, 1991 Cooperative Management Agreement for the Roy E. Shipley Reserve and other lands in western Riverside County.
36. "Shipley Mitigation Agreement" means the May 31, 1991 Agreement for the use of the Shipley Ranch, Bailey Property, and certain lands at Lake Skinner in mitigation of habitat losses resulting from facilities of METROPOLITAN to be constructed in western Riverside County and Environs.
37. "Shipley Plan" means the Land Use and Management Master Plan for the Roy E. Shipley Reserve and other lands in western Riverside County.
38. "Shipley Reserve Area" means a portion of the lands encompassed within the MSHCP and the Multi-Species Reserve which was acquired and initially set aside as mitigation for the loss of certain wildlife habitat as a result of construction of the Eastside Reservoir and other METROPOLITAN projects in western Riverside County, as depicted in Exhibit "1" to Appendix B.
39. "Shipley Reserve Director" means the Director of the Shipley and Lake Skinner Reserves, with responsibilities only for human access control and management of recreational and interpretive activities in these areas.

40. "Suitable habitat" means habitat which has been found to have the combination of characteristics generally associated with occupation by a species, this determination made on the basis of literature review and field observations in the area covered by this MSHCP. Suitable habitat is therefore considered habitat for the species, which may or may not have been confirmed as occupied by field surveys. Because even the most rigorous survey techniques may at times fail to verify occupation, suitable habitat is used as the measure of impact and mitigation throughout this Multi-Species Habitat Conservation Plan, rather than "occupied habitat."
41. "University" means the University of California, Riverside.
42. "Wildlife" means and includes all wild animals, birds, plants, fish, amphibians, reptiles, and related ecological communities, including the habitat upon which the wildlife depends for its continued viability.

These definitions are used exclusively throughout the MSHCP and its appendices.

# SOUTHWESTERN RIVERSIDE COUNTY MULTI-SPECIES HABITAT CONSERVATION PLAN

## EXECUTIVE SUMMARY

The Metropolitan Water District of Southern California (Metropolitan) and the Riverside County Habitat Conservation Agency (RCHCA) propose a Southwestern Riverside County Multi-Species Habitat Conservation Plan (MSHCP) to cover an area of approximately 20,000 acres in public ownership within the area shown on Figure ES-1. This action is taken in association with Metropolitan's development of the Eastside Reservoir Project in the Domenigoni-Diamond Valley, within the boundaries of the area covered by this MSHCP. Within the 20,000-acre area covered by this MSHCP, existing or planned land uses include:

- **Lands for a Multi-Species Reserve**
  - Approximately 5,400 to 5,700 acres of lands in public ownership at the Lake Skinner reservoir site and the Domenigoni Valley Reservoir site or lands to be acquired by Metropolitan in the vicinity of the Domenigoni Valley Reservoir site.
  - 3,300 acres dedicated to wildlife reserves and/or on-site mitigation for the Eastside Reservoir Project, including the Roy E. Shipley Reserve.
- **Other Publicly Managed Lands**
  - 5,650 acres dedicated to reservoir storage at the existing Lake Skinner reservoir (1,200 surface acres) and the planned Domenigoni Valley Reservoir (4,450 surface acres);
  - 2,400 acres dedicated to recreation facilities associated with the two reservoirs;
  - 2,800 acres dedicated to reservoir construction, maintenance, and operations at the two reservoir sites;

Including water surface of the reservoirs, then, there are or will be approximately 14,400 to 14,900 acres of wildlife habitat and open space within the 20,000-acre of publicly-owned lands. Note that all acreages are approximate. The reserve created under this MSHCP will have a minimum size of 8,700 acres and a maximum size of 9,000 acres, depending on calculations made following final surveys.

Figure ES-1. SWRC Multi-Species Reserve



## **Goals and Objectives of the MSHCP**

The goal of this MSHCP is to provide for the continued survival and recovery of populations of sensitive species in the area shown on Figure ES-1. Consistent with this goal, the objectives of the MSHCP are:

- To acquire the remaining land in the vicinity of the Domenigoni Valley Reservoir site and dedicate this land and lands in the Lake Skinner area to conservation purposes, and in doing so to unify existing wildlife reserves and mitigation areas into a single, contiguous Multi-Species Reserve (Reserve);
- To provide for the management of the Reserve, primarily for the benefit of sensitive species (31 identified on the Reserve to date), with particular emphasis on species which are or may be listed as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA);
- To utilize the Reserve as a research resource for management research which will (1) contribute to understanding of sensitive species life history and habitat requirements and (2) contribute to understanding of the factors which affect the regional population viability of sensitive species; and
- To the extent feasible, to promote the expansion of the Reserve to include habitat adjacent to it and connecting it to other large areas of wildlife habitat in the region.

This plan for accomplishing these goals is recognized by the U.S. Fish and Wildlife Service as the basis for a Section 7 consultation regarding the California gnatcatcher. The Service will conduct this internal consultation on the California gnatcatcher as a part of its process leading to a decision to participate in the management of the Reserve established under this MSHCP. In addition, the MSHCP is proposed as the basis for issuance of Section 10(a) permits for sensitive species covered by this MSHCP, if they should be listed under FESA in the future. At the time when issuance of such Section 10(a) permits are considered by the Service, the Service will prepare appropriate NEPA documentation. The California Department of Fish and Game will also recognize this MSHCP as the basis for entering into a Section 2081 Agreement under the CESA and a Section 2835 Agreement under the NCCP Act for the same species. An Agreement and Memoranda of Understanding to this effect will be appended to the MSHCP. This MSHCP includes provisions for long-term funding and management to assure a full opportunity for these goals and objectives to be accomplished; however, factors beyond the control of the Reserve Management Committee, such as climate, natural disaster, and natural changes in other conditions affecting species population viability, may affect attainment of goals and objectives.

### **Species Covered by this MSHCP**

In addition to the Stephens' kangaroo rat which is already provided for at the Shipley reserve, this MSHCP will benefit some 31 sensitive species, (identified to date), 16 of which occur within the reservoir impact area of the Domenigoni Valley Reservoir (Table ES-1). With the exception of the SKR, none of the species addressed in this MSHCP has been listed as threatened or endangered under either the FESA or the CESA.



## **Primary Features of this MSHCP**

This MSHCP provides for long-term preservation and management of significant natural communities which would otherwise be lost to development and/or the indirect impacts of development in the foreseeable future. The actions detailed in this MSHCP include:

- Acquisition and preservation of approximately 2,700 to 3,350 acres of wildlife habitat surrounding the Domenigoni Valley Reservoir;
- Dedication and preservation of approximately 2,350 acres of wildlife habitat within the Lake Skinner and Shipley Reserve areas, these lands not currently protected by a conservation easement;
- Joining of these newly dedicated lands to the 3,307 acres of land currently dedicated to wildlife habitat at either Domenigoni Valley, the Shipley Reserve, or Lake Skinner to create a contiguous multi-species Reserve, including a 500-foot wildlife corridor at the base of the west dam and a 1,000-foot corridor at the base of the east dam to join the North Hills to the remainder of the Reserve following construction;
- Establishment of a five-member Reserve Management Committee to operate the newly created Reserve, consisting of one voting member each from Metropolitan, the RCHCA, the California Department of Fish and Game (Department); the U.S. Fish and Wildlife Service (Service); and the Riverside County Park and Open Space District (RCPOSD).
- Funding of initial research and management of the Reserve for a period of approximately eight years (1992 through 2000) with \$13,886,000 in funding; and
- Provision for long-term management of the Reserve in accordance with conservation easements described in the attached Department and Service MOUs, with funding provided from recreational revenues (or Metropolitan's operating budget).

This MSHCP may be implemented by signature of Metropolitan, the RCHCA, the RCPOSD, and the Department and/or the Service. Initial implementation of this MSHCP without the signature of either the Service or the Department will not preclude the non-signing party from subsequently approving the MSHCP and assuming Reserve Management Committee membership and responsibilities, as described in this MSHCP.

In addition to these actions, Metropolitan and the RCHCA propose to provide for the continued survival and recovery of populations of four sensitive plants (see Table ES-1), this action taken although neither the FESA nor the California Fish and Game Code would require such action for plant species listed as endangered or threatened. These four sensitive plant species will be protected by a program of seed collection from areas to be impacted by the Domenigoni Valley Reservoir and replanting in areas of suitable soils at several sites within the Reserve or under other public management. These actions are in addition to, not a substitute for, mitigation actions already taken by Metropolitan in conjunction with the construction of the Domenigoni Valley Reservoir.

These *prior* mitigation actions have included:

- Contribution of \$17.4 million dollars towards the acquisition and management of approximately 3,700 acres of the Santa Rosa Plateau which have been added to existing Nature Conservancy holdings on this plateau; and
- Acquisition of the Roy E. Shipley Reserve, at a cost of approximately \$12 million, including creation of a management endowment.

Both of these mitigation actions had significant benefit for sensitive species covered by this MSHCP. Twelve of the 16 sensitive species identified in the reservoir project exist at the Plateau site and 14 exist at the Shipley Reserve site.

### **Reserve Habitats**

The Reserve is dominated by coastal sage scrub, with approximately 5,600 acres of this sensitive habitat. Other major habitat types are chamise chaparral (1,380 acres) and non-native grasslands (1,530 acres). In addition, there are important areas of coast live oak woodland (18 acres); live oak riparian forest (121 acres); sycamore/alder riparian woodland (15 acres); southern willow scrub (25 acres); and cottonwood/willow riparian forest (17 acres). The corridors which will run along the base of the two dams at the Domenigoni Valley Reservoir (300 acres total habitat following construction) will probably be managed as disturbed grasslands for SKR habitat, with bands of sage scrub and trees providing cover for other wildlife.

### **Timing of Reserve Creation**

Upon acceptance of the MSHCP, Metropolitan and the RCHCA will immediately begin to manage the Reserve areas currently in public ownership. Lands in the Lake Skinner and Shipley Reserve areas are completely in public ownership at this time. Reserve acquisition around the Domenigoni Valley Reservoir is approximately 60% complete at this time. Metropolitan will acquire the remaining lands for the Reserve by approximately December 1993. The final phase in Reserve creation will come after the main dams have been constructed; the corridors at the base of the dams, and the impact areas around the dam abutments, will then be vegetated and added to the Reserve.

### **Management Strategies**

The MSHCP is focused on management of habitat for bio-diversity, rather than management focused on a single species. The primary features of this management approach are:

- **Protection of habitat from human disturbance.** Many recovery and enhancement goals can be realized by removing grazing, by preventing catastrophic fires, and by removing off-road vehicles from the Reserve. This will be accomplished by fencing, construction of fire breaks, and patrol to prevent unauthorized access.
- **Management to promote recovery of historic, native plant and animal communities.** These efforts will be based on research into historic and existing habitat characteristics, followed by actions which will encourage recovery of native communities. These actions may include management of fire, control of grazing, and re-seeding efforts following

controlled burns or other efforts to remove exotic vegetation. The current management plan provides for enhancement of approximately 300 acres of coastal sage scrub surrounding the Domenigoni Valley Reservoir site; additional enhancement activities, primarily removal of exotic grasses to permit native vegetation to recover, are also being considered for the North Hills, the South Hills, and the Shipley Reserve.

- **Management for bio-diversity.** This is accomplished by maintaining a mosaic of different-aged habitat to meet the needs of many species. In addition, efforts to create edge habitat, utilized by many species which cannot use contiguous stands of any habitat type, will occur along fire breaks, access roads, and recreation trails.

Specific management actions will be reviewed and approved by the five-member management committee prior to action.

**Table ES-1**  
**Sensitive Species Covered by this Habitat Conservation Plan**

<u>Species</u>	<u>Location within MSHCP Area</u>		
	<u>Reserve</u>	<u>Impact Area</u>	<u>Lands Adjacent<sup>1</sup></u>
<b>Plants</b>			
Smooth tarplant ( <i>Hemizonia laevis</i> ) Federal C2	No	Yes	Yes
Payson's jewelflower ( <i>Caulanthus simulans</i> ) Federal C2	Yes	Yes	Yes
Parry's spineflower ( <i>Chorizanthe parryi</i> var <i>parryi</i> ) Federal C2	Yes	Yes	Yes
San Jacinto Valley saltbush ( <i>Atriplex coronata</i> var <i>notatior</i> ) Federal C2	No	Yes	Yes
Munz's onion ( <i>Allium fimbriatum</i> var <i>munzii</i> ) Federal C2; State CT	Yes	No	No
Engelmann Oak ( <i>Quercus Engelmannii</i> )	Yes	No	No
Palmer's grappling hook ( <i>Harpagonella plameri</i> var. <i>palmeri</i> )	Yes	No	No
<b>Reptiles</b>			
Orange-throated whiptail ( <i>Cnemidophorus hyperythrus beldingi</i> ) Federal C2; State CSC	Yes	Yes	Yes
San Diego horned lizard ( <i>Phrynosoma coronatum blainvillei</i> ) Federal C2; State CSC	Yes	Yes	Yes
Northern red-diamond rattlesnake ( <i>Crotalus ruber ruber</i> ) Federal C2	Yes	Yes	Yes
Coastal western whiptail ( <i>Cnemidophorus tigris multiscutatus</i> ) Federal C2	Yes	Yes	Yes

Table ES-1, continued

<u>Species</u>	<u>Location within MSHCP Area</u>		
	<u>Reserve</u>	<u>Impact Area</u>	<u>Lands Adjacent<sup>1</sup></u>
<b>Reptiles (continued).</b>			
Southwestern Pond Turtle ( <i>Clemmys marmorata pallida</i> ) Federal C2; State CSC	Yes	No	No
<b>Mammals</b>			
Mountain lion ( <i>Felis concolor</i> ) State CFP	Yes	No	Yes
American badger ( <i>Taxidea taxus</i> ) State CSC	Yes	No	No
Stephens' kangaroo rat ( <i>Dipodomys stephensi</i> ) Federal Endangered; State CT	Yes	Yes	Yes
Los Angeles pocket mouse ( <i>Perognathus longimembris brevinasus</i> ) Federal C2	Yes	No	Yes
San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> ) Federal C2	Yes	Yes	Yes
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennettii</i> ) Federal C2	Yes	Yes	Yes
Northwestern San Diego pocket mouse ( <i>Chaetodipus fallax</i> ) Federal C2	Yes	Yes	Yes
<b>Birds</b>			
California gnatcatcher ( <i>Polioptila californica</i> ) Federal FP; State CSC	Yes	Yes	Yes
Bell's sage sparrow ( <i>Amphispiza belli</i> ) Federal C2	Yes	Yes	Yes
S. California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> ) Federal C2	Yes	Yes	Yes

Table ES-1, continued

Species	Location within MSHCP Area		
	Reserve	Impact Area	Lands Adjacent <sup>1</sup>
<b>Birds, continued</b>			
Great blue heron ( <i>Ardea herodias</i> ) Restricted nesting sites in CA	Yes	No	No
Black-shouldered kite ( <i>Elanus caeruleus</i> ) State CFP	Yes	No	No
Bald Eagle ( <i>Haliaeetus leucocephalus</i> ) Federal endangered; State endangered	Yes, winter visitant	No	No
Cooper's hawk ( <i>Accipiter cooperii</i> ) State CSC	Yes	No	No
Ferruginous hawk ( <i>Buteo regalis</i> ) Federal C2; State CSC	Yes Winter visitant	Yes Winter visitant	Yes
Golden eagle ( <i>Aquila chrysaetos</i> ) State CFP	Yes	No	Yes
Loggerhead shrike ( <i>Lanius ludovicianus</i> ) Federal C2	Yes	Yes	Yes
Burrowing owl ( <i>Athene cunicularia</i> ) State CSC	Yes	Yes	Yes
California horned lark ( <i>Eremophila alpestris actia</i> ) Federal C2	Yes	Yes <sup>2</sup>	Yes

Notes: 1. Presence of these species in adjacent habitat, particularly on publicly owned lands, is speculative. "Yes" indicates probability that the species will be found on recreation or operations areas following construction. "No" indicates a low probability of occurrence.

2. California horned lark was identified in the impact area in late July 1992; an HCP for this species will be prepared and added to this MSHCP as Appendix A-17 at a future date.

CFP = California fully protected  
 FP = Federal proposed  
 C2 = Federal candidate 2  
 CSC = California Species of Special Concern

## **Contingencies**

This MSHCP addresses a number of contingencies, including but not limited to fluctuation of populations within the impact area and Reserve, isolation of the Reserve as a result of development, temporary loss of reserve habitat due to phenomena such as drought and fire, changes in regional populations of sensitive species resulting in a need to focus additional management efforts on their Reserve populations, and temporary construction impacts related to Metropolitan's projects. Management strategies for addressing these contingencies are proposed.

Metropolitan retains rights to act on the Reserve for construction, maintenance, and operational purposes, but agrees to act to avoid impacts where feasible and minimize impacts from necessary actions. A list of limited facilities to be placed on the Reserve, consisting mainly of unpaved access roads which will also function as fire breaks and several dam-keeper residences and offices, is included in the body of the MSHCP. Metropolitan also anticipates temporary construction impacts from the Domenigoni Valley Reservoir, but expects these to be limited and will restore impacted areas following construction. The extent of Metropolitan's impacts will be to temporarily affect only approximately 100-300 acres of the Reserve, with much lower permanent impacts. The Reserve acreages shown in this MSHCP do not include a buffer zone around the reservoir or areas designated for dam-keeper's residences, interpretive centers, and similar facilities which may be located within the Reserve as a part of Reserve management or Metropolitan operations.

## **Research**

The research proposed will be designed to address critical management questions for coastal sage scrub communities and for several sensitive species. It will be designed to characterize the communities of the Reserve, and to identify key habitat requirements for sensitive species. It will include focused studies of many of the sensitive species, including the California gnatcatcher, the orange-throated whiptail, and the San Diego horned lizard, considered important indicator species for coastal sage scrub habitat quality.

## **Funding**

Of the \$13,886,000 allocated to short-term research and management, approximately \$3.5 million is allocated to basic management activities such as fencing, security, biological resources monitoring, and a planned program of research into the habitat requirements and life history of the California gnatcatcher. The remaining \$10.4 million is to be used at the discretion of the Reserve Management Committee, with the provisions that (1) it will be allocated over a period of 5-8 years, (2) its use will be consistent with the goals and objectives of this MSHCP, and (3) expenditures will be approved by the Service and the Department and will not affect the status of FESA Section 10(a) incidental take permits or the status of any 2081/2835 Agreement related to the Domenigoni Valley Reservoir Project.

## **Domenigoni Valley Reservoir Levels of Incidental Take and Offsetting Reserve Mitigation**

Table ES-2 shows the estimated levels of take for the Domenigoni Valley Reservoir. With the exception of sensitive plants, these levels of take are expressed in terms of acres of suitable habitat. Suitable habitat was determined on the basis of field surveys and literature review. For purposes of defining incidental take, all suitable habitat within the project impact area was assumed to be occupied, a worst-case assumption. An explanation of methods used to designate suitable habitat is found at the beginning of Appendix A.

For several of the species covered by this MSHCP, 1989 and 1990 surveys included population estimates within suitable habitat. Based on survey methods explained in Appendix A for the California gnatcatcher, a total of 14 nesting pairs and 6 individual birds were identified in the impact area for the project. For the sensitive plant species, exact plant counts were taken, as described in technical appendices to the reservoir project FEIR. Recent surveys suggest that habitat for these sensitive species is responding positively to a warm, wet winter (following 5 years of drought). Sensitive species are being located in areas of designated suitable habitat where they were not identified during 1990 or 1991 surveys. For example, the California gnatcatcher has been reported in suitable habitat on the South Hills of the Domenigoni Valley in previously unoccupied suitable habitat both within and outside of the project impact area, and within habitat at the Shipley Reserve. University of California at Riverside surveys of the Shipley Reserve also suggest changes in both distribution and abundance of sensitive plant species.

These positive changes in sensitive species distribution and abundance underscore the need to base impact and mitigation planning on acreage of suitable habitat. Population fluctuations in response to weather, habitat quality, predation, or other natural phenomena are to be expected, and thus the area of occupied habitat of a given sensitive species may fluctuate significantly. Both reservoir project incidental take and offsetting Reserve resources are therefore expressed in terms of acres of suitable habitat.

In general, this MSHCP provides for new mitigation for sensitive species habitat impacts at a ratio of approximately two acres of suitable habitat preserved for each acre of suitable habitat impacted. This new mitigation area, when combined with prior mitigation, results in mitigation ratios of 3 to 1 or higher.

#### **Actions to Minimize, Monitor, and Mitigate for Take**

Metropolitan has acted to minimize project impacts by, first, selecting the least-damaging site for its Eastside reservoir Project. Second, Metropolitan will act to minimize project impacts by scheduling removal of sensitive species' habitat during non-reproductive periods and by removing habitat prior to major destructive activities such as blasting. This should force sensitive species into adjacent suitable Reserve habitat prior to pre-construction and construction activities which would otherwise occur during nesting periods and would therefore result in higher levels of impact.

Metropolitan will monitor impacts on an on-going basis, cooperating with the Reserve Management Committee to coordinate management and construction activities. Monitoring will be coordinated with the Reserve research program, which will include focused studies of key sensitive species.

Metropolitan's mitigation actions will consist of creation and management of the 8,700 to 9,000 acre Reserve, by dedication of from 5,400 to 5,700 acres of new habitat to Reserve status. Protection and management of this habitat is intended to result in recovery of natural communities, and an increase in the habitat's robustness. In addition, Metropolitan will provide funding for the proposed research program, and for the long-term management of the Reserve.

#### **Support for Section 10(A) Permits and Findings of No Jeopardy**

The actions proposed in this MSHCP will minimize impacts to sensitive species and/or offset these impacts to the extent that the reservoir project will not pose a significant threat to the population viability of the sensitive species covered by this MSHCP. Levels of take will be minimized during construction and subsequent operations to the extent feasible. The Reserve, properly managed with the Service and the Department taking active roles in management, will be a viable unit of habitat for the species covered



by this MSHCP, and will be the focal point for efforts to expand multi-species habitat conservation planning in the region. The Reserve's regional importance will grow as adjacent habitat is acquired and included under reserve management; two parcels totalling approximately 500 acres are currently being considered for inclusion in the Reserve by two of the Reserve Management Committee Members, and there are long-term plans to expand the Reserve as well. Areas adjacent to the Reserve may also be added to the Reserve by others.

**Table ES-2.  
Summary of Sensitive Species Impacts and Mitigation  
Eastside Reservoir Project**

<u>Species</u>	<u>Status</u>	<u>Acres of Suitable habitat</u>	
		<u>Impact Area</u>	<u>Reserve</u>
Stephens' kangaroo rat ( <i>Dipodomys stephensi</i> )	Federal endangered State threatened	263	1,162
California gnatcatcher ( <i>Polioptila californica</i> )	Federal Proposed	543-1,220 <sup>1</sup>	1,433-4,779 <sup>1</sup>
Ferruginous hawk ( <i>Buteo regalis</i> )	Federal C2	NA <sup>2</sup>	NA <sup>2</sup>
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Federal C2	2,200	7,150 <sup>1</sup>
Bell's sage sparrow ( <i>Amphispiza belli</i> )	Federal C2 Species of local concern	2,200	7,000 <sup>1</sup>
Southern California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> )	Federal C2 Species of local concern	2,200	7,000
Orange-throated whiptail ( <i>Cnemidophorus hyperythrus beldingi</i> )	Federal C2	2,200	7,000
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i> )	Federal C2	2,200	7,000
Coastal western whiptail ( <i>Cnemidophorus tigris multiscutatus</i> )	Federal C2	2,200	7,000

Table ES-2, continued

<u>Species</u>	<u>Status</u>	<u>Acres of Suitable habitat</u>	
		<u>Impact Area</u>	<u>Reserve</u>
Northern red-diamond rattlesnake ( <i>Crotalus ruber ruber</i> )	Federal C2	2,200	7,000
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennetti</i> )	Federal C2	2,200	7,150
San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> )	Federal C2	2,200	7,000
N.W. San Diego pocket mouse ( <i>Chaetodipus fallax</i> )	Federal C2	2,200	7,000
Payson's jewelflower ( <i>Caulanthus simulans</i> )	Federal C2 CNPS List 4	19,309 plants	Same <sup>3</sup>
Parry's spineflower ( <i>Chorizanthe parryi</i> var <i>parryi</i> )	Federal C2 CNPS List 4	4,989 plants	Same <sup>3</sup>
Smooth tarplant ( <i>Hemizonia laevis</i> )	CNPS List 3	19,778 plants	NA <sup>4</sup>
San Jacinto Valley saltbush ( <i>Atriplex</i> <i>coronata</i> var <i>notarior</i> )	Federal C2	21,950 plants	NA <sup>4</sup>

Notes:

1. The range of acreage shown represents data from 1990 surveys, following 6 years of drought, and 1992 data taken in surveys and as a part of research into the habitat requirements and nesting success of California gnatcatcher populations in the Reserve and project impact areas. Mitigation acreage is based on sage scrub and chaparral habitat (7,000 acres) or sage scrub and non-native grasslands habitat (7,150 acres).
2. As a winter visitant, the ferruginous hawk does not occupy habitat. There are several thousand acres of suitable foraging habitat for this species within the Reserve.
3. Payson's jewelflower and Parry's spineflower populations will be replaced in kind on the Reserve, in appropriate soils and vegetative communities.
4. Smooth tarplant and San Jacinto Valley saltbush impacts will be mitigated outside of the reserve.

## 1.0 INTRODUCTION

### 1.1 PURPOSE

The Riverside County Habitat Conservation Agency (RCHCA) and The Metropolitan Water District of Southern California (Metropolitan) are seeking an agreement with the U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (Department) regarding establishment of an approximately 8,700 to 9,000 acre multi-species reserve and research program in southwestern Riverside County. This Southwestern Riverside County Multi-Species Reserve (hereafter "Reserve") would be within an area of about 20,000 acres of publicly-owned lands.

These publicly-owned lands include certain lands not part of the Reserve established by this Pre-listing Multi-Species Habitat Conservation Plan (MSHCP). These lands include approximately 5,650 acres of reservoir water surface area associated with the existing Lake Skinner and the proposed Domenigoni Valley Reservoir. Two reservoir operations/recreation areas are also included in this publicly-managed area, totalling approximately 5,400 acres of lands at Lake Skinner and the proposed Domenigoni Valley Reservoir:

<u>Area</u>	<u>Acreage</u>
Total MSHCP Area	20,000
Less:	
Water Surface	
Lake Skinner	-1,200
Domenigoni Valley Res.	-4,500
Operations and Recreation	<u>-5,400</u>
Reserve	9,000

All figures used in this MSHCP are approximate. The Reserve will be a minimum of 8,700 acres but could be up to 9,000 acres. The size of the Reserve is expressed as a range because of uncertainties regarding the placement of trails, access roads, and some reservoir facilities. Under this agreement, Metropolitan and the RCHCA would establish the Reserve and a research program, and manage the natural communities that surround and link the two reservoir sites. The natural communities within the Reserve include 31 sensitive species, including the endangered Stephens' kangaroo rat. Subject to consideration of unforeseen circumstances and to appropriate NEPA documentation, the Service and the Department would accept, under pre-listing agreements, conservation value of the Reserve and research program as the basis for incidental take of these species in the event that sensitive species in the Domenigoni Valley Reservoir Project impact area become listed during the construction, filling, and operation of the Domenigoni Valley Reservoir. Reserve management would be habitat based, with management to provide a mosaic of habitat types and qualities which could support the many sensitive species on the Reserve.

A number of sensitive species have been identified in the Domenigoni Valley Reservoir Project impact area. The habitat-based approach of this MSHCP is intended to provide long-term mitigation for project impacts to all of these species by ensuring preservation and management of a large multi-habitat reserve. For all sensitive species except several sensitive plant species, the Reserve will provide approximately three acres of suitable habitat for each acre of habitat impacted.

The sensitive species covered by this MSHCP are shown on Table 1-1. Table 1-1 covers only species identified as sensitive to date; additional species may be classified as sensitive in the future and would be taken into account in management of the Reserve as deemed appropriate. In addition to the species shown on Table 1-1, areas immediately adjacent to the Reserve may support several species of bats, including the Western Mastiff Bat (*Eumops perotis*) and Townsend's bat (*Plecotis townsendii*). These species have been observed (heard) in the Reserve area, and may roost on the Reserve or areas immediately adjacent to it. Further data are needed before these species are formally added to this MSHCP.

## 1.2 THE SCOPE OF THE MSHCP AND RESERVE

The Reserve supports many more sensitive species than are found in the reservoir project impact area. Two plants in the impact area and not on the Reserve, the smooth tarplant and the San Jacinto Valley saltbush, are treated separately, as described in the appendices to this MSHCP. Recognizing that species not now considered sensitive may in the future need long-term protection and management, this MSHCP seeks to ensure that the needs of other species associated with Riversidian sage scrub, chaparral, oak woodland, and grasslands communities will be met through acquisition, preservation, and long-term management of a large ecosystem containing viable habitat of these types.

This MSHCP has been prepared to demonstrate how the Reserve and research program would satisfy the requirements of the Federal Endangered Species Act (FESA) and the State of California Endangered Species Act (Fish and Game Code Sections 2050 *et seq.*) in the event that any or all of the species were listed prior to completion and filling of the Domenigoni Valley Reservoir. The MSHCP will be used for four functions: (1) as the basis for future FESA Section 10(a) permits, (2) to provide the information required for a FESA Section 7 consultation on the California gnatcatcher, (3) as the basis for an agreement with the Department under Sections 2081 and 2835 of the Fish and Game Code, and (4) as the basis for management of the Reserve and research program. There are five key elements to the MSHCP:

- Preservation of approximately 5,400 to 5,700 acres of lands in the vicinity of the reservoir and Metropolitan's Lake Skinner Facility (hereafter "added reserve area" as shown on Figure 1);
- Joining of this added reserve area with the existing Roy. E. Shipley Reserve and existing mitigation areas (3,307 acres) to create a contiguous Reserve of approximately 8,700 to 9,000 acres;
- A commitment to management of the Reserve by a Management Committee consisting of representatives from Metropolitan the RCHCA, the Service, the Department, and the Riverside County Park and Open Space District (RCPOSD), with short-term funding from Metropolitan's general fund and long-term funding to manage the Reserve from recreation revenues at Domenigoni Valley Reservoir's recreation area; and
- Extensive research into the life history, habitat requirements, and population viability of the sensitive species impacted by the project and found within the Reserve.
- Action to manage sensitive plant species impacted by the project, including relocation of populations to suitable areas within and outside of the MSHCP area.

**Table 1-1**  
**Sensitive Species Covered by this Habitat Conservation Plan**

<u>Species</u>	<u>Reserve</u>	<u>Location within MSHCP Area<sup>1</sup></u>	
		<u>Reservoir</u> <u>Impact Area</u>	<u>Lands Adjacent</u>
<b>Plants</b>			
Smooth tarplant ( <i>Hemizonia laevis</i> ) Federal C2	No	Yes	Yes
Payson's jewelflower ( <i>Caulanthus simulans</i> ) Federal C2	Yes	Yes	Yes
Parry's spineflower ( <i>Chorizanthe parryi</i> var. <i>parryi</i> ) Federal C2	Yes	Yes	Yes
San Jacinto Valley saltbush ( <i>Atriplex coronata</i> var. <i>notator</i> ) Federal C2	No	Yes	Yes
Munz's onion ( <i>Allium fimbriatum</i> var. <i>munzii</i> ) Federal C2; State CT	Yes	No	No
Engelmann Oak ( <i>Quercus Engelmannii</i> )	Yes	No	No
Palmer's grappling hook ( <i>Harpageonella palmeri</i> var. <i>palmeri</i> )	Yes	No	No
<b>Reptiles</b>			
Orange-throated whiptail ( <i>Cnemidophorus hyperythrus beldingi</i> ) Federal C2; State CSC	Yes	Yes	Yes
San Diego horned lizard ( <i>Phrynosoma coronatum blainvillei</i> ) Federal C2; State CSC	Yes	Yes	Yes
Northern red-diamond rattlesnake ( <i>Crotalus ruber ruber</i> ) Federal C2	Yes	Yes	Yes
Coastal western whiptail ( <i>Cnemidophorus tigris multiscutatus</i> ) Federal C2	Yes	Yes	Yes

Table 1-1, continued

<u>Species</u>	<u>Reserve</u>	<u>Location within MSHCP Area</u>	
		<u>Reservoir Impact Area</u>	<u>Lands Adjacent</u>
<b>Reptiles (continued)</b>			
Southwestern Pond Turtle ( <i>Clemmys marmorata pallida</i> ) Federal C2; State CSC	Yes	No	No
<b>Mammals</b>			
Mountain lion ( <i>Felis concolor</i> ) State CFP	Yes	No	Yes
American badger ( <i>Taxidea taxus</i> ) State CSC	Yes	No	No
Stephens' kangaroo rat ( <i>Dipodomys stephensi</i> ) Federal Endangered; State CT	Yes	Yes	Yes
Los Angeles pocket mouse ( <i>Perognathus longimembrus brevinasus</i> ) Federal C2	Yes	No	Yes
San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> ) Federal C2	Yes	Yes	Yes
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennettii</i> ) Federal C2	Yes	Yes	Yes
Northwestern San Diego pocket mouse ( <i>Chaetodipus fallax fallax</i> ) Federal C2	Yes	Yes	Yes
<b>Birds</b>			
California gnatcatcher ( <i>Polioptila californica californica</i> ) Federal FP; State CSC	Yes	Yes	Yes
Bell's sage sparrow ( <i>Amphispiza belli belli</i> ) Federal C2	Yes	Yes	Yes
S. California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> ) Federal C2	Yes	Yes	Yes

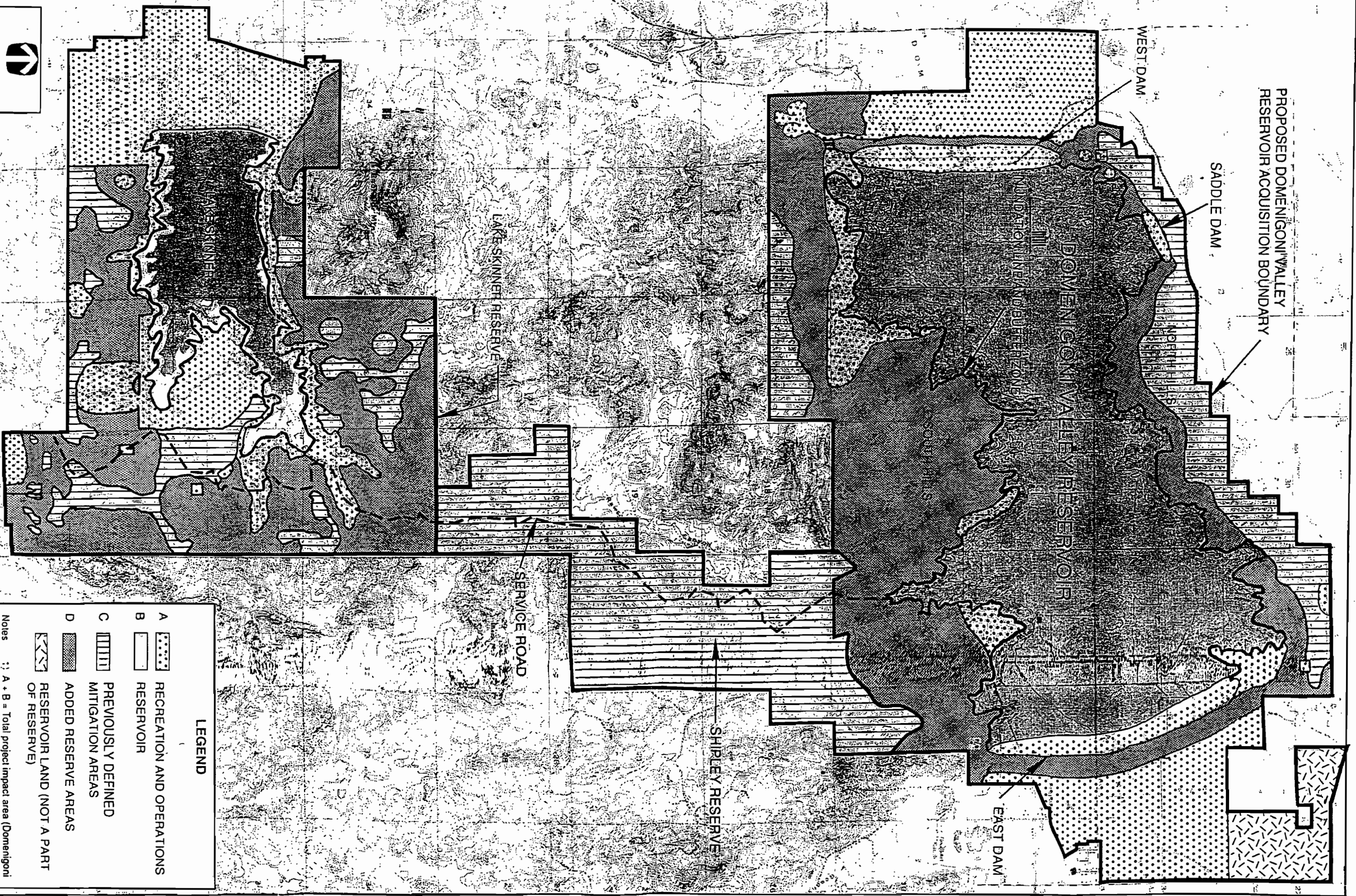
Table 1-1, continued

<u>Species</u>	<u>Reserve</u>	<u>Location within MSHCP Area</u>	
		<u>Reservoir Impact Area</u>	<u>Lands Adjacent</u>
<b>Birds, continued</b>			
Great blue heron ( <i>Ardea herodias</i> ) Restricted nesting sites in CA	Yes	No	No
Black-shouldered kite ( <i>Elanus caeruleus</i> ) State CFP	Yes	No	No
Bald Eagle ( <i>Haliaeetus leucocephalus</i> ) Federal endangered; State endangered	Yes Winter visitant	No	No
Cooper's hawk ( <i>Accipiter cooperii</i> ) State CSC	Yes	No	No
Ferruginous hawk ( <i>Buteo regalis</i> ) Federal C2; State CSC	Yes Winter visitant	Yes Winter visitant	Yes
Golden eagle ( <i>Aquila chrysaetos</i> ) State CFP	Yes	No	Yes
Loggerhead shrike ( <i>Lanius ludovicianus</i> ) Federal C2	Yes	Yes	Yes
Burrowing owl ( <i>Athene cunicularia</i> ) State CSC	Yes	Yes	Yes
California horned lark ( <i>Eremophila alpestris actia</i> ) Federal C2	Yes	Yes <sup>2</sup>	Yes

- Notes: 1. Presence of these species in adjacent habitat is speculative. "Yes" indicates the species has been found in the area. "No" indicates that the species has not at this time been found in the area; these species may occur in the area indicated but will not be addressed in this MSHCP until their presence has been confirmed.
2. The California horned lark was identified in the impact area in July of 1992. An HCP for this species will be prepared and added in the future to this MSHCP as Appendix 17.

CFP = California fully protected  
 FP = Federal proposed  
 C2 = Federal candidate 2  
 CSC = California Species of Special Concern





PROPOSED DOMENIGONI VALLEY  
RESERVOIR ACQUISITION BOUNDARY

SADDLE DAM

WEST DAM

DOMENIGONI VALLEY RESERVOIR

FLOODPLAIN AND BUFFER ZONE

SOUTH PINES

EAST DAM

SHIRLEY RESERVE

SERVICE ROAD

LAKE SKINNER RESERVE

**LEGEND**

- A [Pattern: Dotted] RECREATION AND OPERATIONS RESERVOIR
- B [Pattern: Horizontal Lines] PREVIOUSLY DEFINED MITIGATION AREAS
- C [Pattern: Vertical Lines] ADDED RESERVE AREAS
- D [Pattern: Diagonal Lines] RESERVOIR LAND (NOT A PART OF RESERVE)

Notes  
 1. A + B = Total project impact area (Domenigoni Valley only)  
 2. C + D = Total reserve area

SCALE IN FEET  
 0 3500

FIGURE 1

Total acreage added to Reserve areas under this MSHCP is expressed as a range to accommodate potential minor changes in boundary lines as a result of reservoir construction activities and operations in the future, as well as to reflect the potential for measurement error in areas currently outside of Metropolitan's ownership. The exact boundaries of the Reserve will be established following construction of the Domenigoni Valley Reservoir, but will be substantially in accordance with those shown on the figures in this MSHCP and the more detailed map in Appendix B. Note also that the boundaries of the recreation facilities in the southwest corner of the Reserve (Figure 1) are conceptual at this time and will be refined, with a effort to avoid impacts to sensitive species and their habitat, as well as archeological resources.

## **2.0 REGULATORY AND PLANNING FRAMEWORK**

### **2.1 GENERAL**

The planning framework for this MSHCP includes (1) the FESA; (2) applicable provisions of the Fish and Game Code; (3) the certified Final Environmental Impact Report (FEIR) for the Domenigoni Valley Reservoir Project, including approved mitigation measures for impacts to all adversely affected biological resources; (4) the approved HCP for the Stephens' kangaroo rat (SKR), which is being implemented by the RCHCA; (5) the agreements which expanded the Santa Rosa Plateau Reserve and established the Roy E. Shipley Reserve (Shipley Reserve); and (6) the multiple-species habitat conservation strategy being developed by Riverside County (Riverside County Park and Open Space District). This section of the MSHCP describes this regulatory framework and identifies the geographic overlap of this MSHCP with related plans.

### **2.2 FEDERAL ENDANGERED SPECIES ACT**

Four sections of the FESA pertain to this MSHCP:

- Section 4, which covers the listing of species as threatened or endangered and also permits the Secretary of the Interior to apply Section 9 prohibitions on the taking of threatened species;
- Section 9, which prohibits any taking of a fish or wildlife species listed as threatened or endangered;
- Section 10(a), which authorizes taking that is incidental to but not the purpose of otherwise lawful actions, provided specific requirements are met; and
- Section 7 (a)(4), which requires federal agencies to confer with the Service on any action likely to jeopardize the continued existence of a species proposed for federal listing.

#### **2.2.1 Section 4 (The Listing Process)**

Under Section 4 of the FESA, a species may be determined to be endangered or threatened based on any one of five factors:

- The present or threatened destruction, modification, or curtailment of its habitat or range;
- Overutilization for commercial, recreational, scientific, or educational purposes;
- Disease or predation;
- The inadequacy of existing regulatory mechanisms; and
- Other natural or manmade factors affecting its continued existence.

Section 4 further stipulates the listing process and schedule, requires that critical habitat for the species be designated concurrently with the decision to list, and requires that a recovery plan be prepared and implemented. Under this MSHCP, the concerns of Section 4 have been addressed primarily by:

- Identifying the decline factors that would likely trigger listing for the sensitive species impacted by the Domenigoni Valley Reservoir Project, and
- Identifying the degree to which the Reserve and research program would benefit the local population of the sensitive species by reducing their susceptibility to the decline factors.

### 2.2.2 Section 9 (Restrictions on Taking)

When an *animal* species is listed (i.e., declared threatened or endangered) under the FESA, taking of that species is prohibited. As defined in the FESA, taking means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Harass" has been further defined to mean an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns. In addition, "harm" has been further defined as an act which actually injures or kills wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns.

The animal species covered in this MSHCP are not listed, with the exception of the Stephens' kangaroo rat (SKR); mitigation for impacts to this listed species was provided under the RCHCA's Section 10(a) permit. The SKR will be a focus of Reserve management, as provided under previous agreements. For the other, non-listed species, the above definitions of taking have been assumed to apply and have been used in this MSHCP to assess the potential impacts of the reservoir project on each of them.

For actions on non-federal lands, restrictions on the take of *endangered plants* are different, and less restrictive, than those for animal species. Under FESA amendments in 1988, it is unlawful to "remove, cut, dig up, or damage or destroy any [plant] species on any other area in knowing violation of any state law." This amendment effectively limits prohibitions on take of plant species to only those actions prohibited under state law. State law, in this case Section 1913 of the California Fish and Game Code, exempts public agencies providing essential services to the public from requirements to avoid the take of listed or threatened plant species, except to the extent that the Department must be notified 10 days in advance of taking to permit seed collection and or transplanting of these plants at Department discretion.

Because Section 1913 applies to Metropolitan's actions to construct its reservoir and auxiliary facilities, compliance with both FESA Section 9 and Fish and Game Code Section 1913 is therefore legally accomplished by notification of the Department 10 days in advance of taking of the sensitive plant species.

The RCHCA and Metropolitan have chosen more pro-active preservation and recovery actions for plant species under this MSHCP. This has been done to provide a consistent level of response to all sensitive species, regardless of legal obligations. Mitigation efforts beyond the minimum required by law are also provided for in the Domenigoni Valley Reservoir Project FEIR.

### 2.2.3 Section 10(a) (Incidental Take Permits)

Section 10(a)(1)(B) authorizes USF&WS to issue a permit that allows taking to occur incidental to, but not the purpose of, otherwise lawful activities. Specifically, this section of the FESA is implemented by the requirement that applications for such permits be submitted in an official form and be accompanied by the following attachments:

- A complete description of the activity for which the permit is being sought;
- The common and scientific names of the species to be covered by the permit; and
- An MSHCP that specifies:
  - The impact that will likely result from the proposed taking of the species.
  - Steps the applicant will take to monitor, minimize, and mitigate such impacts.
  - The level and source of funding available to implement such steps.
  - Procedures that will be used to deal with unforeseen events.
  - The names of the responsible party or parties.
  - Alternatives to the taking and the reasons why they were not pursued.
  - Other measures required by USF&WS as necessary or appropriate.

This MSHCP has been prepared to meet the requirements of Section 10(a)(1)(B) in the event that any one of the species becomes listed. The MSHCP is intended to serve as the MSHCP that is a required part of the permit application. This MSHCP is also intended to serve as the appropriate plan when and if the FESA is amended to permit issuance of permits in advance of listing which become effective upon listing of species as endangered or threatened.

### 2.2.4 Section 7 (Consultations and Conferences)

Federal agencies must consult with the Service on actions involving listed species and must confer with the Service on actions involving species proposed for listing. In general, consultations and conferences under Section 7 involve preparation of a biological assessment that examines the potential effects of major actions on the species in question. If the Service finds that the action does not jeopardize the species and impacts have been fully mitigated, the incidental taking may be authorized. A Section 7 conference is similar to a formal consultation except that a biological assessment is not *required*.

This MSHCP has been prepared to provide the information required for a Section 7(a)(4) consultation and conference that will be triggered by the Service's action to participate in the management of the Reserve. The written opinion resulting from the conference will be the means by which the Service affirms that the Reserve and research program meet the "no jeopardy" and "full mitigation" requirements of the FESA for Domenigoni Valley Reservoir Project incidental taking of the California gnatcatcher.

This MSHCP is further intended to be the basis for a pre-listing Memorandum of Understanding (MOU) between the Service and the RCHCA/Metropolitan, under which the Service will *consider* the Reserve and research program proposed as the basis for issuance of a Section 10(a) Permit for incidental take of sensitive species covered by this MSHCP within the impact area of the Domenigoni Valley Reservoir Project, subject to evaluation of appropriate NEPA documentation at the time that such species are proposed for listing.

## **2.3 CALIFORNIA FISH AND GAME CODE**

### **2.3.1 General**

In preparing this MSHCP, it has been assumed that the species covered would become state as well as federal listed species, and that other sensitive species within the proposed Reserve might also be listed. State law prohibits taking of listed and candidate species. Unlike federal law, the Fish and Game Code does not provide for incidental taking or the preparation of habitat conservation plans. However, two sections of the Code authorize the Department to approve management agreements that serve a similar purpose:

- Section 2081, which allows the Department "to authorize individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take or possess [listed or candidate] species for scientific, educational, or management purposes; and
- Section 2835, which also allows the Department to authorize take of a listed or candidate species in areas covered by an approved Natural Community Conservation Plan (NCCP).

Section 2081 is part of the California Endangered Species Act (CESA), which otherwise prohibits the import, export, take, possessing purchase, or sale of listed species. With respect to prohibition of take, the CESA differs from the FESA in three ways:

- The state definition of "take" is "to hunt, pursue, catch, or kill" or attempt the same. Unlike the federal definition, the terms "harm" or "harass" are not used in the state code. However, activities that would trigger a "jeopardy" determination under the state consultation process are essentially the same as those that would constitute "harm" or "harassment" under federal law.
- Unlike the federal law, the state prohibition on taking applies to species proposed for listings as well as to species listed as threatened or endangered. When the Fish and Game Commission designates a species as "candidate" for listing, that species receives the full protection of the California ESA for the one-year period during which the final decision on listing is made.
- Section 2081 and Section 2835 authorize CDF&G to approve "management" agreements and permits that serve a similar purpose. In addition, the NCCP referenced under 2835 is similar to an MSHCP under federal law.

NCCPs differ from Section 2081 agreements primarily in that they are intended to conserve, protect, recover, and enhance species and ecosystems before they are on the verge of extinction. The planning

process has been proposed by the California Resources Agency as a way to preserve local and regional biological diversity, reconcile urban development and wildlife needs, and meet the objectives of both the state and federal ESAs. As currently envisioned, NCCPs would have components similar to those required in MSHCPs and, in plans involving federally-listed species, would be designed to meet the requirements of a federal Section 10(a) permit. This MSHCP has been prepared to meet the requirements of Section 2081 should any of the species become state listed, with the understanding that so long as the MSHCP is complied with, take of state-listed species covered by the MSHCP may occur without further Department approval. The MSHCP also is intended to be consistent with the goals of the NCCP program. For purposes of this MSHCP, these code sections referred to as the "Fish and Game Code."

It should further be noted that Section 1913 of the Fish and Game Code exempts public agencies providing essential utility services and performing tasks related to their mandate to provide public service from requirements to avoid the take of listed or threatened plant species, except to the extent that the Department must be notified 10 days in advance of taking to permit seed collection and or transplanting of these plants at Department discretion.

### **2.3.2 State "No Jeopardy" Findings**

A state agreement which would allow taking of an endangered or threatened species requires the preparation of documentation which:

- Describes the project area and project impact area, including project maps;
- Describes known and potential distribution of the species in the project area and project impact area, based on recent field surveys conducted in compliance with Department guidelines;
- Includes additional data on species distribution and habitat, based on literature, scientific data review, and discussion with experts;
- Includes analysis of possible effects of the proposed project on listed species, including cumulative effects; and
- Includes analysis of alternatives designed to reduce or eliminate impacts to endangered and threatened species.

Based on this documentation, the Department then applies the following questions to the project before issuing an opinion regarding whether the project places the species in jeopardy:

- Would a viable or recoverable population be eliminated, or would a significant proportion of a population be adversely affected by the project or the project's effects?
- Would the range of the species be significantly diminished by the project?
- Would habitat used by the species be reduced in quantity or quality by either the immediate or future effects of the project?

- Would a species' access to habitat be reduced or rendered more hazardous as a result of the project?
- Would the project adversely affect current or future efforts at providing protection for the species?
- Would plans for the recovery or eventual delisting of the threatened or endangered species be adversely affected by the project?
- Would the project interfere with reproductive or other behavior of the endangered or threatened species?
- Would the project cause extinction of the species?

To support a no jeopardy finding, the answer to all of these questions must be "no." This MSHCP has been prepared to provide a clear basis for a no jeopardy opinion; that is, to demonstrate that the Reserve and the research program associated with it offset immediate and cumulative effects of the Domenigoni Valley Reservoir Project.

#### **2.4 THE CERTIFIED EIR FOR THE DOMENIGONI VALLEY RESERVOIR PROJECT**

The FEIR for the Domenigoni Valley Reservoir Project was certified in October 1991, and included both a full description of the project and a complete and acceptable plan for mitigation of project impacts (further described in Section 4). The mitigation plan provides for on-site mitigation of some impacts to biological resources but focuses on off-site mitigation consisting of habitat acquisition, preservation, and management. This mitigation plan was the result of four years of studies, during which Metropolitan coordinated with the public and with appropriate city, county, state, and federal agencies (Table 2-1). This coordination led to:

- Acquisition and preservation of 3,825 acres at the Santa Rosa Plateau;
- Acquisition and preservation of 2,400 acres southeast of the reservoir site in the area now known as the Roy E. Shipley Reserve; and
- Management of lands adjacent to Lake Skinner for specific wildlife values.

This MSHCP is a direct out-growth of the mitigation planning process for the FEIR. The FEIR, however, does not require preparation of this MSHCP. As previously noted, the mitigation measures in this MSHCP have been proposed in anticipation of the federal or state listing of sensitive species. *With the exception of measures proposed for sensitive plant species, the creation of the proposed Reserve and its long-term management described in this MSHCP are additions to, not substitutes for, the measures in the FEIR.* Moreover, until such time as a species is listed, approval to take the species is not required for the reservoir project to proceed.



Table 2-1.

Summary of public involvement and coordination:  
Domenigoni Valley Reservoir Project: 1987-1990.

<u>Date</u>	<u>Activity</u>	<u>Attendees/Scope/subjects covered</u>
April 1987	Initial Project Briefing	U.S. Army Corps of Engineers (USACE)
May 1987	Meeting to discuss Lake Perris enlargement	State Parks and Recreation, Lake Perris Office
November 1988	Initial Project Briefing	California Department of Fish and Game (The Department)
December 1988	Initial Project Briefing	The Department
February 1988	Initial Project Briefing	U.S. Fish and Wildlife Service (The Service)
March 1988	Meeting: regulatory issues and environmental documentation	USACE
June 1988-Present	Informal meetings to discuss preservation strategies	The Nature Conservancy (TNC)
July 1988	Scoping meeting	Reg. Water Quality Control Board, Santa Ana Region
August 1988	Field Trip to 5 sites	The Service and the Department
December 1988-Present	Participation in Riverside County SKR MSHCP and ecologic plan	Riverside Co. HCA. Dept., resource agencies, others
January-December 1989	Scoping meetings	Native American groups
January 1989	Initial Project Briefing	Sierra Club
March 1989	Initial Project Briefing	US Forest Service (USFS), Palomar Ranger District
August 1989	Initial Project Briefing	Bureau of Land Management (BLM)
September 1989	Mitigation planning discussions	The Service
November 1989	Briefing on study results	The Service and the Department
January 1989	Public meeting at Hemet Community Center, 250 people attending	Introduction to study Discussion of community concerns Question-answer session
March 1989	Study Bulletin mailed to 1250 people	Summary of need for project, preliminary findings, and study scope Responses to questions raised at January 17, 1989 meeting

Table 2-1 (continued)

<u>Date</u>	<u>Activity</u>	<u>Attendees/Scope/subjects covered</u>
March 1989	Public Meeting	Scoping for environmental studies
July, 1989	Notice of Preparation of a Draft EIR	Scoping for environmental studies
October 1989	Study Bulletin	Questions and answers on real estate issues
October 1989	Study Bulletin mailed to 1,400 people	Progress report
		Responses to questions at March 30, 1989 meeting
		Review of recent Metropolitan actions and study scope changes
January 1990-present	RCHCA Meetings	Participation in MSHCP planning for Stephens' kangaroo rat and multi-species plan
January 1990-1990-present	Coordination of study issues Mitigation planning meeting	USFS, Palomar Ranger Station TNC
June 1990-present	Mitigation planning meetings	The Service, Laguna Niguel Office
January 1990-present	Mitigation planning	The Department, Region 5
April 1990	Project status review	USACE
April 1990-present	Mitigation planning	The Department
June 1990	Project status reviews	Sierra Club, Audubon Society, others
August 1990-present	Project status briefing	BLM
September 1990-present	Mitigation planning meetings	The Service
September 1990	Project status briefings	Congressman McCandless' staff
October 1990	Field trip	California Department of Water Resources
November 1990	Project status briefing	California Regional Water Quality Control Board, Santa Ana Region
November 1990	Project briefing	USACE
July 1991	Public Meeting at Hemet, 300 people	Public comments received on DEIR
August 1991-October 1991	Public comment period, FEIR	
October 1991-present	Multi-species planning	RCHCA, RCPOSD, the Service, the Department, and TNC

## 2.5

### THE SKR HABITAT CONSERVATION PLAN

Approved by the Service as the basis for a Section 10(a) permit and by the Department as the basis for a Section 2081 agreement, the SKR HCP for Riverside County is administered by the RCHCA, whose members include the County of Riverside and the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Perris, Riverside, and Temecula. The SKR HCP established a two-year program during which permanent reserves for the species would be designed and a limited level of incidental take would be allowed. The SKR HCP identifies 10 study areas as the focus of reserve design and specifies the conditions under which incidental take can occur. Under this SKR HCP, incidental take is allowed only in a reserve fee area, cannot occur in reserve study area, and cannot exceed 4,400 acres or 20% of the occupied habitat in the fee area (whichever is less), and requires payment of \$1,950 per acre of incidental take (to fund habitat acquisition and reserve design).

The SKR HCP covers about 565,000 acres and approximates the historic range of the SKR in Riverside County. Over 368,000 acres of this area has already been cleared of natural vegetation. SKR occur on only about 26,000 of the remaining natural habitat. About 70 percent of the remaining habitat is within 10 study areas. Metropolitan owns about 13,000 acres in two of the SKR study areas:

- 5,200 acres, 3,000 occupied by SKR, around Lake Mathews
- 8,200 acres, 1,500 occupied by SKR, around Lake Skinner and at the Shipley Reserve

The SKR HCP and this multi-species MSHCP are linked because (1) the Reserve overlaps portions of the SKR study area and (2) the RCHCA has conservation easements over SKR habitat at the Shipley Reserve as well as over some areas surrounding Lake Skinner, both of which are included in the Reserve.

## 2.6

### THE SHIPLEY RESERVE

The Shipley Reserve forms a north-south corridor between the site of the Domenigoni Valley Reservoir and Lake Skinner. It includes 582 acres of SKR habitat over which the RCHCA holds a conservation easement. The Shipley Reserve is managed under a cooperative agreement among the Service, the Department, the RCHCA, the Riverside County Park and Open Space District (RCPOSD), and Metropolitan, all of whom participate in management. The management principles for the Shipley Reserve are entirely consistent with the multi-species principles for the Reserve created under this MSHCP, with the exception that 695 acres have been set aside specifically for management for the SKR. Several of the sensitive species covered by this MSHCP also utilize the disturbed grasslands habitat currently used by the SKR on the Shipley Reserve. Under the Shipley Agreement, an additional 582 acres of occupied SKR habitat was set aside at Lake Skinner to be managed for this listed species. Thus, based on 1990 surveys, the total SKR habitat covered by the Shipley Agreement is 1277 acres. Conservation easements over this land were granted to the RCHCA. This includes 111 acres of property owned by the County facilities Corporation. In 1992, the RCHCA granted Metropolitan an incidental take allocation of 263 acres of occupied habitat in the Domenigoni Valley Reservoir project area under the RCHCA's short-term HCP.

An upland habitat mitigation bank consisting of 939 acres was established as part of the agreement establishing the Shipley Reserve; 6 acres of the bank's total of 939 acres are dedicated to management facilities or were designated as agricultural lands, thereby reducing the total habitat bank to 933 acres. The parties to this agreement include Metropolitan, the Service, the Department, the RCHCA, and the

RCPOSD. Under this agreement, Metropolitan has rights to utilize the mitigation bank at Shipley Reserve in mitigation of future project upland impacts within a defined geographic area, with mitigation exchanges determined on the basis of a mitigation formula described in the Shipley Agreement. The bank has not, at the time of this writing, been used.

The mitigation credit available to Metropolitan involves "upland habitat credit" only; that is, Metropolitan may use the bank to mitigate for impacts to upland habitat impacts from other projects within the region, provided that there are no sensitive species within these habitats. The bank currently has the following resources:

<u>Habitat Type</u>	<u>Acreage</u>
Riversidian sage scrub:	584 acres
Chaparral:	179 acres
Coast live oak woodland:	8 acres
Live oak riparian forest:	68 acres
Southern willow scrub:	3 acres
Non-native grassland:	22 acres
Native plant habitat, primarily RSS:	<u>72 acres</u>
Subtotal:	939 acres
Less 6 acres, management and agriculture	<u>-6 acres</u>
Habitat mitigation bank:	933 acres

Nothing in this MSHCP affects this mitigation banking agreement, nor does it affect Metropolitan's prior commitment to maintain the habitat in the mitigation bank as part of the Shipley Reserve.

## 2.7 MULTIPLE SPECIES HABITAT CONSERVATION PLANS FOR RIVERSIDE COUNTY

The RCPOSD has proposed a draft multi-species habitat conservation strategy for the County of Riverside, this strategy intended to provide for protection of the County's biological resources and for integration of these protections into the County's General Plan. The draft strategy document synthesizes and evaluates data on County natural resources and makes draft recommendations to ensure conservation of specific species and resources. A 10-year acquisition and implementation program is proposed, giving special attention to species listed or likely to be listed by the Service or Department. The strategy recommends a network of multi-species reserves and corridors, anchored on three centers of biologically diverse habitat. The Reserve created under this MSHCP lies entirely within one of these multi-species reserve areas; one of the effects of this MSHCP would therefore be to initiate the region-wide implementation of the draft County multi-species habitat conservation strategy, if the strategy is adopted by the Riverside County Board of Supervisors.

## 2.8 EFFECT OF MSHCP ON EXISTING PLANS AND AGREEMENTS

This MSHCP is consistent with and adds significant natural resource areas and funding to existing plans and agreements. The Reserve proposed lies almost entirely within one of the RCHCA's study areas for SKR and is entirely within one of the study areas for Riverside County's preliminary regional Multi-

Species Habitat Conservation Plan. The MSHCP provides for management of lands within these areas in a manner entirely consistent with the goals of these two existing county-wide plans, and the agencies responsible for the implementation of these plans are members of the Management Committee for the Reserve established under this MSHCP. Finally, this MSHCP adds 5,400 to 5,700 acres to the existing mitigation areas and reserve areas established by prior actions. The effect of this additional habitat is to join currently fragmented habitat into a single contiguous Reserve.

### **3.0 MULTI-SPECIES PRE-LISTING HABITAT CONSERVATION PLAN**

#### **3.1 GENERAL**

##### **3.1.1 Scope of the Plan**

This section of the MSHCP describes the MSHCP, with particular focus on the Reserve and the research and management associated with it. The Reserve's management and research plan is intended to make a contribution to accomplishing regional ecological planning objectives; accordingly the regional ecological context and regional ecological planning objectives are summarized. This summary provides a framework for understanding the importance and function of the Reserve and its research program. Following this effort to establish the context of the Reserve, the overall habitat conservation plan is detailed, beginning with the resources of the Reserve, the goals and focus of the research program, and the management of the Reserve.

##### **3.1.2 Relationship of Plan to Prior Agreements**

Prior to formulation of this MSHCP, a number of actions were taken by Metropolitan, the RCHCA, the Service, the Department, and the Riverside County Park and Open Space District (RCPOSD) to establish the Shipley Reserve in the vicinity of Lake Skinner and the Domenigoni Valley Reservoir and to establish on-site mitigation for Domenigoni Valley Reservoir impacts. These actions in addition to acquisition of the Santa Rosa Plateau under an agreement with the Service and the Department, resulted in:

- Creation of the Shipley Reserve, which links the lands surrounding Lake Skinner with lands in the watershed of the Domenigoni Valley Reservoir;
- Under the Shipley Reserve Agreement, placing of a conservation easement over lands occupied by the SKR at Lake Skinner;
- Creation of a management endowment for the Shipley Reserve, with total endowment funds of approximately \$2.2 million (including funds provided by the RCHCA);
- Metropolitan's agreement to manage certain lands at Lake Skinner and at the Shipley Reserve for the benefit of the California gnatcatcher (134 acres at Lake Skinner) and for several sensitive plant species (both at Lake Skinner and the Shipley Reserve, with the understanding that mitigation credit would be granted for this management which would offset some of the impacts of the Domenigoni Valley Reservoir;
- Identification of on-site mitigation areas, outside of the watershed of the Domenigoni Valley Reservoir, to be dedicated as mitigation areas for project impacts; and
- As a part of the action to create the Shipley Reserve, creation of a mitigation bank for future Metropolitan projects.

This MSHCP *expands upon and modifies* the agreements which describe the above actions, but does not affect the basic terms of the agreements which established the Shipley Reserve, Metropolitan's mitigation

bank at the Shipley Reserve, or the project FEIR. The parties to these agreements remain committed to fulfilling them; this MSHCP merely extends the scope of action and provides additional funding for multi-species research and management. Accordingly, this MSHCP will result in:

- Addition of approximately 5,400 to 5,700 acres to the existing 3,307 acres covered by existing reserve, mitigation, and banking agreements;
- Addition of \$13,886,000 in research and management funds to the existing Shipley Reserve funding for the period 1992-1998, with long-term management funding of \$200,000 or 50% of net revenues from proposed recreation facilities, whichever is larger.
- Expansion of the duties of the Shipley Management Committee to encompass the entire Reserve created by this MSHCP; and
- Provisions for expansion of the Reserve, either by the five members of the Reserve Management Committee or by donation of lands by private parties or other public entities.

Under this MSHCP, the conservation easements over the 5,400 to 5,700 acres to be added to existing reserve areas will be established as provided in the Department and Service MOUs. The lands which will be so dedicated to management of wildlife are lands either currently under public ownership at Lake Skinner or to be acquired in the vicinity of Domenigoni Valley Reservoir. These lands have previously been designated as operations and/or recreation areas for the two reservoirs. Placement of an easement over these lands will alter their management, as well as affect the type and extent of public access to them. To fulfill obligations under the easements and this MSHCP, Metropolitan must increase its efforts to conserve, protect, recover, and enhance the easement areas beyond what would be required without this MSHCP.

The actions described in this MSHCP are taken solely for the mitigation of sensitive species impacts associated with Domenigoni Valley Reservoir and its support facilities; no mitigation bank is created by this MSHCP, although the existing 933-acre upland habitat bank at the Shipley Reserve is unaffected by this MSHCP.

### **3.1.3 The Reserve**

The Reserve (Figure 1, above) created by adding approximately 5,400 to 5,700 acres to the existing Shipley reserve and on-site mitigation areas will encompass virtually the entire watershed of the existing Domenigoni Valley and significant lands outside of the watershed and to the north of the valley, the entire existing Shipley Reserve, and all lands around Lake Skinner not dedicated to recreation and/or reservoir operations. Metropolitan currently owns about 65 percent of the lands needed for the Reserve. A majority of the additional land for the Reserve will be acquired in the next 2 years. The final piece of the Reserve, a wildlife corridor at the outer base of the two proposed main dams, will be added to the Reserve following construction. The Reserve will be managed under an agreement similar to that for the Shipley Reserve, which will be absorbed into the Reserve. The 8,700 to 9,000 acre Reserve will include 3,307 acres already preserved, adding approximately 5,400 to 5,700 acres to the existing reserve areas (Table 3-1). Total Reserve acreage is expressed as a range, and all figures are approximate, because of uncertainties due to measurement errors and the potential for minor facility alignment changes associated with the Domenigoni Valley Reservoir.

Table 3-1.

Summary of habitat to be preserved by creation of the proposed multi-species Reserve.

Total area within site boundaries, excluding agricultural areas, areas developed, and areas designated for operations, roads, existing buildings, and/or high intensity recreation.

Habitat Type	Location										Total Acres
	Domenigoni Valley		Shipley Reserve		County		Lake Skinner		Metropolitan		
	NS/NH'	SS/NH'	NS/SH'	SS/SH'	Metropolitan	Ownership	Ownership	In Shipley Reserve	Ownership	Ownership	Acres
Riversidian Sage Scrub	750	500	1,550	59	656	25	186	1,900	5,626		
Non-Native Grassland	100	0	0	0	26	582	582	240	1,530		
Chaparral	0	0	850	88	179	219	0	43	1,379		
Coast Live Oak Woodland	0	0	0	0	8	10	0	0	18		
Live Oak Riparian Forest	0	0	0	0	68	40	0	13	121		
Sycamore/Alder Riparian											
Woodland	0	0	0	0	0	0	0	15	15		
Southern Willow Scrub	0	0	0	0	2	1	0	22	25		
Cottonwood Willow Riparian Forest	0	0	0	0	0	0	0	17	17		
Corridors at base of dams											
<b>TOTAL</b>	<b>850</b>	<b>500</b>	<b>2,400</b>	<b>147</b>	<b>939<sup>3</sup></b>	<b>877</b>	<b>768</b>	<b>2,250</b>	<b>9,031</b>		
Previously dedicated to mitigation	850	0	0	59	939	877	582	0	3,307		
New acreage added to Reserve per this MSHCP	0	500	2,400	88	0	0	186	2,250	5,724		

Note: 1. NS/NH = North Slope of the North Hills of Domenigoni valley; SS/NH = the South Slope of the North Hills of the Domenigoni Valley; NS/SH = the North Slope of the South Hills of the Domenigoni Valley; SS/SH = the South Slope of the South Hills of the Domenigoni Valley.  
 2. Some lands outside of the Shipley Reserve were covered by the Shipley Agreement; these lands were located within the boundaries of the Lake Skinner area. They include SKR, California gnatcatcher, and rare plant habitats.  
 3. This habitat is "banked" for upland mitigation purposes and may be used to offset upland habitat impacts of other projects in the region, provided no sensitive species impacts are involved.

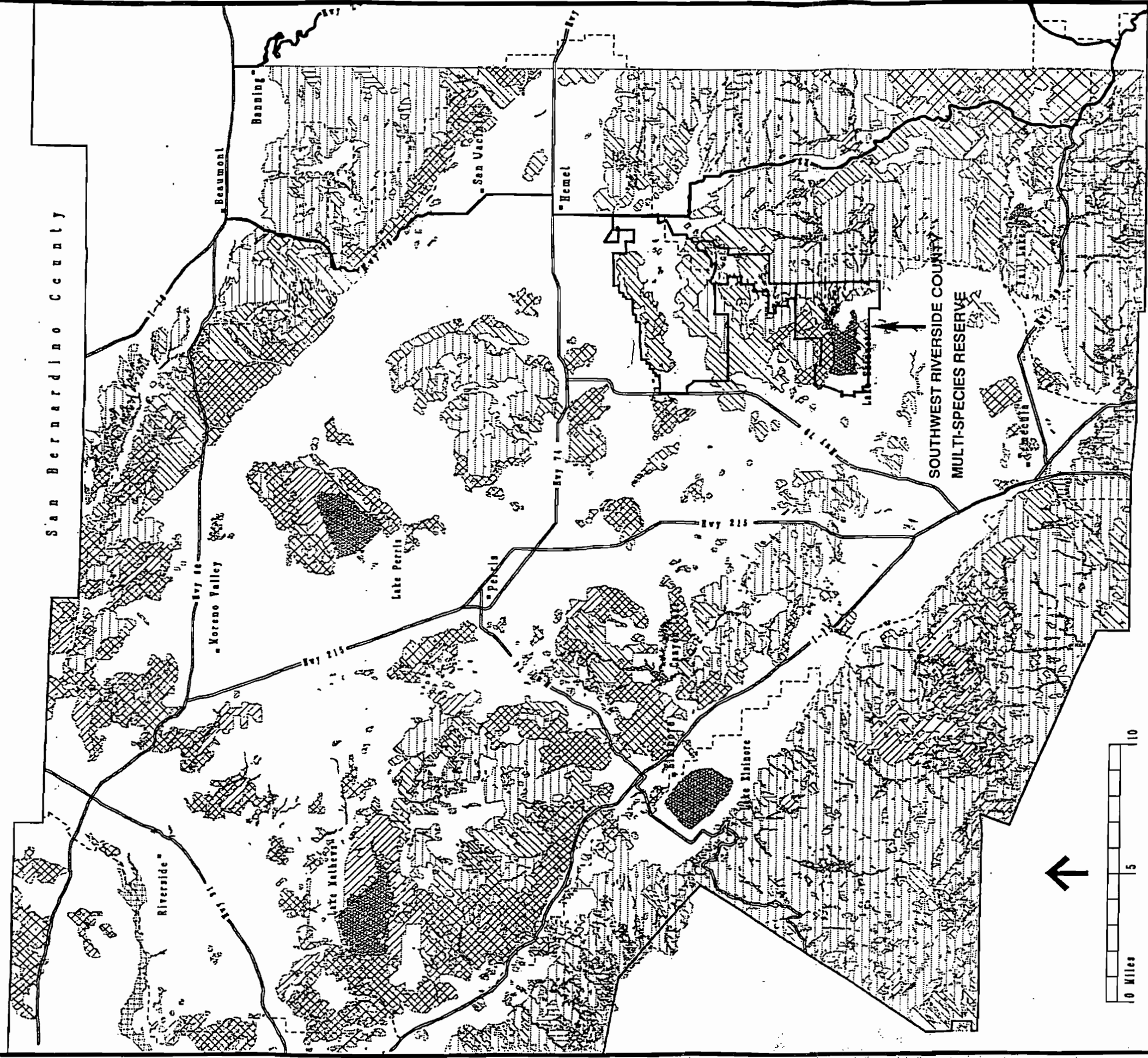


Southwestern Riverside County is a rapidly developing area of residential communities serving adjacent commercial and industrial areas, and resort/retirement communities. To the east, the area is bounded by the San Jacinto Mountains and a range of "badlands" between the San Jacinto and San Andreas fault zones. To the west, the coast range forms the other dominant boundary for the basin. Lower hills (2,000-3,000 feet) form the north and south boundaries of the basin, which is approximately 35 miles long and 20 miles wide.

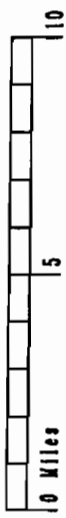
The southwestern Riverside County basin consists of flat alluvial plains surrounding a number of isolated mountainous ridges of ancient volcanic origin. To the north and south, hilly areas become more widespread, separating the basin from the Santa Ana River Basin (to the north) and the Pauba Basin (to the south). Most of the development in the region is occurring on the alluvial plains or at the base of the various mountains in and around the basin. The Moreno Valley, the Hemet area, Lake Elsinore, and the Temecula Valley are examples of this development. The basin has a semi-arid desert climate, with short mild winters and a dry period extending from April through October. Precipitation during the short rainy season averages 8 to 12 inches within the basin, with substantially greater amounts falling in the San Jacinto Mountains.

Currently, the dominant habitats in the basin are Riversidian sage scrub, chaparral, and non-native grasslands (Figure 2). Grazing, development, agriculture, and other human disturbance such as fire have resulted in a substantial reduction of all three habitats, as well as loss of riparian corridors along the major rivers and streams of the region. The RCHCA's Long-term Habitat Conservation Plan for the Stephens' Kangaroo Rat (SKR) notes that about 51% of the 927,000 acres in the region is cleared land. About one-half of the natural habitat remaining (455,000 acres) is chaparral (215,000 acres); exotic annual grasses and grasslands mixed with degraded sage scrub account for another 111,000 acres. Riversidian sage scrub (RSS) communities are the next most abundant, with approximately 75,000 acres remaining.

Minnich's vegetation map for the basin (Figure 2) indirectly shows the isolation of natural communities which is occurring as a result of development. The Lake Perris and Lakeview Mountains areas are surrounded by agricultural lands and new housing and commercial development. Wildlife movement between these areas of viable habitat is therefore severely constrained. It is particularly important to note from Figure 2 that RSS communities are generally fragmented and isolated in the midst of development throughout the basin; Large contiguous RSS communities are found in the hills surrounding the basin and in the area proposed for the Reserve. But few other large RSS communities are found.



San Diego County



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|--|---|
| <ul style="list-style-type: none"> <li>--- HCP Fee Area Boundary</li> <li>— Major Road</li> <li>▨ European Annual Grassland</li> <li>▩ Mixed European Annual Grassland / Coastal Sage Scrub</li> <li>▧ Coastal Sage Scrub</li> <li>▦ Chamise Chaparral</li> <li>▥ Red Shank Chaparral</li> <li>▤ Mixed Chaparral</li> <li>▣ Desert Chaparral</li> <li>▢ Riparian Forest</li> <li>□ Mixed Riparian / Eucalyptus Forest</li> </ul> | <ul style="list-style-type: none"> <li>▧ Coast Live Oak Forest</li> <li>▦ Engelmann Oak Forest</li> <li>▥ Canyon Live Oak Forest</li> <li>▤ Bigcone Douglas Fir Forest</li> <li>▣ Coulter Pine Forest</li> <li>▢ Knobcone Pine Forest</li> <li>□ California Juniper Woodland</li> <li>■ California Juniper / Scrub Oak Woodland</li> <li>▧ Singleleaf Pinyon / Canyon Liveoak Woodland</li> <li>▥ Cleared Land - Rural and Urban</li> </ul> |
|--|---|

Southwest Riverside County Vegetation Map

RECØN

### 3.3

### LAND OWNERSHIP AND LAND USE

Regional land use patterns affect the planning environment for natural community conservation by affecting the feasibility of plans to consolidate and preserve holdings with viable natural communities. For example, the Steele Peak area southeast of Metropolitan's Lake Mathews has significant natural communities (Figure 2), including chaparral, RSS, and live oak forest. But there are several thousand individual land holdings in the area. Acquisition of many individual holdings is administratively complex and this constrains plans to consolidate the natural communities in the area under public ownership.

Land ownership of the region's remaining native communities is generally fragmented, except in the foothills surrounding the basin, where there are significant public holdings (U.S. Forest Service and Bureau of Land Management). The Domenigoni Valley, Shipley Reserve, and Lake Skinner area is one of the few remaining large contiguous natural communities dominated by RSS in the basin.

Within the area covered by this MSHCP, Metropolitan currently owns more than 75% of the land, including all of the area within the boundary line for Lake Skinner and the Shipley Reserve. Lands in the Shipley Reserve are currently designated as a conservation area/mitigation bank; lands immediately to the east of the Shipley Reserve are subdivided; those to the west are generally in agricultural use (grazing).

In the Domenigoni Valley area, Metropolitan currently owns about 60% of the land and is currently negotiating to acquire the remaining lands for its project. Existing land uses on lands not owned by Metropolitan are farming (row crops, several dairies and poultry ranches, and grazing areas) and residential (scattered houses and trailers). The property is crossed by one major county maintained road (Newport Road), and by Metropolitan's existing San Diego Canal, which will be relocated as a part of the project. Absent the proposed Metropolitan project, the Domenigoni Valley site was anticipated to be fully developed by the year 2000; several large-scale developments were in final planning stages prior to Metropolitan acquisition of lands at the project site. For purposes of this MSHCP, it is assumed that Metropolitan will acquire the remaining lands in the Domenigoni Valley prior to 1994. Metropolitan also owns the entire Lake Skinner area. All of these lands will either be dedicated to reservoir operations, recreation, or the Reserve.

### 3.4

### REGIONAL DEVELOPMENT CONTEXT

#### 3.4.1

#### General

To understand the proposed Domenigoni Valley Reservoir and the MSHCP intended to pre-mitigate for sensitive species impacts directly associated with the project, it is necessary to understand how regional development trends are altering the overall ecological context of the Reserve area. This is best explained in terms of recent trends in development. Prior to acquisition of the reservoir site, much of it was zoned for residential development, with high density development on the valley floor. The Reserve is zoned for rural uses and low density development. Both areas are now in either public ownership or are used primarily for agriculture. The valley floor of the reservoir site has been planted in row crops for decades, and there are several large livestock operations as well (a large dairy and a poultry farm).

### **3.4.2 Existing Disturbance of Natural Habitats**

Under existing conditions, natural habitats are disturbed in a number of ways. First, grazing by local ranchers has resulted in extensive disturbance of Riversidian sage scrub habitats, primarily on the South Hills of the Domenigoni Valley. Grazing by cattle or sheep both destroys native habitats and introduces exotic seed stock to the areas. The presence of cattle brings with it cowbirds which parasitize the nests of native bird species, such as the California gnatcatcher.

Second, unrestricted access by equestrians, off-road vehicle users, and domestic animals destroys habitat directly, causes erosion of the soil, and virtually ensures that human-caused fires will occur in the dry sage scrub and grasslands on the hillsides surrounding the Domenigoni Valley. These disturbances have contributed to the slow type conversion of many areas from Riversidian sage scrub to mixed sage scrub and exotic grasslands communities. Fire recently destroyed approximately 200 acres of California gnatcatcher habitat on the North Hills of the Domenigoni Valley. On the east end of the North Hills, sage scrub habitat has not recovered from fires which occurred in the early 1980's. Riversidian sage scrub habitat has been replaced temporarily by mixed sage scrub and non-native grasslands. Third, the existing agricultural development in the Domenigoni and Diamond valleys somewhat isolates the habitat of the North Hills for some species from the larger block of contiguous habitat which begins at the South Hills and extends eastward to the Cleveland National Forest. The North Hills of Domenigoni Valley are therefore an ecological island, with only a reduced number of native species occupying the area. Existing agricultural uses of the reservoir/Reserve land also have potential long-term indirect effects on downstream water quality in several tributaries of the Santa Margarita River. Runoff from agriculture contains pesticides and high levels of sediment. Fertilizers containing nitrates contribute to high levels of nitrates in local groundwater.

### **3.4.3 Regional Development Trends**

#### **3.4.3.1 General**

Riverside County is located approximately 20 miles southeast of Los Angeles, bordered on the north by San Bernardino County, on the east by Arizona, on the south by San Diego and Imperial counties, and on the west by Orange County. The western one-third of the county, where the Reserve would be located, is developing rapidly (Figure 3). This one-third of the county contains approximately 75 percent of the county population or about 800,000 people. The Southern California Association of Governments projects that this population will reach 1,400,000 by 2010. Housing and employment will increase proportionally, with 275,000 additional housing units projected to be constructed in western Riverside County by 2010. The southern subregion of the County, which includes the Reserve area, is anticipated to have the highest growth rate in western Riverside County.

Urban development has historically been concentrated in the northern subregion of western Riverside County in and around the cities of Corona, Norco, Riverside, Moreno Valley, Banning, and Beaumont; these areas are nearest traditional centers of employment, with good rail and freeway access to commercial and industrial development. The central subregion, including the cities of Perris, San Jacinto, and Hemet is primarily rural and includes Lake Perris, Lake Mathews, and the San Jacinto Wildlife Area. Agriculture dominates the current land use outside of these large public holdings. In the southern subregion, including the cities of Canyon Lake, Lake Elsinore, Murietta, and Temecula, urbanization is occurring rapidly along the corridors of Interstates 15 and 215. These areas are relatively near employment centers in Orange and San Diego counties.

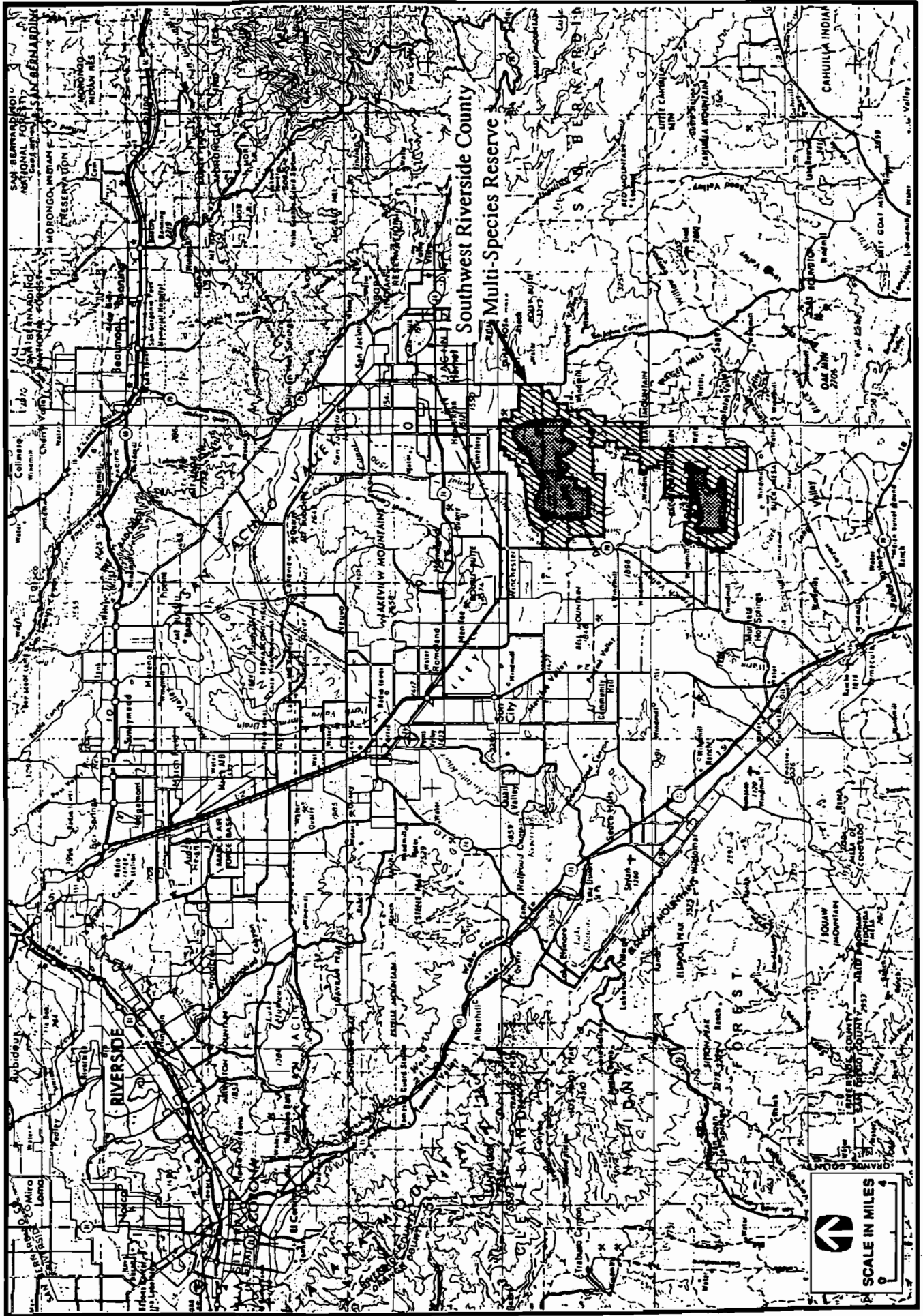
### 3.4.3.2 Development in the Project Area

Over the past five to ten years, southwestern Riverside County has seen significant growth in areas immediately adjacent to the reservoir site and the Reserve. To the north and east, the cities of Hemet, Homeland, and Romoland have been spreading out along Highway 74. New housing developments have been constructed about one mile north of the boundary for the proposed reservoir and Reserve. Development of the three towns will merge in the near future. An example of development is the 1,210-acre Page Ranch development, approved for 5,400 dwelling units in 1980 and currently being built out by several developers. The City of Hemet is also growing in a southeasterly direction, towards the project area. The Page Ranch development, immediately to the north of the proposed Reserve's northern boundary, recently removed approximately 1,000,000 cubic yards of earth from an area to be acquired for the Reserve (this area is being revegetated by Page Ranch and will be acquired). If the Reserve is not established, similar impacts to the proposed Reserve could be expected along the northern boundary in the near future.

To the south and east of the Reserve, development has been occurring rapidly. The City of Temecula is growing to the east and to the north along Highway 79 and Interstate 15. Development is occurring within a mile of the south border of Lake Skinner, as well as immediately to the East of the Reserve in the Rawson Valley area. There is new residential development along Newport Road about two to three miles east of the reservoir site, as well as increased development along Highway 74 east of Winchester. Re-alignment of Newport Road, proposed by the County of Riverside, will further promote development along the base of the North Hills of Domenigoni Valley. To the east of the Reserve, lower density development is occurring up Goodhart Canyon and along the eastern border of the Shipley Reserve. There is existing low-density development to the east of Lake Skinner as well. The regional development trend is further evidenced by local and County of Riverside plans for new transportation facilities. First, Winchester Road (Highway 79) has been scheduled to be widened from two lanes to four lanes within the next five years; Highway 79 would then be designated as a high capacity arterial/expressway with full access control. This action would make it an alternative route to Interstate 215 between the Moreno Valley and Temecula. It would also increase access to the general area and promote development along the newly-improved transportation corridor. Second, prior to selection of the reservoir site, a new east-west road through the Domenigoni Valley was planned.

The County Planning Department projections used to evaluate the existing road system also suggest that the area will be fully developed within the decade. A number of developments have been identified which would significantly affect land use and traffic in the region:

- Menifee North, a 1,554-acre site planned for 3,000 dwellings and 7.7 million square feet of commercial building;
- Menifee Ranch, a 1,300-acre site planned for 4,600 dwellings and 1.0 million square feet of commercial building;
- Menifee Estates, a smaller development of as yet to be determined size;
- Page Ranch, with 5,400 dwelling units;
- Eight smaller residential tracts on the north and east boundaries of the proposed reservoir and reserve.



Southwestern Riverside County Regional Map

The net effect of development and road improvement will be to surround the reservoir and reserve area with high density residential and commercial development. Long-term regional development trends also suggest that the reservoir and Reserve areas themselves would be developed in the relatively near future. This is evident from the filing of Specific Plan 294 (Monteverde), which proposed development of 606 acres of the Domenigoni Valley, including 2,400 dwelling units on 306 acres and 300 acres of mixed commercial, recreational, and institutional uses. Plans for sale and subsequent development of the Searl Ranch in the Domenigoni Valley were underway in 1990 before Metropolitan acquired this property in the Domenigoni and Diamond valleys.

#### **3.4.4 Future Condition in the Absence of a Reservoir Project and Associated Mitigation**

In the absence of a reservoir project and the acquisition and preservation of lands around the reservoir as a multi-species reserve, it is probable that development of the Domenigoni and Diamond valleys would occur within a decade, with the entire North Hills area surrounded by residential and commercial development and itself developed to some extent. Suitable habitat for many sensitive species would be threatened by increased human use of the habitat and by a high probability of fire.

Development on the South Hills will probably be limited by the steepness of the hills, and Federal listing of the California gnatcatcher would impose strict limits on development in occupied habitat. However, some development of upper slopes of these hills is likely. Heavily vegetated open space between the valley floor and the developments in the hills would be a fire hazard, and normal fire control methods would likely be employed to reduce hazards. These could range from clearing of brush to create a fire break to complete clearing and re-planting of the hillsides. Open space not cleared would be isolated and fragmented by development and roads.

To the east of the Shipley Reserve, development would likely be less dense than in the Domenigoni-Diamond valleys, but fencing, roads, and fire control measures would create an effective barrier to wildlife movement, further isolating the Shipley Reserve from the National Forest to the south and east. Probable development to the north and west would have indirect effects on the environment as well. Development adjacent to the Shipley Reserve would increase recreational use of this ecologically important area, and would introduce domestic animals and exotic seed stocks to the Shipley Reserve.

The without-project condition in the Domenigoni Valley Reservoir area would therefore most likely involve development of the entire valley floor, with up to 50,000 residential units by 2010. The effects of this development on surrounding hillsides and their occupied sensitive species habitat would be significant. Fires, predation and harassment by domestic animals, and disturbance by off-road vehicles would severely degrade the habitat over time. It is therefore likely that the habitat impacted by the reservoir project, as well as habitat to be placed in the reserve would be substantially degraded in the near future, resulting in loss of sensitive species habitat in both areas.

In addition, this MSHCP also changes the without-project condition at Lake Skinner. At this site, lands proposed to be included in this MSHCP would otherwise be under public ownership but would be managed for operations and recreation values, rather than for sensitive species. Placing these lands into the Reserve will ensure management for habitat conservation and preservation of sensitive species. This change in management will provide for limits to recreational uses of Lake Skinner wildlife habitat. Reduced human use of this habitat, and management for bio-diversity, will also reduce the potential for catastrophic fire.

Finally, this MSHCP will reduce the long-term impacts of development adjacent to the area proposed for Reserve by providing fencing and patrols to restrict access to the Reserve. Chainlink fencing will be provided where development abuts or is near the boundary of the Reserve, and smooth-wire fencing will be provided along other borders to restrict grazing. Access to the Reserve will be controlled at all three general public entry points from major recreation areas, and daily patrols of the Reserve will reduce the potential for illegal entry and activities on the Reserve. Patrols will reduce the threat of off-road vehicles. Without these actions, the habitat values of areas not fully developed would be severely compromised by human activity and disturbance from domestic animals. The effect of this MSHCP will therefore be to significantly increase the natural resource values of all of the lands placed into the Reserve.

### **3.5 REGIONAL ENVIRONMENTAL CONCERNS**

#### **3.5.1 Status of Natural Communities in Western Riverside County**

The development described above is altering southwestern Riverside County significantly; both agricultural areas and open-space are rapidly being converted to commercial and residential uses. In addition, a major environmental concern is the type conversion of native habitats to non-native grasslands following disturbance, primarily grazing and fire. Two type conversions are of particular concern. First, chaparral is being converted to coastal sage scrub following fire. Second, coastal sage scrub habitats are being converted to non-native grasslands following fire and subsequent invasion of non-native grasses and forbs from adjacent exotic grasslands. Minnich's vegetation mapping indicates the extent of this conversion process; he identifies about 78,000 acres of mixed sage scrub and exotic grasslands. In addition to the general loss of native habitats, there is particular concern in the basin over impacts to several sensitive resources:

- **Stephens' kangaroo rat.** The RCHCA is actively pursuing implementation of a general conservation plan for this Federally-listed endangered species. The RCHCA has identified a number of areas for possible inclusion in a multi-species habitat conservation plan. The Reserve is at the core of one of these areas.
- **California gnatcatcher.** The California gnatcatcher is proposed for listing under the FESA because its habitat, coastal sage scrub, is rapidly being lost to development, burned and type-converted to non-native grassland, or grazed and made unsuitable for occupation by the California gnatcatcher. The Reserve is one of several areas with moderate populations of this sensitive species.
- **Coastal sage scrub and chaparral.** Both of these habitats are in decline in the region. This decline may be the result of frequent fire, which is followed by an invasion of non-native plants which out-compete native plants during early regrowth phases. The result is a type conversion of habitat. Extensive grazing may also contribute to such type conversions. The most significant cause of decline in these habitats is increased urbanization of western Riverside County.
- **Wetlands.** The historic marsh areas along the San Jacinto River and other major waterways in the region have been cleared and drained as a result of agriculture and development. The Department's San Jacinto Wildlife Area is restoring some of this wetland habitat, and local duck clubs have made a contribution to its preservation and restoration as well. Nevertheless, wetland/marsh habitat, important to the migratory



birds of the Pacific Flyway, is scarce in the region compared to probable historic levels. The proposed Reserve will not directly address this issue, although the two reservoirs within the Reserve will provide some aquatic habitat for migratory birds.

An analysis of the vegetative communities in the immediate vicinity of the Reserve (the area bounded by highways 79, 74, and State Street and its extension on Figure 2) shows that there are approximately 22,375 acres of coastal sage scrub, 4,400 acres of mixed non-native grasslands and coastal sage scrub, and 93,885 acres of other lands, including large areas of chaparral and agricultural lands. Within this context, the Domenigoni Valley Reservoir impact to approximately 2,450 acres of coastal sage scrub represents a loss of about 11% of the total habitat of this type, while the Reserve's approximately 5,600 acres of this habitat type represents almost 27% of the habitat in this portion of southwestern Riverside County.

### **3.5.2 Regional Environmental Objectives**

The primary objective of regional plans currently being formulated and implemented is to acquire, preserve, and manage the remaining large contiguous areas of natural communities within the basin. The RCHCA's SKR plan is a primary example of this focus. The RCHCA has identified a number of large contiguous parcels of suitable habitat for the SKR and is now pursuing acquisition of these parcels for long-term preservation.

Creation of wildlife corridors to link significant habitat areas is another regional planning priority. Various county and regional planning agencies have efforts underway to acquire and preserve corridors along the San Jacinto River and other county water courses. The focus of planning for sensitive species is also on habitat acquisition and preservation. In the long-term, the primary objective of planning for sensitive species is to identify habitat requirements for the various species and to manage for these species by returning disturbed communities to their historic status. For the California gnatcatcher, for example, this will involve research to gain a better understanding of coastal sage scrub communities combined with efforts to reverse the type conversion of RSS habitats to exotic grasslands.

## **3.6 MULTI-SPECIES HABITAT CONSERVATION PLAN OBJECTIVES**

### **3.6.1 General**

The Reserve will be large enough and have the bio-diversity required to make a contribution to meeting overall regional environmental objectives. This perspective is reflected in the specific multi-species habitat conservation plan objectives. While these objectives are focused on meeting the requirements of the FESA and the Fish and Game Code, they are also structured to provide long-term net regional conservation benefits.

### **3.6.2 Objective One: Minimize Impacts**

Efforts to minimize impacts from the Domenigoni Valley Reservoir are focused first on efforts to delay project impacts to the extent feasible while mitigating actions are underway, particularly actions to increase habitat available to the sensitive species. Activities which constitute "take" of these species may be controlled and limited to the extent technically feasible. Delay of impact, combined with action to provide alternate suitable habitat, may reduce the *net* impact to the sensitive species within the impact area.

### **3.6.2 Objective Two: Monitor Impacts**

A second objective of the MSHCP is to provide for monitoring of impacts to ensure that they are consistent with those anticipated in the project environmental documentation, and to ensure that additional mitigation measures may be formulated and implemented should levels of impact vary from those predicted.

### **3.6.4 Objective Three: Mitigate for Unavoidable Impacts**

The third objective is to mitigate for unavoidable impacts in a manner which meets the requirements of a Section 10(a) permit. This can best be done from an overall regional perspective. Mitigation must be consistent with overall regional planning for sensitive species and their habitat. MSHCP and Reserve objectives must be consistent with the general objectives of regional environmental planning. From this perspective, adequate mitigation for Domenigoni Valley Reservoir impacts requires that the following objectives be met:

- To preserve a large contiguous area of natural habitat for the sensitive species identified and protect this habitat from human disturbance. This is consistent with overall regional needs and with the resources of the Reserve;
- To link all elements of the existing 3,307 acres of land already preserved under either the Shipley Agreement or the mitigation plan for the Domenigoni Valley Reservoir, including linking the North Hills of the Domenigoni Valley with the habitat on the South Hills. Linking of habitats within the Reserve to create a contiguous area and in particular to link the North Hills to the rest of the Reserve habitat is consistent with regional conservation objectives;
- To manage this land to permit and encourage restoration of historic natural communities, with an emphasis on bio-diversity. Management for biodiversity not only will contribute to overall regional objectives, but is entirely consistent with the fact that the Reserve supports over 30 sensitive species, including the species covered by this MSHCP; and
- To enhance habitat for sensitive species to the extent feasible without favoring one species over another. Examples of such actions would include creation of edge habitat along fire breaks and roads, establishment of artificial nesting and roosting sites, and use of fire and grazing to manage exotic species.

### **3.6.5 Objective Four: Research to Contribute to Long-Term Conservation and Management for Sensitive Species**

Knowledge of sensitive species life history, habitat requirements, and distribution within the Reserve and within southwestern Riverside County in general would contribute significantly to long-term species conservation planning. Accordingly, a significant research program is proposed as a part of this MSHCP.

**MEASURES TO MINIMIZE IMPACTS**

Habitat within the project impact area will be cleared, using the least damaging methods feasible given project schedule. Initial clearing activities will be required in late 1992 and early 1993 to clear habitat for archeological and geotechnical investigations, as well as to provide a fire break between construction areas and the proposed Reserve. Metropolitan is attempting to minimize the impacts of this clearing activity in the following manner:

- Use of grazing and manual labor to clear areas, where feasible. This will reduce the potential for direct mortality related to clearing, and will allow wildlife in the impact area an opportunity to move upslope into the Reserve.
- Clearing from the bottom of the valley upward to the extent feasible to, again, allow wildlife an opportunity to escape the impact area and move upslope into the Reserve.
- Where machinery is used for clearing, only the top 4-6 inches of soil will be removed.

Although virtually all habitat within the impact zone will be removed prior to March of 1993 to open the area up for archeological and geotechnical investigations, these clearing methods will minimize impacts to some extent. This effort to minimize clearing impacts is being undertaken at significantly higher cost than clearing by bulldozers scraping up to 2-3 feet of soil from the impact area, the more common construction method.

In addition, habitat will be removed during the period between August and January of each year. This will mean that impacts will generally be confined to non-nesting, non-reproductive periods for most species. Thus, habitat which must be removed during the period of August 1 through July 31 of the following year will be identified and removed during the August 1 through December 31 period. Migratory birds and other species which would have used this habitat for nesting will therefore seek other nesting habitat. Given management efforts to improve habitat quality on the Reserve, it is hoped that many of these species will find alternate habitat in the Reserve. Efforts to control human access to Reserve habitat through fencing and patrols will allow much of the disturbed habitat in the Reserve area adjacent to impacted habitat to recover. Other management activities, such as efforts to enhance the recovery of natural communities to their historic status may also increase sensitive species habitat in the Reserve, providing for a net gain in populations in Reserve areas. It is anticipated that these management strategies will result in a higher carrying capacity for this previously disturbed habitat and a net gain in sensitive species populations. Specific enhancement activities will be determined by the Reserve Management Committee; activities currently contemplated include removal of exotic grasses and forbs to promote recovery of coastal sage scrub species (by grazing or controlled use of fire), removal of destructive grazers, fencing to reduce disturbance, and measures to control cowbird parasitism on California gnatcatcher and other nesting birds. Over time, these activities are intended to augment the capacity of the Reserve to support sensitive species.

Metropolitan will also maintain the impact area free of vegetation during construction in an effort to minimize direct take which could result if revegetation of the area drew sensitive species out of the Reserve and back into areas where construction activity would cause direct mortality.

Metropolitan also desires to avoid indirect impacts to sensitive species, such as those which will occur as a result of dust and noise resulting from construction adjacent to the proposed Reserve. Actions which will reduce indirect impact are further explained below, but will generally consist of:

- Use of water to reduce dust
- Use of screens, as feasible, to reduce the impacts of construction lighting on the reserve
- Use of available noise reduction technology to reduce construction noise, to the extent feasible.

This concern for avoiding indirect impacts to species during reproductive cycles is also reflected in the establishment of an operations buffer zone around the ultimate impact area for the project. Although this buffer zone will ultimately provide significant habitat for sensitive species, it has not been included in the calculation of Reserve habitat because some operational activities will occur within the zone. It is anticipated that pre-construction and construction activities will create a level of disturbance in this zone which will discourage species sensitive to disturbance from establishing nests in the buffer zone.

Following construction, Metropolitan will fill the reservoir over a period of 4 to 6 years. This slow filling rate will mean that any animals remaining in the impact area or otherwise utilizing this habitat will have ample opportunity to move out of impacted habitat and into habitat on the upper slopes. Specific measures to minimize impacts to each of the sensitive species found in the Domenigoni Valley Reservoir impact area and are outlined in Appendix A.

Establishment of the Reserve and initiation of management activities concurrent with initial impact periods is also a strategy for minimizing impacts. The existence of the Reserve, and management to improve habitat quality on lands which have been recently burned, grazed, or otherwise disturbed by human or domestic animal activity, will allow for movement of sensitive species within the reservoir project impact area to move into adjacent reserve habitat prior to major impacts. Movement into adjacent habitat may be feasible for sensitive species because:

- Management to assist native habitat in recovery may improve habitat quality and improve area carrying capacity, therefore allowing sensitive species to survive once they have moved into adjacent habitat. Based on a 5-day field survey by William Wagner Biological Consulting in July of 1992 and review of 1990 and 1992 aerial photographs, there are approximately 1390 acres of disturbed, degraded habitat within the Reserve which can be managed to improve carrying capacity (Table 3-2). This survey involved a general walk-over of the Reserve to identify and generally map areas of obviously degraded habitat;
- Management activities may increase habitat for some species by creating a mosaic of different age-class habitat areas (through controlled burning) and by creating additional edge habitat utilized by many species. For example, fire control plans may provide for fire breaks which will be occupied by SKR and other species which preferred disturbed areas; and
- Planning for movement of species out of the impact area may include phasing of impacts to avoid nesting periods for both territorial and migratory species. In impact areas

designated for major construction activities, it may be feasible to remove habitat prior to nesting seasons, thereby allowing species to establish in new territories prior to activities such as blasting and excavation.

- Specific management activities may be developed to provide additional nesting habitat, outside of the reservoir project impact area, to ensure that migratory species have alternate nesting sites when they arrive. For example, nesting sites in exotic trees in the impact area may be replaced with pole nests within the Reserve.

Managed properly, the Reserve therefore offers an opportunity to minimize impacts as well as to mitigate for them.

**Table 3-2.  
Reserve Habitat Currently in Degraded Condition and Suitable for Enhancement**

<u>Area and Habitat</u>	<u>Acres</u>	<u>Reason for Existing Condition</u>
North Hills RSS/GRASS	725	Fire, grazing, exotics
South Hills RSS	90	Grazing, exotics
Shiplay Reserve RSS	0 <sup>1</sup>	Grazing, exotics
GRASS	0 <sup>1</sup>	
CHAP	0 <sup>1</sup>	
Lake Skinner RSS	575	Fire, exotics, off-road vehicles

Notes: Virtually all disturbed habitat at the Shiplay Reserve is occupied by Stephens' kangaroo rat; management of this habitat to assist in its recovery to sage scrub or other native communities may not be feasible without affecting this federally-listed endangered species. Therefore, this habitat was not considered as "degraded" nor is it considered suitable for enhancement.

### 3.8

### MEASURES TO MONITOR IMPACTS

Metropolitan will monitor the impacts of its construction activities on an on-going basis, as provided for in its FEIR. These efforts will include banding and monitoring of California gnatcatchers in the impact area and monitoring of their movement within the valley for a period of at least 5 years.

On the Reserve, monitoring will be a feature of the reserve research program, and will focus on:

- **Monitoring of habitat condition leading to management recommendations for the Reserve, which may involve monitoring of:**
  - **Changes in species composition**
  - **Presence of noxious exotic species**
  - **Health of individual plants and animals**
  - **Progress of community succession following disturbance**
  - **Presence of seedlings**
  - **Presence of sensitive animal and plant species**
  - **Effects of human use**
- **Monitoring of California gnatcatcher impacts, which may also include identification of problems related to introduced animal species, such as cowbirds and domestic cats.**

Monitoring will be conducted as a part of routine management of the Reserve, to document the nature of the Reserve ecosystem and the ecosystem response to variables such as weather and human use. Under this MSHCP, the entity responsible for day-to-day management of natural resources (Metropolitan initially, and an entity to be selected by the Management Committee later) will designate a full-time director for the Reserve. The director will conduct periodic surveys of habitat, identify management needs, and propose management activities. Additional monitoring will be conducted as needed.

As portions of the Reserve are opened to recreation, use patterns and impacts will be monitored closely to ensure that regulations and enforcement activities are adequate to protect the natural communities. Changes in management will be implemented if there are significant impacts to natural communities as a result of recreation on the Reserve. Monitoring of the movement of California gnatcatchers prior to and during construction. This monitoring began in early 1992 with banding of gnatcatchers in the project area (as well as other areas in the region such as Lake Mathews and Motte Reserve as a part of long-term studies). Finally, resource inventories and focused surveys of the Reserve area will identify sensitive species in the Reserve and identify habitat use patterns in the Reserve. Based on these inventories, it will be possible to develop overall management strategies for the Reserve which will assist management in efforts to promote the recovery of natural communities.

Monitoring of project impacts *per se* will be focused on the direct impact area. The Reserve research plan, which will involve long-term monitoring of selected areas for research and management purposes, will be focused on understanding the factors which contribute to long-term population viability for sensitive species on the Reserve. Following dam construction and reservoir filling, the Reserve research and management plan may include monitoring the effects of the reservoir on the adjacent Reserve habitat. These Reserve monitoring efforts will be focused on establishment of long-term management.

### **3.9 MEASURES TO MITIGATE IMPACTS OF TAKE**

#### **3.9.1 General**

The primary mitigation strategy for the sensitive species covered by this MSHCP is creation and long-term management of a large multi-species Reserve to preserve natural communities which support these sensitive species. As previously noted, 3,307 acres in the Reserve are lands which are already being preserved under previous mitigation agreements. This multiple-species MSHCP will add about 5,400 to 5,700 acres to the preserved area, creating a Reserve of 8,700 to 9,000 acres. The area to be added to existing mitigation areas is highlighted on Figure 1, above.

In addition, although no mitigation credit can be assigned to research, the Reserve will be used as a research resource. Life history and habitat requirements research can be pursued on the Reserve under controlled conditions, leading to a better understanding of the biology and habitat requirements of the sensitive species covered by this MSHCP. As a result, resource managers from the Department and the Service will be able to develop the data needed to support regional planning efforts.

### **3.10 THE RESERVE**

#### **3.10.1 Ecological Profile**

The approximately 9,000 acres within the Reserve is within a larger 20,000-acre area of publicly owned lands, most of these lands owned by Metropolitan and used for either reservoir operations or recreation. The area within the boundaries of the Reserve includes Lake Skinner and the proposed Domenigoni Reservoir. Once completed, the Domenigoni Valley Reservoir will provide approximately 4,450 acres of freshwater habitat in an area with few such resources, supplementing the approximately 1,200 acres of water surface area at Lake Skinner. This 5,650 acres of water surface is not a part of the area for the Reserve, but management of the reservoirs will in general be compatible with Reserve management. In addition, the County of Riverside owns lands within the Shipley Reserve and adjacent to the Reserve at Bachelor Mountain.

The Reserve is almost wholly within the boundaries of an RCHCA SKR study area. The RCHCA holds a conservation easement on portions of the Shipley Reserve dedicated to SKR management. Additional RCHCA acquisitions in the area are probable in the near future. The RCHCA has a pending application for a grant (1:1 matching funds) to acquire certain lands to the west and adjacent to the Shipley Reserve. These, and other lands acquired by the RCHCA will be added to the Reserve and placed under Reserve management as they are acquired.

Management objectives for the Reserve are in part a function of the regional context for the Reserve and in part a function of the resources of the Reserve. Planning objectives for the Reserve must be consistent with the regional context and realistic in terms of the resources of the Reserve.

In the Domenigoni Valley, the pre-project condition is that of a flat agricultural valley surrounded by steep hillsides which are dominated by Riversidian sage scrub, chaparral, and non-native grassland habitat. Agricultural operations currently separate the North Hills of the Domenigoni Valley from the South Hills; as a result, the North Hills are partly isolated from other areas of natural habitat in the region. Riversidian sage scrub is the dominant community of both impact areas and areas outside of the impact zone, and much of the RSS is occupied or suitable for occupation by the California gnatcatcher.

In addition, there is chaparral and non-native grasslands habitat. Within the upland habitat areas surrounding the valley, a number of sensitive species were observed during 1990-1991 surveys. While 16 unlisted sensitive species were observed within the project impact area, the area outside of the impact area was found to support 31 known sensitive species (Table 1-1, above), or about 40% of the sensitive species found in all of western Riverside County.

The Shipley Reserve consists of a high valley dominated by disturbed grasslands, surrounded by north-south running hills with Riversidian sage scrub and chaparral habitats. Several bands of coast live oak woodland and live oak riparian woodland run through the Shipley Reserve, following stream courses, primarily along Rawson Creek.

The Lake Skinner area proposed for inclusion in the Reserve is diverse habitat, dominated by non-native grasslands and Riversidian sage scrub, habitats suitable for the SKR and the California gnatcatcher, respectively. Evidence of occupation by other sensitive species was also found during 1990-1991 habitat surveys at Lake Skinner, including the orange-throated whiptail, the San Diego horned lizard, Bell's sage sparrow, the Southern California rufous-crowned sparrow, Payson's jewelflower, and Parry's spineflower. Extensive riparian vegetation has grown along the margin of the lake. Some of this area will be included in the expanded Reserve, with limited access to it except by boat. The drainages into the Skinner area, particularly Rawson Creek and Tualota Creek, support significant riparian areas. In the aggregate, the Reserve will encompass highly significant areas of Riversidian sage scrub, chaparral, non-native grassland, and live oak riparian forest, as well as other communities (Table 3-3).

In the aggregate, these three somewhat distinct ecological areas support a wide variety of wildlife, including many species listed or candidates for listing under either the FESA or the CESA. Of these species, 16 occur in the impact area of the Domenigoni Valley Reservoir, although some of these occur only sporadically or in very low numbers. In many cases, the presence of a sensitive species within the impact area was established on the basis of a single incidental observation during other environmental studies associated with the reservoir project FEIR. Given these Reserve resources, it is appropriate to consider the area selected for the Reserve as a significant regional resource, with multi-species management approaches being the most appropriate strategies to pursue in formulation of management objectives and in developing a management plan for the Reserve.

### **3.10.2 Reserve Resources**

The primary mitigation measure proposed for sensitive species impacts is acquisition, preservation, and management of the Reserve itself. Based on preliminary studies, this action will result in preservation and coordinated management of significant natural communities. In the 8,700 to 9,000 acres of the combined Reserve, a number of distinct vegetative communities will be preserved and managed (Table 3-3, Figures 4-6).



**Table 3-3  
Reserve habitats and approximate acreage<sup>1</sup>.**

<u>Habitat Type</u>	<u>Approximate Acreage</u>
Riversidian sage scrub:	5,600 acres
Non-native grasslands:	1,500 acres
Chaparral:	1,400 acres
Coast Live Oak Woodland:	18 acres
Live Oak Riparian Forest:	21 acres
Sycamore/Alder Riparian Forest:	15 acres
Southern Willow Scrub:	25 acres
Cottonwood-Willow Riparian Forest	17 acres
Corridor at base of dams (habitat type not determined at this time):	300 acres

Note 1. For a detailed breakdown of habitat, by area, see Table 3-1.

The designation of habitat as "suitable" for any sensitive species was made based on field observations of habitat use by each of the species and on review of existing literature to determine habitat requirements and determinants for each sensitive species. Based on this work, the characteristics of suitable habitat were estimated and compared to habitat characteristics within the impact and Reserve areas. All habitat with the general characteristics of suitable habitat for the species was designated as suitable for both reservoir impact and Reserve areas. This results in an approximately equal but probable overstatement of suitable habitat acreage for each sensitive species. See Appendix A for a description of this methodology.

For most of the 16 sensitive species, which were not the subject of species-specific surveys during the 1990 and 1991 surveys for the reservoir project EIR, it is difficult to estimate actual acreage of suitable habitat. For example, according to the current literature (see Appendix A) the San Diego desert woodrat is likely to inhabit areas with rocky outcroppings, but may also occur in lower numbers in other habitats. Since its preferred habitat is widely scattered throughout both the reservoir project upland impact area and the Reserve but not precisely mapped, the assumption has been made that all habitat which has rocky outcroppings within it would be suitable, at least to some degree. This "worst-case" assumption for the impact area is balanced by a similar "best-case" assumption for the habitat in the Reserve. Habitats of the same type in the impact area and the Reserve are quite similar (although impact area habitat is generally between 1600 and 1750 feet NGVD and Reserve habitat is from 1450 and 2500 feet NGVD). Because of the habitat similarities, applying the same assumption to both areas gives a reasonable approximation of the ratio of impacted habitat to Reserve habitat (Table 3-4). To ensure against underestimation of impacts, the highly degraded habitat within the impact area on the south-facing slope of the North Hills was designated in the FEIR and in this MSHCP as coastal sage scrub.

For the California gnatcatcher, acreage of suitable habitat is most appropriately expressed as a range. For other species, the most appropriate method for designating suitable habitat is to include all habitat which has the general characteristics of the habitat where the species is found normally. Most of the sensitive species in the project impact area utilize either coastal sage scrub and chaparral or coastal sage scrub and non-native grasslands habitats. Because there is approximately the same amount of chaparral and non-native grasslands habitat on the Reserve, the mitigation acreage on the Reserve for these all of

species is quite similar. As Table 3-4 indicates, there is from 7,000 to 7,150 acres of habitat on the Reserve suitable for sage scrub/chaparral species and sage scrub/grasslands species, respectively.

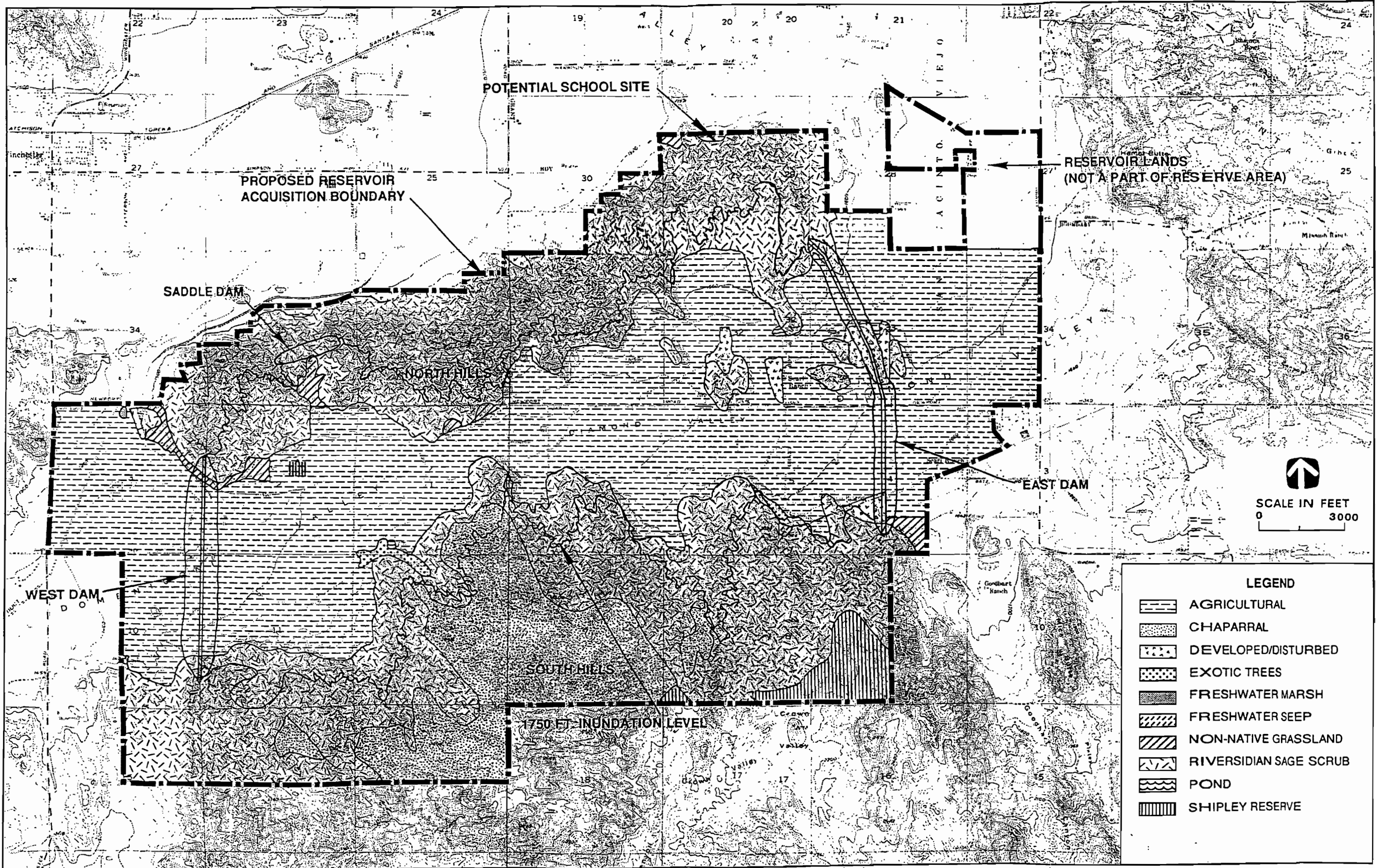
Occupied habitat for the Stephens' kangaroo rat is not identified on Table 3-4 because this MSHCP does not specifically address impacts to this species. Habitat for this species was mapped by Dr. Michael J. O'Farrell; maps of habitat in both the impact and Reserve areas are contained in the project FEIR. It is likely that, like other species, the SKR distribution within these areas has changed somewhat since 1990-1991.

**Table 3-4.  
Reserve Acres of suitable habitat for sensitive species.  
(Reservoir impact area sensitive species only)**

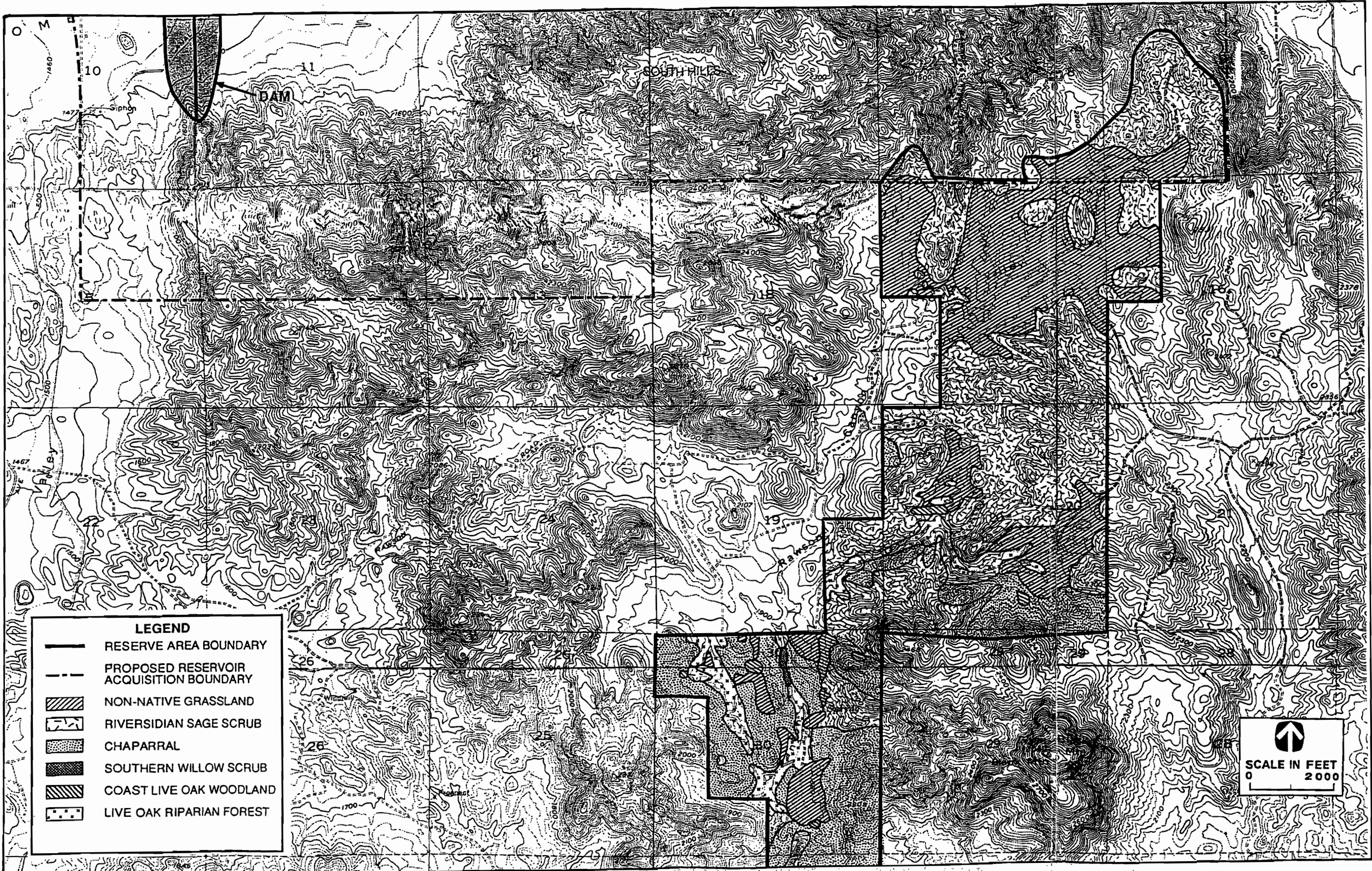
<u>Species</u>	<u>Acres of Suitable Habitat</u>
California gnatcatcher:	1,400 to 4,779 <sup>1</sup>
Ferruginous hawk:	NA <sup>2</sup>
Loggerhead shrike:	7,050
So. Calif. rufous-crowned sparrow:	7,000
Bell's sage sparrow:	7,000
Orange-throated whiptail:	7,000
San Diego horned lizard:	7,000
Coastal western whiptail:	7,000
Northern red-diamond rattlesnake:	7,000
San Diego black-tailed jackrabbit:	7,050
San Diego desert woodrat:	7,000
NW San Diego pocket mouse:	7,000
Payson's jewelflower:	120
Parry's spineflower:	120
Smooth tarplant:	None
San Jacinto Valley saltbush:	None

1. The first figure is based on estimates of suitable habitat during 1990, when conditions were poor following 5-6 years of drought; the second figure is based on 1992 data when conditions had improved following 2 relatively wet and warm springs.
2. The ferruginous hawk is a winter visitant to the project area and the Reserve, foraging in grasslands and on the Domenigoni Valley floor. The species utilizes adjacent habitat as well. It is therefore difficult to estimate the "acreage" of habitat for this species, as its foraging range may extend well beyond the project boundaries. The project may be assumed to have an impact on the two winter visitants which have been observed in the valley; these birds may be able to alter their foraging range, and management of Reserve grasslands may provide some alternate habitat for the species.

The reservoir project EIR vegetation surveys conducted in 1990 and 1991 are the basis for determination of suitable habitat for most of the sensitive species shown on Table 3-4. Habitat classifications from these surveys are shown on Figures 4 through 6.



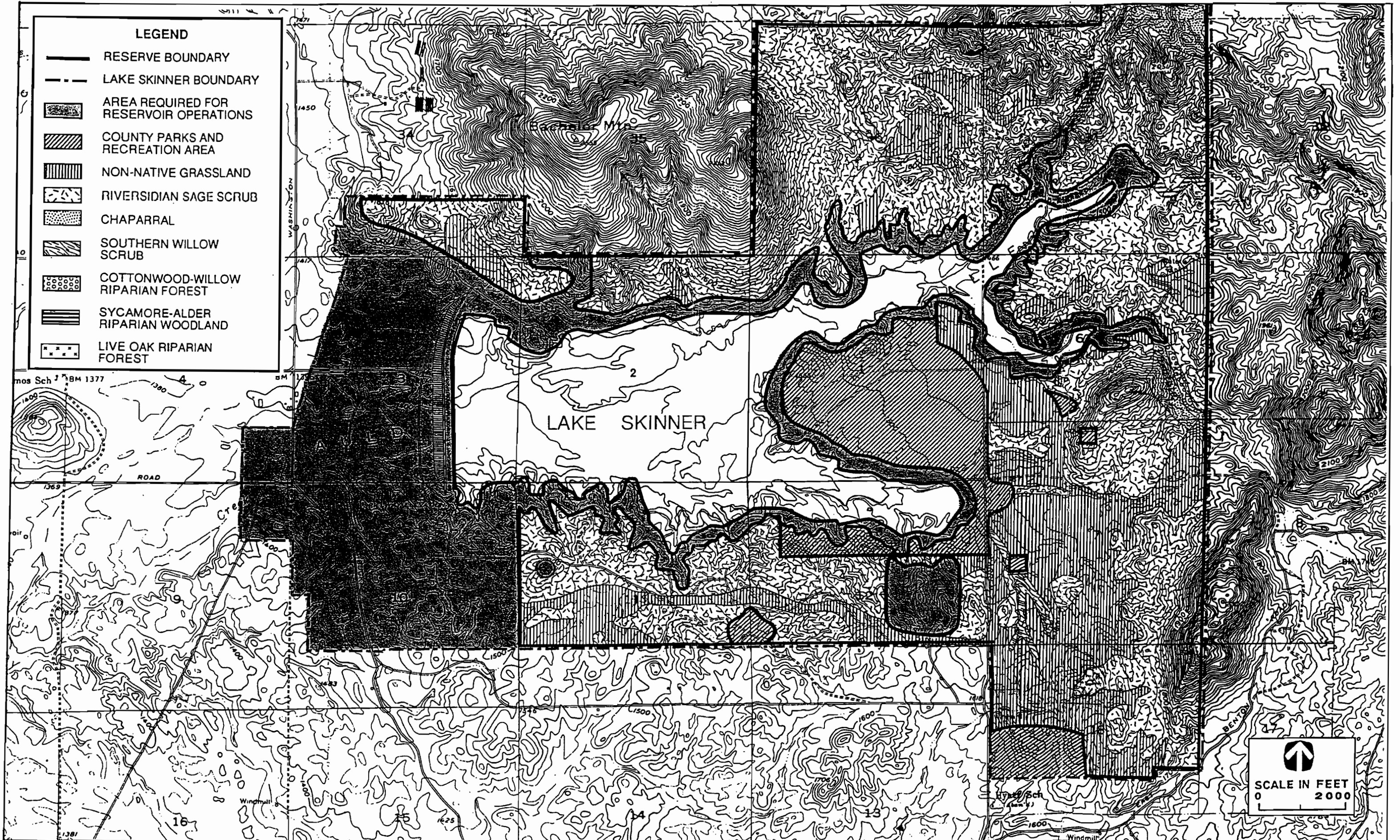
Vegetation Resources at Domenigoni Valley



**LEGEND**

- RESERVE AREA BOUNDARY
- PROPOSED RESERVOIR ACQUISITION BOUNDARY
- NON-NATIVE GRASSLAND
- RIVERSIDIAN SAGE SCRUB
- CHAPARRAL
- SOUTHERN WILLOW SCRUB
- COAST LIVE OAK WOODLAND
- LIVE OAK RIPARIAN FOREST

SCALE IN FEET  
0 2000



Vegetation Resources at Lake Skinner Reserve

The ferruginous hawk is a migrant in the area, wintering in the valley, but not nesting; two individuals were observed during 1989-1990. The loggerhead shrike is a resident of the valley floor, with two nesting pairs identified during surveys in 1989-1990. There is probably only very limited habitat for this species on the valley floor, which has been continuously farmed over the past 100 years. Total impact area suitable habitat for the loggerhead shrike is estimated at 2,200 acres. The Reserve probably contains 7,150 acres of suitable habitat for this species.

Estimates of suitable habitat for the Southern California rufous-crowned sparrow and Bell's sage sparrow were based on field observations of these species during FEIR surveys of the area during 1990-1991. Both of these species are known to inhabit RSS and chaparral, although the level of their utilization of these habitats varies. Nonetheless, they can be expected to utilize these habitat types to some extent, as well as to utilize ecotonal habitat areas.

The orange-throated whiptail and San Diego horned lizard have been observed in a wide variety of habitats within the Reserve, including RSS, chaparral, grasslands, and several of the woodland habitats within the Reserve. Indirect evidence of significant populations (concentrations of scat) have been observed in several of these communities. It is therefore probable that these species inhabit 7,000 Reserve habitat.

The coastal western whiptail and the northern red-diamond rattlesnake are likely to be found in patches of habitat throughout the impact area, particularly in edge habitat and rocky outcroppings. The acreage of habitat for these species is not possible to calculate; population densities of the coastal western whiptail are likely to be low, as the site is on the fringe of its habitat. The northern red-diamond rattlesnake is likely to occur throughout the impact and reserve areas. Total acreage of habitat for these species is estimated at 7,000 acres.

The San Diego blacktailed jackrabbit may occur throughout the impact and Reserve areas. This is also true for the San Diego desert woodrat, which is likely to be found concentrated in areas with rocky outcrops. These occur infrequently on the impact area and more frequently at higher elevations. Total Reserve acreage of habitat for these species is estimated at 7,000 acres.

During FEIR surveys, the northwestern San Diego pocket mouse was observed commonly throughout sage scrub and chaparral habitat in the impact and Reserve area; therefore the total acreage of habitat for this species is estimated at 2,200 acres in the impact area and over 7,000 acres in the Reserve area.

Payson's jewelflower and Parry's spineflower were found within the Reserve boundaries at the Shipley Reserve and at Lake Skinner. Populations of these sensitive plants will be enhanced to ensure that the impacted populations in the Domenigoni Valley are replaced on at least a one-to-one basis. Details of this enhancement program are found in later sections.

The sensitive species resources of the Reserve's three areas, Domenigoni Valley, Shipley Reserve, and Lake Skinner, are shown on the figures below. Not all sensitive species have been mapped in detail on the figures below, because surveys for these species are preliminary. Suitable and probably occupied habitat for these species are shown in Appendix A.

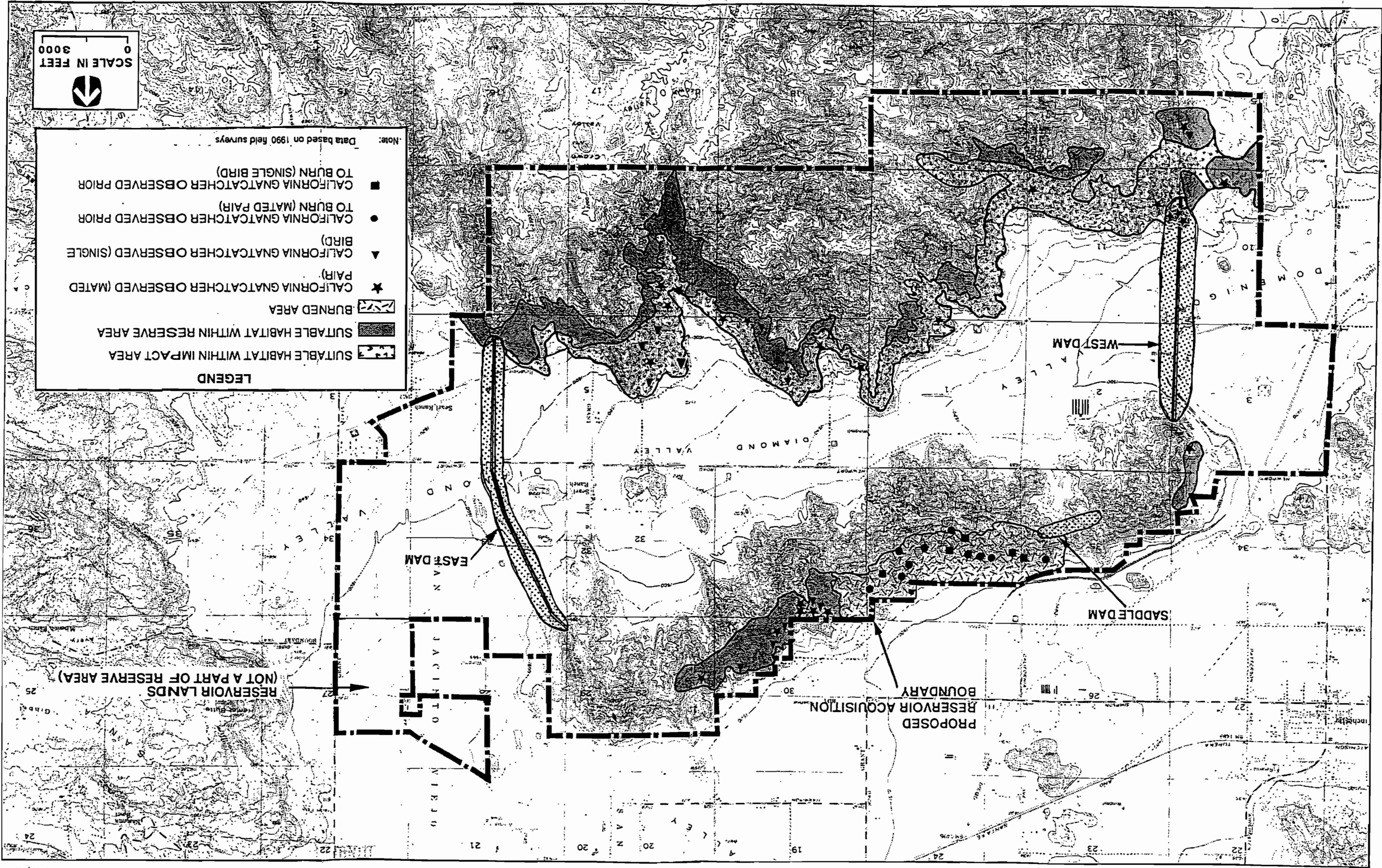
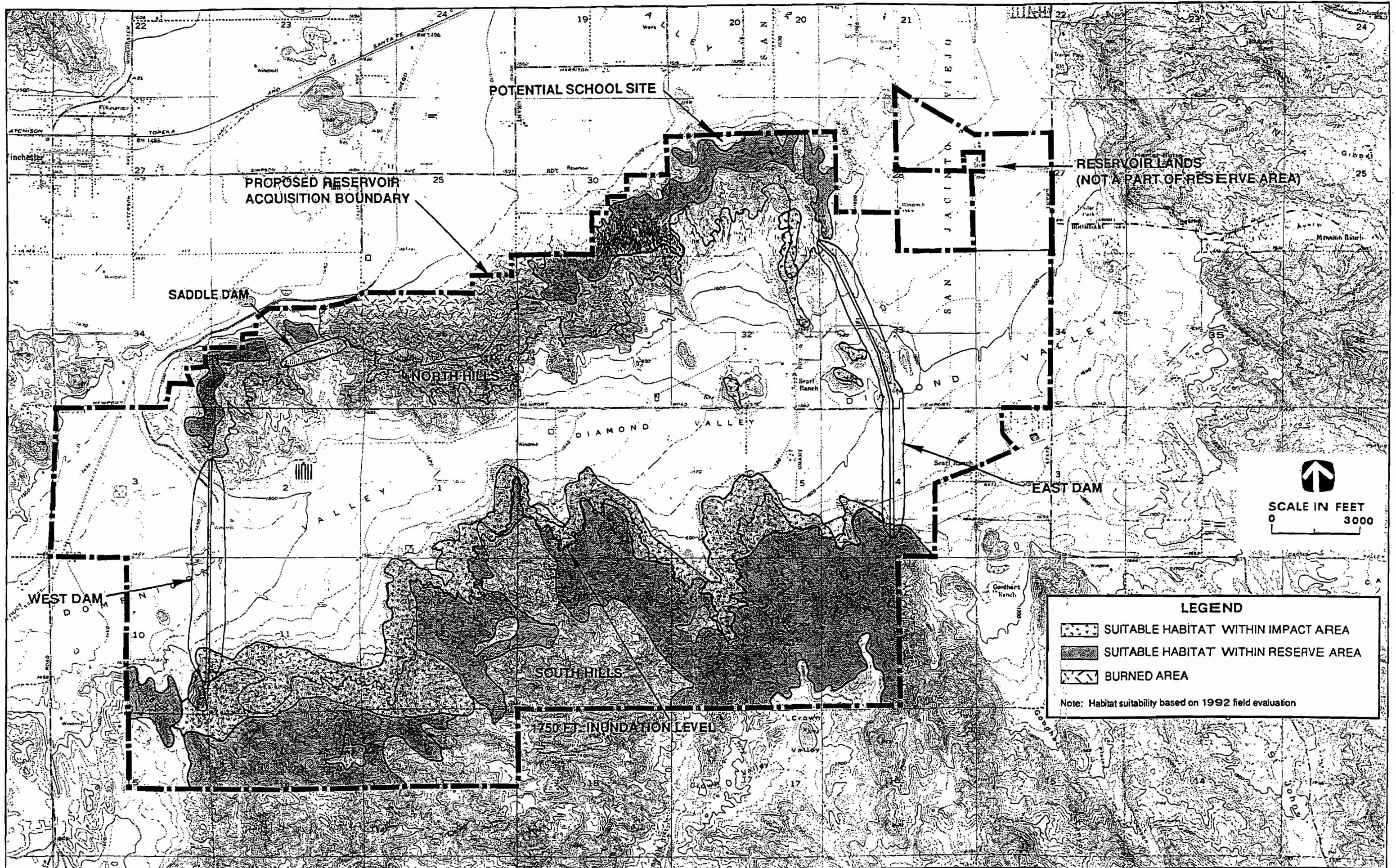
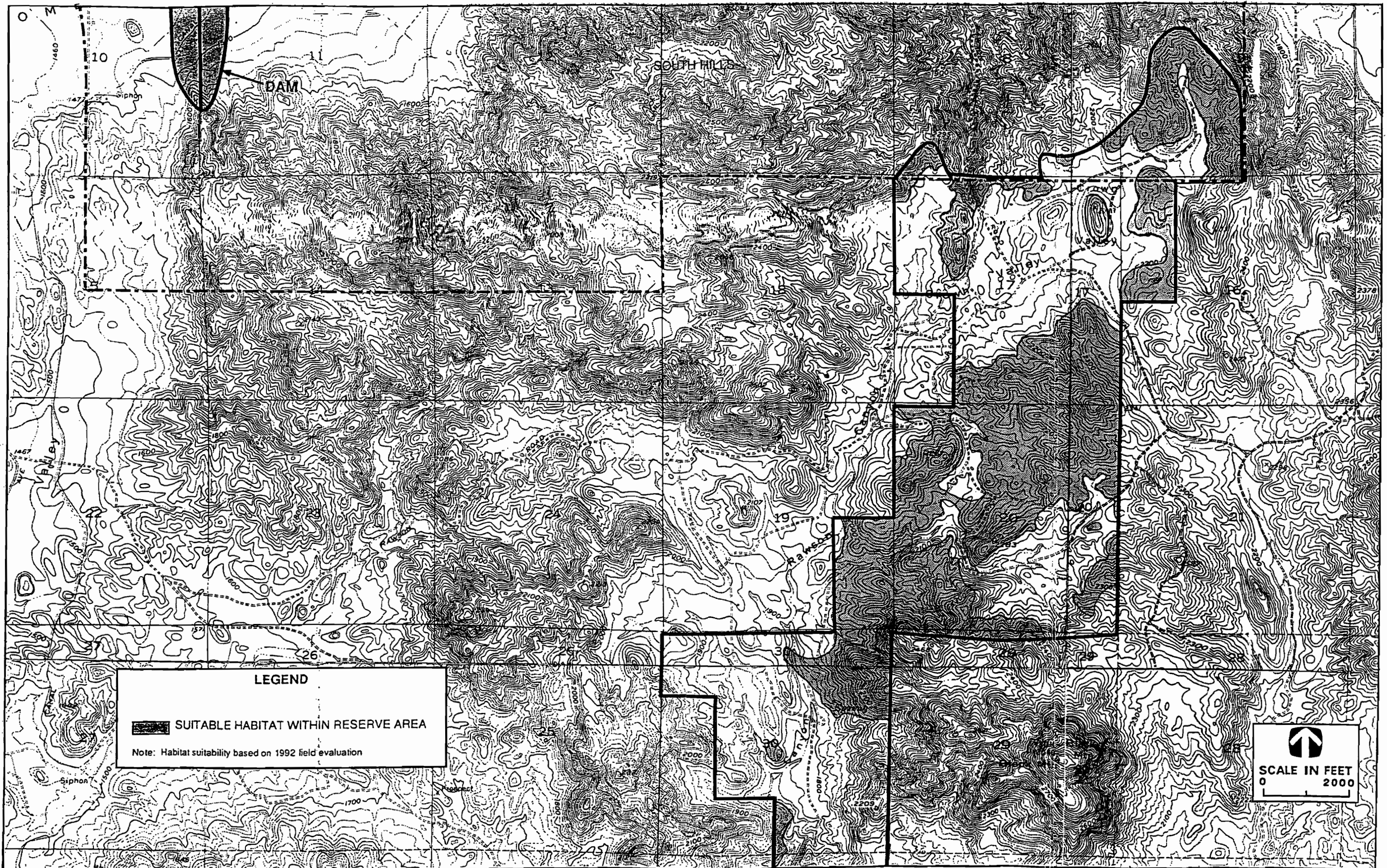


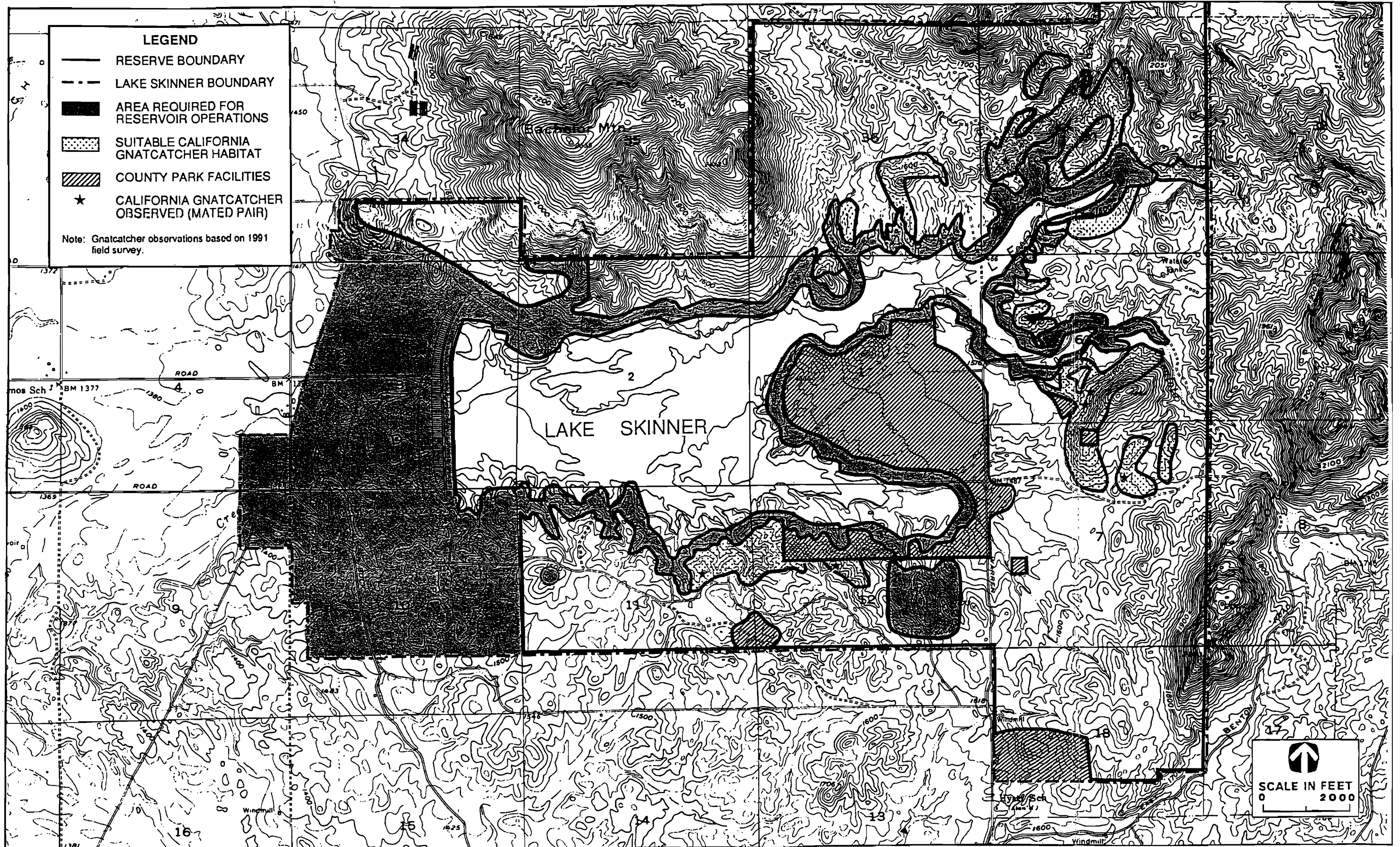
FIGURE 7



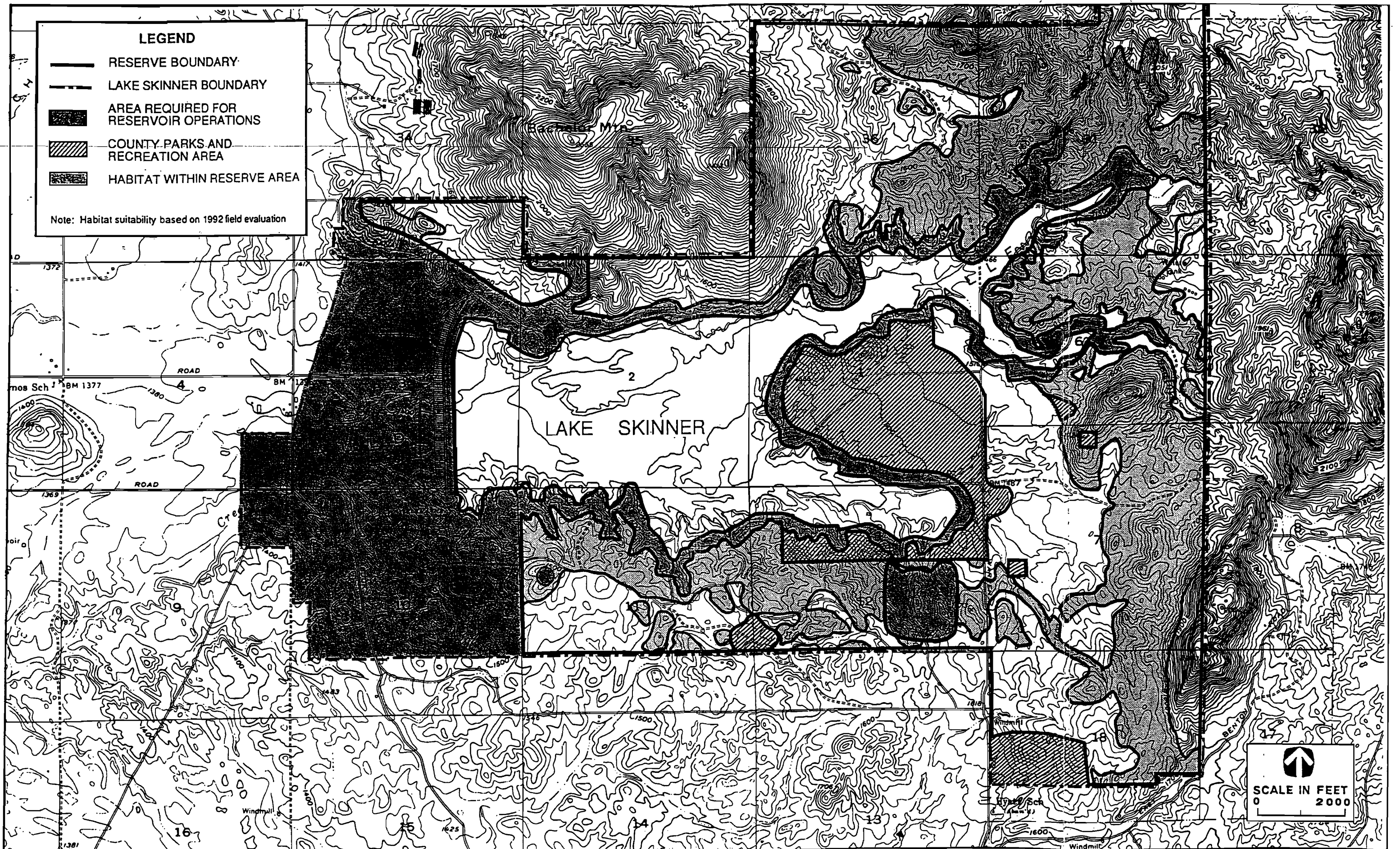
Domenigoni Valley California Gnatcatcher Habitat - 1992



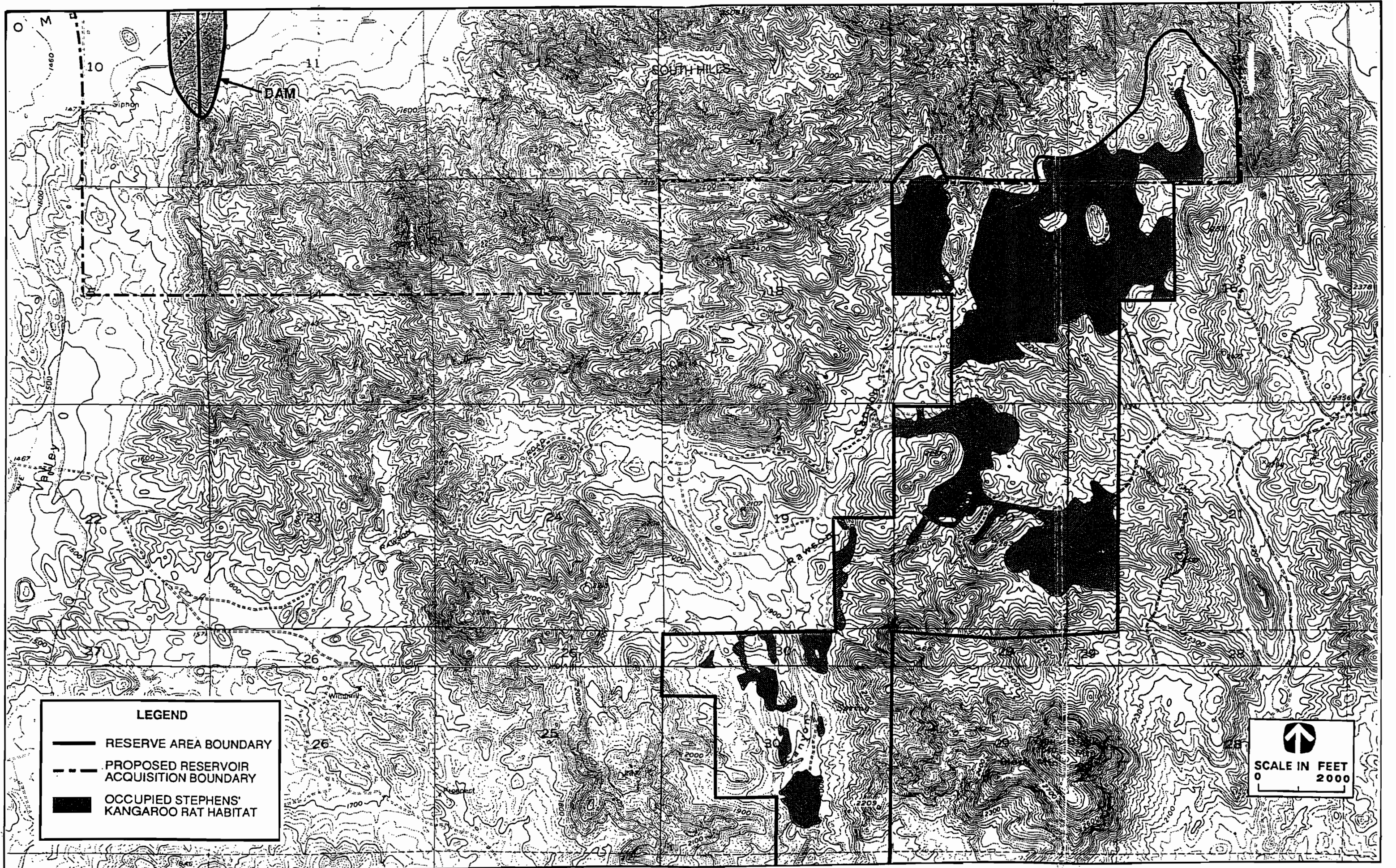




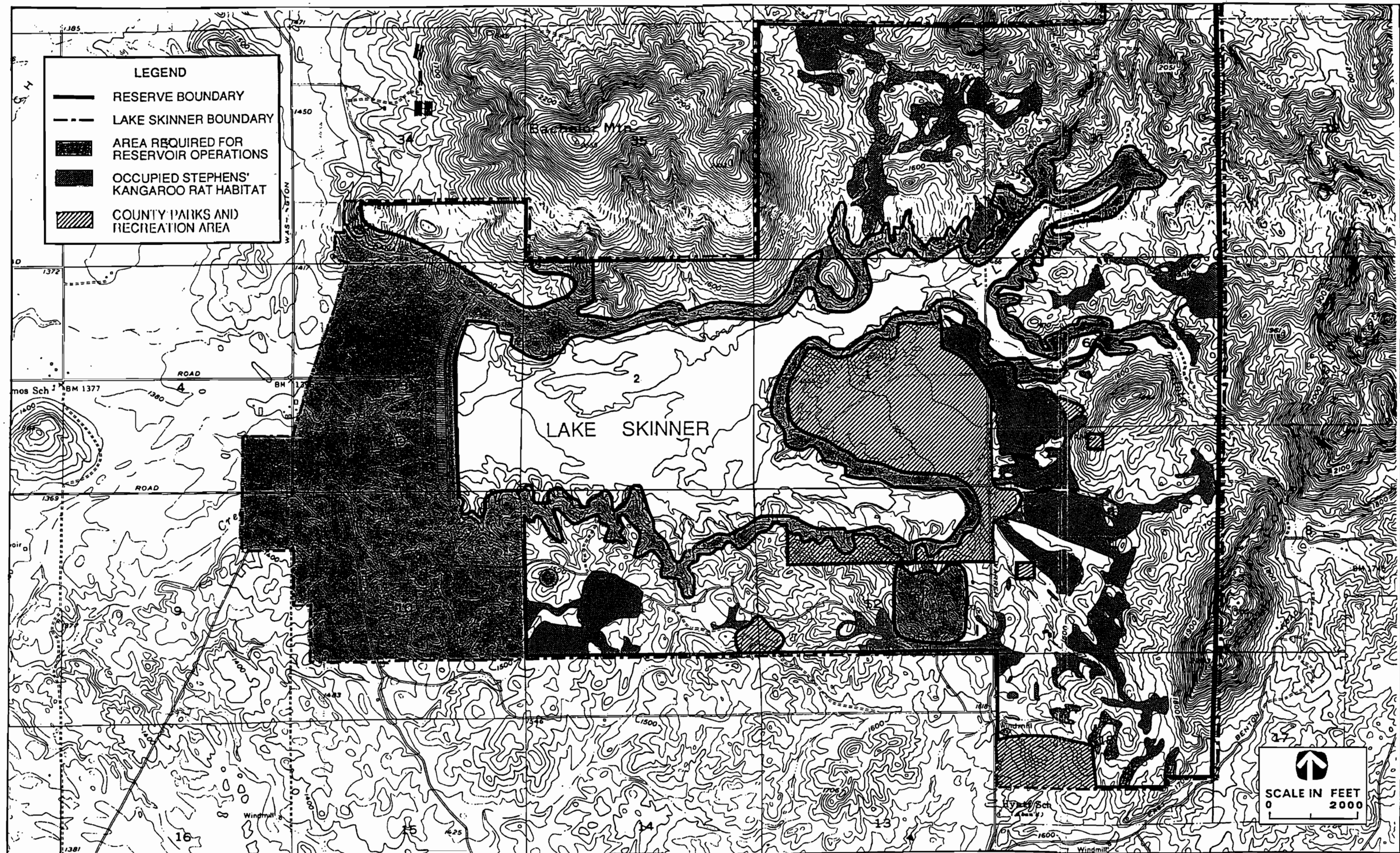
Lake Skinner California Gnatcatcher Habitat - 1991.



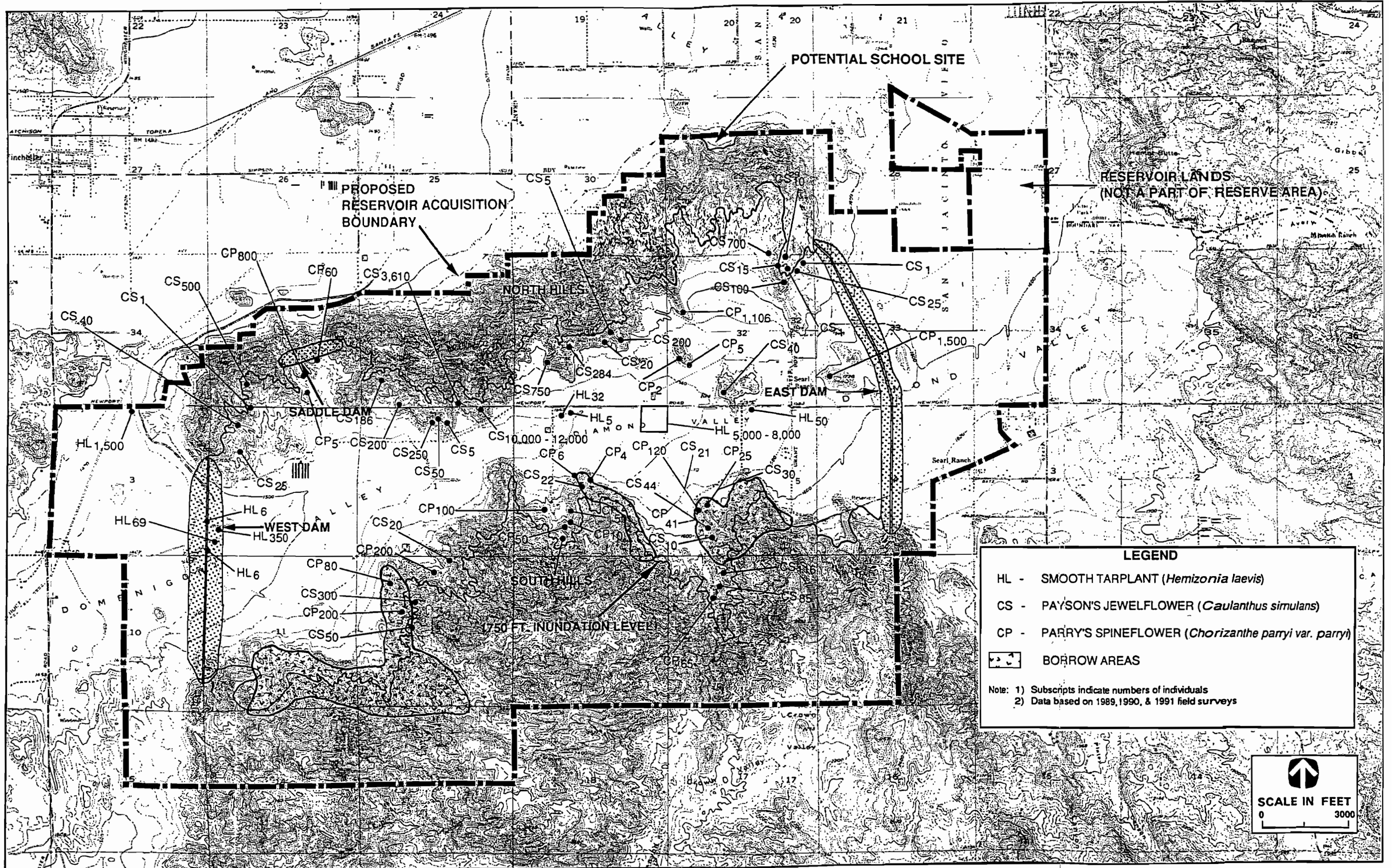
Lake Skinner California Gnatcatcher Habitat - 1992.



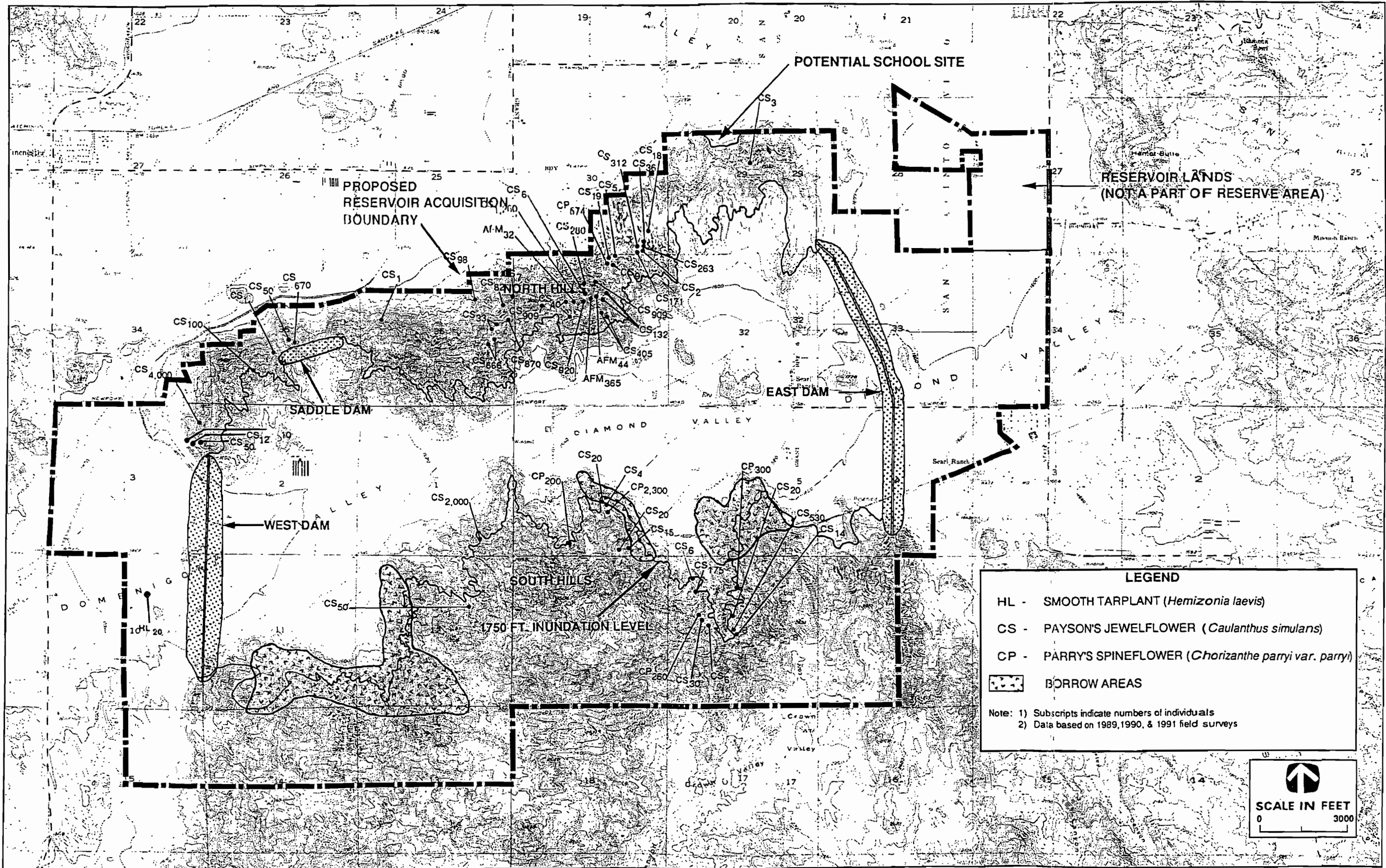
Shipley Reserve Occupied Stephens' Kangaroo Rat Habitat



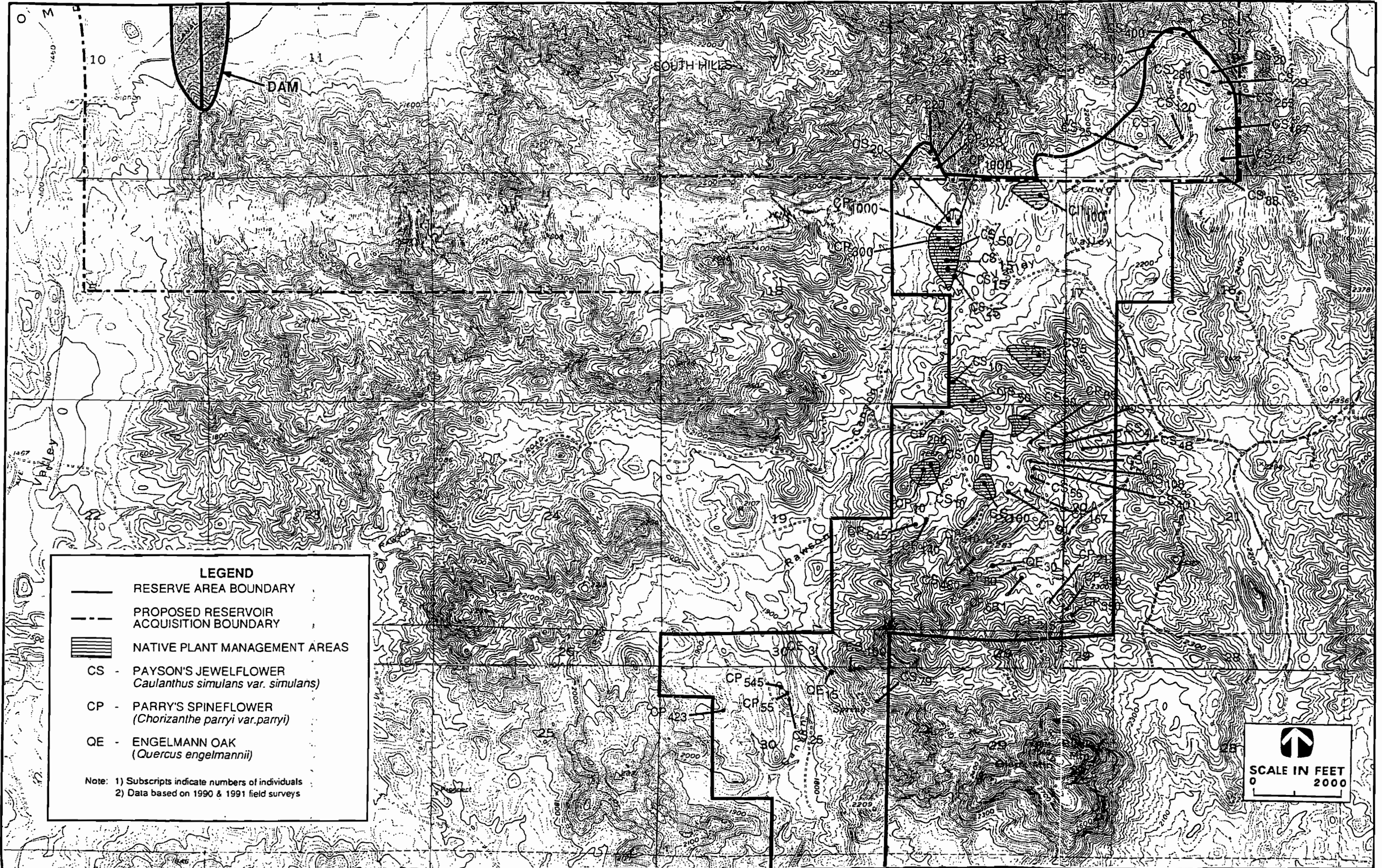
Lake Skinner Occupied Stephens' Kangaroo Rat Habitat



Domenigoni Valley Sensitive Plants - Impact Area.



Domenigoni Valley Sensitive Plants - Reserve Area



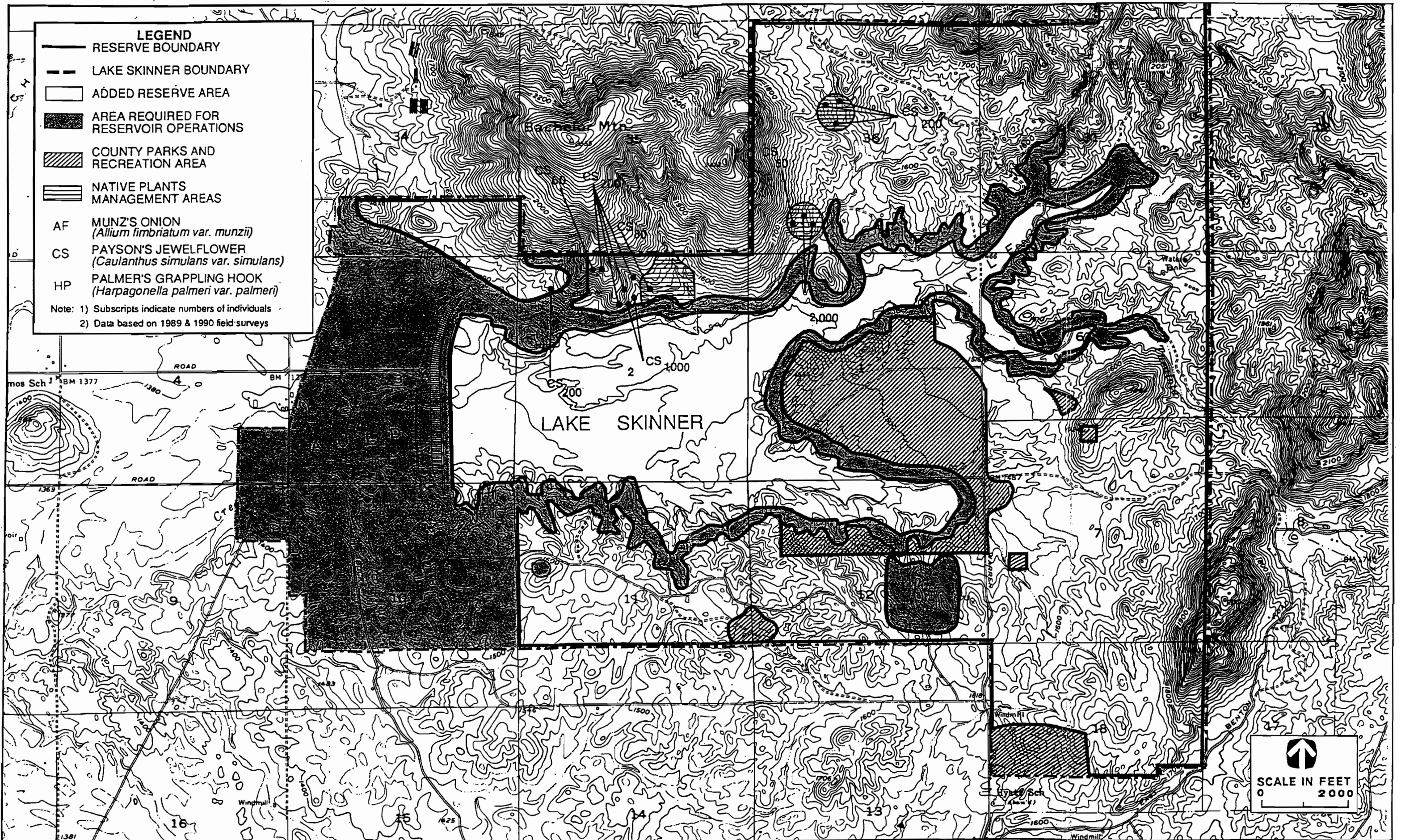
**LEGEND**

- RESERVE AREA BOUNDARY
- - - PROPOSED RESERVOIR ACQUISITION BOUNDARY
- ▨ NATIVE PLANT MANAGEMENT AREAS
- CS - PAYSON'S JEWELFLOWER  
*Caulanthus simulans* var. *simulans*)
- CP - PARRY'S SPINEFLOWER  
*Chorizanthe parryi* var. *parryi*)
- QE - ENGELMANN OAK  
*Quercus engelmannii*)

Note: 1) Subscripts indicate numbers of individuals  
 2) Data based on 1990 & 1991 field surveys







Lake Skinner Reserve Sensitive Plants.

### **3.10.3 Establishment of the Reserve**

The Reserve will be established in three stages. First, the core of the Reserve is already owned by Metropolitan and the County of Riverside and operated by the existing Shipley Reserve Management Committee. It exists at the time of this writing. In addition, Metropolitan currently owns and will immediately place conservation easements over lands designated for the Reserve at Lake Skinner. Metropolitan will also immediately place easements over Reserve-designated lands which it currently owns at the Domenigoni Valley Reservoir site.

Second, within a period of approximately one year, Metropolitan will acquire by negotiated purchase or condemnation, the remaining lands within the Domenigoni Valley Reservoir area shown on Figure 1. Portions of these lands dedicated to the Reserve will have conservation easements placed on them at close of escrow.

Third, corridor areas at the base of the two main dams to be placed in the Reserve to link the North Hills and the South Hills will be brought into the Reserve following main dam construction.

These three stages are currently scheduled to be completed by 1998-1999; but project delays could affect this schedule. Delay in inclusion of all areas designated for management under this MSHCP which results from land acquisition difficulties and/or construction or construction financing difficulties may affect the schedule by as much as 1-2 years (land acquisition) and 3-5 years (inclusion of abutment areas and corridors within the Reserve).

### **3.10.4 Reserve Management Strategies**

Habitat management (with the objectives of conservation, protection, recovery, and enhancement) for diversity is the overall strategy to be pursued under this MSHCP. The focus of management will be on maintaining the Reserve as a functioning ecosystem, on assisting the habitat within the Reserve to recover from previous disturbance and the effects of grazing. In general, the management will seek to maintain existing habitat values. Habitat manipulation for single-species benefit will be de-emphasized in favor of management for bio-diversity. The habitat management plan for the Reserve sensitive species, detailed in Appendix A, is based on the following strategies:

- **Protection:** Habitat within the project area will be protected (as needed) by fencing borders adjacent to high density development to prevent further habitat degradation from off-road vehicle use, shooting, fire, use by domestic animals, and grazing. Restrictions on human use of the habitat will be imposed, limiting uses to those compatible with resource management objectives. Enforcement of these restrictions will be accomplished by a ranger, who will supplement the ranger activities covered by the Shipley Agreement. Management of fire with fire breaks and other methods will be implemented, as appropriate. These fire breaks may also serve as roads for maintenance and hiking, biking, or equestrian trails. Prior to reservoir project completion, a fire break will be provided just above the proposed inundation line and outside of the proposed borrow areas, to provide fire control in the event that construction activities cause fire in the project impact zone. During geotechnical investigations and construction, contractors working on site will maintain fire equipment on site to ensure against catastrophic fires in the Reserve areas. In addition, other methods of fire control will be considered and

implemented if shown to be necessary and appropriate. Control of introduced species such as cowbirds will also be a feature of the Reserve management plan.

Fire/fuel breaks will affect total acreage of habitat for sensitive species. In general, they will be placed along the margin between habitat types, such as between grasslands and sage scrub and sage scrub and chaparral. They may also be used to divide areas within given habitat types so that they may be managed differently. For example, an area of coastal sage scrub may be divided along a ridge line so that one area may be burned to create a better "mix" of habitat qualities within the overall Reserve. Fuel breaks may also be created adjacent to recreation trails by planting native cactus plants to both discourage off-trail activities and to provide habitat for species such as the cactus wren and the desert woodrat.

Such fuel breaks, typically 20-30 feet in width, may be created by disking or by grazing. The total acreage on the Reserve, including fuel breaks which double in function as trails and access roads, may be 50 to 150 acres (2.5 acres per mile of fuel break, road, or trail). They will therefore provide large linear areas of edge habitat (20 miles to 60 miles, respectively).

- **Enhancement to promote recovery of historic natural communities:** The initial phase of enhancement will focus on RSS habitat on the north slope of the North Hills of Domenigoni Valley, and on the southwest corner of the South Hills of Domenigoni Valley (outside of the dam/inundation area). The emphasis of this work will be on meeting the habitat requirements of sensitive species, in particular the California gnatcatcher. This degraded habitat (burn area and area grazed by cattle, respectively) is known to have been RSS and to have supported California gnatcatchers prior to disturbance. Habitat surveys of adjacent habitat will be used as a guide to the enhancement program.

Another phase of proposed habitat enhancement will involve habitat for the smooth tarplant, Payson's jewelflower, and Parry's spineflower. Seed from impacted populations of these sensitive species will be collected and re-planting of these species will be undertaken at Shipley Reserve and Lake Skinner (Payson's jewelflower and Parry's spineflower). This restoration will take place on 48 acres at Lake Skinner and 72 acres on the Shipley Reserve. An additional habitat "creation" area will be developed following construction of the reservoir and recreation facilities within the West Recreation Area to mitigate for impacts to the smooth tarplant (*Hemizonia laevis*). The area selected for this work will be defined on the basis of soil studies.

A third phase of restoration activity will involve the San Jacinto Valley saltbush (*Atriplex coronata*), found along the right-of-way for the pipeline to be used to connect the reservoir to supply and distribution systems. An estimated 50% of the saltbush habitat along the right-of-way is considered subject to construction impacts. Prior to construction, seed will be taken from these populations and stockpiled. As construction is completed along a segment of the pipeline, the saltbush will be re-planted. In addition to these planned habitat enhancement programs, Reserve management may identify additional enhancement methods appropriate for enhancing recovery of historic

communities on the Reserve. Additional funding is provided in the Reserve budget for such enhancement efforts.

- **Linking of Reserve Areas:** The Domenigoni Valley will be fully linked with other wildlife areas at Lake Skinner via the Shipley Reserve. The North Hills of the Domenigoni Valley, now an island of habitat within an agricultural area, will be linked to the remaining portion of the Reserve via a 500-foot wide corridor at the base of the west dam and a 1,000-foot corridor at the base of the east dam for Domenigoni Valley Reservoir.
- **Research:** Although research is not considered mitigation for sensitive species loss, the Reserve will be a significant resource for research into the habitat requirements and life history of many sensitive species, including sensitive species not found in the project impact area. Research proposed in this MSHCP is focused on the sensitive species found in both the impact area and the Reserve. But Reserve management in the future may choose to sponsor research for other species and/or allow independent researchers to conduct such research on the Reserve.

A number of types of research are provided for under this MSHCP. First, there will be status surveys for the sensitive species found in the impact area and the Reserve. Second, there will be a general resource inventory (field walkovers and limited trapping program) to identify and locate habitat of all wildlife. Third, there will be focused life history and habitat requirements studies to identify, estimate populations of, and determine the habitat used by sensitive species. These research programs will provide Reserve management with data needed to manage the resources of the Reserve. They will also be designed to assist resource managers in overall regional planning for these species and the biological community as a whole.

FEIR surveys of the Domenigoni Valley were conducted in 1989-1991, and additional surveys of the Shipley Reserve and Lake Skinner were conducted during 1990-1991. While these surveys were of representative samples of habitat, they are not considered exhaustive. It is therefore expected that sensitive species not identified during these studies may be found on lands to be included in the Reserve, or that estimates of sensitive species habitat may be revised. Results of surveys to date are shown on Figures 4 through 6, with results of searches for sensitive species shown on Figures 7 through 17.

It is anticipated that resource managers will identify additional sensitive species *on the Reserve* once the Reserve is placed under management and research begins, and that resource managers will take appropriate management action based on these findings. For planning purposes, the primary management focus assumed in this MSHCP is management to assist the recovery of native habitats to their pre-disturbance natural state.

Although the overall focus of management will be on managing for diversity and to preserve habitat, specific management plans for sensitive species have been prepared to the extent feasible given existing knowledge of the species involved. The most detailed plans are for the California gnatcatcher and the 4 species of rare plants addressed in the FEIR. Other plans are at present tentative, and will be refined on the basis of the status surveys and resource inventories mentioned above. Preliminary species-specific habitat conservation plans are found in Appendix A.

### **3.10.5 The Research Program**

The description of the proposed research program below is preliminary, based on initial scoping meetings with members of the proposed Reserve Management Committee and its advisors.

#### **3.10.5.1 Research Goals**

The Reserve will be managed adaptively for the benefit of all wildlife, but with emphasis on conservation, preservation, restoration, and enhancement activities related to sensitive species, particularly species listed as threatened or endangered under CESA or FESA. The emphasis of management will be on restoration of historic native communities and on maintenance of bio-diversity.

The primary goals of the research program will be to contribute to the long-term viability of sensitive species in southwestern Riverside County by providing data about these species which will assist in management of their habitat. The focus of the research program will be on understanding these species and their habitat requirements within the Reserve, but data will be applicable to large areas of southern California as well.

The Reserve Management Committee's long-term management objective will be to recover natural community values on the Reserve, with some management adjustment of historic community characteristics to ensure adequate management for sensitive species. In general, managing for native habitat would have benefits for sensitive native species, as well as all wildlife. Accordingly, research will have an integrated, multi-species focus, attempting to gain an understanding of communities which support sensitive species and how these species utilize and contribute to the viability of these communities. In addition, research will include focused surveys and studies related to sensitive species.

Research will be focused on gathering the data which will permit the Reserve to be managed effectively in both the short term and the long term. In evaluating research proposals, then the RMC will consider how the research addresses *management* questions such as:

- What is the "natural" state of the Reserve habitat and what factors must be changed to return the Reserve to this state?
- What are the implications of specific management activities, such as fire control and grazing, on wildlife, particularly the sensitive species of the Reserve?
- What factors affect the viability of Reserve habitats and the sensitive species which are a part of these habitats?
- What are the habitat requirements of the sensitive species on the Reserve?
- How can bio-diversity be maintained on the Reserve, so that management does not favor some sensitive species at the expense of other sensitive species?
- How can Reserve research be applied to solve address overall regional natural resources problems?

The implications of this focus on research for reserve management are:

- An emphasis on collection of data about factors which can be *manipulated* by management to provide for bio-diversity and to improve overall quality of habitat;
- An emphasis on collection of data at the ecosystem level, rather than at the individual plot level (thus an emphasis on Reserve-wide research rather than research focused on a particular habitat or area);
- An emphasis on collection of data which will help confirm or falsify basic management theories or principles;
- An emphasis on structuring research design and data evaluation to promote better understanding of ecological and community issues in Reserve ecology; that is, issues which affect the viability of the Reserve and its wildlife; and
- Data collection at a level of precision appropriate to answering "overview" level questions; that is, with an emphasis on macro-habitat issues and general distribution and abundance trends.

#### 3.10.5.2 Specific Research Objectives

Within this general philosophical context, there are a number of specific research objectives:

- To characterize the native Reserve habitat and wildlife populations, as they existed in pre-historic times;
- To identify factors responsible for the dynamics of pre-historic habitat characteristics (such as fire, wildlife and habitat interactions, grazing);
- To characterize the reserve habitat and wildlife populations as they exist at the present and compare them to pre-historic conditions;
- To identify management actions which will result in recovery of natural habitat and wildlife populations, on a sustainable basis;
- To evaluate the potential affects of proposed management strategies and activities on long-term viability of the Reserve, on maintenance of bio-diversity of the Reserve, and on maintenance of viable populations of sensitive species on the Reserve;
- To establish a monitoring plan for Reserve habitat and wildlife populations which will permit management to identify *significant* problems and the factors responsible for them; that is, monitoring should be focused on identifying changes in habitat characteristics and wildlife populations in excess of fluctuations considered "normal"; and
- To gather data about the life history and habitat requirements of sensitive species, with an early emphasis on listed and proposed species such as the California gnatcatcher.

### 3.10.5.3 Overall Research and Management Plan

The research and management plan for the Reserve will be phased, with more general field survey and archival research undertaken initially to establish a context for design of more detailed and focused research. The phases are outlined below:

- **Phase I (1992-1993).**

**Management Activities:** Until our understanding of the Reserve is improved, management activities should be limited to those which can be taken without significant concern that they would cause damage to the Reserve. Management will therefore be limited to:

- \* Fencing
- \* Creation of fire breaks
- \* Removal of exotic grasses and other vegetation
- \* Enhancement of Stephen's kangaroo rat (SKR) habitat on agricultural fields to the north of the North Hills, as these fields are acquired.
- \* Removal of exotic trees, such as eucalyptus, on the reserve
- \* Control of human access to the reserve

**Research Activities:** Three research activities need to be conducted simultaneously during this initial phase of work:

- \* Historical (archival, paleo-botany, and oral history) research to characterize "native" habitat and the factors which influenced habitat type and wildlife populations. This research may include development of a fire history for the Reserve and development of a history of human disturbance on the Reserve.
- \* General Reserve Inventory. This research would involve an inventory of habitat and wildlife at representative points in the Reserve. The purpose would be to establish presence-absence of wildlife species, with abundance data on selected species, and to characterize habitat so that habitat/species correlations could be established. The inventory would be seasonal, to permit a basic understanding of the influence of season on habitat characteristics and presence-absence of wildlife. In addition, baseline studies of micro-climate within the Reserve may be initiated.
- \* Literature Review. Simultaneous with the above studies, a detailed literature review would be conducted to summarize current knowledge on several topics: ecology of the communities of the Reserve; life history of selected plant and animal species; and management of similar habitat.
- \* Focused Studies. Some focused studies of sensitive species, for example the California gnatcatcher and its life history, will be initiated during Phase I, but in general manipulative experiments will be postponed until general ecological relationships and life history data are adequate to ensure that experimental manipulations proposed would not constitute a clear threat to the viability of sensitive species populations on the Reserve.

Reports will be prepared to summarize the results of these studies, and to make recommendations for Phase II studies.

- **Phase II**

Activities in Phase II will depend on the results of Phase I management and study. The general scope of Phase II activities is described below:

**Management Activities:** Depending on the data from Phase I research, additional management activities may be undertaken, including habitat restoration and management aimed at bio-diversity and/or sensitive species management. Management activities will be focused on recovery of historic habitat, except where recovery would adversely affect population viability of sensitive species.

**Research:** A multi-year habitat and wildlife population monitoring plan will be developed based on the results of Phase I research. The purpose of monitoring will be to evaluate changes in Reserve habitat, both those occurring as a part of natural successional processes and those occurring as a result of specific management activities. The monitoring program will be designed to permit correlations between management activities and habitat changes to be quantified. This monitoring program will be the fundamental focus of the Reserve research plan.

In addition, comparative studies may be established on other Reserves in an effort to gain a broader, regional perspective on habitat management issues.

Finally, proposals for specific research projects, including experimental manipulations of habitat, will be solicited, reviewed, and funded by the RMC; proposals with matching funding from other sources will be encouraged to optimize research funding. Priority will be given to proposals which would:

- \* Yield significant new insight into the life history of sensitive species, with particular emphasis on species/habitat relationships;
- \* Yield significant new insight into the factors affecting plant/animal community structure, abundance and distribution of plants and wildlife;
- \* Yield significant new insight into the relationship of the Reserve and adjacent developed or agricultural areas; and/or
- \* Yield significant new insight into the relationship of human disturbance levels and plant/animal community structures.

Proposals would be accepted from independent researchers, university faculty and graduate students, and government agencies.

#### 3.10.5.4 Research Management

The research will be designed and managed by a committee consisting of members from Metropolitan, the RCHCA, the Service, the Department, and the RCPOSD, which will also constitute the Reserve



Management Committee, with scientific assistance provided by representatives of the University of California. These agencies will designate representatives to participate in the research and Reserve management. The combined research and Reserve Management Committee will act by consensus (unanimous consent of the voting members present, including at least one member from the Service or the Department) to implement the goals and objectives of this MSHCP. That is, they will be bound by the objectives of the Reserve and will take actions to ensure that the requirements of any Section 10(a) permits or Section 2081/2835 agreements are fully complied with.

The Reserve Management Committee (RMC) will be the principal policy making body for the Reserve, defining objectives and establishing research and management priorities. The five members of the RMC will meet at least annually to discuss policy issues and to evaluate management and research progress.

The day-to-day operation of the Reserve will be vested in two Reserve Directors, both of whom will also be members of the Reserve Management Committee. The Shipley Reserve Director (appointed by the Riverside County Park and Open Space District) will share responsibility with Metropolitan's Lake Skinner management for management of human activities on the Shipley Reserve and at Lake Skinner. The Reserve Natural Resources Director (appointed by Metropolitan) will be responsible for research and natural resources management for the entire Reserve. During construction of the Domenigoni Valley Reservoir, Metropolitan will also provide human access control for the Domenigoni Valley element of the Reserve. Other arrangements may be made by the RMC following completion of this reservoir project.

The actions of the RMC are to be governed by the MSHCP. Within the context of the MSHCP, the members of the RMC will represent the positions of their respective agencies; nothing in their participation on the RMC affects their respective duties and obligations under the Plan, or under applicable law or policy. All RMC meetings will be open to the general public, which may offer comment on any issue placed before this committee.

#### Organization:

The RMC will conduct work through two executive committees, the Reserve Management Committee and the Natural Resources Committee:

- The Reserve Management Committee will consist of the RCPOSD representative and the Metropolitan representative, and their management staff. Their responsibility will be to implement RMC policies regarding human access to and activities on the Reserve.
- The Natural Resources Committee will consist of the Metropolitan representative, the Service representative, the Department representative, and a panel of research advisors chosen by the RMC. Their responsibility will be to implement RMC research policy.

Within this constraint, and within the budget available for research and interim management (\$13,886,000 for the period 1992-1999), the committee shall design and carry out research and management programs. It is anticipated that the Service and the Department will participate in field research activities.

### **3.10.5.5 Sage Scrub Re-Vegetation Research**

In addition to the broader ecological-based research plans, a more focused research program will address a pressing need for data about revegetation of coastal sage scrub communities. The focus of this research will be on identifying efficient and effective methods for preventing community type conversion (from coastal sage scrub to non-native grasslands) following disturbance such as fire and grazing. The focus of the work will be on identifying low-cost methods of stimulating the re-establishment of sage scrub communities to re-establish following disturbance, with an emphasis on exotics control.

Re-vegetation research may be conducted on a large scale on the area of the North Hills which was burned in 1990, and on the adjacent area which is now being converted to grasslands following a fire in the early 1980's.

### **3.10.5.6 Interim Management during Research**

Limited active management of the Reserve will begin during initial surveys/inventories, with the focus on possible use of controlled burns and other weed abatement programs in specific areas and on providing alternate nesting habitat for some species prior to commencement of construction in the reservoir area.

Public access to the area will generally be restricted until the initial survey/inventory program has been completed. The RCPOSD will control human activity on areas to the south of the Eastside reservoir site, while Metropolitan will control access to the Reserve within this project area. Site tours may be arranged on a limited basis, but in general public use of the Reserve will be discouraged until the Reserve Management Committee determines that it may be permitted.

## **3.11 MANAGEMENT OF THE RESERVE**

### **3.11.1 Reserve Management Committee**

A Reserve Management Committee, consisting of one voting member from each of the Service, the Department, Metropolitan, the RCHCA, and the RCPOSD, shall manage the Reserve, acting by consensus. The parties have agreed to manage the Reserve in accordance with the provisions of this MSHCP.

The RCHCA will hold conservation easements over the various portions of the Reserve *added under this MSHCP*, as provided for under the Cooperative Management Agreement (Appendix B). Although day-to-day management of the Reserve's natural resources will be assumed by the Shipley Reserve Director and the Natural Resources Director during the period from 1992 to the completion of the Domenigoni Valley Reservoir, long-term management of the Reserve will be carried out cooperatively by the Reserve Management Committee.

### **3.11.2 Consistency with Shipley Reserve Management Plan**

Reserve management will incorporate all essential features of the previously approved "Land Use and Management Master Plan for the Roy E. Shipley Reserve and other Lands in Western Riverside County," hereafter referred to as the Shipley Management Plan. The objectives of this plan were:

- To identify management needs and mechanisms to protect the natural resources, including the Stephens' kangaroo rat and its occupied habitat, the California gnatcatcher and its occupied habitat, and the significant plant species found on Shipley-Skinner lands, and to ensure that all proposed uses of the subareas are consistent with the primary goal of natural resource protection;
- To define the appropriate uses of the Resource Management subareas to meet preservation, mitigation, interpretation, and recreation goals of the parties; and
- To identify opportunities to augment the value of Resource Management Subareas through future acquisitions, both by the Management Committee and by others.

This MSHCP and the Reserve it creates is an extension and expansion of these objectives. In implementing these objectives, the Shipley Management Plan was based on several conclusions:

- Areas to be managed for the SKR would be used for interpretive and recreational opportunities only to the extent that habitat values would not be disturbed;
- Management of non-SKR lands would also have as a primary objective of maintenance or enhancement of habitat values;
- Trail systems would be designed to have minimum impact, primarily by utilizing existing roads and avoiding critical habitat areas; and
- Interpretive facilities would generally not be sited within Resource Management Subareas, but rather within adjacent lands.

Within these constraints, the management of the Shipley Reserve will include the following activities:

- Protection, including restriction of human disturbance through fencing, patrol, and coordination with neighboring landowners to minimize the potential for outside influences on the Shipley Reserve;
- Restoration of habitat, to focus on removal of exotic plants such as tamarisk and eucalyptus, correction of erosion problems, and re-planting of unneeded roads and trails; and
- Monitoring the health of the habitat on a regular basis, with remedial actions to be recommended if detrimental trends were identified.

Using these general management strategies as a guideline, a series of habitat management plans were formulated for each general habitat type and included in the Shipley Management Plan. These conceptual plans were intended as general guidelines, rather than specific action agendas. They are summarized on Table 3-5.

The management of the Reserve created by this MSHCP will be generally consistent with, but will expand the scope of, the management activities shown on Table 3-5; changes in management strategy will be made by the Reserve Management Committee to reflect new knowledge of management as appropriate.

Initially, the baseline research described in the Shipley Management Plan will be expanded significantly. This will lead to a more complete understanding of the larger ecosystem within Reserve boundaries. A more ecosystem-oriented management will then be feasible, with management of the Reserve taking into account habitat and community interactions. Management will be accordingly more active and more sophisticated as a result of a better data base. The list of management activities on Table 3-5 may be increased, depending on the results of research. The general plan for management of the Reserve is described below. It is necessarily conceptual, but nonetheless describes the overall focus and approach of the management proposed for the Reserve.

**Table 3-5.**  
**Multi-Species Reserve Management Plan, General Strategies**

<u>Type of Management</u>	<u>Recommended Activities</u>	<u>Habitat Types</u>
Protection	Remove grazing animals and other means of disturbance	Chaparral Sage Scrub Oak communities Riparian communities
	Exclude domestic animals	Sage Scrub
Restoration	Using baseline data, identify areas requiring restoration; implement recommendations	All communities
	Plant acorns, seedlings, etc.	Oak communities
	Remove exotic vegetation	Riparian communities
	Provide nesting boxes, as needed	Oak communities Riparian communities
Habitat enhancement	Provide edge habitat	All communities
	Promote uneven-aged mosaic of habitat (prescribed burns)	Chaparral Sage Scrub
	Re-introduce native species	All communities
Monitoring	Establish baseline data, monitor condition, compare to criteria, adopt contingency measures, and develop research/management programs	All communities

### **3.11.3 Reserve Management Strategies and Their Implications**

#### **3.11.3.1 General Focus**

The primary objective of habitat management will be to maintain viable populations of sensitive species and other wildlife on the Reserve, by managing a large, contiguous area of habitat for these species. The focus of this MSHCP is on acquisition, preservation, enhancement, and long-term management of a large, contiguous area of high-value habitat which will serve as a core Reserve for southwestern Riverside County. The specific mitigation action proposed under this MSHCP for impacts to the sensitive species covered by the MSHCP is addition of approximately 5,400 to 5,700 acres of sensitive species habitat to the existing 3,307-acres currently under reserve management. To the extent feasible under the funding provisions of the MSHCP, management will be focused on maintaining habitat quality and on enhancing natural biological communities. The lands will be managed for diversity, and natural phenomena which have historically contributed to the growth, development, maturation, decline, and conversion of communities within the region will generally be monitored but not actively managed. Thus, for example, sage scrub communities which naturally convert to chaparral may be allowed to do so; likewise, chaparral communities which convert to sage scrub following fire may be allowed to do so. In this way, a dynamic natural ecosystem will be maintained. Intervention in natural processes will occur only when they pose a significant threat to the maintenance of the matrix of historic communities on the Reserve. Thus, for example, efforts will be undertaken to control fires which threaten large areas of the Reserve and could therefore cause a significant long-term loss of bio-diversity.

This emphasis on bio-diversity and on maintaining a dynamic ecosystem on the Reserve has significant impacts on management strategies. First, except for those areas which are already dedicated for management for the Stephens' kangaroo rat, specific areas will not be dedicated entirely to management for a single species. Second, the success of the Reserve will not be measured in terms of the success of any one of the sensitive species covered by this MSHCP. It is anticipated that populations of these species will fluctuate within the Reserve, in a dynamic equilibrium.

Implementing this management approach will require an understanding of how natural areas such as the Reserve change, and how these changes affect various sensitive species and communities within the Reserve. The proposed research program to develop this understanding is described above. Some of the more obvious implications of managing for bio-diversity are described below.

#### **3.11.3.2 Measurement of Mitigation Effectiveness**

Mitigation monitoring is intended to ensure that the level of mitigation proposed is actually achieved; that is, to ensure compliance with FESA and Fish and Game Code requirements. In traditional monitoring of effectiveness and contingency planning (for a single species or habitat type), a level of mitigation is clearly defined and the mitigation success is measured against that standard of performance. Failure to meet the standard triggers a requirement for corrective or additional action. Because the objective of management is maintenance of viable wildlife populations, with emphasis on sensitive species, the determination of the size of population needed to ensure viability will therefore be a major emphasis in Reserve research. There are several factors to be taken into account in this analysis:

- The ability of a given population to recover from extreme environmental conditions, such as drought and cold.

- The ability of a population to withstand challenge from exotic species in adjacent habitat.
- The ability of a given population to maintain genetic viability.

Research into these factors will lead to formulation of specific monitoring criteria. For example, if research determines that a shrub cover must be between 30 and 30 percent for successfully breeding of California gnatcatchers, then this characteristic will be monitored and used as a measure of habitat quality. If significant areas of habitat become degraded so that they do not meet this criterion, then the management activity leading to this degradation of habitat for this species will be considered a failure and will be revised.

Measuring of mitigation effectiveness will therefore depend on research to identify concrete criteria which can be used as the basis of monitoring. Monitoring will also require that a threshold level be established for each of the criteria, so that data indicating decline below the threshold level will trigger an "alarm" for the Reserve Management Committee, leading to an effort to define the cause of problems and take appropriate management action.

Effectiveness of mitigation will therefore be measured in terms of a range of conditions, rather than by applying a rigid standard of performance. This approach may be illustrated by the recent 6-year drought, accompanied by several unusually cold winter periods which was then followed in 1991 and 1992 by warm, wet springs.

During the unusual 6-year drought, the California gnatcatcher population within the area now designated as a Reserve was estimated at only 21 nesting pairs (15 on the north-facing slope of the North Hills and 6 at Lake Skinner). By June of 1991, following a fire on the North Hills, the population within the reserve was only 13 pairs (a loss of 7 pairs to the fire). In addition to these 13 breeding pairs, there were only 14 breeding pairs observed in the impact area on the north-facing slope of the South Hills. Thus the population within the entire Reserve and Impact area was estimated at only 27 pairs. This population would appear to be on its way to recovery following two years of improved conditions. According to recent studies conducted by the Service, nesting success at Lake Skinner and on the North Hills has been good, with approximately 50% of nests producing young. Under optimum conditions, the Reserve may recover to support a population of up to 150 breeding pairs (4,779 acres of habitat at 32 acres per breeding territory).

In this example, which measure of mitigation effectiveness is appropriate, the low population in 1990 or the higher optimum population, or some population in between? Measurement of mitigation effectiveness in the short term might suggest that a population of as few as 20-30 nesting pairs may be a viable population, that is, a population capable of recovering to higher levels following periods of stress. In the long-term, a larger average population might be used as a standard. And the optimum population of from 100 to 150 breeding pairs might be considered a long-term objective. Management effectiveness could be measured against any of these three standards.

Other factors may also be considered in measurement of mitigation effectiveness. The same recent studies also indicated that nesting success for California gnatcatchers on the north-facing slope of the South Hills was poor; cowbird parasitism may have contributed to this poor success ratio, suggesting that a viable population may require active control of cowbirds in the region. Long-term viability analysis may also depend on the ability of a population to sustain the genetic variability needed to prevent loss of vigor due to inbreeding. Analysis of these and other factors will be required before an estimates of

"viable population" can be made for the California gnatcatcher and other sensitive species. Research will be needed to define the specific threshold criteria for short-term population and long-term average population before mitigation effectiveness can be measured effectively.

### 3.11.3.3 Adaptive Management

Implementation of a multi-species plan is more complex than implementation of a plan for conservation of a single species or habitat type.

- First, it is difficult to set a precise level of mitigation; the interaction of the many sensitive species covered by a multi-species plan is such that implementation of the plan may result in a differential success rate. That is, the management action chosen by the Reserve Management Committee may result in greater-than-required "success" for one species and a slightly less-than-required "success" for another species. In this case, it will be extremely difficult to conclude that there is a "problem" which requires corrective action.
- Second, if an element of the proposed mitigation is identified as performing below the standard set in the mitigation plan, it does not necessarily follow that corrective action is immediately appropriate. It is first necessary to determine whether the problem is an indication of long-term problems or merely an artifact of a dynamic system in flux.
- Third, there is a philosophical issue to be addressed in contingency planning for a multi-species reserve. The emphasis of multi-species planning is on acquisition and management of areas large enough to support viable populations of sensitive (as well as other) species. Creation of such a reserve therefore contributes to the long-term viability of the species. But it may not be feasible, or even appropriate, to manage species-by-species in such a reserve. Identifying precise habitat management areas for each species, and management to ensure maintenance of a specified number of acres of habitat for that species, is not good multi-species management. It would result in a fragmented approach, and would confront managers with the problem of having to "take" one species in order to ensure habitat for another species.
- Finally, natural processes such as drought, fire, and natural succession can be expected to alter the Reserve in a dynamic fashion. At any point in time, then, one species may be favored by natural conditions on the Reserve, while another species may appear to decline. As the Reserve ecosystem changes, this seeming unbalanced condition may correct itself and a reversal of fortunes may occur.

The standard of mitigation effectiveness is continued viable populations, which are expected to fluctuate within a range to be defined as research progresses. In managing to achieve this objective, it will be necessary to avoid conflicts in management of one species versus another species. The focus of the MSHCP is thus to assist recovery of Reserve habitat to its historic status and to maintain bio-diversity by creating a mosaic of different-aged habitats.

In managing the Reserve's communities, the focus will therefore be on managing a dynamic system which can be expected to change. Factors which may influence the nature and direction of change may include:

- Drought, fire, and other natural disturbances which will favor species which require open, disturbed habitat (such as the SKR, the Southern California rufous-crowned sparrow, and the orange-throated whiptail);
- Management to control exotics, which will favor virtually all of the sensitive species covered by this plan;
- Levels of human use and disturbance, which will be regulated to minimize disturbance to natural resources;
- Management of the physical resources of the Reserve to enhance species survival, such as construction of artificial nesting structures, placement of guzzlers, and similar techniques which will encourage development of robust wildlife communities; and
- Reintroduction of species which historically occupied the Reserve, but were displaced by grazing or hunting.

Given the interaction of these factors, individual populations of sensitive species in the Reserve can be expected to fluctuate *naturally* as they would under unmanaged natural conditions. These population fluctuations will be monitored. Corrective management actions will be taken only when it appears that they are required to ensure species survival. When this occurs, the impact of the proposed management action on other sensitive species will be evaluated prior to taking corrective actions.

The effectiveness of mitigation will be monitored on an on-going basis and adjustments to this plan will be made, on the recommendation of the Reserve Management Committee, within the limitations of the funding provided. This monitoring and adjustment of the plan will ensure the general effectiveness of the measures proposed. Effectiveness will be defined in terms of overall habitat quality, not in terms of the status of any individual species.

#### 3.11.3.4 Adaptive Management Response to Changes in Sensitive Species Status or Knowledge of Sensitive Species

Management will be dynamic, with on-going monitoring of the status of sensitive species on the Reserve itself; the Service and the Department will also independently monitor the status of sensitive species in the region. As new data become available, management strategies may change. This MSHCP specifically anticipates a number of categories of change in sensitive species status or data available regarding sensitive species and proposes the following management responses:

- **Changes in Estimates of Suitable Habitat for Sensitive Species.** The suitable habitat areas shown in Appendix A are estimates based on the best available data at the time of mapping. As more detailed surveys are conducted as a part of the Reserve research and management planning program, it is highly likely that these preliminary habitat designations will be altered significantly. There are a number of changes anticipated. First, population density data will be added and may show differential densities within the areas shown on the maps. Second, it is possible that the total suitable habitat area



may fluctuate for each species, in response to natural phenomena such as fire or drought. This may also occur as a result of variations in natural conditions or of changes in habitat quality due to management.

The management response to these changes will depend on the nature of the change. If the extent and quality of Reserve habitat for a sensitive species appears to be significantly less than previously indicated, the Reserve Management Committee may choose to manage the Reserve to increase and/or enhance the available habitat for that species. If natural events, such as consecutive wet or drought years affect populations or the availability of suitable habitat, the Reserve Management Committee may or may not take similar actions on a community basis.

- **Changes in Regional Population, Distribution, and Life History Data.** It is anticipated that life history data on the Reserve's sensitive species will be significantly improved in the near future, both as a result of Reserve research activities and as a result of other planning and data collection efforts in the region. These planning and data collection efforts should add to the knowledge of sensitive species distribution, density, and habitat requirements. The methods and survey protocols used to estimate suitable habitat and species distribution in this MSHCP should not be used as the standard in other regional planning efforts. Discussions with the Service and the Department during the preparation of this MSHCP have underscored the need for more thorough surveys of sensitive species to be covered by MSHCP's and related prelisting agreements. One implication of this new knowledge is that the importance of the resources on the Reserve may increase or decrease. New life history data may also suggest reevaluation and new management strategies.

The management response to significant environmental changes and new scientific data will be to adjust within-Reserve management strategies. For example, designation of areas covered by this MSHCP as critical habitat as a result of new data may generate a management response to manage for the appropriate species by manipulating habitat in some areas of the Reserve. Alternately, a finding that a species is no longer considered sensitive in the region could lead to its de-emphasis in management planning.

The Reserve Management Committee, through its Service and Department members, will monitor changes in the regional status of sensitive species and propose appropriate management action within the context of the Reserve.

It should be noted that the definitions of suitable habitat used in this MSHCP are site specific and should not be used to make resource management decisions outside of the Reserve.

- **Continued Development Resulting in Reserve Isolation.** Development pressure is anticipated to increase in the future, and it is possible that the Reserve may become isolated from other open-space and wildlife habitat in the region.

There are a number of management responses to this potential isolation. First, the Reserve Management Committee will monitor development and encourage regional and local planners to act in a manner which will prevent isolation of the Reserve. The

committee will make recommendations to its individual member agencies regarding the appropriateness of development on lands adjacent to the Reserve, and will use its good offices to encourage member agencies to support sound regional environmental planning. Second, the Reserve Management Committee will encourage action which will add to the Reserve, such as acquisition of adjacent lands or conservation easements over these adjacent lands as a part of regional mitigation banking efforts. While the reserve is considered a viable unit of habitat for many species at this time, additional acreage should be added as it is purchased by local and regional conservation agencies.

Third, the Reserve Management Committee will act to control the impacts of development on adjacent lands so that Reserve habitat quality is maintained to the extent feasible.

The RCHCA has, in a letter to the USF&WS dated July 21, 1992, expressed its commitment to expansion of the Reserve as part of its overall commitment to multi-species planning; specific acquisitions of habitat adjacent to the Reserve are planned, and these will be added to the Reserve as appropriate.

- **Changes in Law and Policy.** There is potential for significant change in NEPA, CEQA, the FESA and the CESA, as well as in the policies governing their implementation. In the event these and other laws and policies are made less protective of natural resources, the Reserve Management Committee will act in accordance with its commitments under this MSHCP. In the event that laws become more protective of natural resources, the Reserve Management Committee may take actions to increase the level of protection provided for these resources on the Reserve. For example, an increase in the level of enforcement activity on the Reserve may be an appropriate response to new laws or regulations requiring more stringent protection of Reserve resources.
- **Regional Decline of Sensitive Species Populations outside of the Reserve.** A number of the species covered by this MSHCP are currently considered relatively common within the region and within southern California in general. They have been elevated to sensitive species status primarily because of threats to their habitat from continued development. It is therefore feasible that populations of many of these species will decline significantly in the foreseeable future. Indeed, the purpose of establishing reserves prior to formal listing of any or all of these species is to anticipate this type of problem and prevent it from threatening the existence of the species by setting aside reserve areas.

Management response to declines in regional populations should initially be to act to influence public policy in a manner which would encourage sound resource management. In the event of a significant decline in regional populations, the Reserve Management Committee may alter Reserve management strategy to favor a species considered especially threatened. This may be done to the extent that it does not affect other species on the reserve to a significant and adverse extent.

Both the Service and the Department have significant powers to regulate impacts to listed endangered or threatened species. Use of these powers to protect sensitive species populations is the responsibility of these regulatory agencies. At the request of either the

Service or the Department, the management plan for the Reserve may be amended by the Reserve Management Committee to provide for specific management activities for these species.

- **Temporary Habitat Loss and Alteration on the Reserve.** The Reserve may be affected by fire or other disturbance outside of the control of the Reserve Management Committee. Large temporary changes in habitat structure and composition may result. The Reserve Management Committee will attempt to prevent and/or control the extent of such losses through appropriate fire control and disturbance control activities. In the event they occur, they will be considered as a part of the natural evolution of the Reserve. Management efforts in response to such perturbations will be to assist natural processes in the long-term restoration of historic habitat quality. Actions taken may include control of exotics, reduction in public access to disturbed areas, re-planting of critical species, and re-introduction of sensitive species if needed.
- **Fluctuation in Populations of Sensitive Species.** Sensitive species populations are expected to fluctuate, both on the Reserve and in the region, in response to fluctuations in climate and other factors. In addition, improved survey methods may result in significant changes in population estimates from time to time. These fluctuations are considered normal. Management response to them will depend on their nature and severity.
- **Additional Sensitive Species Located in MSHCP Area.** As survey methodologies are refined during the research program, additional sensitive species may be located within the Reserve and/or areas adjacent to the Reserve. At the request of either the Service or the Department, the management plan for the Reserve may be amended by the Reserve Management Committee to provide for specific management activities for these species. It is anticipated that the research and management funding provided under this MSHCP will be adequate to address concerns raised by identification of additional sensitive species within the Reserve.

These management strategies are intended to provide for adaptive responses to factors outside of the control of the Reserve Management Committee.

#### **3.11.4 Methodology for Developing and Implementing Management Plans**

Taking an ecosystem management approach to measurement of mitigation effectiveness will lead to management planning which emphasizes adjustment of research and management to ensure a robust, diverse assemblage of natural communities. Management planning will therefore be focused on supporting native vegetative communities and on sustaining viable populations of wildlife species.

For sensitive species management, this means that when monitoring indicates that management actions have not resulted in viable habitat for a particular sensitive species (that is, a species anticipated to utilize a particular habitat) additional research will be conducted to determine:

- What sensitive species are and are not utilizing the managed habitat;
- The probable reasons for the unanticipated result;

- Whether the net result of the management is favorable from a multi-species point of view; and
- Whether corrective action is needed to ensure the continued viability of any particular sensitive species.

In general, significant corrective actions will be recommended only when two conditions are met:

- The Reserve Management Committee concludes that the "result" achieved represents a long-term "failure" of the management strategy, and
- The "result" achieved by management threatens the viability of the population of a particular sensitive species to the extent that it is appropriate to take action which favors that species over other species which may be successfully utilizing the habitat in question.

Management planning for the Reserve is therefore not a matter of simple comparison of results to an arbitrarily established standard. Rather, it will be the result of a thorough review of the overall success of the Reserve in establishing and maintaining a diverse, dynamic natural ecosystem, taking into account the complex interactions among the various sensitive species on the Reserve.

### **3.12 RESPONSIBILITIES OF THE RESERVE MANAGEMENT COMMITTEE**

#### **3.12.1 Lands to Be Managed under this MSHCP**

The lands to be managed under this MSHCP shall include the areas designated as Reserve on the maps incorporated in the Cooperative Management Agreement.

#### **3.12.2 Management Goals and Objectives**

Consistent with the purposes of this MSHCP, the management goals of the Reserve Management Committee shall be:

- To provide for implementation of a Department 2081/2835 Agreement for the sensitive species covered by this MSHCP in the event of their listing under the CESA, Service Section 10(a) permits for these same species in the event of their listing under the FESA, and findings and recommendations of a Service Section 7 Conference regarding the California gnatcatcher (related to the Bureau of Land Management's transfer of lands at Domenigoni Valley to the RCHCA);
- To cooperatively manage the Reserve lands as a single ecological unit;
- To manage to promote the quality and diversity of plants and animal communities within the Reserve, with an emphasis on restoring these communities to their natural condition;
- To accommodate research on the Reserve, with a focus on ecological studies and studies of life history, habitat requirements, and factors affecting population viability of sensitive species that have practical application for Reserve management and operations and/or regional reserve planning;
- To the extent feasible without compromising the above primary management goals, to provide opportunities for (in descending order of priority) teaching and interpretive activities, historical and cultural research and interpretation, and nature study and appreciation; and
- To the extent feasible without compromising the above management goals, to provide for low-impact recreational opportunities in areas of the Reserve which are deemed appropriate for such activities by the Reserve Management Committee.

In implementing these goals, the members of the Reserve Management Committee shall act in a manner in accordance with their respective rights, responsibilities, and authority, and in applying their respective expertise, skills, and knowledge, shall meet the following specific management objectives:

- Prepare and adopt specific plans governing natural resources on the Reserve, so long as these plans are consistent with, and in furtherance of, the goals of this MSHCP;
- Promote, develop, review, and authorize research projects related to the natural resources of the Reserve;

- Enhance public awareness of the natural and cultural resources of the Reserve through on-site and off-site interpretive programs;
- Provide for only the following improvements upon the Reserve, except as provided for under Section 3.14:
  - a) Residences for a ranger and a groundskeeper-caretaker, located on the Shipley Reserve lands;
  - b) Facilities for support and maintenance functions and biological research that must be performed on Reserve lands;
  - c) Minimal facilities essential to the safety and comfort of the visiting public;
  - d) Appropriate trails and facilities that provide access to environmentally resilient areas of the Reserve and which provide for the education and enjoyment of the general public;
  - e) Repair and maintenance of the principal existing service road between Lake Skinner and the Domenigoni Valley, and for the alternative route selected for this road following closure of the road following construction of the Domenigoni Valley Reservoir.
- Provide for carefully controlled public access to the Reserve in furtherance of the teaching, interpretive, and recreational goals of the Reserve;
- Comply with the National Historic Preservation Act of 1966;
- Adopt rules, regulations or ordinances, as provided for in the Cooperative Management Agreement; and
- Adopt amendments to this MSHCP, by unanimous written agreement of the parties to the Cooperative Management Agreement, in furtherance of the goals of this MSHCP and consistent with applicable federal and state law and regulation, following the amendment procedures in the Cooperative Management Agreement).

### **3.12.3 Interim and Final Management Plans**

General management plans and activities are proposed at this time. Until research needed is completed, access to the Reserve will be restricted to management and research personnel. Two phases of management are anticipated: interim (1992-1998) and long-term (1999-indefinite).

### 3.12.3.1 Interim Management (1992-1998)

In this MSHCP, general mitigation requirements and strategies have been outlined and constitute an Interim Management Plan. Under the Interim Management Plan, activities permitted on the Reserve will be strictly limited. In particular:

- General public access to the Reserve will be restricted from the north (Domenigoni Valley), with the possible exception of access to a trail at the base of the north slope of the North Hills). This restriction on access will be maintained throughout the construction period and thereafter until the Reserve Management Committee approves a general plan for public access;
- General public access from Lake Skinner will be restricted until the Shipley Committee approves a plan for public access;
- The RCPOSD and Metropolitan will patrol the Reserve (RCPOSD south of the Domenigoni Valley Reservoir site; Metropolitan on the Domenigoni Valley Reservoir site);
- Research approved by the Reserve Management Committee will be allowed. Research which would result in a conversion of habitat will generally be restricted until surveys of the Reserve and other basic research into the habitat requirements of sensitive species on the Reserve have been completed.

Under this MSHCP, the areas proposed for the Reserve will be acquired and protected with fencing and fire control. This will occur over the period 1992-1994. All Reserve lands are expected to be acquired and protected prior to construction initiation in 1995.

During the interim management period day-to-day management of the Reserve will be provided by Metropolitan pursuant to the policies of the Reserve Management Committee. The focus of management will be on preservation and protection of habitat from disturbance. The Reserve Management Committee will prepare a Research Plan which will include a full research program for life history and habitat requirements research for the sensitive species covered by this MSHCP.

### 3.12.3.2 Long-Term Management

Long-term management will be provided by the Reserve Management Committee under a Management Plan to be developed as research is completed in 1998-1999. Funding is discussed in later sections of this MSHCP.

### **3.12.4 Management Responsibilities of the Parties**

The Reserve Management Committee shall be composed of one voting member each from Metropolitan, the Service, the Department, the RCHCA, and the RCPOSD. Duties and obligations of these members are outlined below.

#### **3.12.4.1 Metropolitan**

Until the Domenigoni Valley Reservoir construction is completed and the reservoir is filled, Metropolitan will have primary responsibility for day-to-day management of natural resources within the Reserve, and will designate a manager to coordinate with the Reserve Management Committee. Metropolitan will be primarily responsible for management related to protection of the Reserve, including maintenance of fire breaks and fencing around the reserve. Metropolitan's operations personnel may also participate in other management activities such as providing support and facilities for monitors and research personnel. Metropolitan will provide the Natural Resources Director to coordinate all research activities and mitigation activities on the Reserve until such time as:

- The Domenigoni Valley Reservoir has been completed and the reservoir filled, and
- The mitigation banking provisions of the Shipley Agreement have been accomplished; that is, until mitigation credits have been used and mitigation activities on the Reserve have been certified as completed.

At the termination of the initial funding arrangements, Metropolitan will provide for management of the Reserve consistent with the obligations of the conservation easements granted to the RCHCA.

Metropolitan may also designate a coordinator from its Engineering (short-term) and/or Operations (long-term) Division to work with the Reserve Management Committee and the Natural Resources Director to accomplish the objectives of the MSHCP and to ensure that reservoir operations and Reserve operations are coordinated. This Operations Division manager will participate in activities which affect water quality or Metropolitan's water service operations.

#### **3.12.4.2 The Service**

In addition to voting membership on the Reserve Management Committee, the Service will initially participate in status surveys, resource inventories, California gnatcatcher habitat and life history studies, in monitoring of revegetation efforts, and in studies of other sensitive species. The Reserve Management Committee will determine the nature and scope of Service research design and field activities. The Service will be represented on any research design committees and may participate actively in other research activities.

#### **3.12.4.3 The Department**

In addition to voting membership on the Reserve Management Committee, a Department staff member may, at the discretion of the Reserve Management Committee, be assigned to perform biological research, monitoring, and other research on the Reserve. The Department will be represented on any research design committees and may participate actively in research activities. In addition, the Department will enforce the conservation easement granted to the RCHCA under this MSHCP.



#### **3.12.4.4      RCHCA**

In addition to voting membership on the Reserve Management Committee, the RCHCA will be granted the conservation easement, enforceable by the Department, over the lands to be set aside under this MSHCP.

#### **3.12.4.5      RCPOSD**

The RCPOSD will continue to chair the Reserve Management Committee, and will manage the Shipley endowment, in a manner consistent with direction from the Reserve Management Committee. Also consistent with the Shipley Agreement, the RCPOSD will regulate recreational access to the Reserve in accordance with regulations developed and approved by the Reserve Management Committee governing the Reserve. In addition, RCPOSD is a voting member of the Reserve Management Committee and public access manager of the Shipley Reserve and Lake Skinner Reserve.

### **3.13            FUNDING AND SCHEDULING OF RESERVE ESTABLISHMENT**

#### **3.13.1        FUNDING**

The management and research budget for the existing Shipley Reserve is approximately \$170,000 per year, supported by a \$2.2 million endowment which will be exhausted by the year 2010. Thereafter, other provisions for funding the Shipley Reserve were to be developed.

During construction and initial filling of the reservoir during the period 1992-2003, additional funding for management of the Reserve will be provided from Metropolitan's project mitigation budget. The total commitment for this period of Reserve management is \$13,886,000 (Table 3-6). Following construction and expenditure of this initial funding, Metropolitan will provide for management of the Reserve by providing funding in the amount of \$200,000 per year or 50% of the net receipts from operation of the Domenigoni valley Reservoir recreation areas, whichever is greater.

#### **3.13.2        Schedule**

The Reserve shall be established on the date when either the Department accepts this MSHCP as a basis for entering into a Section 2081 Agreement and/or when the Service accepts this MSHCP as the basis for issuance of Section 10(a) permits under the FESA. Full participation in management of the Reserve will begin when the respective agencies sign the Cooperative Management Agreement and Memoranda of Understanding attached as Appendices B and C. If these documents are not signed by the Service or the Department simultaneously, the MSHCP may nonetheless be implemented. The party not signing at the time may subsequently approve the MSHCP and assume membership in the Reserve Management Committee. At that time, Metropolitan will:

- Undertake to acquire in fee, through condemnation proceedings if necessary, any and all Reserve lands not currently under Metropolitan ownership;
- Authorize the funding of the Reserve management and research program for the period 1992-1999, as provided in Section 3.10.1, and shall authorize its representative to the Reserve Management Committee to initiate contracts for research and management

activities approved by the Reserve Management Committee, up to the budgetary limit provided for in Section 3.13.1.

The schedule for land acquisition may vary, depending on the processing of appraisals and other real estate documentation. In general, Metropolitan intends to acquire all lands for the Reserve by late 1993, with a majority of the lands acquired by early 1993.

The research and management work plan, and the budget for initial management of the Reserve is currently being developed in cooperation with the Reserve Management Committee. As Table 3-6 indicates, the Reserve Management Committee will have budgetary discretion over a majority of the budget (\$10.4 million) provided that any budgetary decisions made will not affect the acceptance of this MSHCP as meeting the requirements of the FESA and the Fish and Game Code.

**Table 3-6**

**Multi-Species Habitat Conservation Plan, Preliminary Budget**

<u>Budget Item</u>	<u>Period of Application</u>	<u>Total Funding</u>
<b>Reserve Protection</b>		
Fencing.....	1993-1994	\$400,000
Fire/Security.....	1993-1998	328,000
<b>Management and Monitoring</b>		
Habitat and wildlife monitoring and field management.....	1992-2003	2,750,000
Subtotal, fixed costs.....	1992-2003	3,478,000
<b>Funds for research and management activities, including added habitat acquisition, restoration and/or enhancement.....</b>		
	1992-2003	10,408,000 <sup>1</sup>
<b>Total Budget Commitment</b>	<b>1992-2003</b>	<b>\$13,886,000</b>

1. In consultation with the Program Manager for the Domenigoni Valley Reservoir Project, the Reserve Management Committee may disburse funds from this total over the period 1992-1999 at its discretion. The funds may be used to match funding from local, state, federal, or private funding sources, consistent with the purposes of this MSHCP. The Reserve Management Committee may reserve a portion of this funding for contingencies.

### 3.13.2.2 The Natural Resources Director

From acceptance of this MSHCP to completion of construction and initial filling of the Domenigoni Valley Reservoir, the activities outlined herein will be overseen by the Reserve Management Committee and coordinated via a Natural Resources Director, chosen and paid by Metropolitan. Metropolitan may also choose additional management personnel, either staff or consultants, to coordinate or perform various aspects of the mitigation work for the California gnatcatcher and for the establishment of the Reserve.

After construction and initial reservoir filling, the management of the Reserve may be adjusted. The Reserve Management Committee may appoint a new Natural Resources Director. If the Reserve Management Committee cannot agree on a Natural Resources Director, Metropolitan may retain active management responsibility. Because of the importance of the Reserve to Metropolitan's two reservoirs, Metropolitan reserves the right to retain many management responsibilities, such as responsibility for maintaining fencing and fire roads. Metropolitan will participate actively in management of the reservoir watersheds, consistent with the objective of maintenance of habitat quality and diversity.

Progress reports will be prepared annually and submitted by all parties taking part in field research and management to the Reserve Management Committee for review and comment. These reports will summarize findings and recommend additional management measures and additional research, if needed. Metropolitan will share data from research, monitoring, and management efforts with resource agencies. Research reports may be prepared by Metropolitan and other members of the Reserve Management Committee and submitted to appropriate peer-review journals for publication.

### 3.13.2.3 Summary Schedule

Scheduling for implementation of Reserve activities is tentative, with changes in schedule probable as a as more data about Reserve resources are developed. A general schedule outlining probable phases of work is:

- 1992: Shipley Agreement Replaced by new Cooperative Management Agreement
  - Reserve scientific advisory committee formed
  - Preparation of Interim Management Plan and research scopes
  - On-going Reserve land acquisition
  - Rare plant seed collection (mitigation activity)
  - Progress report 1
  - Reserve patrols and fire control plan initiated
  
- 1993: Construction of Newport Road and other relocated facilities initiated
  - Initiation of community ecological characterization
  - Land acquisition continues, with fencing as land is acquired
  - Some RSS enhancement may begin (weed control)
  - Sensitive species life history studies
  - Rare plant mitigation begins
  - Initial public access (North Slope base trail only)
  - Progress report 2

- 1994: Land acquisition and fencing completed prior to January 1994  
Recreation plan for reservoir completed and coordinated with Reserve Management Committee  
Some Reserve areas opened for recreation, at Reserve Management Committee discretion  
Reservoir project construction and construction monitoring begin  
Access roads completed  
Research and management efforts continue  
Progress report 3
- 1995: On-going research, management, monitoring, and report 4
- 1996: Reservoir Recreation areas initiated  
Preliminary long-term Management Plan prepared  
On-going research, management, monitoring, and report 5
- 1997: Preliminary long-term Management Plan refinement  
On-going research, management, monitoring, and report 6
- 1998: On-going research, management, monitoring and report 7  
Long-term Management Plan completed  
Recreation plan for Reserve completed
- 1999: Reservoir construction complete  
Recreation facilities for reservoir project completed  
Full public access to the Reserve initiated  
On-going research, management, monitoring, and report 8
- 2000: Reservoir filling underway  
Long-term Management Plan implemented
- 2001: Long-term funding from recreation revenues initiated

### **3.14 RELATIONSHIP OF RESERVE TO METROPOLITAN RESERVOIRS**

#### **3.14.1 General**

Two Metropolitan reservoirs will be entirely within the Reserve boundaries: the 4,450-acre Domenigoni Valley Reservoir and Lake Skinner. These two lakes will provide approximately 5,650 acres of aquatic habitat. Lake Skinner has significant riparian areas along its borders, primarily because it is maintained at a relatively constant level. The Eastside Reservoir level will fluctuate more significantly, and minimal riparian vegetation is anticipated surrounding this facility. Both lakes, however, will provide benefits to wildlife communities in the Reserve:

- A reliable source of water for animals such as deer;
- Minor micro-climate changes which will probably not alter the type of plant communities in the Reserve but may enhance conditions for more robust plant community development by increasing relative humidity and lowering downwind temperatures in surrounding areas. This phenomenon has been observed at Lake Skinner, but not systematically studied;
- A food supply for birds which feed on fish, such as osprey; and
- Limited habitat for migratory waterfowl. Both reservoirs will be deep and therefore do not provide significant feeding grounds for ducks and geese, but will provide some habitat for migratory birds.

The Reserve Management Committee will be consulted in regard to many of these issues, such as what varieties of fish should be planted in the Reservoir. Recreation management decisions for the Reservoir and its associated recreation facilities will, however, remain the responsibility of Metropolitan.

These benefits will be permanent. It is highly unlikely that even under the worst drought and emergency conditions these reservoirs would be drawn down completely.

Metropolitan will manage these reservoirs primarily to provide municipal and industrial water. There will therefore be limited recreation access to the two lakes. The general policy at Lake Skinner has been to provide fishing and boating and sailing opportunities consistent with efforts to maintain water quality, and no body contact recreation has been allowed. A similar policy will be followed at the Domenigoni Valley Reservoir. At both reservoirs, then, there will be very limited access to the shoreline of the lakes; no body contact recreation; limits on power boats; and no water skiing, jet skiing, or similar activities. In short, disturbance to wildlife using the lakes will be limited.

#### **3.14.2 Metropolitan's Rights to Operate on the Reserve**

Metropolitan will endeavor to minimize impacts to Reserve resources in all of its operations in and adjacent to the Reserve; nevertheless the parties to this MSHCP and to the Cooperative Management Agreement recognize Metropolitan's rights to utilize the Reserve and adjacent lands to meet its water service obligations or water service operations responsibilities, to perform rescue operations, and similar activities. In this regard, and for all purposes of this MSHCP, without limitation on rights as reserved

under MSHCP conservation easements, the parties acknowledge and accept that Metropolitan has the right to:

- Take such actions on Reserve lands as Metropolitan shall deem necessary in the interests of its water service obligation or operations (including, but not limited to, metering of natural water inflow into the reservoirs and activities to maintain water quality in the reservoirs), public safety, or national security;
- Maintain, repair, replace, and use existing roads, water facilities, and ancillary improvements; and, subject to the prior written approval of the Department and the Service, which approval shall not be unreasonably withheld, to designate, construct, and use or authorize rights of way for roads, trails, irrigation works, flood control structures and channels, utility corridors, sewers, water facilities, and ancillary improvements, telephone and above and below-ground power lines, across the Reserve for operational and water supply purposes;
- Authorize its directors, officers, employees, licensees, agents, and contractors to enter on, pass over, and egress from the Reserve as necessary to protect any right or carry out Metropolitan's water service obligations or operations, including, but not limited to, the protection of water quality; and
- Remove or demolish any unauthorized structure or other improvement located on the Reserve that may conflict with Metropolitan's water service obligations or operations.

Metropolitan will undertake these actions to the minimum extent feasible consistent with its service obligations and will coordinate these actions with the Reserve Management Committee to assist Metropolitan in identifying the least damaging methods of conducting operations. Several specific actions contemplated in relation to these rights are identified below.

### **3.14.3 Metropolitan Reservoir Management Activities and their Impact on the Reserve**

Metropolitan's primary concern being maintenance of water quality, there will be few operational concerns which would significantly affect Reserve habitat. Metropolitan will establish a fire control plan to prevent catastrophic fires (and the erosion which accompanies them), will patrol the reservoir area to prevent dumping and other activities which could adversely affect water quality, and will maintain generally unpaved roads which will provide access to the reservoir for operational purposes. In addition, Metropolitan will monitor inflow into the reservoir from local watersheds with streamflow gauges placed at strategic locations around both reservoirs; this is required to ensure that releases from the reservoirs to local water users match historic flows on these ephemeral-flow watersheds.

Metropolitan's operations activities *on the Reserve* will therefore have little impact on Reserve plant and animal communities, with primary impacts from fire control and access control being beneficial. Road and hiking trail maintenance may have beneficial impacts for plants and animals which utilize disturbed habitat or marginal "edge" habitat, such as the Stephens' kangaroo rat.

Specific permanent facilities which may have an impact on the Reserve in the vicinity of the Domenigoni Valley Reservoir include:

- Construction of an unpaved service road around the perimeter of the Domenigoni Valley Reservoir. This road will generally follow the shoreline, but in areas with extremely steep terrain would encroach on the Reserve. The road would serve Metropolitan, Reserve management, and the public (as a hiking trail), and would allow access to the reservoir for water quality measurements and treatments (such as copper sulfate treatment to control algal growth).
- Construction of unpaved access roads. Where the service road does not hug the shoreline, access roads would connect the service road to the reservoir. These roads would also function as fire breaks, reducing the potential for catastrophic fires. They would not be open to the public.
- Construction and operation of a visitor's center, probably located several hundred yards north of the west dam main embankment, on a knoll overlooking the dam and reservoir, and served by a paved road through the Reserve. The visitor's center may also function as an interpretive center and as an access control and activity monitoring point for the Reserve.
- Construction and operation of three permanent dam-keeper's residences, with associated operations buildings, one near the visitor's center and two on high ground at either end of the east main dam. These residences/offices will be accessed by paved roads and will provide further access control to the Reserve. In the vicinity of the east dam-keeper's residence, a helicopter pad and storage area will also be constructed.
- Potential construction of a tunnel portal on the South Hills for a tunnel to link Domenigoni Valley Reservoir to Lake Skinner; this aspect of the reservoir project has not been planned and environmental documentation has not been prepared. If a decision is made to connect the two reservoirs by tunnel, the impacts of this project will be separately documented and mitigated.
- Maintenance of an operations buffer around the reservoir. This buffer zone, shown on Figure 1, will allow Metropolitan access to the reservoir to enforce operational regulations, to test water quality, and for other purposes. A similar zone has been in effect around Lake Skinner since it was opened and provides excellent wildlife habitat.

At Lake Skinner, there are some minor permanent facilities planned, including replacement of several weirs for streamflow monitoring on Rawson and Tualota Creek and construction of trails at the south end of the Reserve area to replace existing horse trails. The weirs are within the operations buffer zone shown on Figure 1, and are therefore outside of the Reserve *per se*. In addition, a radio transmission tower may be constructed near the southwest corner of the Reserve area shown on Figure 1. An unpaved access road may be constructed across a portion of the Reserve at the northwest corner of the Lake Skinner area to allow county employees access to a planned microwave station on the top of Bachelor Mountain. Finally, a tunnel portal may be constructed on the north shore of Lake Skinner if a direct connection between the two regional reservoirs is desired. The portal construction zone would be approximately 300 by 1000 feet. Exact siting for these facilities is unknown at this time. If it were constructed, the impacts of this project will be separately documented and mitigated.



In addition to these permanent facilities, which will utilize approximately 6-12 acres of habitat and be surrounded by the Reserve, there will be temporary construction impacts of a limited nature at the Domenigoni Valley Reservoir:

- Dam construction activities will extend approximately 1000 feet from the at-grade dam footprint; this will affect habitat at the dam abutments which, following construction, may be graded, re-seeded, and placed within the Reserve. This will also affect the agricultural areas within the 500-foot west wildlife corridor and the 1,000-foot east wildlife corridor. As noted above, these corridors will not become a part of the Reserve until construction of the reservoir project is completed. Following completion of construction, these corridors will be separated from recreation areas and planted. The Reserve Management Committee will be consulted on the appropriate habitat for these corridors. Metropolitan will retain access to the dams and the San Diego Canal through the Reserve.
- Geotechnical investigations in the North Hills will involve efforts to determine rock quality in this narrow band of hills, possibly followed by grouting of areas. This activity will involve construction of a temporary unpaved access road (many existing road alignments can be used, but some new cuts may be required) followed by extensive coring and localized trenching. Following any required grouting (grout pumped into fractures in the rock below the inundation line), the road would be abandoned or used as a hiking trail. If abandoned, the road would be scarified and re-planted in native species.
- Extension of the hard-rock borrow area slightly beyond the boundaries shown on Figure 1 and identified in the project FEIR, if the delineated borrow area does not yield adequate quantities of hard rock for construction. If this occurs, additional mitigation will be proposed and implemented.

Indirect construction impacts to the Reserve will include dust, noise, and lighting. Measures to control these impacts are described in the next section, which provides a more detailed description of the Domenigoni Valley Reservoir and its impacts.

A vast majority of construction activities will be entirely outside of the Reserve, including dam construction, borrow area operations, and construction of control facilities such as pumping stations, tunnels, pipelines, and the like. When construction activities require access to the Reserve, Metropolitan will coordinate, in advance, with the Reserve Management Committee to ensure that impacts are avoided or minimized.

The minimum Reserve acreage, approximately 8,700 acres, excludes all of the areas of temporary and permanent facilities discussed above, as well as reflecting uncertainties due to measurement errors. The maximum Reserve acreage figure includes areas of temporary impact which will be placed under Reserve management following construction.

### **3.15 BENEFITS OF THIS MSHCP AND THE MULTI-SPECIES RESERVE IT CREATES**

#### **3.15.1 Contribution to Regional Conservation Objectives**

A detailed analysis of the benefits of this MSHCP to sensitive species is provided in Section 5. The primary intent of the MSHCP is to create a large reserve large for wildlife species which can be expected to utilize its community types and to provide a core areas for future-expansion to the east, south, and west. It provides corridors for wildlife movement around the two major lakes in the Reserve (Lake Skinner and the Domenigoni Valley Reservoir). The Reserve will also be generally consistent with regional, state, and federal planning for coastal sage scrub and the sensitive species of this community. The research program proposed will be the most extensive long-term evaluation of coastal sage scrub communities and the sensitive species inhabiting them. It will provide data which can be used to make regional land use decisions regarding the habitat requirements of these species. In addition, research and monitoring of habitat recovery following management activity will contribute to knowledge of the natural recovery process for disturbed coastal sage scrub communities following fire, grazing, and other disturbance.

#### **3.15.2 Regional Recreation Opportunities**

To the extent that recreation can be compatible with Reserve management for the benefit of wildlife, the Reserve will offer highly valuable open-space/wilderness type recreation opportunities. General public access to the Reserve will be controlled effectively both by entry facilities at the west and east recreation areas and by the topography of the lands at key access points. At the marina and day-use boat launching facilities, access to the Reserve will be via the designated trails. At Lake Skinner, access to the North Shore, and therefore to the Reserve, has always been tightly controlled by both Metropolitan and by the RCPOSD, which operates the recreation facilities at Lake Skinner.

The Domenigoni Valley Reservoir itself will be patrolled, and restrictions on boating will include restrictions against landing outside of designated points along the lake shore (a similar policy is enforced at Lake Skinner). It will therefore be possible to exert very tight control on general public access to the Reserve. A conceptual plan for recreation on the Reserve is included in Section 4 of this MSHCP.

## **4.0 DOMENIGONI VALLEY RESERVOIR AND ASSOCIATED ESTIMATED LEVEL OF TAKE**

### **4.1 DOMENIGONI VALLEY RESERVOIR**

#### **4.1.1 Prior Environmental Documentation**

Within the 20,000-acre area of lands under public ownership covered by this MSHCP, impacts to sensitive species can be anticipated at the construction and operations sites of the Domenigoni Valley Reservoir Project. In addition, development and operation of recreation could have impacts, depending on the siting and operation of recreation facilities.

Domenigoni Valley Reservoir Project Impacts were documented in the project FEIR. When the FEIR was certified in October 1991, all impacts to listed species were addressed. Impacts to unlisted sensitive plants and to the California gnatcatcher were specifically addressed as well. Other sensitive species impacts were addressed by providing reserve habitat at the Shipley Reserve and at on-site mitigation areas.

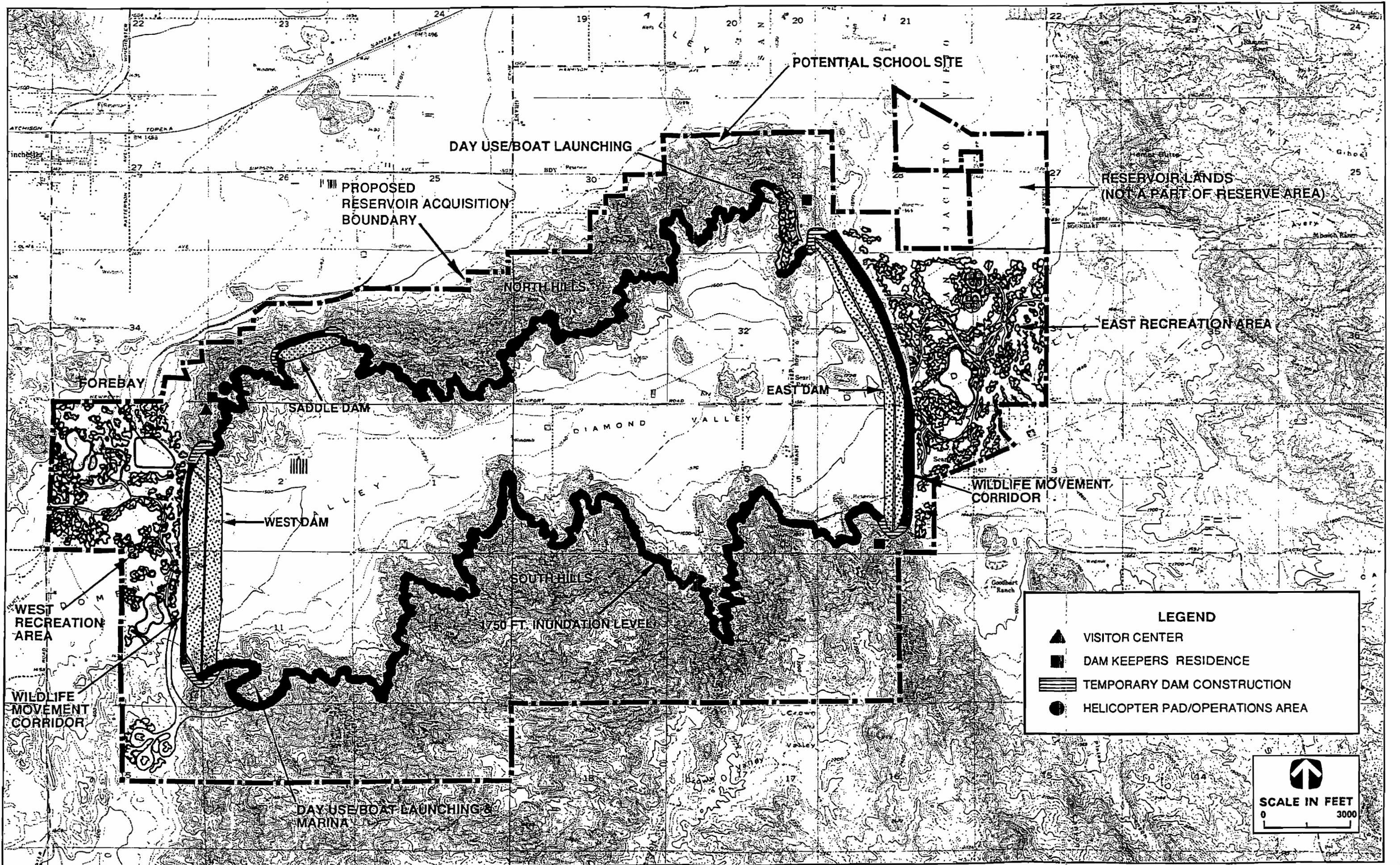
Given the status of the sensitive species affected by the project at the time of FEIR certification, prior mitigation documentation completely disclosed project impacts and prior mitigation plans completely addressed legally-mandated mitigation.

#### **4.1.2 The Reservoir and its Support Facilities**

The Domenigoni Valley Reservoir Project (Figure 18) will provide up to 800,000 acre-feet of reservoir storage in western Riverside County. A smaller reservoir at this site may be considered, but for purposes of this MSHCP, the maximum reservoir at the site has been assumed. The Domenigoni alternative was identified by Metropolitan as the preferred site and is recognized by the Service and the Department as the least environmentally-damaging practicable alternative. Land acquisition for the project is planned to be completed in early 1994, including acquisition of all areas covered by this MSHCP (Metropolitan currently owns about 60% of the land in the project area).

The activities to be covered by the incidental take authorized under this MSHCP include all construction, operation, and maintenance activities associated with the reservoir project and its support facilities, as well as those associated with development of recreation facilities on predominantly agricultural lands to the east and west of the reservoir as provided for in the project FEIR. These activities will typically include:

- Excavation of valley floor and selected hillside areas to prepare the foundation for the reservoir embankments and procure embankment materials, including excavation by blasting. These activities will begin in mid-1993 and will be continuous thereafter through approximately 1998;
- Processing of materials (on the valley floor and selected hillside areas), including significant quantities of aggregate and concrete, needed for construction of the reservoir project and associated recreation features. This activity would begin in mid-1993 and continue through 1998;



**LEGEND**

- ▲ VISITOR CENTER
- DAM KEEPERS RESIDENCE
- ▨ TEMPORARY DAM CONSTRUCTION
- HELICOPTER PAD/OPERATIONS AREA

↑

**SCALE IN FEET**

0 3000

Eastside Reservoir Project.

- Removal of vegetation and housing within the designated impact area during and following construction for a variety of project-related needs, on an as needed basis. This activity may begin in early 1992 and continue through 1998-99;
- Contouring of lands within the project area and the project recreation areas, both as a part of the construction process and as a part of efforts to rehabilitate recreation areas. This activity will begin in 1992 or 1993 and continue through the year 1999 (depending on the as-yet-to-be-determined timetable for development of recreation facilities);
- Disturbance of lands for the purpose of constructing permanent access roads, recreation facilities, trails, fire breaks, and other protective features (such as fencing) for the purpose of reservoir operations, recreation operations, and/or operation of the Multi-Species Reserve. This activity will begin in 1992 or 1993 and continue indefinitely, depending on the timetable for development of recreation facilities and on the need for continued management of the proposed Multi-Species Reserve; and
- Inundation of lands below elevation 1750 feet above mean sea level within the confines of the reservoir and inundation of lands at the reservoir afterbay and at recreation lakes within the recreation areas. Inundation effects are anticipated to begin in 1999 and continue through 2004 as the reservoir is filled.
- Cut-and-fill excavation of a pipeline corridor within the existing right-of-way of the San Diego Canal. Normal power transmission line construction activities along the proposed transmission line corridor, including excavation for transmission tower footings, and use of heavy equipment to erect transmission towers and string power lines from reservoir facilities to regional power grids.
- Relocation of Newport Roads and utility lines to alignments outside of the reservoir impact area.

The direct impacts of these activities, as disclosed in the project FEIR, include loss of approximately 2,500 acres of upland habitat in the Domenigoni Valley area, and temporary construction impacts to habitat along the San Diego Canal and power-line alignments.

As a consequence of these activities, there is also a potential that significant amounts of dust will be created and will disperse throughout the valley area. Metropolitan anticipates that this dust will be controlled by an aggressive program of watering borrow areas, excavation areas, construction zones, and haul routes. Metropolitan's dust-control program will meet the requirements of the South Coast Air Quality Management District; therefore significant impacts of dust are anticipated to be contained below the maximum inundation elevation of 1750 feet above sea level.

This list of activities is for illustration purposes only and is not intended as a complete listing of all potential construction activities. Except for concrete, materials for construction of the earth and rockfill dams will be obtained on site, with rock taken from two borrow areas in the South Hills and earthfill materials taken from the valley floor (within the area for the proposed reservoir). Construction will last approximately 5 years, with about 3 years of intense excavation and construction activity (1995-1998). Following construction, the reservoir will be filled over a period of at least 4-6 years.

Support facilities for the reservoir include pipelines (causing temporary loss of habitat due to construction), power lines, and a forebay/afterbay at the northwest corner of the project area. Two large recreation areas are planned for construction at either end of the project area, with some phases of recreation activity beginning during construction and initial filling of the reservoir. Wildlife corridors 500-600 feet wide on the west and 1,000 feet wide on the east will separate the main embankments from the recreation areas; these wildlife corridors will also be used to allow inspection and maintenance teams easy access to the embankments. This use for operational purposes will not affect their function as wildlife corridors; the maintenance roads needed will occupy only a small portion of the corridor and the remaining corridor area will be virtually undisturbed by inspection and maintenance activities.

Of the species which will be covered on the basis of this MSHCP by Section 10 (a) permits or Section 7 Conference report and/or Section 2081/2835 Agreement, none is currently listed under either the CESA or the FESA. One, the California gnatcatcher, is proposed for federal listing as threatened or endangered.

#### **4.1.3 Reservoir Recreation Areas**

The proposed recreation features will be concentrated outside of the reservoir area, to the west of the west dam and the east of the east dam. Recreation within the reservoir area itself will be limited to boating, sailing, and fishing, and to several hiking trails which will provide limited access to the Reserve. There is little existing natural habitat within the areas designated for recreation; the 750 to 850 acre west recreation area and the 850 to 950 acre east recreation area will be developed on lands which have been intensively farmed for over a century.

#### **4.1.4 Recreation Plan for the Reservoir and Reserve**

##### **4.1.4.1 General**

The lands acquired by Metropolitan for the Reserve and at the site of the proposed reservoir together represent an exceptional opportunity to provide recreation and interpretation at appropriate locations and in ways that support attainment of the goals of preservation, protection, restoration, and enhancement of the natural resources for which the Reserve is being established. Recreation and interpretation are proposed for the following reasons:

- **To meet community and regional recreation needs.** With a surface area of almost 4,500 acres, the Domenigoni Valley Reservoir will be the largest reservoir in southern California, providing water related recreation in a semi-arid region where demand for this type of recreation is high. Lands outside the reservoir and Reserve will provide from 1,700 to 1,900 acres suitable for a wide range of recreational uses to meet needs of nearby communities and recreational users drawn from throughout southern California. By the fifth year of operation, an estimated 1,300,000 visitors are expected to use these recreation resources.
- **To generate revenue to underwrite Reserve management.** In the two intensive-use areas outside of the Reserve, some recreation facilities will generate an income stream that will be used to support Reserve management.

- **Education.** The exceptionally rich natural and cultural resources of the area make education and interpretation activities an important component of the recreation plan for the reservoir and the Reserve. The large number of visitors expected represents a significant opportunity to educate and to strengthen public support for natural resource conservation.

#### 4.1.4.2 Consistency with Reserve Goals

The recreation plan is consistent with Reserve goals and objectives, with priority given to protection of the natural and cultural resources of the Reserve. The Reserve's size and contiguous nature enable planning for a recreation system which can appropriately utilize the variety of landforms and resource types found throughout the Reserve. Thus, for example, only trail uses, nature observation, and interpretive programs are planned for the Reserve, and these activities are proposed only for areas which do not have sensitive natural resources, using existing unpaved roads and fire breaks whenever possible. Intensive recreation is planned only for areas outside the Reserve, on lands which have been in agricultural production for the last century.

#### 4.1.4.3 Existing and Proposed Recreation Facilities in the MSHCP Area

Activities at one existing and two proposed intensive recreation areas will be quite diverse, ranging from swimming lakes, sports fields, and a golf course to an interpretive center and habitat restoration demonstration areas. At the Domenigoni Valley Reservoir, intensive use recreation will be focused on two boating facilities (southwest corner and northeast corner of the lake) and on two large areas separated from the base of the dams by wildlife corridors. On the west, the San Diego Canal will form an imposing barrier between the recreation area and the wildlife corridor. On the east, the Reserve corridor and the recreation area will be separated with fencing. The reservoir and the Reserve will be accessible only via the three adjacent recreation areas, which are described below:

- **Lake Skinner.** The existing 375-acre recreation area at the east end of Lake Skinner is operated by the RCPOSD and includes a campground, trails, a marina, picnicking, swimming in an artificial lagoon (no body contact in the reservoir itself), other day-use activities, and an historical area. Overnight camping facilities for equestrians are currently provided at a separate unit on the south side of the lake. Lake Skinner attracted 330,000 visitors in 1988, the last year for which complete attendance data are available. An additional 150 acres at the east end of the lake are designated for expansion of this area.
- **The West Recreation Area.** The 750-850 acre area to the west of the relocated San Diego Canal will include group camping, a small lake for swimming and fishing, recreational vehicle and tent camping sites, picnic areas, equestrian trails, paved trails for walking and biking, and an equestrian center. At least one interpretive center is planned; a cultural resources research and interpretive center may be located near an existing historical site. The equestrian center, which was described as a feature of the East Recreation Area in the project FEIR, is more appropriately located in the West Recreation Area. Operation of the center will be contingent on an effective cowbird control program. The marina will provide slips for privately-owned boats, rental boats, and day-use launching facilities.

- **The East Recreation Area.** The 950-1,050 acre area to the east of the east wildlife corridor will focus on community-oriented recreation. There is a proposed day-use launching facility at the northeast corner of the lake, but no slips for overnight mooring. Facilities at this area will emphasize active, daytime uses, including a small lake for swimming and fishing, areas for field sports and turf play, and up to 200 acres for a golf course. An equestrian trail, but no equestrian facilities, is proposed for this area. There will be no camping facilities. An interpretive center, in addition to the cultural resources interpretive center, may be constructed in this recreation area. The East Recreation Area will be set aside primarily for urban, day-use activities such as golf, swimming, fishing and field sports.

#### 4.1.4.4 Recreation on the Reserve

Low intensity, passive trail uses and associated activities will be the only recreation in the Reserve and will be restricted to designated areas. The emphasis will be on nature appreciation/observation. No general public access by motor vehicle will be allowed, and the only facilities provided will be trails, trailheads, sanitation, water supply for equestrians (trails outside of the watershed around Domenigoni Valley), bike riders, and hikers, and a small picnic area near the existing Shipley Reserve Headquarters. Up to five east-west trails will pass through the Domenigoni Valley portion of the Reserve, with a north-south trail linking Lake Skinner, via the Shipley Reserve, to the east-west trails (Figure 19):

- **Fenceline Trail.** This combined trail (equestrian, bike, and pedestrian uses) will run along the outside of the fence at the base of the north slope of the North Hills, and will also serve as a fire and patrol road.
- **North Crest Trail.** This pedestrian trail will follow the ridge line of the North Hills, offering spectacular views in all directions and linking the East and West Recreation areas; the trail may also be suitable for equestrian and cyclists.
- **South Shore Trail.** This pedestrian-bicycle trail will follow the shoreline road which will serve as Metropolitan's operations access to the reservoir and which will function as a fire break to protect the Reserve during construction activities. The shoreline trail may be augmented by a parallel trail on the shoreline of the north shore of the reservoir.
- **South Crest Trail.** This high trail will meander along or just below the south-facing ridge line of the South Hills, accommodating both equestrians and pedestrians. In places where dictated by terrain, these uses will be in a single corridor, but generally pedestrian uses will be to the north of the ridge line and equestrian uses will be to the south of the ridge line, on lands draining away from the reservoir.
- **Lake Skinner Trail.** This pedestrian-bicycle trail along the north side of the lake will originate in the recreation area at the east end of the lake and will connect to the Shipley reserve and other trails.
- **Shipley Reserve Trail.** This hiking-bicycling trail corridor will utilize existing roads to the extent feasible and will be developed in coordination with the Reserve fire control plan. The trails within this corridor will double as service roads and fuel breaks.



Consistent with Metropolitan's policy regarding equestrian trails within the watershed of its reservoirs, there will be no equestrian trails within the watershed of the Domenigoni Valley Reservoir or within the Shipley Reserve-Lake Skinner areas, which drain into Lake Skinner. This will also reduce the potential for adverse impacts to sensitive resources on the Reserve from equestrian trails. All proposed trail alignments will be reviewed and approved by the Reserve Management Committee before being implemented. Periodic review of the impact of recreation on the reserve by the Reserve Management Committee will contribute to on-going adjustment of the trail-use program for the reserve. The potential for unauthorized use of these trails, and control of off-trail uses, is addressed below.

#### 4.1.4.5 Control of Visitor Impacts

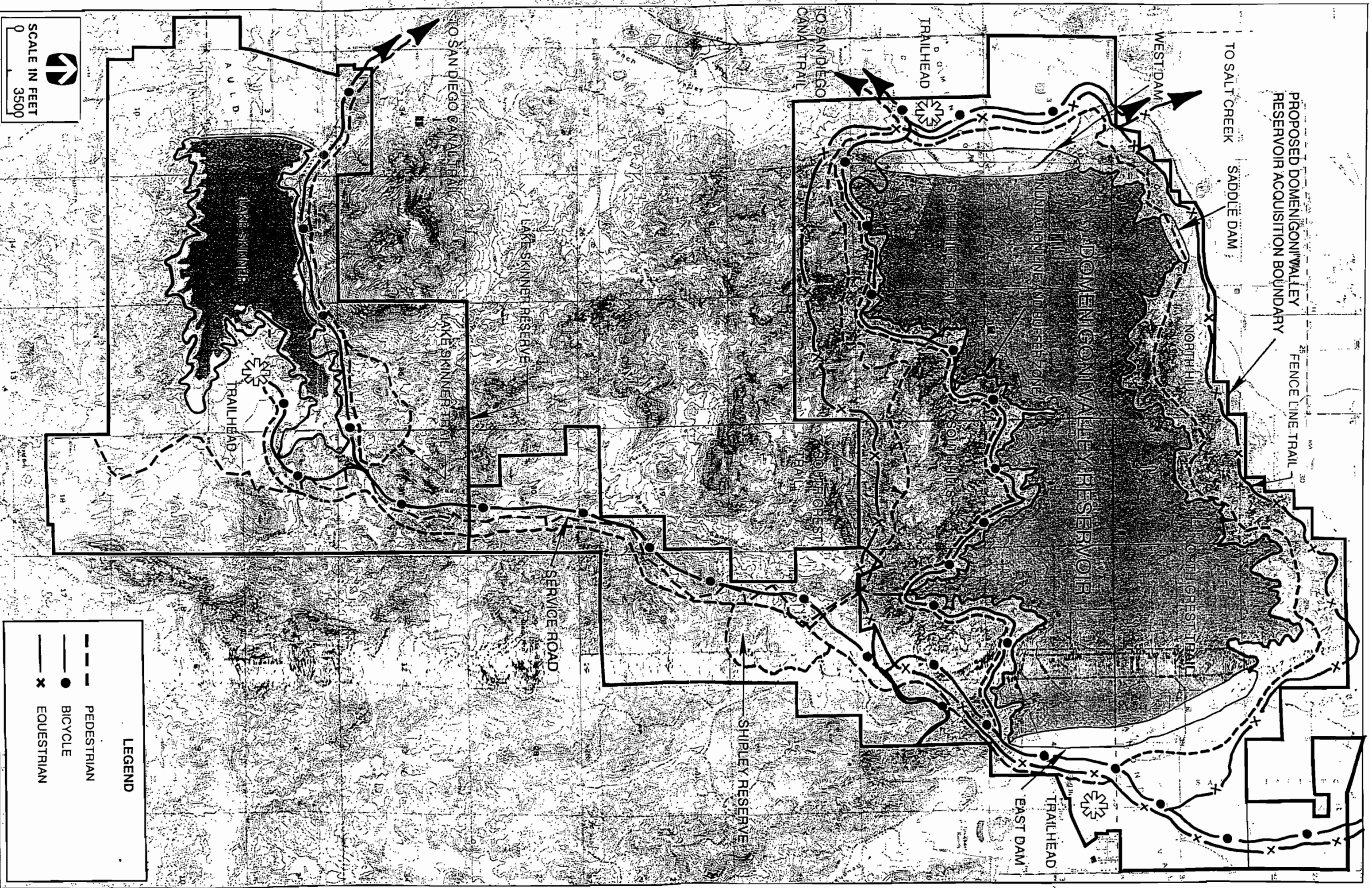
Impacts from visitor use will be minimized through design, research, education, and management.

Design tools available for minimizing impact include locating Reserve trails away from sensitive resources and developing criteria for location of recreation facilities outside of the Reserve. Activity zones can be established which place the highest intensity activities in areas the farthest away from the Reserve boundaries. Buffer zones of lower intensity and lower impact recreation will be located between the Reserve and these high-intensity areas. Zoning of activities, combined with fencing of the Reserve where unauthorized entry might occur, will focus high intensity uses in areas distant from the Reserve boundary.

To reduce opportunistic, unpermitted use, trailheads for the Reserve can also be sited no closer than the Reserve boundary and remote from intense activity sites in the recreation areas. Signs can be designed and placed to inform users that they are approaching or entering a Reserve and announcing different rules of conduct that apply in the Reserve. If needed, the Reserve can be further controlled by gates that must be opened for bicycles and equestrians, with keys issued through a permit and reservation system. (For ease of administration, gates should have an adjacent, constricted opening to allow for pedestrian entry.) Access to the Reserve will be highly controlled because there will be no direct lawful access from areas not owned and controlled by Metropolitan. Finally, trails may be designed to take advantage of terrain, with trails sited to discourage off-trail use.

Education is perhaps the most effective long-range visitor control method; those who understand the uniqueness and sensitivity of the Reserve and the special rules of conduct needed to ensure its continued viability will act responsibly and exert control over their own actions. This understanding can be developed by:

- Interpretive programs for natural and cultural resources;
- Active, ongoing liaison with, and volunteer recruitment from, groups such as the Audubon Society, Sierra Club, The Nature Conservancy, bicycling organizations, and equestrian clubs; and
- Hiring knowledgeable and committed recreation area and Reserve personnel who will have contact with visitors at entry points and while on patrol.



PROPOSED DOMENIGONI VALLEY  
RESERVOIR ACQUISITION BOUNDARY

FENCE LINE TRAIL

TO SALT CREEK

SADDLE DAM

NORTH HILLS

SOUTH FOREST TRAIL

WEST DAM

DOMENIGONI VALLEY RESERVOIR

NUNDABONINE AND NORTH HILLS

EAST DAM

TRAILHEAD

TO SAN DIEGO  
CANAL TRAIL

TRAILHEAD

SOUTH HILLS

SOUTH FOREST TRAIL

TO SAN DIEGO  
CANAL TRAIL

SHIRLEY RESERVE

LAKE SKINNER RESERVE

SERVICE ROAD

TO SAN DIEGO CANAL TRAIL

LAKE SKINNER TRAIL

A U L D

LAKE SKINNER

TRAILHEAD

LEGEND

- PEDESTRIAN
- BICYCLE
- EQUESTRIAN
- BICYCLE
- ✕ EQUESTRIAN

SCALE IN FEET  
0 3500



Management strategies to control visitor impacts will include:

- Fees charged for day-use and for camping in recreation areas. Fees will not only generate revenue for the Reserve, but will emphasize to arriving visitors that the area is special, therefore deterring indiscriminate use;
- Control of entrance to the Reserve through a system of gates in the primary recreation areas for the reservoir;
- Regular patrols with law enforcement capabilities throughout the Reserve and in recreation areas;
- Regular monitoring of sensitive species to provide data about visitor impact and the need to close or restrict access to a trail.

#### 4.1.4.6 Interpretation Opportunities

There are significant opportunities for interpretation of the rich natural and cultural resources found on the Reserve and in adjacent recreation areas, and interpretive programs and facilities are highly popular attractions. Possible themes include the native American and later history of the area, the engineering and construction of the reservoir, the history of water development in Southern California, the need for water conservation, planning for regional natural resource protection, restoration of plant communities, and the natural history of the area. At least one interpretive center is planned, and signs and panels displayed throughout the recreation area can highlight particular resources and features. Within the Reserve, interpretive activities may be accomplished without extensive signage or facilities.

#### 4.1.4.7 Schedule of Recreation Development

The schedule for development of recreational facilities will depend on the completion of other activities. In general, development of recreation within the Reserve itself will depend on the progress of research to identify and understand sensitive resource areas. This research may be adequate to support a decision to develop a particular trail within the period 1992-1994, but the siting of the full trail system may not be completed until as late as 1998-1999. In some cases, trails routes may be determined by the location of fire breaks and service roads, which may permit some trail use while research activities are underway.

Prior to construction impacts, an study of facilities and resources in the impact area should be made to identify resources which may be useful for recreational/interpretive programs, including historic and other buildings which could be used for recreation facilities and mature shrubs and trees which can be transplanted in the recreation area. Following this inventory, general plans for planting and location of facilities can be prepared.

Construction of recreation areas will be coordinated with the general reservoir project construction schedule and plan. With such coordination, it may be possible to assure that some excavations for the reservoir can be used for facilities such as swimming lakes and the boating facilities. Some recreation facilities may be available for public use prior to completion of the reservoir. This may be particularly feasible in the West Recreation Area, where the relocated San Diego Canal will separate the recreation area from the construction zone. Coordination with final construction planning may also result in changes in facility size and location; the locations shown in the project FEIR were considered conceptual.

## 4.2 BIOLOGICAL RESOURCES IMPACTS AND MITIGATION ACTIONS

### 4.2.1 General Habitat Impacts

As described in the FEIR for the Domenigoni Valley Reservoir Project (October 1991), the project and its associated recreation features will have the following permanent impacts on biological resources (Figure 19). The permanent loss of habitat associated with the project would be 2503 acres (not including the agricultural valley floor), with an additional 290 acres temporarily disturbed by construction of pipelines and canals associated with the project:

<u>Reservoir Site</u>	<u>Acres</u>
Riversidian Sage Scrub (RSS):	2,054
Chaparral (CHAP):	52
Non-Native Grassland (NNG):	359
Exotic Trees (ET):	37
Freshwater Seep (FS):	Trace
Freshwater Marsh (FM):	Trace
Agricultural Ponds:	1
<b>TOTAL PERMANENT HABITAT IMPACT:</b>	<b>2,503</b>
<u>Support Facilities (Temporary Impact)</u>	<u>Acres</u>
Riversidian Sage Scrub (RSS):	3
Non-Native Grassland (NNG):	287
<b>TOTAL TEMPORARY HABITAT IMPACT:</b>	<b>290</b>

Impacts to sensitive species will not occur on all of these 2503 acres. The sensitive species discussed in this MSHCP are, for the most part, associated with sage scrub and chaparral communities, although they will occupy and utilize non-native grassland communities as well. It was assumed that the sensitive animal species would therefore be found in all of the sage scrub and chaparral habitat within the impact area. In addition, it was assumed that the sensitive species would to some extent occupy or utilize non-native grasslands habitat; occupation of all 359 acres was not assumed because of the degraded condition of much of this habitat. Instead, it was assumed that approximately 100 acres of this habitat would be occupied or utilized. Thus, the impact of the reservoir project on sensitive animal species was assumed to be a uniform 2,200 acres consisting of all of the sage scrub and chaparral habitat and about 100 acres of non-native grasslands.

The exception to this assumption was the California gnatcatcher which was not located in the degraded mixed sage scrub and grasslands habitat on the south Slope of the North Hills of the Domenigoni Valley at any time during the period 1990-1992. Suitable habitat for this species was calculated based on field observations of the bird's habitat in 1990 and 1992. For the California gnatcatcher, then, the impact area was defined as 543 acres (based on 1990 data) and 1220 acres (based on 1992 data).

## 4.2.2 Impacts to Sensitive Species: Estimated Levels of Take

### 4.2.2.1 Direct Impacts

Portions of the 2503 acres of habitat which will be permanently lost due to the project are known to be occupied to some extent by the sensitive species which will be managed on the Reserve by this MSHCP, including the Stephens' kangaroo rat. These impacts currently constitute incidental take of an endangered species only for the SKR; impacts to other sensitive species shall be considered incidental take only following formal listing action under either the CESA or the FESA. For purposes of this MSHCP, the term "take" is used to describe impacts to all of the sensitive species covered by this MSHCP.

Environmental surveys of impact areas identified 2503 acres of habitat which would be permanently lost as a result of the project. Within this habitat, the estimated level of take for each of the sensitive species is identified below (impacts are summarized on Table 4-1):

- **Stephens' kangaroo rat (*Dipodomys stephensi*):** loss of 263 acres of habitat for this federally-listed endangered species, due to project soil disturbance prior to construction, during construction, and/or as a result of inundation. Impact will occur early in the pre-construction process when sources of gravel, which generally correspond to SKR habitat in the valley, are excavated. These impacts are fully addressed under the existing Section 10(a) permit granted to the RCHCA.
- **California gnatcatcher (*Poliophtila californica californica*):** Based on one-time surveys in early 1990, there will be permanent loss of 543 acres of suitable habitat for this candidate for federal listing, including 322 acres of habitat occupied during 1990 surveys (14 nesting pairs) on the lower slopes of the South Hills of the Domenigoni Valley, in both inundation areas and within areas designated for borrow operations.

As a result of two wet springs and a warm winter, combined with removal of some cattle grazing from the habitat in 1990 conditions for the California gnatcatcher appear to have improved in both the impact and Reserve areas. Under these more favorable conditions, it is now estimated (1992) that all habitat on the north-facing slope of the South Hills has characteristics which would make it suitable for gnatcatchers: 30-50% shrub cover, shrubs of 0.6 to 0.7 meters in height, and plentiful California buckwheat. Similar changes in habitat suitability in fact appear to have occurred throughout the Reserve.

In addition, researchers in other areas in southern California have reported similar improvements in conditions for the California gnatcatcher, demonstrated by increases in populations of approximately 30% when compared to 1990. Preliminary results from banding efforts at Lake Skinner, at the North Hills, in the South Hills at the hard rock borrow site, and near Rawson Canyon suggest that gnatcatcher populations in this area may also be responding positively to the warm, wet winter and early spring of 1992, occupying areas where they were not found in early 1990 surveys. In particular, two gnatcatchers were found at elevation 2280 on the eastern portions of the Shipley Reserve on July 26, 1992 and two gnatcatchers were found in the southeastern area of Lake Skinner on July 27, 1992. In addition, sightings in habitat previously thought to be unoccupied have been made above the inundation line in the southeast portion of the South Hills, within areas to be included in the Reserve.

This type of natural population fluctuation may be anticipated. The population within both the project impact areas and the Reserve appears to be responding to the positive change in conditions since 1990. There may be more gnatcatchers in both areas than previously estimated. This has not to date been confirmed except in selected portions of the South Hills and at Lake Skinner.

For purposes of impact analysis, then, a minimum take of suitable habitat can be assumed to be 543 acres, the area defined as suitable under adverse conditions. A maximum take of suitable habitat may be assumed to be 1220 acres, the area of the impact zone which currently has the characteristics used in this MSHCP to define suitable habitat. It is unlikely that the degraded habitat on the south-facing slope of the North Hills will have the characteristics of suitable gnatcatcher habitat prior to impact by the reservoir project; no California gnatcatchers have been observed in this habitat during any of the study surveys.

The exact number of California gnatcatchers occupying the impact area is not known. It is therefore necessary to define incidental take of this species in terms of take of suitable habitat. Given this approach, the Domenigoni Valley Reservoir will have a minimum take of 543 acres and a maximum take of habitat will be 1220 acres. The probable actual take will fall somewhere between these two numbers, but an assumption of 1220 acres of take shall be made for purposes of this MSHCP.

Recent Service studies on the north-facing slope of the South Hills, in the area designated for hard-rock borrow for the reservoir project, mapped nesting territories of five nesting pairs. A preliminary analysis indicates that these territories averaged 31-32 acres in size (as opposed to the 23 acre estimate used in the reservoir project FEIR). This is the best field data currently available for the site. Based on this estimate, the maximum population of California gnatcatchers within the impact area would be 38 pairs. The minimum population may be assumed to be the 14 nesting pairs identified at the end of the drought and cold winter period in 1990.

- **Ferruginous hawk (*Buteo regalis*):** raptor surveys in 1989-1990 indicate that two individuals were wintering in the Domenigoni Valley.
- **Loggerhead shrike (*Lanius ludovicianus*):** at least two pairs were observed nesting in the Domenigoni Valley in 1990.
- **Bell's sage sparrow (*Amphispiza belli belli*):** loss of sage scrub habitat in which this species of local concern is commonly found. Bell's sage sparrow was found most frequently on site in areas with minimal habitat disturbance and good shrub cover, but may be found in all of the sage scrub and chaparral and some of the mixed grasslands as well. Approximately 2,200 acres of the impact area has these characteristics and may be considered habitat for this bird. For purposes of estimating level of take, all of this area was considered occupied.
- **Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*):** loss of disturbed sage scrub and grasslands habitat in which this species of local concern is commonly found. The rufous-crowned sparrow was found most often in disturbed sage

scrub and mixed sage scrub and grasslands habitat on site, but was also observed (less frequently) in more dense habitat. A majority of this habitat is on the south-facing slopes of the North Hills of Domenigoni Valley. Lower density populations would also be anticipated on the South Hills. Suitable habitat was therefore determined to be approximately 2,200 acres. For purposes of estimating level of take, all 2,200 acres were assumed to be suitable and to some extent occupied.

- **Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*):** loss and disturbance of habitat in which this federal Candidate (Category 2) species was detected. Populations of the orange-throated whiptail were observed to be most dense in areas of mixed grasslands and sage scrub on the south-facing slopes of the North Hills, particularly at the base of the hills. As a result, the project could be expected to have an impact on this species early in construction. A total of 2,200 acres of suitable habitat would be impacted by the Domenigoni Valley Reservoir Project, all of it assumed to be suitable and to some extent occupied for purposes of estimating level of incidental take.
- **San Diego horned lizard (*Phrynosoma coronatum blainvillei*):** loss of some habitat for this federal Candidate (Category 2) species, which was found primarily in the more complex habitats with more dense shrub cover on site. The San Diego horned lizard was found to inhabit hillsides on the north-facing slopes of the South Hills, with its habitat extending from dense sage scrub into the chaparral which grows up to the ridge line of the South Hills. The Domenigoni Valley Reservoir Project will affect approximately 2,200 acres of suitable habitat for this species, all of it assumed to be suitable and to some extent occupied for purposes of estimating level of incidental take.
- **Coastal western whiptail (*Cnemidophorus tigris multiscutatus*):** there were no sightings of this species during EIR studies, but its presence in sage scrub habitat was anticipated in the EIR, particularly along edge areas between habitats and along trails and roads. Recent field surveys have identified it in both the impact and Reserve areas, as predicted.
- **Northern red-diamond rattlesnake (*Crotalus ruber ruber*):** there were no sightings of this species during EIR studies, but its presence in sage scrub and chaparral habitat on site was anticipated in the EIR. Its presence in the impact area and on the Reserve has recently been confirmed.
- **San Diego black-tailed jackrabbit (*Lepus californicus bennettii*):** the project area is within this species' known range. The species was recorded in both sage scrub and grasslands habitat and is known to forage on species abundant at the site.
- **San Diego desert woodrat (*Neotoma lepida intermedia*):** this species was commonly trapped at the reservoir site and its occurrence was documented; its populations are probably limited due to the absence of cactus, but populations may be found in heavy cover and in rock outcroppings.
- **N.W. San Diego pocket mouse (*Chaetodipus fallax fallax*):** this species was the most commonly trapped small mammal at Domenigoni Valley, inhabiting sage scrub and chaparral. It is likely that it will be found throughout the approximately 2,200 acres of habitat impacted by the project.

- **Payson's jewelflower (*Caulanthus simulans*):** permanent loss of habitat for 19,309 of these federal Candidate (Category 2) plants (1991 surveys, actual plant counts). This plant is found both immediately adjacent to the valley floor and in Riversidian sage scrub communities scattered along the hillsides surrounding the valley. Some populations would be affected by early project activities, particularly those within the borrow areas for the reservoir and on the valley floor. Other populations would not be affected until the final reservoir filling.
- **Parry's spineflower (*Chorizanthe parryi* var *parryi*):** permanent loss of habitat for 4,989 of these federal Candidate (Category 2) plants, primarily within the Riversidian sage scrub communities on the South Hills at the center of the Domenigoni Valley. These populations would be impacted when borrow excavations were begun early in the project construction period.
- **Smooth tarplant (*Hemizonia laevis*):** permanent loss of habitat occupied by 19,788 of these California Native Plant Society (CNPS) List 3 plants (1991 surveys, actual plant counts). This plant, which grows in saline soils on the valley floor, would be impacted early in the construction process.
- **The San Jacinto Valley saltbush (*Atriplex coronata* var *notatior*).** This plant is found in the project area only along the pipeline and power transmission line corridors. Estimates of take will depend on final design of the support facilities, as efforts will be made to avoid impact by adjusting construction laydown areas and by minor alterations of pipeline corridors and placement of transmission lines within the general corridors surveyed for the project. The maximum take of this species along the pipeline corridor will be 22,000 individuals. This level of take is unlikely, as all of the plants lie outside of the right-of-way for the pipeline; take would occur on private lands adjacent to the pipeline right-of-way in areas designated for construction laydown.

Incidental take of sensitive species (Table 4-1) has generally been expressed in terms of acres of suitable habitat lost. This method was selected due to the difficulties in establishing population density estimates for these species. In addition, it is assumed that habitat carrying capacity on both impact and reserve areas will fluctuate, generally in parallel, in response to natural factors such as climate, predation, and fire. Population densities will presumably fluctuate in a relative manner. To ensure that potential levels of take of these species are not underestimated, all habitat of a type generally considered suitable for these species has been assumed to be, in fact, occupied.



#### 4.2.2.2 Indirect Impacts

Indirect impacts to sensitive species may occur as a result of (1) development of recreation facilities on lands now in agricultural use, (2) construction activities, and (3) long-term effects of the reservoir.

Recreation impacts could result from:

- Public access to Reserve lands proposed in this MSHCP, although public access will be appropriately controlled under the Reserve management plan and may decline in some areas.
- Creation of "magnet" habitat within the high-use recreation areas which would draw sensitive species into high-use areas where they would be adversely impacted. The existing land has virtually no habitat value for most of the sensitive species addressed in this MSHCP; creation of native communities adjacent to high-use areas could, under some circumstances, draw sensitive species into this area.

The recreation plan addresses the first two of these potential sources of indirect impacts. First, public access to the proposed Reserve area will be controlled through an entry control system, and the Reserve will be patrolled daily to enforce regulations. Access restrictions and daily patrols will limit indirect impacts to the trail system; off-trail activities will be discouraged by limiting access to the Reserve with fencing and patrols to apprehend violators. Combined with other protective features of the MSHCP such as fencing and elimination of active farming on the Reserve, these restrictions are intended to result in a substantially lower level of impact to the Reserve area than is presently occurring.

Second, the potential for the recreation area to have a magnet effect on sensitive species is being addressed by careful zoning of the proposed recreation facilities. High-use areas will be separated from more natural communities by intermediate zones. Public use of these intermediate zones will be less damaging, and more importantly, sensitive species habitat created in the recreation area will be physically separated from high-impact activities such as roads, parking lots, golf courses, and playing fields. Given this "zoned" approach to recreation development, the *net* impact of recreation development will probably be an increase in the habitat available to sensitive species.

Metropolitan and the RCHCA are committed to this approach to recreation development and are coordinating with the Department and the Service regarding recreation development to ensure that the net impact of this development is positive.

Indirect impacts from construction activities will include dust, noise, and lighting. The project FEIR describes procedures which Metropolitan will use to minimize these impacts:

- Dust will be minimized by watering all construction and excavation areas. Other options will be implemented if these methods are not adequate to meet SCAQMD dust control regulations. Implementation of these controls will likely reduce dust to levels similar to those under current conditions, which involve extensive plowing of the valley floor. In addition, removal of cattle from the Reserve will reduce the breakdown of soils in the Reserve.

- Lighting of construction areas will be directed away from the Reserve to minimize impacts to the greatest extent possible.
- Noise, except for periodic blasting in borrow sites and short-term geotechnical and quarry explorations, will generally be confined to the valley floor and to dam abutment areas. Blasting will occur infrequently, as areas to be quarried will first be drilled extensively to place charges.

The fact that a majority of construction activity will occur on the valley floor, and the existence of the buffer zone around the impact area, excluded from the Reserve area, means that there will be few indirect impacts to sensitive within Reserve areas species. Sensitive species outside of the direct impact area will likely have less disturbance during construction than under pre-project conditions, when off-road vehicle use, grazing, hunting, and other disturbance was common. Given dust control efforts, it is also unlikely that dust levels above the impact zone will exceed those under pre-project conditions.

Noise is likely to have some indirect effects in areas adjacent to borrow sites, where blasting will occur on a regular basis. A noise analysis by Woodward-Clyde Consultants suggests that it will be possible to hold noise emissions to below 130 decibels at the blast site itself. These noise events will be infrequent and of short duration (2-10 seconds). Blasting noise will be reduced significantly in the Reserve area during most of the construction period because it will be taking place below the inundation line, and sound will be substantially deflected from the Reserve by the vertical wall of the quarry areas. As a result, noise levels of 120+ decibels will not be common within the Reserve.

The response of wildlife to these levels of noise has been observed in many construction projects. As the Woodward-Clyde report points out, animals in and near construction sites have been observed to respond to blasting noise by "twisting their ears or shaking their heads" but they do not generally run away or otherwise change their behavior. Cattle wandering onto construction sites have been observed to prefer areas with good feeding habitat regardless of their proximity to blasting sites. The response of birds to construction disturbance may also be quite minor; eagles have been documented nesting on the top of mobile units at Alyeska Camp No. 3 on the North Slope in Alaska. In the Domenigoni Valley, local farmers use a blasting cap device to frighten birds away from crops; this technique causes the birds to move from the immediate vicinity of the noise, but they return to foraging within seconds following the blast.

Noise from general construction activities is likely to fall well below levels which would constitute significant disturbance to wildlife. Pneumatic drilling noise, 84 decibels at 50 feet is below the levels associated with airport operation which wildlife have been observed to move into following construction. Long-term exposure to these noise levels does not appear to affect the populations under approach and takeoff lanes.

The presence of the Domenigoni Valley Reservoir may also have indirect effects on Reserve communities:

- Changes in microclimate conditions associated with reservoir operations. Such changes are most probable along the reservoir shoreline, where lower temperatures and higher

humidity are likely. The water level in the reservoir is expected to fluctuate by 30-60 feet a year, and by up to 100 feet during drought years, and therefore no major changes in vegetative community are anticipated. Fluctuating water levels will not likely allow riparian vegetation to develop around the shoreline; Riversidian sage scrub and chaparral communities are therefore anticipate to continue to dominate the area adjacent to the reservoir.

Indirect impacts associated with the presence of the reservoir may include increased humidity and lower temperature, particularly night-time temperatures. Wind patterns may be altered. Micro-climate studies are proposed to monitor these potential effects.

The presence of a reservoir in the Domenigoni Valley could have a positive impact on natural communities adjacent to the reservoir. The existing intense agricultural activity in the valley is generally detrimental to natural communities. First, pesticides and herbicides drift into adjacent habitat. Second, agricultural activities are a source of exotic seed. Third, grazing is a major disturbing influence on native plant communities, both by physically destroying habitat and by introducing exotic seed stock through cattle droppings. Fourth, off-road vehicular traffic is encouraged under present conditions, both by farmers checking their stock and by the general public. The presence of a reservoir will eliminate these adverse influences on the natural communities surrounding the reservoir and may therefore have a positive impact on the ability of natural communities to recover and be sustained throughout the Reserve.

**Table 4-1.  
Summary of Sensitive Species Impacts  
Domenigoni Valley Reservoir Project**

<u>Species</u>	<u>Status</u>	<u>Impacts</u> <u>Acres of Suitable habitat</u>
Stephens' kangaroo rat ( <i>Dipodomys stephensi</i> )	Federal endangered State threatened	263
California gnatcatcher ( <i>Polioptila californica</i> )	Federal Proposed	543-1220 <sup>1</sup>
Ferruginous hawk ( <i>Buteo regalis</i> )	Federal C2	2,200 <sup>2</sup>
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Federal C2	2,200
Bell's sage sparrow ( <i>Amphispiza belli belli</i> )	Federal C2 Species of local concern	2,200
Southern California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> )	Federal C2 Species of local concern	2,200
Orange-throated whiptail ( <i>Cnemidophorus hyperythrus beldingi</i> )	Federal C2	2,200
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i> )	Federal C2	2,200
Coastal western whiptail ( <i>Cnemidophorus tigris multiscutatus</i> )	Federal C2	2,200

Table 4-1, continued

<u>Species</u>	<u>Status</u>	<u>Impacts</u> <u>Acres of Suitable Habitat</u>
Northern red-diamond rattlesnake ( <i>Crotalus ruber ruber</i> )	Federal C2	2,200
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennettii</i> )	Federal C2	2,200
San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> )	Federal C2	2,200
N.W. San Diego pocket mouse ( <i>Chaetodipus fallax fallax</i> )	Federal C2	2,200
Payson's jewelflower ( <i>Caulanthus simulans</i> )	Federal C2 CNPS List 4	19,309 plants
Parry's spineflower ( <i>Chorizanthe parryi</i> var <i>parryi</i> )	Federal C2 CNPS List 4	4,989 plants
Smooth tarplant ( <i>Hemizonia laevis</i> )	CNPS List 3	19,778 plants
San Jacinto Valley saltbush ( <i>Atriplex</i> <i>coronata</i> var <i>notatior</i> )	Federal C2	Up to 21,950 plants

- Notes: 1. See discussion of definition of suitable habitat for this species in Section 4.2 and Appendix A-1.
2. See discussion of definition of suitable habitat for this and other animal species in Section 4.2

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## **5.0 BASIS FOR ISSUANCE OF SECTION 10(A) PERMITS AND FOR ENTERING INTO A SECTION 2081/2835 AGREEMENT**

### **5.1 GENERAL**

Federal permits for incidental take of endangered species require a finding of no jeopardy; that is, that the actions proposed will not jeopardize the existence of the endangered species under consideration. They also require efforts to avoid or minimize, monitor, and mitigate for the impacts. These considerations are addressed below. The State of California does not issue permits for incidental take of endangered species, but rather may enter into Code Section 2081/2835 Agreements which permit an action which has impacts on a listed species. Here, too, a finding of no jeopardy is necessary. The technical requirements of the Section 10(A) Permit and the Section 2081/2835 Agreement are different; therefore they are addressed below in separate sections. However, the rationale for a finding of no jeopardy is essentially the same, so there is therefore some repetition in the sections below.

### **5.2 SECTION 10(A) PERMITS**

The taking of sensitive species described in this MSHCP will be incidental to the construction and operation of Metropolitan's Domenigoni Valley Reservoir Project. To the extent feasible, taking will be phased to permit sensitive species to move out of impact area habitat prior to operations such as blasting and excavation. Nevertheless, taking of the sensitive species covered by this MSHCP will occur as a result of project activities, at levels specified in Section 4 of this MSHCP.

Metropolitan will request that the Service issue Section 10(A) permits for incidental take of sensitive species covered by this pre-listing MSHCP when and if these species are listed prior to completion of the Domenigoni Valley Reservoir. Issuance of these permits will be based on the evaluation of levels of incidental take presented in this MSHCP and on the actions proposed to monitor, avoid or minimize, and mitigate for take, as presented in this MSHCP, taking into account additional information available, public comments, and other circumstances unforeseen at this time.

#### **5.2.1 Avoidance**

The least-damaging practicable alternative site for the Domenigoni Valley Reservoir was selected, despite higher construction costs, in an effort to avoid and minimize impacts to sensitive species. This selection of the least-damaging practicable alternative resulted in:

- By not selecting the Potrero Creek site, Metropolitan avoided impacts to approximately 1,100 acres of densely occupied habitat of the federally-listed Stephens' kangaroo rat, 23 other sensitive species including many of the species found at the Domenigoni valley site, and several hundred acres of wetlands habitat at the Potrero Creek alternative site.
- By not selecting the Vail Lake-Domenigoni Valley combination alternative, Metropolitan avoided impacts to the largest known population of the federally-listed slender-horned spinyflower, a population of SKR, at least two pairs of federally-listed least Bell's vireo, a large population of the federally-listed Nevin's barberry, 46 acres of occupied California gnatcatcher habitat, 15 additional sensitive species, and 559 acres of protected wetlands habitat.

The least damaging alignments were also selected for the pipeline to supply water to the Domenigoni Valley Reservoir; the pipeline will be within the right-of-way of public roads or the existing San Diego Canal.

As noted above, Metropolitan will also seek to minimize impacts of taking, to the extent feasible, by avoidance of taking during nesting seasons, by preserving adjacent habitat for species to move to prior to destructive construction activities, and by managing adjacent habitat to improve its potential carrying capacity for sensitive species and other wildlife. This Reserve habitat, surrounding the Domenigoni Valley, will recover from its pre-project disturbed condition as a result of removal of grazing and other disturbance and as a result of management efforts to control exotics. As the habitat recovers, its carrying capacity may increase and sensitive species may have additional habitat to move to as the impact area is cleared for construction.

### **5.2.2 Monitoring**

In its FEIR, Metropolitan committed to a full monitoring program for all biological resources. Monitoring activities and life history studies were initiated for the California gnatcatcher, in cooperation with the Service, in early Spring 1992. Other monitoring activities will be initiated prior to construction. Monitoring will include banding of California gnatcatchers in the impact area and tracking of their movement following project impacts to habitat.

### **5.2.3 Project Mitigation for General Biological Resources Impacts**

As specified in the project FEIR and the associated mitigation agreements with the Service and Department, loss of 2503 acres of *upland habitat* at the reservoir site will be mitigated by acquisition, preservation, and management of the upland habitat at the nearby Santa Rosa Plateau and within the project property acquisition lines shown on Figure 1.

#### **5.2.3.1 The Santa Rosa Plateau Mitigation Area**

The Santa Rosa Plateau (Plateau) was established as a mitigation bank for the Domenigoni Valley Reservoir Project and other projects within the general region. The operation of this mitigation bank, and the methodology for determining appropriate mitigation exchanges, was detailed in the mitigation agreement. The mitigation action at the Plateau resulted in use of a total of 1438 acres of habitat credit at this mitigation banking site, leaving 224 acres of credit (127 of chaparral and 97 of Engelmann Oaks) remaining for Metropolitan's use at that site at a future date.

Because of study difficulties related to rights-of-entry, surveys of the Plateau for the sensitive species covered by this Plan were not conducted during the environmental planning for the Domenigoni Valley Reservoir Project. Metropolitan therefore claimed only *habitat credit* for this mitigation action. TNC surveys of the Plateau have determined that many of the sensitive species are found on the parcels set aside for mitigation. Under an agreement with the Service and the Department, the effect of this prior mitigation actions has been to completely offset habitat loss associated with the project. It should be noted that the Plateau would have been developed (up to 3000 units) if this mitigation action had not taken place.



Based on surveys conducted by The Nature Conservancy on its Santa Rosa Plateau properties, habitat selected for mitigation at the Plateau probably supports San Diego horned lizards, Bell's sage sparrows, and California gnatcatcher. Acquisition, preservation, and management of this offsite mitigation area therefore contributes to the long-term viability of these species, as well as the plethora of native, rare, and endangered species at this unique site.

#### 5.2.3.2 Shipley Reserve Mitigation Area

The Shipley Reserve was established both as an SKR mitigation area and as a habitat mitigation bank. Metropolitan currently has about 933 acres of unused habitat credit at the Shipley Reserve; the remaining 1184 acres of occupied SKR habitat was transferred to the RCHCA for use in its SKR habitat conservation plan, with the County of Riverside, a member agency of the RCHCA allocating 263 acres of incidental take to Metropolitan under its Section 10(a) permit. Nothing in this Plan is intended to alter the terms and conditions of the Shipley Agreement related to this mitigation bank. The habitat credits remaining for future mitigation use under that agreement are unaffected by this Plan.

Surveys of the Shipley Reserve established, through incidental observation during vegetation surveys, the presence of many of the sensitive species covered by this plan, the exceptions being the smooth tarplant and the San Jacinto Valley saltbush. Evidence of species such as the orange-throated whiptail, the San Diego horned lizard (scat), Bell's sage sparrow (sightings), and the Southern California rufous-crowned sparrow (sightings) was observed in both the RCHCA SKR reserve areas and the remaining RSS and chaparral habitat on the Shipley Reserve. The effect of this prior mitigation action for the SKR was therefore to contribute to the long-term viability of these species in the region.

#### 5.2.3.3 On-Site Mitigation Areas

In addition to using habitat credits at the Santa Rosa Plateau (Plateau) mitigation bank to mitigate for the Domenigoni Valley Reservoir Project, Metropolitan also identified areas outside of the Domenigoni Valley Reservoir watershed but within the proposed project acquisition boundary which would be suitable for "on-site" mitigation. These areas, predominantly RSS habitat, were surveyed in 1990 and 1991 and found to support many of the sensitive species covered by this plan. Detailed population estimates were made for the California gnatcatcher and the sensitive plants identified on these mitigation areas. These on-site mitigation areas will be a part of the Reserve, but their acreage is not counted in calculations of acres added to the reserve under this MSHCP.

#### 5.2.4 Mitigation for Sensitive Species Impacts under this MSHCP

In addition to previous mitigation actions, the Reserve and the research and management program associated with its creation mitigates specifically for impacts to the sensitive species within the impact area. Creation of the Reserve is the most pro-active and least-damaging method of addressing sensitive species issues in the project area. It provides for preservation of large areas of suitable and occupied habitat for many of the sensitive species identified within the project impact area, and for preservation of plant populations outside of the Reserve in areas where they can be protected.

The general mitigation strategies for sensitive species can be summed up as (1) minimizing impacts by phasing the occurrence of impacts so that animal species have an opportunity to move out of habitat to be impacted before highly destructive activities such as blasting and excavation occur, (2) providing for acquisition and management of adjacent habitat so that sensitive species can move into and occupy it when

their existing habitat is disturbed, and (3) providing for long-term management of the Reserve with the objective of supporting viable populations of sensitive species.

#### 5.2.4.1 Mitigation for Impacts to the Stephens' kangaroo rat

Loss of 263 acres of habitat occupied by the Stephens' kangaroo rat will be mitigated by acquisition, preservation, and management of a 1164 acres of occupied and suitable habitat at two sites – the Shipley Reserve and Metropolitan's Lake Skinner Reservoir (582 acres at each of the two sites). This action has been taken under the Riverside County Habitat Conservation Plan for the Stephens' kangaroo rat. Under its approved MSHCP for the SKR, the County of Riverside has allocated incidental take to Metropolitan for the population of SKR within the impact area of the eastside reservoir. The 1164 acres at Shipley Reserve and Lake Skinner is under a conservation easement granted to the RCHCA. Impacts to the SKR are therefore considered fully mitigated and are not further addressed in this MSHCP.

#### 5.2.4.2 Mitigation for Impacts to the California Gnatcatcher

Under this MSHCP, loss of suitable California gnatcatcher habitat will be mitigated by acquisition, preservation, and management of suitable California gnatcatcher habitat on the north and south hills of Domenigoni-Diamond valleys, at Shipley Reserve, and at Lake Skinner. In addition, a significant research effort will improve understanding of the life history and habitat requirements of the California gnatcatcher in this region. Finally, habitat enhancement activities, including removal of grazing, cowbird trapping, exotic plant control (weeding), and selected seeding are intended to result in recovery of currently degraded sage scrub communities. This represents a significant increase in the mitigation action compared to that proposed, and accepted by the Service and Department, under the FEIR mitigation plan. The mitigation acreage for this species, existing suitable habitat and habitat which may be suitable following recovery and enhancement, are shown on Table 5-1.

The adequacy of this mitigation action can be evaluated to some extent by comparing suitable habitat impacted to suitable habitat preserved and managed under the MSHCP. Based on 1990 surveys, 543 acres of suitable habitat impacted would be mitigated for by 1433 acres of suitable habitat between elevation 1750 and 2000 on the north and south hills of the Domenigoni Valley and at Lake Skinner, about 325 acres of this would be currently degraded habitat which would be enhanced. This results in a mitigation ratio of up to 2.6 to 1. Based on more recent evaluation of suitable habitat following the improved conditions of 1991 and 1992, the impact of the project would appear to be 1220 acres of suitable habitat. The Reserve would, however, provide 4,779 acres of suitable habitat and 1390 acres of habitat which could be enhanced. This results in a mitigation ratio of 3.8 to 1.

The probable range of actual population of impact and Reserve areas can be estimated by using an average territory size of 32 acres for a breeding pair, assuming full utilization of available suitable habitat, including only habitat designated as currently suitable and using 1990 and 1992 data (reflecting conditions considered poor and conditions considered much more favorable, respectively). Using this approach, estimated populations would be:

	<u>Impact area population</u>	<u>Mitigation area population</u>
1990 data	17 pairs	35 pairs
1992 data	38 pairs	150 pairs

Actual impact area and Reserve populations probably fall somewhere between these two estimates.

#### 5.2.4.3 Mitigation for Impacts to Rare Plants

There is no legal mandate to mitigate for the sensitive plant species within the project impact area. However, Metropolitan will take steps to ensure the survival of the sensitive plant populations within its impact area. Under this MSHCP, and consistent with the project FEIR, loss of sensitive plants due to the project will be mitigated by preservation of plant communities at Lake Skinner (48 acres on the north side of the reservoir and by restoration/enhancement of sensitive plant habitat at two sites: the Shipley Reserve (72 acres) and at the base of the west dam, in an isolated area within the recreation area proposed for the west end of the reservoir project. The sites selected for restoration/enhancement were determined to be suitable for the three sensitive plant species impacted by the project: Payson's jewelflower, Parry's spineflower, and the smooth tarplant. An alternate site currently being evaluated for mitigation related to Metropolitan's Inland Feeder Project may also be considered by the Reserve Management Committee, provided that lands are available. Mitigation for impacts along pipeline corridors and transmission lines includes restoration of habitat following temporary disturbance by construction activities; the nature and extent of restoration activities will be determined by the Reserve Management Committee.

Rare plant enhancement/restoration provided for in the FEIR includes site preparation, seeding and planting or plants from native seed stock, maintenance until the plant communities are established, and long-term protection of the areas from human disturbance. The mitigation proposed for these sensitive plants in the reservoir FEIR is included in the Appendix A.

**Table 5-1**  
**Suitable habitat for the California gnatcatcher,**  
**Impact area and Reserve areas,**  
**Based on 1990 and 1992 habitat analyses.<sup>1</sup>**

<u>Area</u>	<u>Acres of Suitable Habitat</u>	
	<u>1990</u>	<u>1992</u>
<b>IMPACT AREA</b>		
North slope of South Hills	543	944
South slope of North Hills	0	76
Buffer zone	200	200
<b>TOTAL</b>	<b>743</b>	<b>1220</b>
<b>RESERVE</b>		
<b>North Hills</b>		
Suitable	210	389
Suitable after enhancement	230	725
<b>South Hills</b>		
Suitable	413	1858
Suitable after enhancement	90	90
<b>Lake Skinner</b>		
Suitable	310	1550
Suitable after enhancement	not estimated	575
<b>Shipley Reserve</b>		
Suitable	0	982
<b>TOTAL</b>	<b>1,433</b>	<b>6169</b>

1. The methodology for determining suitable habitat for the California gnatcatcher is explained in Appendix A.

#### 5.2.4.4 Mitigation for Impacts to sage scrub, grasslands, and chaparral species.

Creation and management of the Reserve are the mitigation action proposed for these sensitive species. The acreage *added to the Reserve* under this MSHCP, approximately 5,400 to 5,700 acres at Domenigoni Valley and Lake Skinner, offsets sensitive species habitat losses due to the project by approximately 2 to 1. When the Shipley Reserve acreage is considered, the ratio increases to up to 3.0 to 1.

Reserve sensitive species habitat for the animal species covered by this MSHCP was estimated by summing either the existing sage scrub and chaparral habitat acreages (approximately 7,000 acres) or the existing sage scrub and non-native grasslands acreages (approximately 7,150 acres). It was assumed that species identified in the literature as preferring more dense habitat would have 7,000 acres of suitable habitat on the Reserve while those identified as preferring less dense habitat would have 7,150 acres of suitable habitat on the Reserve. There may be additional habitat on the Reserve which is utilized by these sensitive species. This method of approximating suitable habitat for these species was considered a reasonable method of estimating overall acreage of suitable habitat.

Reserve habitat management actions for these species will be habitat based. They will include:

- Control of exotic vegetation and efforts to restore significant areas of coastal sage scrub;
- Creation of significant areas of edge habitat along trails and fire breaks throughout the Reserve;
- Manipulation of habitat quality through grazing, fire, and other methods;
- Creation of a mosaic of different age-class habitats through controlled burning followed by a program of exotic vegetation control;
- Construction of nesting sites for raptors;
- Provision of corridors along the base of the two embankments for the Domenigoni Valley Reservoir to link the North Hills to the main area of the Reserve;
- Control of human and domestic animal disturbance, to permit recovery of native communities; and
- Research to improve habitat conservation and restoration methods.

The acreage of suitable habitat impacted by the reservoir project, shown on Table 4-1, and the suitable habitat preserved and managed within the Reserve to offset these impacts is shown on Table 5-3.

## 5.2.5 Summary Basis for Issuance of 10(A) Permits

The basis for Service issuance of 10(A) permits for the sensitive species which may be federally listed prior to initial reservoir filling and during project operation and Department action to enter into a Section 2081/2835 Agreement covering these same species is:

- Establishment of a large, regionally significant multi-species Reserve *prior to listing of the species covered by this MSHCP* is intended to contribute significantly to the long-term viability of these species and help maintain regional biodiversity.

As noted in the without-project condition discussion, in the absence of the Domenigoni Valley Reservoir, the project impact zone and portions of the Reserve would likely have been developed extensively, as evidenced by both general development trends and by specific plans for the area. Action to acquire and manage the Reserve will therefore have a net benefit to sensitive species, compared to the without-project condition. Placement of conservation easements over an additional 5,400 to 5,700 acres of the Reserve, and long-term management in accordance with these easements, will provide significantly higher levels of protection for the Reserve than would have been available under either the without-project condition or FEIR mitigation plan. The Reserve and other actions proposed under this MSHCP therefore have a regionally significant positive impact on the viability of the sensitive species covered by this MSHCP.

- The research program proposed will contribute significantly to understanding of the life history, habitat requirements, and regional population viability of the sensitive species covered by this MSHCP. This will assist resource managers in developing long-range plans for the preservation of these species in particular, and the conservation of important natural communities in general. Without this research, it is likely that the data needed to support listing decisions and long-term management decisions will not be available for a significantly longer period of time. The research program will therefore assist resource managers in their decisions to list/not list sensitive species.
- The cooperative effort involved in development of this *pre-listing* MSHCP may also serve as a model for expansion of this Reserve or creation of other pre-listing MSHCPs. Sufficient activity of this nature could, for some species, obviate the need to list.

Table 5-2.

Summary of habitat to be preserved by creation of the proposed multi-species Reserve.

Total area within site boundaries, excluding agricultural areas, areas developed, and areas designated for operations, roads, existing buildings, and/or high intensity recreation.

Habitat Type	Location						Total Acres	
	Domenigoni Valley		Shipley Reserve	County	Lake Skinner	Metropolitan		
	NS/NH'	SS/NH'	NS/SH'	SS/SH'	Metropolitan Ownership	Ownership	Reserve Agr <sup>2</sup>	Ownership
Riversidian Sage Scrub	750	500	1,550	59	656	25	186	1,900
Non-Native Grassland	100	0	0	0	26	582	582	240
Chaparral	0	0	850	88	179	219	0	43
Coast Live Oak Woodland	0	0	0	0	8	10	0	0
Live Oak Riparian Forest	0	0	0	0	68	40	0	13
Sycamore/Alder Riparian								
Woodland	0	0	0	0	0	0	0	15
Southern Willow Scrub	0	0	0	0	2	1	0	22
Coltonwood Willow Riparian Forest	0	0	0	0	0	0	0	17
Corridors at base of dams								
<b>TOTAL</b>	<b>850</b>	<b>500</b>	<b>2,400</b>	<b>147</b>	<b>939<sup>3</sup></b>	<b>877</b>	<b>768</b>	<b>2,250</b>
Previously dedicated to mitigation	850	0	0	59	933	877	582	0
New acreage added to Reserve per this MSHCP	0	500	2,400	88	0	0	186	2,250
								5,724

Note: 1. NS/NH = North Slope of the North Hills of Domenigoni valley; SS/NH = the South Slope of the North Hills of the Domenigoni Valley; NS/SH = the North Slope of the South Hills of the Domenigoni Valley; SS/SH = the South Slope of the South Hills of the Domenigoni Valley.  
 2. Some lands outside of the Shipley Reserve were covered by the Shipley Agreement; these lands were located within the boundaries of the Lake Skinner area. They include SKR, California gnatcatcher, and rare plant habitats.  
 3. This habitat is "banked" for upland mitigation purposes and may be used to offset upland habitat impacts of other projects in the region, provided no sensitive species impacts are involved.

**Table 5-3.  
Summary of Sensitive Species Impacts and Mitigation  
Domenigoni Valley Reservoir Project.**

<u>Species</u>	<u>Status</u>	<u>Acres of Suitable habitat<sup>1</sup></u>	
		<u>Impact Area</u>	<u>Reserve</u>
Stephens' kangaroo rat ( <i>Dipodomys stephensi</i> )	Federal endangered State threatened	263	1,162
California gnatcatcher ( <i>Poliopitila californica</i> )	Federal Proposed	543-1220	1,433-4,779
Ferruginous hawk ( <i>Buteo regalis</i> )	Federal C2	NA <sup>2</sup>	NA
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Federal C2	2,200	7,150
Bell's sage sparrow ( <i>Amphispiza belli belli</i> )	Federal C2 Species of local concern	2,200	7,000
Southern California rufous-crowned sparrow ( <i>Aimophila ruficeps canescens</i> )	Federal C2 Species of local concern	2,200	7,000
Orange-throated whiptail ( <i>Cnemidophorus hyperythrus beldingi</i> )	Federal C2	2,200	7,000
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i> )	Federal C2	2,200	7,000
Coastal western whiptail ( <i>Cnemidophorus tigris multiscutatus</i> )	Federal C2	2,200	7,000



Table 5-3, continued

<u>Species</u>	<u>Status</u>	<u>Acres of Suitable habitat</u>	
		<u>Impact Area</u>	<u>Reserve</u>
Northern red-diamond rattlesnake ( <i>Crotalus ruber ruber</i> )	Federal C2	2,200	7,000
San Diego black-tailed jackrabbit ( <i>Lepus californicus bennettii</i> )	Federal C2	2,200	7,150
San Diego desert woodrat ( <i>Neotoma lepida intermedia</i> )	Federal C2	2,200	7,000
N.W. San Diego pocket mouse ( <i>Chaetodipus fallax fallax</i> )	Federal C2	2,200	7,000
Payson's jewelflower ( <i>Caulanthus simulans</i> )	Federal C2 CNPS List 4	19,309 plants	Same <sup>3</sup>
Parry's spineflower ( <i>Chorizanthe parryi</i> var <i>parryi</i> )	Federal C2 CNPS List 4	4,989 plants	Same <sup>3</sup>
Smooth tarplant ( <i>Hemizonia laevis</i> )	CNPS List 3	19,778 plants	NA <sup>4</sup>
San Jacinto Valley saltbush ( <i>Atriplex coronata</i> var <i>notator</i> )	Federal C2	21,950 plants	NA <sup>4</sup>

## Notes:

1. The range of acreage shown for the California gnatcatcher represents data from 1990 and 1992, the former a drought year and the latter representing more favorable conditions. The mitigation acreage for other animal species is based on estimates of suitable habitat (sage scrub and chaparral = 7,000 acres; sage scrub and non-native grasslands = 7150 acres).
2. As a winter visitant, the ferruginous hawk does not occupy habitat, but forages in the agricultural fields in the reservoir area and in adjacent areas. There are several thousand acres of suitable foraging habitat for this species within the Reserve and additional habitat outside of the project area.
3. Payson's jewelflower and Parry's spineflower populations will be replaced in kind on the Reserve, in appropriate soils and vegetative communities.
4. Smooth tarplant and San Jacinto Valley saltbush impacts will be mitigated outside of the reserve.

## **5.3 SECTION 2081/2835 AGREEMENT**

### **5.3.1 Requirements for a "No Jeopardy" Finding**

In conjunction with acquisition of the Santa Rosa Plateau, the actions described in this MSHCP, including the creation and management of the Reserve and its natural resources and the implementation of rare plant recovery programs will offset the impacts of the Domenigoni Valley Reservoir Project to the extent that this project will meet all of the tests for a finding of "No Jeopardy" for all of the sensitive species covered by this MSHCP, as provided under the Fish and Game Code.

#### **5.3.2 Would a viable or recoverable population be eliminated, or would a significant proportion of a population be adversely affected by the project or the project's effects?**

##### **5.3.2.1 California gnatcatcher**

Although the project will impact 543-1220 acres of suitable habitat for the California gnatcatcher, 1,400-4,799 acres of suitable habitat, much of it occupied, will be preserved on the North Hills, on the South Hills, at the Shipley Reserve, and at Lake Skinner. Based on 1990 surveys, the impact area nesting population of 14 pairs will be matched by a mitigation area population of 15 pairs. As noted above, populations in both the impact and reserve areas are probably higher than in 1990; however, the reserve continues to provide suitable habitat in mitigation for loss of similar habitat in a ratio of from 2.5 to 3.8 to 1. The gnatcatchers within the Reserve are found in the North Hills, the South Hills, the Shipley Reserve, and at Lake Skinner; this distribution helps to ensure that the population will remain viable even if temporary habitat losses occur in some areas of the Reserve due to natural disturbances such as fire or drought.

Juveniles from the population can be expected to move into adjacent Reserve habitat when it is acquired, protected, and human disturbance has been minimized. Recently documented dispersal of three juveniles from Lake Skinner to the Domenigoni Valley (August 2, 1992, Bill Wagner, personal communication) suggests that areas impacted by fire or other disturbance may be re-occupied by birds from other areas, up to 5-8 miles away. On the North Hills, exotic vegetation control will enhance habitat recovery and re-occupation of habitat by the gnatcatchers from adjacent populations. Protection of Riversidian sage scrub habitat on the South Hills, with cattle grazing removed, will enhance the quality of this suitable habitat. The gnatcatcher populations on the North and South Hills may be more effectively joined when the reservoir is completed and the wildlife corridors are established and vegetated at the base of each dam.

##### **5.3.2.2 Ferruginous hawk**

The ferruginous hawk was observed wintering at Domenigoni Valley, foraging in the valley and in neighboring fields. The project will eliminate foraging habitat. The Reserve, managed for habitat quality, will provide alternate foraging areas, particularly in disturbed areas used by the SKR. Populations of this migrant species are not likely to be significantly adversely affected by loss of this foraging habitat.

#### 5.3.2.3 Loggerhead shrike

This species nests in the Domenigoni Valley, with two nests observed in the impact area in 1989-1990. The project will therefore not affect a significant population of the species. Following construction, nesting sites will be more plentiful than under current conditions in the corridor area at the base of the dams and in the recreation area.

#### 5.3.2.4 Bell's sage sparrow

Bell's sage sparrow has been observed throughout the Reserve, and project-related impacts will therefore not eliminate the regional population; acquisition of the Santa Rosa Plateau will also ensure the regional population's viability. Habitat management in the Reserve may increase the density of this population.

#### 5.3.2.5 Southern California rufous-crowned sparrow

The Southern California rufous-crowned sparrow has been observed throughout the Reserve, and project-related impacts will therefore not eliminate the regional population. Habitat management in the Reserve may increase the density of this population.

#### 5.3.2.6 Orange-throated whiptail

The orange-throated whiptail has been observed throughout the Reserve; the regional population will not be eliminated by the Domenigoni Valley Reservoir Project. This lizard can be expected to occupy and utilize the RSS habitat enhanced on the North and South Hills. Other management actions proposed in this MSHCP will also benefit this regional population. Control of human access to the Reserve may also reduce impacts to this species.

#### 5.3.2.7 San Diego horned lizard

The San Diego horned lizard has been observed throughout the Reserve; the regional population will not be eliminated by the Domenigoni Valley Reservoir Project. This lizard can be expected to occupy and utilize the RSS habitat enhanced on the North and South Hills. Other management actions proposed in this MSHCP will also benefit this regional population, including management of its food species. Control of human access to the Reserve may also reduce impacts to this species.

#### 5.3.2.8 Northern red-diamond rattlesnake

The reservoir project will affect a population of these snakes, but the enhanced reserve will provide important sage scrub and chaparral habitat for the species, and the edge habitat which the species appears to prefer will be increased when fire control efforts and management for community diversity are initiated.

#### 5.3.2.9 Coastal western whiptail

The project site is within this species' range and a few individuals have been observed in the Reserve. Only a small population is likely at this site. The population on site would not be eliminated by the project; rather, individuals could be expected to move into adjacent, enhanced quality, habitat as impacts to their habitat occur.

#### 5.3.2.10 San Diego blacktailed jackrabbit

Low numbers of this species were observed in 1989 and 1990. This species, which feeds on grasses, forbs, and shrubs, will probably benefit from removal of cattle from the Reserve. The carrying capacity of the Reserve for this species will therefore be increased, and will probably more than offset losses due to the reservoir project.

#### 5.3.2.11 San Diego desert woodrat

This species is likely to be found within the impact area and the Reserve because its prime habitat (cactus) is not available on site. The species is more likely on the Reserve than in the project impact area because there are few rocky outcrops within the impact area and many within the Reserve. Protection and management of a large tract of land which will serve as a cornerstone for multi-species planning in the region and maintenance of regional bio-diversity should more than offset impacts to this species from the reservoir project.

#### 5.3.2.12 Northwestern San Diego pocket mouse

This species was found commonly within both impact and reserve areas during 1989-1990, but populations are likely to be quite dispersed, based on the large home territories the species appears to require. The range of population density reported in the literature (0.9 to 0.54 per hectare, see Appendix A) suggests that habitat enhancement may have a beneficial impact on population density. The species is likely to occur in the rocky substrate areas above the inundation line of the reservoir, within the Reserve. Protection and management of a large tract of land which will serve as a cornerstone for multi-species planning in the region and maintenance of regional bio-diversity should more than offset impacts to this species from the reservoir project.

#### 5.3.2.13 Payson's jewelflower

Under the without-project condition, the population of this species in the project area would be questionable due to proposed and probable residential and commercial development. The population in the Domenigoni and Diamond valleys cannot therefore be considered viable. The enhancement of 123 acres of suitable and currently occupied but disturbed habitat at Lake Skinner and Shipley Reserve locations within the Reserve and research into the life history and habitat requirements of this species in support of overall regional conservation planning efforts will contribute to the long-term viability of the population within the impact area and within the Reserve. Reserve management, including use of fire to create a multi-age mosaic of sage scrub and chaparral communities may also benefit this fire-following species.

#### 5.3.2.14 Parry's Spineflower

Under the without-project condition, the population of this species in the project area would be questionable due to proposed and probable residential and commercial development. The population in the Domenigoni and Diamond valleys cannot therefore be considered viable. The enhancement of 123 acres of suitable and currently occupied but disturbed habitat at Lake Skinner and Shipley Reserve locations within the Reserve and research into the life history and habitat requirements of this species in support of overall regional conservation planning efforts will contribute to the long-term viability of the population within the impact area and within the Reserve. Reserve management, including use of fire

to create a multi-age mosaic of sage scrub and chaparral communities may also benefit this fire-following species.

#### **5.3.2.15 Smooth tarplant**

Under the without-project condition, the populations of smooth tarplant on the valley floor would be completely lost to development within a period of several years. Under this MSHCP, this population will be preserved by propagation on lands suitable for its propagation but currently unoccupied.

#### **5.3.2.16 San Jacinto Valley saltbush**

The project will have no net impact on populations of this species because all impacts will be temporary and populations will be preserved and reestablished following construction.

### **5.3.3 Would the range of the species be significantly diminished by the project?**

The Domenigoni Valley Reservoir Project would not affect the overall range of any of the sensitive species covered by this MSHCP, and has the potential to extend the range of some species, and to provide for joining of populations now separated by agricultural development. Management of the Reserve, including removal of cattle and other domestic animals, may create conditions which would promote re-occupation of habitat currently not occupied by some of the sensitive species. Management of fire may extend the range of some plant species covered by this MSHCP.

### **5.3.4 Would habitat used by the species be reduced in quantity or quality by either the immediate or future effects of the project?**

Compared to the without-project condition for both the impact areas, the Santa Rosa Plateau, and the Reserve, the net impact of the Domenigoni Valley Reservoir Project, including its mitigation features, will be to at least maintain and in some cases to increase both the quality and quantity of habitat for the sensitive species covered by this MSHCP. Specifically, the project FEIR and this MSHCP provides for preservation of habitat which would otherwise have been destroyed by *imminent* development and associated disturbance by fire, off-road vehicles, and domestic animals at approximately a 3:1 ratio for the Stephens' kangaroo rat, California gnatcatcher, Bell's sage sparrow, southern California rufous-crowned sparrow, orange-throated whiptail, and San Diego horned lizard. Sensitive plant populations are to be restored to full size on site following construction, or will be mitigated by propagation of equal-sized populations in areas to be protected in perpetuity.

### **5.3.5 Would a species' access to habitat be reduced or rendered more hazardous as a result of the project?**

The Domenigoni Valley Reservoir Project will improve species' access to habitat within the Reserve by removing all significant human disturbance from the Reserve areas. Road use will diminish, off-road vehicle uses will diminish, grazing will diminish, and there will be corridors joining North Hills habitat, which has been partially isolated for some species for at least 100 years by agricultural operations, to the South Hills. Foraging habitat for the ferruginous hawk will be lost as a result of the project; this should not result in jeopardy to the species.

**5.3.6 Would the project adversely affect current or future efforts at providing protection for the species?**

The Reserve and research proposed under this MSHCP will have a significant positive impacts on future plans for the protection of the sensitive species covered by this MSHCP. The Reserve and its long-term management features will encourage others seeking to mitigate for project impacts to acquire adjacent property, expanding the Reserve over time. The County of Riverside is currently considering adding its Bachelor Mountain holdings to the Reserve, and the RCHCA is currently considering addition of about 175 acres on the west side of the Shipley Reserve. The Reserve Management Committee, through the *Service and the Department, may encourage other parties seeking to mitigate for project impacts to contribute additional lands to the Reserve, working through the Service, the Department, and/or the RCHCA.* The existence of the Reserve may therefore offer alternative mitigation strategies to developers who might otherwise mitigate by acquisition of small, isolated parcels of open-space.

The research proposed for the Reserve, along with propagation experiments for sensitive plants, will contribute significantly to the understanding of the sensitive species and their habitat requirements, assisting resource managers in efforts to identify critical habitat for these sensitive species.

**5.3.7 Would plans for the recovery or eventual delisting of the threatened or endangered species be adversely affected by the project?**

The mitigation actions for the Domenigoni Valley Reservoir Project, including acquisition of the Santa Rosa Plateau and the creation of the Reserve and its research and management plan, will positively affect plans for the recovery or eventual delisting of sensitive species. The existence of the Reserve and the potential for its expansion by others will assist in recovery planning. Finally, the research program will provide data needed to adequately plan for recovery and/or delisting plans.

**5.3.8 Would the project interfere with reproductive or other behavior of the endangered or threatened species?**

The reservoir project will affect reproductive and other behavior of endangered and threatened species, should any of the species covered by this pre-listing MSHCP be listed prior to project completion. Short-term project impacts on Reserve populations, as a result of dust, noise, or construction activities will be carefully monitored and appropriate actions taken to eliminate or minimize these indirect impacts. Dust control measures currently contemplated will be stringent enough to meet new standards proposed by the South Coast Air Quality Management District. Noise impacts will be confined to the valley floor and to borrow areas. Lighting impacts will be reduced through use of appropriate lighting types, by directing lighting away from sensitive areas to the extent feasible. A majority of lighting will be in the valley floor, well away from the Reserve populations of sensitive species. As a result of these avoidance/mitigation actions, it is not anticipated that the project will have significant impacts reproductive or other behavior of the sensitive species; that is, the wildlife on the Reserve will probably be able to complete their life cycles and maintain populations at levels which they would otherwise have maintained without the project. Indeed, removal of other human disturbance, elimination of grazing, and efforts to control cowbird parasitism, combined with management activities on the reserve, should contribute to restoration of natural conditions and elimination of factors which significantly and directly affect reproductive behavior of the sensitive species covered by this MSHCP. Phasing of habitat removal prior to construction activities to avoid nesting seasons, to the extent feasible, should further reduce impacts to reproductive behavior for the sensitive species covered by this MSHCP.

**5.3.9            Would the project cause extinction of the species?**

The project impact area is not currently designated critical habitat for any of the sensitive species covered by this MSHCP; the Reserve and its research, enhancement, and management program should contribute significantly to long-term viability of these species. Neither the reservoir project nor the Service and Department acceptance of this MSHCP is expected to contribute to extinction of these species; that is, the long-term survival of these species should not be adversely affected by this project alone.

## **APPENDIX A**

### **PRELIMINARY HABITAT CONSERVATION PLANS FOR THE SENSITIVE SPECIES COVERED BY THIS MSHCP**

#### **A.1 GENERAL**

Appendix A includes summaries of existing data on the sensitive species covered by this MSHCP, followed by preliminary plans for mitigation of impacts and/or their management as a part of the management of the Reserve. The research proposed under this MSHCP will ensure a more complete understanding of their life history, habitat requirements, and the viability of their populations within the general region prior to formulation of long-range plans for their management within the Reserve.

#### **A.2 METHODS CONSIDERATIONS**

##### **A.2.1 General**

The habitat conservation plans proposed for the 16 sensitive species covered by this MSHCP are primarily based on literature review and on limited surveys of the Reserve area during 1989 through 1992. Literature reviews were prepared by William Wagner and Dr. Felisa Smith based on literature currently available in standard reference books, relevant scientific and management professional journals, and government reports. Literature reviews did not include archival studies, interviews with researchers who have relevant research in progress, or review of museum specimens and records.

To date, the Reserve area has not been systematically surveyed for sensitive species, except for the Stephens' kangaroo rat, which was surveyed by Dr. Michael O'Farrell in 1989 and 1990, and sensitive plants, which were surveyed by Ms. Patricia Gordon-Reedy of Ogden Environmental in 1989-1992. Vegetative communities in the Reserve have been characterized, based on sample transects taken in 1989 and 1990 and on review of aerial photographs taken in 1990 and 1992. Transect field methods and locations are documented in the Biological Resources Appendix to the Domenigoni Valley Reservoir Project FEIR.

##### **A.2.2 Suitable Habitat Designations for Sensitive Species**

In general, designations of suitable habitat for sensitive species, both on the Reserve and within the Domenigoni Valley Reservoir project impact area, have been based on comparison of literature review data with the findings of vegetative community surveys and field observations of occupied habitat. Suitable habitat has therefore been defined as habitat having the characteristics of habitat reported as occupied in the literature. This definition has been confirmed by incidental sightings of sensitive species in habitat classified as suitable throughout the Reserve.

For purposes of estimating the total suitable habitat within project impact areas and Reserve areas, all habitat with the general characteristics of reported occupied habitat has been designated as suitable. No estimate of population abundance has been attempted except in the case of the proposed-endangered



California gnatcatcher. Abundance of a given species will vary in both impact areas and the Reserve, depending on various habitat characteristics. These have not been specifically determined and will be the subject of future field studies. For purposes of estimating level of incidental take of sensitive species and Reserve mitigation acreage all suitable habitat has been assumed to be occupied with a similar pattern of species distribution and abundance. By applying this assumption to both impact and Reserve areas a rough reasonable approximation of the actual mitigation ratio for each species can be calculated. The two areas are similar to one another geologically, geographically, and in terms of vegetative community characteristics. The most obvious differences between impact and Reserve areas are elevation, and perhaps slope.

Total suitable habitat figures therefore depend on characterizations of vegetative communities from surveys taken in 1989 and 1990, and supplemented in 1991 and 1992. In the case of California gnatcatcher habitat, further observations in 1992 were also used.

The Reserve Management Committee intends to initiate a research program beginning in 1993 with the objective of full and systematic characterization of Reserve habitat, including an inventory of sensitive species and the characteristics of their habitat. This work will be conducted as the basis for management planning on the Reserve.

### A.2.3 Suitable Habitat Designation for the California Gnatcatcher

Although not entirely adequate, more data are available for the California gnatcatcher than for other sensitive species covered by this MSHCP. First, focused surveys for this species were conducted in April through June of 1990. These surveys consisted of a one-time walkover through all impact areas for the Domenigoni Valley Reservoir project and North Slope of the North Hills. Three qualified field ornithologists were deployed, spaced at elevational intervals of approximately 80 to 120 feet. These biologists walked in roughly parallel lines through the habitat, maintaining visual and voice communication. They recorded all encounters with California gnatcatchers, distinguishing between nesting pairs and single birds, when feasible. They recorded habitat characteristics of the nesting sites and of habitat utilized when the birds were sighted. These characteristics were later analyzed to identify similarities and to define suitable habitat. The characteristics used to define suitable habitat were:

- Shrub cover from 40 to 90 percent
- Shrubs 0.5 to over 1.5 meters in height
- Shrub dominance of California sage and California buckwheat, and to a lesser degree, *Keckiella antirrhinoides*
- Elevation below 2000 feet National Geodetic Vertical Datum (NGVD)

Second, surveys of mitigation areas proposed in the project FEIR, north-facing slope of the North Hills, the Shipley Reserve, and the Lake Skinner area were made using similar one-time methods in June of 1990, November of 1990, and April of 1991, respectively.

Third, portions of the reservoir impact area (South Hills) were re-surveyed, using a similar one-time survey technique in February 1992, except that areas outside of Metropolitan ownership were not surveyed due to rights-of-entry limitations. Areas omitted in 1992 constituted about 40% of the South Hills area surveyed in 1990.

Fourth, a Service-Metropolitan research program was conducted in Spring of 1992 on three sites within the MSHCP area, the west borrow site for the reservoir on the South Hills, the north slope of the North Hills, and the south shore of Lake Skinner. Data from these studies provides some additional insight into the characteristics of occupied habitat and the size of breeding territories.

Fifth, California gnatcatchers in the reservoir impacts area are, at the time of this writing, being banded for study of post-breeding dispersal and displacement/dispersal following project impact to occupied habitat. Incidental to these banding efforts, three birds banded at fledgling stage have been identified within the Reserve over 6 to 8 miles from their nesting locations.

Finally, biologists have recently found gnatcatchers in several areas on the Reserve where they had not been located in 1990 and 1991. In the Rawson Canyon area of the South Hills, 5 gnatcatchers (adults with juveniles) were located in June of 1992 at elevation 2180 feet NGVD and 2-3 gnatcatchers were detected at elevation 1900. On July 26, two gnatcatchers (juveniles) were found at elevation 2280 on the eastern portion of the Shipley Reserve.

All of these observations have been used to define the characteristics of suitable California gnatcatcher habitat and to estimate probable nesting territory size. Based on these more recent observations, under more current habitat conditions, the characteristics of suitable habitat were defined as:

- Shrub cover from 30 to 90 percent
- Shrubs 0.5 to 1.5 meters in height
- Shrub dominance of California buckwheat, admixed with California sage, and *Keckiella antirrhinoides* or black sage

Note that elevation limitations have been removed from the consideration of suitable habitat, based on recent findings of the species above elevation 2200 feet. Also note that recent field observations suggest a lower level of shrub cover may be utilized by this species under current conditions.

#### A.2.4 California Gnatcatcher Territory Size

Estimates of territory size for the California gnatcatcher vary from 4 to over 40 acres, depending on geographic area. The factors responsible for this variation are not fully understood. An estimate of 23 acres was used in 1990, based on a worst-case analysis of San Diego County data from Patrick Mock (Mock, 1990, Amber Ridge Studies). The 1992 USF&WS data (5 territories) from the reservoir borrow area at Domenigoni Valley was analyzed and suggests an average breeding territory size at this site of 32 acres, with a range of from 25 to 46 acres. In addition, location of 8 breeding pairs within an area of approximately 250 to 400 acres at Lake Skinner suggests a similar range of territory size.

## A-1 MSHCP FOR MITIGATION OF PROJECT IMPACTS TO THE CALIFORNIA GNATCATCHER (*Polioptila californica*)

### GENERAL

Based on 1990 surveys, development of the Domenigoni Valley Reservoir would impact 14 known breeding pairs of California gnatcatchers, occupying 322 acres of RSS habitat within the inundation zone, borrow, and dam footprint (Figure A-1-1). An additional 221 acres of suitable habitat would also be impacted within these areas. Based on more recent surveys (Figure A-1-2) and habitat characterizations, following two wet years in the MSHCP area, it would appear that up to 1220 acres of suitable habitat probably exists in the project impact area; that is, recovery of vegetative communities as a result of better weather and the removal of grazing from sage scrub habitat has resulted in a significant increase in suitable habitat for this species.

Given this most recent estimate of suitable habitat, and an average breeding territory size of 32 acres, and the assumption of occupation for all suitable habitat, the population within the project impact area could be as high as 38 pairs. This estimate may represent a population size in the impact area under more favorable conditions than existed in 1990. Using the same approach and definition of suitable habitat, the Reserve will provide approximately 4,779 acres of suitable habitat, with a population of about 150 breeding pairs.

Although 14 pairs of California gnatcatchers were located in suitable habitat on the South Hills during surveys in 1990, this MSHCP has been designed to mitigate for impacts to the gnatcatcher and its habitat irrespective of the number of nesting pairs and single birds actually present during design, construction, and operation. The long-term impact of the MSHCP aims at protecting otherwise unprotected habitat and at increasing the amount of suitable habitat, resulting in no net loss of the species and a long-term increase California gnatcatcher populations. Recent surveys indicate that some suitable habitat within the Reserve which was not occupied in 1990 may be occupied at present, due to a natural rebound of gnatcatcher populations in response to a warm, wet winter following 5 years of drought.) The plan for gnatcatchers in the area covered by this MSHCP has four elements:

- **Reduction of project indirect impacts to the extent feasible, including measures to reduce noise, dust, and lighting impacts.**
- **Providing for acquisition and protection of additional suitable habitat and/or escape routes for gnatcatchers now inhabiting the impact area (Figures A-1-3, A-1-4, and A-1-5).**
- **Enhancement of existing habitat in areas adjacent to habitat currently occupied by gnatcatchers on the South Hills of Domenigoni valley.**
- **Research into and evaluation of (1) restoration methods for Riversidian sage scrub, and the habitat requirements of the California gnatcatcher; (2) life history of the California gnatcatcher, with an emphasis on identifying preferred habitat and food habits; and (3) micro-climate variables affecting habitat use by the California gnatcatcher.**

Implementation of these strategies will require acquisition, enhancement or restoration, and preservation of significant lands outside of the area needed for the project. Metropolitan is not obliged by any water quality law or regulation to control the watershed surrounding its reservoirs, as evidenced by the fact that Lake Skinner has 30 square miles of watershed outside of Metropolitan control and Lake Mathews has an even larger unprotected watershed area. Metropolitan's decision to acquire the entire Domenigoni Valley watershed is therefore not predicated on a need to meet mandated water quality standards. The decision to acquire the watershed, as well as areas outside of it on both the North and South Hills was made for a variety of reasons, with environmental concerns considered. This is evidenced by the weighing of costs (including land acquisition costs) and environmental mitigation options in the project FEIR. Given the existence of mitigation banks at the Santa Rosa Plateau and the Shipley Reserve, acquisition of areas outside of the watershed specifically for on-site mitigation was not needed to offset project impacts..

Under the without-project alternative, these lands would be threatened by urban development, as evidenced by a number of specific plans filed for development in the valley prior to Metropolitan acquisition of the area. A majority of the Domenigoni Valley area could be expected to be fully developed within 10 years if the Domenigoni Valley Reservoir was not constructed on this site. The project itself therefore preserves habitat which would probably otherwise be lost due to impacts associated with development.

The net effect of Metropolitan's project is to preserve habitat outside of the project impact area from the fire and other human disturbance which would have occurred with build-out of the valley floor. In addition, specific actions to preserve and manage lands within the watershed of the project area, beyond what would be legally required for the project itself at this time, will be undertaken as a part of this plan.

## **THE PLANNING PROCESS**

### **Other Plans and Programs**

Riverside County is currently engaged in planning for multi-species conservation in general, and for preservation of coastal sage scrub communities and the Stephens' kangaroo rat (SKR) in particular. Planning for preservation of coastal sage scrub is being undertaken under the state's Natural Community Conservation Planning Act and in conjunction with the Western Riverside Council of Governments. Planning for the SKR is being undertaken by the RCHCA under the Federal Section 10(a) permitting process.

This plan, cooperatively developed by Metropolitan and the RCHCA, is consistent with these other regional planning efforts; the Reserve created under this MSHCP is a major feature of the reserve system contemplated by Riverside County's multi-species planning effort and for the RCHCA's SKR planning effort.

### **The Planning Process**

This MSHCP has been prepared by Metropolitan and the RCHCA with the assistance of Tetra Tech, Inc., who were responsible for field surveys and habitat evaluations for the Domenigoni Valley Reservoir Project, RECON, Inc., William Wagner, and Sycamore/Blane Associates. Tetra Tech biologists and their

sub-consultants conducted on-site habitat surveys during 1989-1991. In addition, the MSHCP has been based on:

- Status surveys prepared in support of the petition to list the California gnatcatcher (Atwood, 1991);
- Field surveys of the Reserve to identify and quantify vegetation within the Reserve and to determine occupation and suitability for occupation by the California gnatcatcher; and
- Informal coordination between Metropolitan and the Service and the Department over a 3-year period related to the Domenigoni Valley Reservoir FEIR, as well as specific coordination related to development of this pre-listing MSHCP subsequent to October 1991 certification of the FEIR.

### **PROJECT SCHEDULE, TIMING OF POTENTIAL IMPACTS, AND LAND CLEARING METHODS**

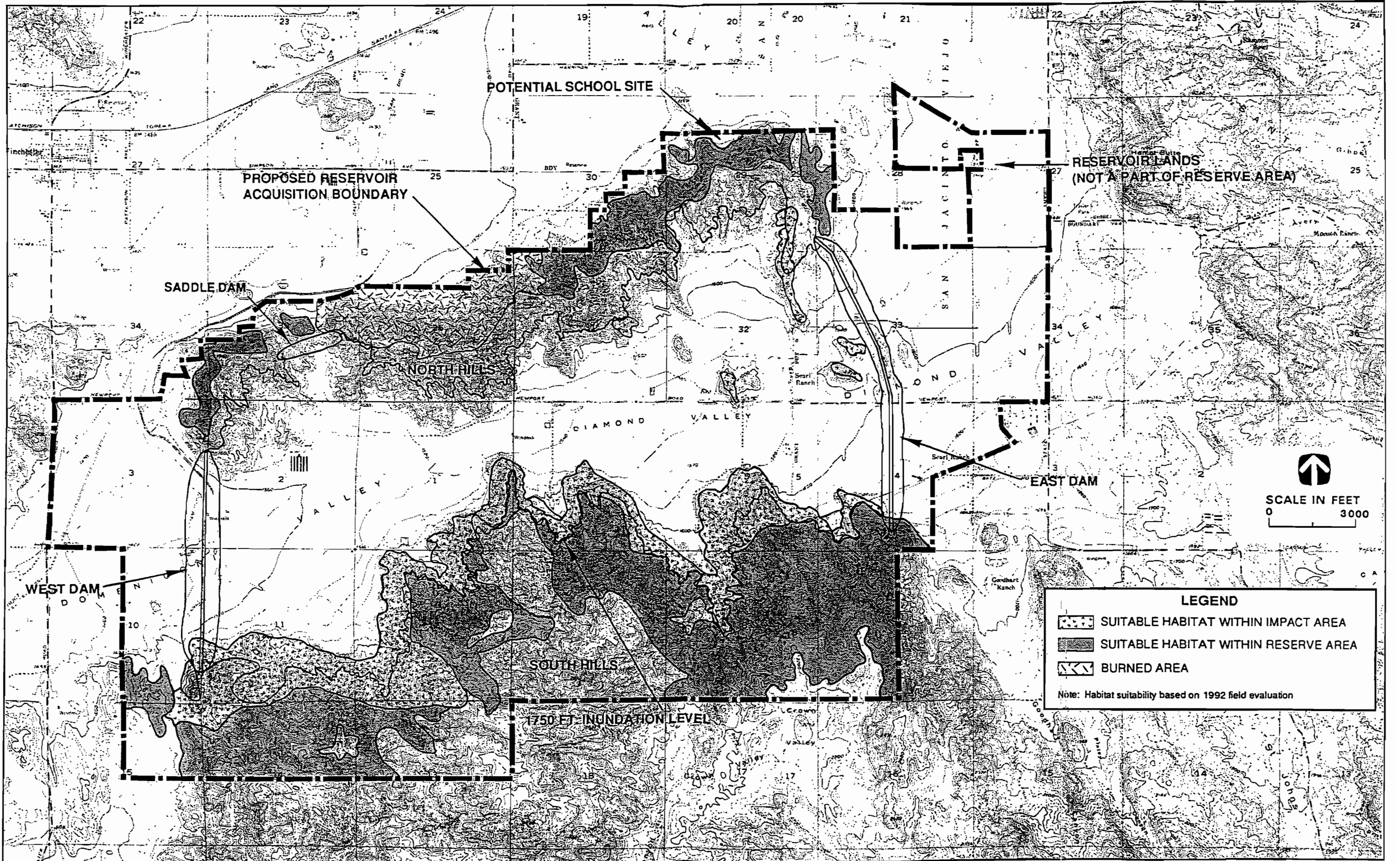
Project impacts are likely to begin in late summer of 1992, when archeological and geotechnical explorations begin within the impact area. At this time, habitat on archeological and borrow areas must be cleared to permit work to begin. The full extent of archeological sites is unknown at this time, and thus the total acreage to be cleared for this purpose is not known. Sites may extend along the entire north-facing slope of the South Hills. Heavy shrub vegetation obscures the full extent of these sites at present.

Geotechnical investigations on the valley floor and at the base of the hills will also begin in late summer of 1992, and will involve exposing gravel sources which exist at the juncture of the hills and the valley as well as hillside quarry areas. Coastal sage scrub habitat may be removed for these purposes as well.

Finally, it may be necessary to remove additional coastal sage scrub habitat beginning in August 1992 for other construction-related purposes; detailed geotechnical and clearing plans will be prepared by September 1-15, 1992, detailing proposed clearing operations. Land clearing of the ultimate impact area may occur at any time between the beginning of pre-construction operations in August 1992 and project completion. The schedule of clearing during pre-construction periods will depend on the need to conduct archeological investigations, geotechnical investigations, and fire control and security operations.

To the extent feasible, this habitat clearing will be conducted in the least-damaging manner possible, with grazing and hand removal of shrubs preferred over mechanical means of clearing. To this end, Metropolitan is at this writing, testing goats as a means of removing shrub habitat. Removal of shrub habitat with hand implements will be the second preferred method, with ground disturbing activities such as those involving use of heavy equipment used as a last option. Habitat removal will also generally begin at lower elevations and proceed up slope to "drive" sensitive species into the Reserve habitat above elevation 1750 where there is suitable habitat.

Impacts of these land clearing operations on the California gnatcatcher will be minimized by timing them for the non-nesting season, August 1 through early February. Timing of land clearance activities for this period will also eliminate the potential for impacting nesting migratory birds.



Domenigoni Valley California Gnatcatcher Habitat - 1992

Domenigoni Valley Potential California Gnatcatcher Dispersal/Movement Corridors.

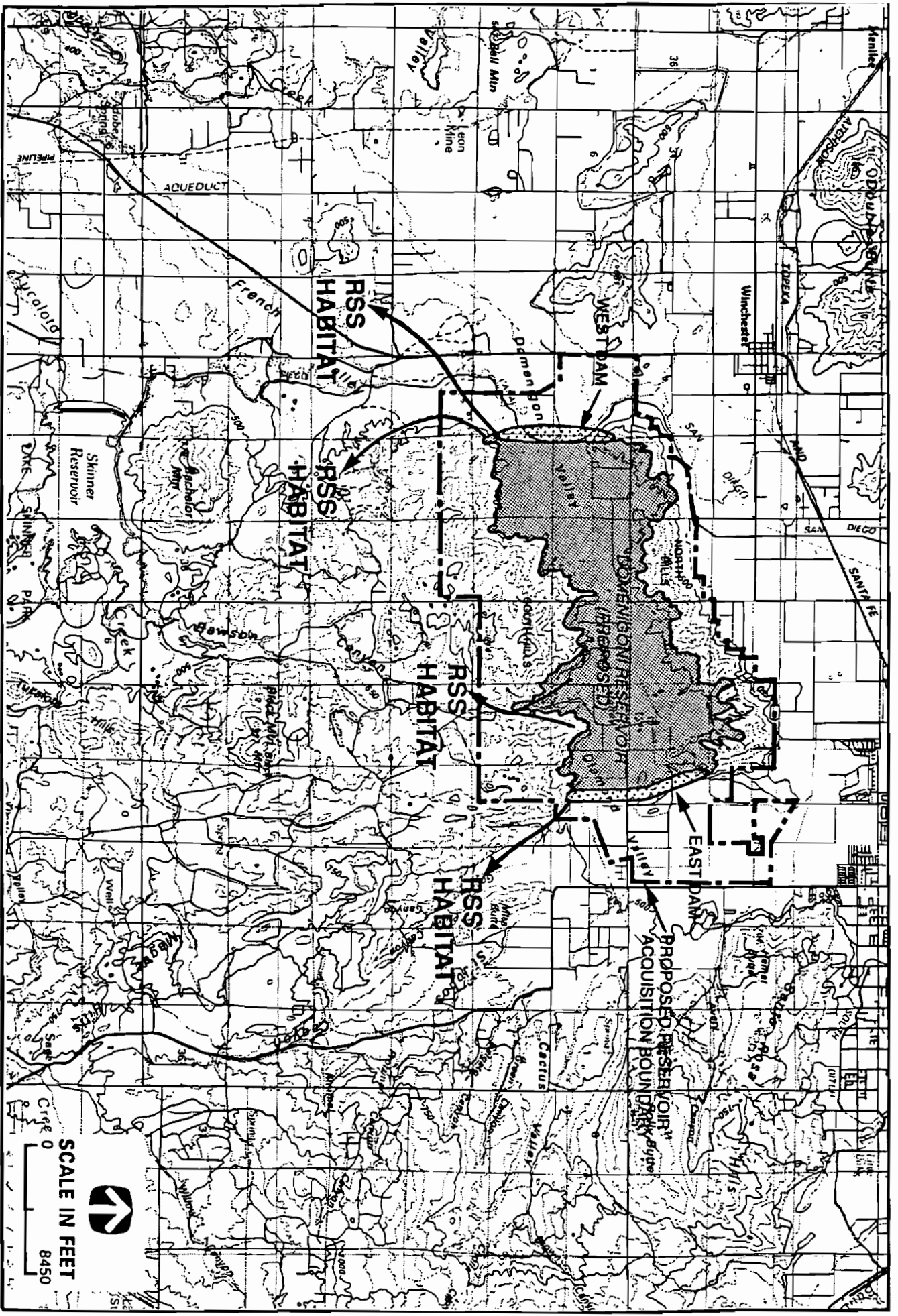
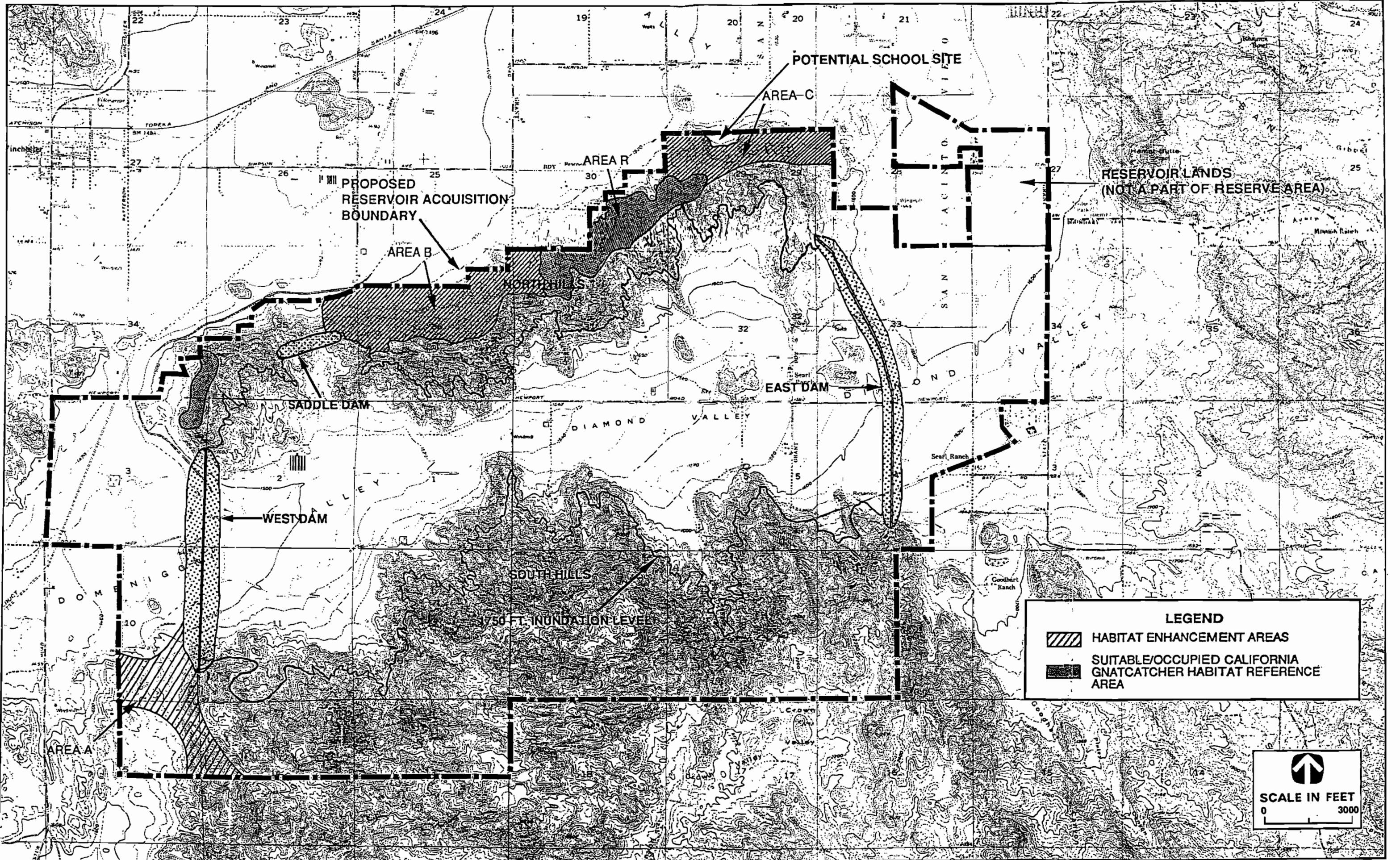




FIGURE A-1-2



**LEGEND**

-  HABITAT ENHANCEMENT AREAS
-  SUITABLE/OCCUPIED CALIFORNIA GNATCATCHER HABITAT REFERENCE AREA



**SCALE IN FEET**

0 3000

Domenigoni Valley California Gnatcatcher Habitat Enhancement Areas



## THE CALIFORNIA GNATCATCHER

### Species Characteristics

According to Atwood (1990), the California gnatcatcher has only recently been recognized as distinct from the more widely distributed black-tailed gnatcatcher (*Polioptila melanura*). Three subspecies of the California gnatcatcher have been described. The northernmost subspecies (*P. c. californica*) has an historic range extending from Ventura County in the north to El Rosario, Baja California. The other two subspecies occur in central to south Baja California, Mexico.

The California gnatcatcher is an obligate resident species in coastal sage scrub habitat, exhibits strong territorial behavior, nests from February through July, and typically has more than one brood during this period. Juvenile gnatcatchers disperse during non-breeding periods, establishing new territories in nearby habitat. In general, they do not travel distances of greater than several miles. In Riverside County, the California gnatcatcher appears to inhabit several phases of RSS from elevation 1,200 feet to elevation 2,000 feet; the reason for the upper limitation in range is unknown. Recent field observations indicate that this species inhabits or otherwise utilizes similar habitat above 2,000 feet. Current research and banding trials at Domenigoni Valley have found California gnatcatchers at well above 2,000 feet. (William Wagner (personnel communication) found two gnatcatchers in buckwheat-dominated habitat on the Shipley Reserve at elevation 2280 feet.

### Current Status

California gnatcatchers have been eliminated from much of their historic range, including Ventura and San Bernardino counties. Their range in Los Angeles County has been reduced to a single population on the Palos Verdes Peninsula. Current estimates of total United States populations range from 1200 to over 2,000 pairs. Estimates based on pre-1990 data indicate that there is a population of approximately 300-400 pairs in Riverside County (Atwood, 1991).

### Habitat Requirements, Riverside County

There have been few studies of habitat requirements for the California gnatcatcher in inland areas. Based on surveys made during studies for the Domenigoni Valley Reservoir FEIR, there appear to be several key characteristics to the RSS habitat occupied by California gnatcatchers:

- **Species Composition.** In general, occupied gnatcatcher habitat in southwestern Riverside County has a substantial growth of California sage (*Artemisia californica*) and California buckwheat (*Erigonium fasciculatum*), in association with an overstory of *Keckiella antirrhinoides*, a tall woody shrub which appears to provide "structure" utilized by the California gnatcatcher in this region. Elsewhere in the region, gnatcatchers are known to commonly inhabit areas dominated by brittlebush (*Encelia farinosa*). Gnatcatchers appear to use *Keckiella* primarily during nesting season. Observed species composition of occupied habitat will be quantified during baseline studies outlined below;
- **Community structure.** Gnatcatchers have been found to occupy several phases of coastal sage scrub habitat with varying degrees of complexity. However, in areas in which gnatcatchers are reliably found, the shrub habitat is more structurally diverse with a high degree of stratification (variation in plant heights within the community). For

inland areas, little data is available regarding plant species and soil requirements for gnatcatcher nesting;

- **Elevation.** In Riverside County, gnatcatchers have been found at elevations from 1,200 feet to 2,000 feet NGVD, but, except for the observation noted above, not in otherwise suitable habitat above this elevation. The reason for this elevation limitation is not known;
- **Aspect.** In Riverside County, occupied habitat has generally been found on north-facing slopes or in areas where micro-climate conditions provide adequate moisture; and
- **Slope.** During early FEIR studies, biologists from RECON, Inc. and Ogden Environmental suggested that slope may also influence gnatcatcher selection of nesting sites.

### **Status of Endangered Species Listing**

Petitions to list the California gnatcatcher as a candidate for endangered species status were filed with the Service in September and December 1990. The Service has recently upgraded the status of the gnatcatcher to "Proposed for listing as an endangered species." Listing under the FESA is therefore considered *highly* probable before construction of the Domenigoni Valley Reservoir Project is initiated. The California Fish and Game Commission, however, recently ruled *not* to list the gnatcatcher as threatened or endangered in California. The potential success of the on-going regional NCCP effort for coastal sage scrub may have had an influence on the Fish and Game Commission's decision not to list the species.

For Metropolitan's planning purposes, the California gnatcatcher is being treated as a federally-listed threatened or endangered species. Incidental take of endangered species is permitted under the FESA, based on a no jeopardy finding, that is, a finding that the level of take specified will not jeopardize the continued existence of the species. For planning purposes, however, it is important to focus on more proactive conservation objectives. Based on conversations with resource agency representatives, current resource agency objectives regarding impacts to the gnatcatcher are summarized:

- **No net loss of gnatcatchers or their habitat as a result of project impacts.** Although this policy objective is best accomplished if there is no take of birds as a result of a project, incidental take may occur as a result of the Metropolitan Domenigoni Valley Reservoir Project. Actions are to be taken under this pre-listing MSHCP to avoid net loss and to minimize take to the extent feasible.
- **Long-term population viability of gnatcatchers and/or their habitat as a result of the project.** This policy contemplates maintenance of adequate suitable habitat and populations as a result of mitigation actions, with potential for mixing of populations in the region to maintain genetic variability within the Reserve. The Reserve, with its 4,779 acres of habitat which is suitable at present, and 1390 acres of habitat suitable for enhancement and recovery following removal of disturbance, provides an opportunity to accomplish this objective.

## Conservation Issues and Options

Within the four-county region where the California gnatcatcher population is threatened, development of occupied and suitable coastal sage scrub habitat is a primary threat to the species' survival. Loss of habitat due to development, and associated fragmentation and degrading of habitat which remains following development, are of concern. The primary goal of the State of California's NCCP process for the region is identification of large parcels of coastal sage scrub habitat which can be set aside to ensure the long-term viability of the California gnatcatcher and other sensitive species associated with this coastal sage scrub community.

In addition to development, type-conversion of habitat following fire and other significant disturbance is also of concern. There is a reservoir of exotic grasses and forbs surrounding most native habitat in the region. Following fire, grazing, or significant human disturbance of habitat, these opportunistic grasses and forbs displace native habitat, particularly during drought when native plants cannot compete with the drought-tolerant annual grasses.

These issues are of particular concern in Riverside County for the following reasons:

- First, Riversidian sage scrub communities in the county tend to be confined to hillsides, which are both prime development land and/or are already isolated from one another by development on the predominant alluvial plains of the basin between the San Jacinto Mountains and the coast range. Fragmentation of habitat in this region effectively isolates many populations, because there is no suitable habitat for birds to travel *through* if their territories are affected by fire or other disturbance.
- Second, much of the open space in the county is grazed. Cattle grazing the hillsides cause significant direct habitat disturbance, allowing exotic grasses and forbs to gain a foothold in native communities. In addition, cowbirds associated with livestock operations parasitize the nests of California gnatcatchers.
- Third, coastal sage scrub communities in Riverside County tend to be less robust than those in the cooler, wetter, coastal communities of Orange and San Diego counties. As a result, the California gnatcatcher may require a larger nesting territory in this region. Densities seem to be lower in Riversidian sage scrub than in the coastal sage scrub communities near the coast.
- Fourth, as development encroaches on sage scrub communities, the threat of fire increases, particularly in very hot, dry inland areas. A large majority of Riverside County's open space has burned at least once in the last 30-40 years.

Conservation of coastal sage scrub communities and the long-term survival of the California gnatcatcher population in inland areas such as Riverside County may depend on:

- Acquisition and preservation of relatively large land holdings with coastal sage scrub as the dominant community;

- Efforts to prevent loss of birds by providing additional habitat and corridors for birds seeking out suitable habitat during juvenile dispersal and during dispersal as a result of project impacts which will occur as early as August 1992; and
- Management to protect habitat from disturbance, nest parasitism and predation, and type-conversion of the habitat to exotic grasslands.
- Habitat enhancement and recovery programs to restore habitat degraded by grazing, off-road vehicle use, or fire.

In the following section of this MSHCP, an approach to meeting the requirements of the FESA and the Fish and Game Code is described.

## **MITIGATION STRATEGIES**

### **Strategies for Ensuring No Net Loss**

Given current population estimates for western Riverside County, it is important that significant sub-populations of California gnatcatchers be preserved to the extent feasible. The Metropolitan reservoir project will impact habitat supporting from 14 to 38 breeding pairs of California gnatcatchers. One objective of this MSHCP is to take actions which may reasonably be expected to result in no net loss of breeding pairs.

Given that the habitat for these birds will, in fact, be lost due to the project, strategies for ensuring no net loss are focused on (1) minimizing impacts and (2) managing suitable habitat in the long-term to provide for recovery of populations to pre-project levels. Impacts can be minimized by timing the impacts to occur during non-nesting periods, by controlling the rate of impacting activities, and by providing for dispersal of impacted birds into adjacent suitable but unoccupied habitat. Long term recovery of populations can be provided by management of the resources of the Reserve to promote recovery, primarily by ensuring adequate suitable habitat to support the desired levels of population.

### **Actions to Minimize Direct Impacts**

The California gnatcatchers tolerance of impacts is the basis for the plan to minimize direct impacts to this species. There is considerable evidence that actions to avoid or minimize project impacts to gnatcatchers may be successful. Gnatcatchers have been shown to tolerate significant human presence and activity near their nesting habitat. For example, nesting habitat has been found adjacent to freeways, to housing developments, and to farms. In the Diamond-Domenigoni valleys, for example, there is occupied habitat within several hundred feet of cultivated fields, housing, and horse corrals. It is not known how long such nesting sites persist.

Given this known tolerance for disturbance, Metropolitan will first attempt to minimize loss of birds by timing impacts to occur during non-nesting periods. During these periods, California gnatcatchers are known to disperse, to widen their territories, and to overlap territories. Avoiding impacts during nesting season will mean that habitat which will be impacted at any time during a year will be scheduled to have sage scrub removed from August 1 to December 31. It is anticipated that the birds will not defend territories at this time and will move to adjacent habitat.

Second, the level of disturbance can be minimized by removing habitat by grazing or hand methods, prior to implementation of blasting or excavation. By removing habitat slowly and by relatively benign methods, the birds affected will not be directly killed. They may be able to disperse in the face of this slow impact process and survive.

Third, reducing the potential for direct loss of birds in the impact area may be further accomplished by acquiring and managing suitable but unoccupied habitat in adjacent areas. The Reserve provides large areas of such habitat to which the existing population in the project impact area may disperse. The protection of this habitat, and its enhancement and recovery through management activities, may provide an opportunity for the existing population to disperse. There is approximately 4,779 acres of suitable habitat for the California gnatcatcher in the Reserve, and much of it currently appears to be unoccupied. This habitat, degraded in 1990 due to drought and heavy grazing, now appears suitable. That this habitat is probably suitable for the California gnatcatcher is demonstrated by recent sightings of the birds in portions of the Reserve where they were not found in 1990.

There are also multiple dispersal corridors into and out of the impact area (Figure A-1-6).

The gnatcatchers in Diamond Valley have two existing dispersal routes out of the impact area:

- A natural dispersal route up a canyon which leads into Crown Valley - Rawson Canyon, an area recently purchased for preservation by Metropolitan. Some gnatcatchers may occupy this habitat or move through habitat in Crown Valley to suitable habitat around Lake Skinner.
- There is a dispersal route from the valley around the southeast hills, leading to suitable habitat in Goodhart and Pixley canyons.

The gnatcatchers in Domenigoni Valley would probably disperse to higher-elevation habitat to the south, or to suitable habitat to the west:

- There is occupied habitat to the west of the dam abutment, part of the Reserve.
- There is extensive suitable habitat to the southwest of Highway 79. Gnatcatchers moving to the southwest would have to cross a 400-yard wide corridor of degraded RSS to reach the suitable habitat to the west of Highway 79.
- There is a potential dispersal corridor through the rolling hills east of French Valley.

The success of this strategy for ensuring no net loss depends on the availability of additional unoccupied habitat and the California gnatcatcher's dispersal behavior in the face of impacts.

First, there is suitable habitat, unoccupied at the present time, contiguous up to a mile from the construction zone, which may provide habitat for the gnatcatchers throughout the construction period. In addition, there is suitable habitat within the project area to the west and south of the west dam. Several of the gnatcatchers in the Domenigoni Valley may be able to disperse to this habitat once impacts begin to occur. There is also suitable habitat on the Shipley Reserve and at Lake Skinner. Recent banding efforts (Wagner, personal communication) have identified 3 fledgling gnatcatchers banded as juveniles in the Lake Skinner area, in habitat in the Domenigoni Valley up to 8 miles from their nesting site. This suggests that juveniles will disperse considerable distances; possible losses in the impact zone may therefore be offset by recruitment from other areas of the Reserve.

Second, although mated pairs are generally considered resident (remaining in a single territory), juvenile California gnatcatchers have been known to disperse up to several miles from one territory to another. Two pairs banded at Lake Skinner in May of 1992 were found over six miles from their nesting location in the South Hills of Domenigoni Valley one month later. Therefore, even if all 14 pairs found within the impact zone during 1990 surveys are disturbed to the extent that they move out of current breeding territories, they may be able to move into the suitable habitat outside of borrow areas and above elevation 1,750 feet once habitat removal prior to construction begins. In addition, adults are known to disperse following breeding, suggesting that the delay of impacts to this period may allow them to survive and move into adjacent unoccupied habitat.

Populations may be rebounding in the Reserve, as evidenced by fledgling success at Lake Skinner and the north slope of the North Hills in 1992 studies by the USF&WS. However, it is unlikely that the rebounding population has completely utilized all of the recovering coastal sage scrub, and there is no evidence from recent banding studies to indicate that birds are occupying or utilizing the enhanceable habitat on the south-facing slope of the North Hills or the recovering burn area on the north-facing slope of the North Hills. There is thus a reasonable probability that birds in the impact area will be able to move up slope into adjacent unoccupied Reserve habitat.

The attainment of no net loss may not, however, require 100% success of birds dispersing to adjacent habitat. Maintenance of a viable population on the Reserve would be enhanced by this dispersal (and therefore by the survival and reproduction of populations impacted), but recruitment of birds to the Reserve population by new pairs from a successful breeding season moving into previously-unoccupied Reserve habitat would also accomplish the objective of no net loss, at least in the short-term. To determine if long-term population viability can be achieved will require additional research. A long-term monitoring program will be required to measure the success of these strategies.

#### **Strategies for Ensuring Long-Term Population Viability**

To meet the objective of long-term population viability for the California gnatcatcher, Metropolitan will both acquire significant habitat outside of its proposed project area (as provided under its EIR mitigation plan for the California gnatcatcher) and will preserve and manage lands within its project area to benefit the gnatcatcher (and other sensitive species). This program will include:

- **Plans included in the FEIR:** Acquisition of the entire 850-acre north slope of the North Hills of Domenigoni Valley for mitigation purposes only, with significant enhancement

and restoration activity in this area to provide at least 404 acres of habitat, including 161 acres of currently occupied habitat. This North Hills habitat will be protected with chain link fencing and protected from fire with a fire road which will also serve as a maintenance access.

The 404 acres of RSS habitat mentioned above does not constitute the total *potential* habitat at the site. An additional 448 acres of RSS, mixed grasslands, and agricultural areas which will convert to wildlife habitat exists on this site. Much of this area *may* revert to Riversidian sage scrub following enhancement and restoration efforts on adjacent habitat, although 100 acres on the flatland to the north of the hills will probably revert to grasslands. In the future, this habitat could also be considered for restoration or enhancement, if it does not naturally revert to RSS.

Acquisition of 180 acres outside of the project direct impact area to the southwest of the proposed west dam embankment, including 46 acres of occupied habitat. This habitat is within or adjacent to the West Recreation area to the west of the dam, and will be set aside as part of the Reserve. Following initial indirect disturbance during construction, only limited human use would be permitted in this area (hiking), and it would be managed for the California gnatcatcher. Initial management efforts would include fencing to exclude cattle, which are responsible for much of the habitat degradation in the area. In addition, the area would be protected from fire and other human disturbance.

- **Acreage added to the Reserve under this MSHCP:** 1858 acres of suitable habitat on the South Hills, above elevation 1,750, will be managed with enhancement and restoration of approximately 90 acres to encourage occupation by gnatcatchers. This area, above the proposed inundation and borrow site impact line, is currently very similar in community structure to occupied habitat. It is anticipated that management and preservation of this area, will encourage occupation of this habitat.

At Lake Skinner, 1550 acres of suitable habitat will be managed under this MSHCP. The existing Shipley-Skinner Agreement includes a provision for management of habitat for 6 pairs of gnatcatchers at Lake Skinner, estimated in 1991 to occupy 138 acres. This habitat is included in the 1550 acres identified above. In addition, 982 acres of suitable habitat at Shipley Reserve will be managed.

The net potential for enhancement and management efforts to improve habitat quality in the Reserve is shown on Table A-1-1.

**Table A-1-1  
Reserve Habitat Currently in Degraded Condition and Suitable for Enhancement**

<u>Area and Habitat</u>	<u>Acres</u>	<u>Reason for Existing Condition</u>
North Hills RSS	725	Fire, grazing, exotics
South Hills RSS	90	Fire, exotics
Shipley Reserve RSS	0	NA
Lake Skinner RSS	575	Fire, exotics, off-road vehicles

The potential of the Reserve to contribute to long-term population viability for the California gnatcatcher can be roughly estimated by evaluating the potential population within the Reserve's suitable habitat. Estimates of long-term population potential within the Reserve are speculative, but do provide a qualitative comparison of the potential for the Reserve to fully mitigate for impacts. The total suitable habitat currently available within the Reserve, 4,779 acres, could, based on breeding territory size of about 30-32 acres, optimal conditions, and occupation of all habitat provide breeding habitat for as many as 150 breeding pairs. Enhancement of an additional 1390 acres of habitat which is currently in degraded condition could result in habitat for an additional 43 pairs under optimal conditions. The probable optimum Reserve population of 190 breeding pairs, assuming full recovery of all currently degraded sage scrub habitat, is about five times the high estimate of the population in the existing suitable habitat (38 breeding pairs).

Population viability may also be affected by project indirect effects. As explained in Section 4, Metropolitan will take significant actions to minimize indirect impacts from construction noise, dust, and lighting. Long-term impacts of a reservoir on adjacent habitat will be addressed at a later date by the Reserve Management Committee. The actions to minimize impacts are summarized below:

- **Dust.** Gnatcatcher tolerance of dust is unknown; although birds in the Diamond-Domenigoni valleys are affected by dust from agricultural operations on a regular basis. It should also be noted that under the without-project condition, the entire valley floor would very likely be developed, with considerable dust generated by construction. Dam construction will nonetheless create additional dust, which will generally be dispersed away from the existing gnatcatcher habitat on the south hills by prevailing southwesterly winds. Metropolitan's dust control program will include watering of soil in the borrow areas, surfacing of haul routes, and watering of soil excavated from embankment



foundation areas. Metropolitan will develop additional plans to reduce dust, which may include some form of surfacing for haul routes to substantially reduce the remaining potential for dust.

- **Noise.** Gnatcatchers may be sensitive to the high levels of construction noise, particularly to blasting. The extent of this sensitivity is not known. Gnatcatchers at the nearby Motte Reserve tolerate quite frequent high levels of noise from large Air Force transport planes practicing "touch-and-go" landings.
- **Lighting.** The construction site will be lighted to permit operations on a 24-hour basis. The sensitivity of gnatcatchers to this lighting regime is unknown. Metropolitan will, to the extent feasible, take actions to minimize potential impacts by placing lighting only in areas where needed, such as at the borrow areas, main embankments, and along haul routes. Use of sodium lighting and/or other lighting which minimizes impact may also be considered. Given that gnatcatchers can apparently occupy habitat adjacent to freeways, these measures to confine lighting impacts to areas of direct construction activity will likely be successful in reducing lighting impacts.
- **Inundation.** Inundation will take place over a period of 4 to 6 years. Therefore, gnatcatchers remaining in the valley may have an opportunity to move to suitable habitat between elevation 1,750 and 2,000 feet. As the water level rises, local micro-climate changes may occur which could be favorable to the gnatcatcher, for example, it could cause an increase in insect abundance.

A qualified ornithologist will monitor the response of gnatcatchers on the south hills to construction activity throughout the construction period. If gnatcatchers do not respond as anticipated, additional measures for reducing construction disturbance will be undertaken.

## Research

Research is not a mitigation action itself, but rather will contribute to attainment of the goals of the Reserve and the MSHCP by providing a sound basis for management.

The general research plan for the Reserve is outlined in Section 3, and will be developed in detail by the Reserve Management Committee. Phase I research will probably have two focal points. First, there will be general studies of coastal sage scrub and how to manage this community. Second, there will be studies to better understand California gnatcatcher biology, life history, and habitat requirements. Both of these studies will be designed by the Reserve Management Committee. Their purpose and preliminary scope are described below:

- **Coastal Sage Scrub Research.** Unless protected, virtually all RSS habitat in southwestern Riverside County can be expected to be disturbed by grazing, human use, and/or fire at sometime in the future. These disturbances permit exotic grasses and other plants to invade historic sage scrub habitats, resulting in a type conversion and reducing habitat for California gnatcatchers. In the future it will be necessary to enhance and/or restore areas of disturbed RSS burned, grazed, or disturbed by human use. Knowledge of RSS habitat in general, and of the habitat requirements of the California gnatcatcher in particular, is limited. Restoration of coastal sage scrub habitat has been studied in coastal areas, and some of the lessons from this research may apply to RSS habitat.

The research proposed will be fully formulated and documented by the Reserve Management Committee, with the research plans appended to this MSHCP and incorporated herein by reference. This research will aim to (1) understanding the processes and factors which affect the type conversion of RSS habitat to non-native grasslands habitat following fire or other disturbance; (2) understanding the management actions by which the type conversion can be prevented following disturbance (such as weed control and re-planting, and (3) understanding the factors which influence gnatcatcher selection of habitat, including community composition and structure, microclimate, and insect populations.

This research may be carried out in a series of studies on several areas of the North Hills and the South Hills. On Areas A and B (Figure A-1-7), large-scale disturbance has occurred (grazing and burn, respectively) and sage scrub communities are in recovery. These areas are appropriate for monitoring and vegetative recovery enhancement efforts such as weed control and seeding with native species. These areas are also appropriate for long-term monitoring of vegetative community development and use by sensitive species including the gnatcatcher. Area C had been type converted to a mixed grasslands and sage scrub community following fire and extensive additional disturbance. This area may be appropriate for intensive small-plot experiments in restoration and enhancement of sage scrub communities and for larger-scale controlled burning and re-seeding.

- **Insect Studies.** The objective of this research will be to identify and quantify insect populations, with particular emphasis on species thought to be important to the California gnatcatcher. Following a period of field observations by the Service to identify shrubs used by gnatcatchers for foraging, this study will involve frequent collections of insects

on leaves of plants used by the gnatcatcher for foraging. Insect populations in occupied and unoccupied RSS habitat will be characterized.

- **Microclimate Studies.** The objective of this study will be to identify the physical factors which may influence gnatcatcher use of habitat. Microclimate recorders will be placed at 72 stations in occupied and unoccupied RSS habitat to monitor microclimate variables in the project area. In addition, eight regional-scale stations will be established to collect detailed weather data at occupied sage scrub at various locations up to 20 miles from the project site. Based on data from these recorders, individual variables and combinations of variables will be analyzed to determine their association with gnatcatcher use and occupation of RSS and other coastal sage scrub habitat.
- **Gnatcatcher Community and Life History Studies.** These studies, conducted by the Service, will extend the baseline surveys conducted to identify plants appropriate for use in restoration and enhancement. Service staff and/or other qualified biologists will conduct extensive field studies of occupied and unoccupied gnatcatcher habitat. These studies will identify the characteristics of the biological communities occupied by the gnatcatcher. In addition, observations of gnatcatcher activity will identify how the gnatcatcher uses various elements of these communities. The result of these life-cycle and habitat studies will be greater understanding of the habitat requirements of the gnatcatcher, and how it uses habitat.

These research studies will be carried out under the guidance of the Reserve Management Committee, which will refine their scope and integrate them into the proposed multi-species management and research plan for the Reserve.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

### **Population Viability**

The availability and long-term protection of additional suitable habitat for the California gnatcatcher outside of the reservoir project impact zone will mean that the population within the 9000-acre Reserve will likely remain viable during and following construction. Habitat enhancement and recovery following removal of cattle grazing on the North and South Hills, at lake Skinner, and on Shipley Reserve should add to the existing acreage of suitable habitat within the Reserve.

### **Range of the Species**

Without the project, it is likely that the existing population of California gnatcatchers on the North Hills would ultimately be surrounded by development and isolated. Fire and other human disturbance would be likely. During the probable fire in this area, there would be no readily available escape route of suitable habitat for these birds to other suitable habitat. The range of the birds might shrink under the without-project condition. Similar fire scenarios would ultimately affect the South Hills and the Shipley Reserve. With the project's protection and management features, the potential for catastrophic fire will be reduced and habitat will be preserved, protected, and connected to South Hills habitat by corridors of open space along the outer base of both dams.

### **Habitat Reduction**

With implementation of this MSHCP, the project will result in a loss of approximately 1220 acres of suitable coastal sage scrub habitat. Preservation of 4,779 acres of suitable habitat on the Reserve, and enhancement and protection of up to 1390 acres of currently degraded habitat, which without the Reserve would not have received a similar level of conservation, should offset this loss. Compared to the without-project condition for the impact area, there would be a net improvement in conditions for the California gnatcatcher.

### **Species Access to Habitat**

With implementation of this MSHCP, the California gnatcatcher would have greater access to habitat within the 9000-acre Reserve than it presently has. Under the current condition (and the without-project condition), agriculture (and planned development) would isolate habitat. The Reserve provides for corridors to improve gnatcatcher habitat access.

### **Long-Term Protection of the California Gnatcatcher**

The Reserve will promote efforts to preserve the species, both by protecting this population of birds in southwestern Riverside County and by providing research which will better define the habitat requirements of the gnatcatcher in similar areas.

### **Impacts on Recovery Efforts**

The Reserve will improve the overall prospects for population recovery and eventual delisting of the California gnatcatcher, both as a result of the habitat conserved and managed and as a result of research into the habitat requirements of the bird.

### **Project Interference with Reproductive or Other Behavior**

Although construction of the Domenigoni Valley Reservoir Project may interfere with territorial behavior and associated nesting behavior, the overall mitigation program should minimize this impact and provide for alternative territories for the impacted birds. In the long-term, the existence of the Reserve will promote normal behavior and stable reproduction and recruitment to the population due to management efforts to reduce levels of disturbance from grazing, cow bird predation, and similar adverse influences.

### **Project Impacts on "Extinction of the Species"**

The project will have a short-term adverse impact (disturbance) on a portion of the population on the Reserve area, but as mitigated is intended to have a long-term beneficial impact on the California gnatcatcher population.

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## **A-2 HCP FOR THE FERRUGINOUS HAWK (*Buteo Regalis* Gray)**

### **GENERAL**

This pre-listing HCP describes the general status of current knowledge concerning the ferruginous hawk. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP. Project impacts to the ferruginous hawk would be limited to loss of over-wintering habitat for two individuals observed to use Domenigoni Valley habitat during the winter months for foraging.

### **THE PLANNING PROCESS**

#### **Other Programs**

The ferruginous hawk is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

#### **The Planning Process**

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be utilized by the species within the HCP area.

### **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to the ferruginous hawk (two overwintering individuals) will occur at the initiation of construction, when foraging habitat within the valley is removed for use as borrow for dam construction.

### **THE FERRUGINOUS HAWK**

#### **Distribution and Habitat Associations**

The ferruginous hawk is the largest and most powerful member of its genus (Bent 1961, Houston and Bechard 1984), and is primarily associated with open grasslands in western North America (Bent 1961, American Ornithologist's Union 1983, Houston and Bechard 1984, Schmutz 1984, Root 1988, Johnsgard 1990). Like many raptors, the birds are sexually dimorphic, with females outweighing the males (1231 grams to 1059; Ehrlich et al. 1988, Johnsgard 1990).

Within southern California, they are reported as a winter visitant (Grinnell and Miller 1944, Bent 1961, Garrett and Dunn 1981, American Ornithologist's Union 1983, Unitt 1984) arriving in September or October and remain until March or April (Garrett and Dunn 1981, Unitt 1984). Ferruginous hawks reach their highest abundances in habitats that consist of large grasslands surrounded by elevational changes, such as ridges or hills where birds can nest (Johnsgard 1990). Root (1988) in his analysis of Christmas Bird Count data, found that *Buteo regalis* avoids regions that



receive less than 20 cm of precipitation per year, and that they rarely are observed below 610 meters of elevation. This general elevational limit is not apparent for California populations. The ferruginous hawk is considered rare in many areas of its former range, with many locations consisting largely of ephemeral populations (Lokemoen and Duebbert 1976, Houston and Bechard 1984, Ehrlich et al. 1988, Root 1988).

### **Population Density and Space Use**

Estimates of population densities vary widely with the type of habitat and availability of prey, ranging from 1 pair per 10 km<sup>2</sup> to 1 per 117 km<sup>2</sup> (Lokemoen and Duebbert 1976, Gilmer and Stewart 1983, Schmutz 1984). Most seem to average about 16 - 20 pairs per km<sup>2</sup> in grasslands (cf. Lokemoen and Duebbert 1976, Johnsgard 1990). Ferruginous hawks do not seem to be territorial, but information to definitely settle this question is lacking (Johnsgard 1990). The absence of aggressive encounters towards conspecifics (Johnsgard 1990) would seem to support this view, although this may also be a result of spatially dispersed populations. Typically, nests of different pairs are separated by 0.8 to 2.5 km (Lokemoen and Duebbert 1976).

Juvenile mortality during the first year is quite high, on the order of 66% (Schmutz and Fyfe 1987). Adult mortality, however is relatively low, approximately 1 - 9% a year (Schmutz and Fyfe 1987).

### **Reproduction**

Ferruginous hawks construct large nests primarily in trees, although cliffs, power line towers, and even ground sites are occasionally used (Bent 1961, Lokemoen and Duebbert 1976, Fitzner et al. 1977, Gilmer and Stewart 1983, Houston and Bechard 1984, Schmutz 1984, Ehrlich et al. 1988, Johnsgard 1990). Nest site selection is dependent on a number of variables including; prey availability, security, microclimate, winds, and visibility (Bent 1961, Lokemoen and Duebbert 1976, Fitzner et al. 1977, Gilmer and Stewart 1983, Schmutz 1984, Johnsgard 1990). Both sexes participate in the construction and maintenance of the nest and brooding of the offspring (Ehrlich et al. 1988, Johnsgard 1990). Like most raptor species, ferruginous hawks are monogamous (Ehrlich et al. 1988, Johnsgard 1990).

Two to four eggs are laid asynchronously at approximately two day intervals with incubation beginning with the first (Lokemoen and Duebbert 1976, Johnsgard 1990). Mean clutch size varies from 2.8 eggs per nest to 4.3 (Howard and Wolfe 1976, Lokemoen and Duebbert 1976, Smith et al. 1981, Gilmer and Stewart 1983). Both sexes incubate the eggs for 28 - 33 days until the young hatch (Ehrlich et al. 1988, Johnsgard 1990). Brooding occurs for an additional 44 - 48 days until fledging (Ehrlich et al. 1988, Johnsgard 1990). Only one brood is produced per year (Ehrlich et al. 1988).

Nesting success is apparently related to the structure in which it was constructed. Gilmer and Stewart (1983), for example, reported that 87% of pairs nesting in power line towers fledged young, compared to about 63% for other types of structures. Interestingly, more young were fledged per nest when they were constructed on the ground (2.8), than in towers (2.6) or trees (2.0), even though fewer ground nests (33%) survived the breeding season. No doubt this is because of hatchling mortality from falls or sudden storms and wind destroying nests built in towers or trees (Gilmer and Stewart 1983).

Ferruginous hawk reproduction is also highly dependent on prey availability. Smith et al. (1981) demonstrated a significant relationship between jackrabbit densities and clutch size as well as the total number of young fledged. In their study area, fully 90% of the diet consisted of *Lepus californicus*.

It should also be noted that, especially during the incubation period, ferruginous hawks are very sensitive to human activities and will often abandon the nest if disturbed (Smith et al. 1981, Howard and Wolfe 1976, Lokemoen and Duebbert 1976, Johnsgard 1990).

### **Food Habits**

Ferruginous hawks hunt primarily in the early morning and late afternoon on a number of diurnal mammals (e.g. Bent 1961, Fitzner et al. 1977, Smith et al. 1981, Gilmer and Stewart 1983, Root 1988, Johnsgard 1990). They have several different foraging strategies including a low skimming approach, still-hunting from a perch and aerial hunts from high altitude (Bent 1961, Lokemoen and Duebbert 1976, Johnsgard 1990). Like all raptors, ferruginous hawks locate prey visually. They have excellent eye sight, and can see objects 2-3 times further than can a human (Synder and Miller 1978). Largely, this is a result of a flattened eye lens providing a long focal length (Synder and Miller 1978). Prey are killed primarily by driving the talons into their body; the hooked bill may be used to finish animals off (Ehrlich et al. 1988).

Within a given locality, ferruginous hawks tend to specialize on a single type of prey. Smith et al. (1981), for example, noted that almost 90% of the diet was composed of black-tailed jackrabbits. Other workers such Lokemoen and Duebbert (1976) reported that ground squirrels were 68% of the diet, with jackrabbits comprising only 17%. Gilmer and Stewart (1983) found that Richardson's ground squirrels were 55 - 75% of total prey taken, and that 15 - 21% of prey items were pocket gophers. Some dietary specialization may be explained in terms of body size variation within prey. Jackrabbits, for example, vary considerably in body mass in different regions of their distribution, and they may simply be too large in some areas for ferruginous hawks to transport (Lokemoen and Duebbert 1976). Additionally, insects, birds, and snakes are infrequently taken (Bent 1961, Ehrlich et al. 1988, Root 1988, Johnsgard 1990). Some cooperative hunting of large jackrabbits has been observed (Smith et al. 1981, Root 1988).

### **Factors affecting Distribution**

The ferruginous hawk was first listed on the Audubon Society's Blue List in 1972 (Tate 1981, Johnsgard 1990). Inclusion on the Blue List is significant because it is a warning of those bird species undergoing population or range reductions. From 1982 to 1986, it was considered a species of special concern (Ehrlich et al. 1988, Johnsgard 1990), and it is currently listed by the state of California. Cultivation of grasslands is considered to be a major reason for the population decline, since ferruginous hawks nest exclusively in these areas (Houston and Bechard 1984, Schmutz 1984, Johnsgard 1990). Tate (1981) and Houston and Bechard (1984) both suggested that nest sites were limiting and Tate (1981) reported increases in areas where artificial nests were provided. Pollutants may also have resulted in population decreases. Widespread pesticide use in agricultural lands resulted in the formation of underweight and dangerously thin shelled eggs in many species of raptors (Ratcliffe 1967). Although this phenomena was first noticed in the mid 1940's, it wasn't until 1967 that the connection was made with chemical contamination (Ratcliffe 1967).

### **Status of Endangered Species Listing**

The ferruginous hawk was elevated to federal Candidate 2 status in 1992. It is not likely that the species will be listed as threatened or endangered by either California or the federal government in the near future.

### **Conservation Issues**

Loss of grassland habitat is considered the primary conservation issue. Pesticide use is also considered a major conservation issue.

### **MITIGATION STRATEGIES**

The Reserve will contain approximately 2,000 acres of suitable foraging habitat for this species, and perches adjacent to this habitat may be provided for the individuals which winter in or adjacent to the Reserve. The species will probably also benefit from efforts to improve habitat quality on the Reserve. The Reserve will also provide pesticide-free areas for the species to forage.

### **IMPLEMENTATION AND FUNDING**

Implementation and funding for this plan is described in Section 3. Research proposed will be designed in 1992 and carried out from 1993 through 1998.

### **SUPPORT FOR A "NO JEOPARDY" FINDING**

The two ferruginous hawks observed foraging within the reservoir project impact area do not represent a significant population of this species, and the reservoir project will not affect the species' long-term prospects for survival. Action to improve foraging habitat in the Reserve, and provision of suitable raptor perches adjacent to this habitat, will attract the bird to the Reserve, where it will probably be able to overwinter successfully.

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**HABITAT CONSERVATION PLAN FOR THE LOGGERHEAD SHRIKE (*Lanius ludovicianus-Gambeli*)**

This pre-listing HCP describes the general status of current knowledge concerning the loggerhead shrike. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

The number of loggerhead shrikes inhabiting the reservoir project impact area is unknown, but two nesting pairs were observed in the valley during 1989 and 1990 surveys. Impacts to a large population are unlikely.

**THE PLANNING PROCESS****Other Programs**

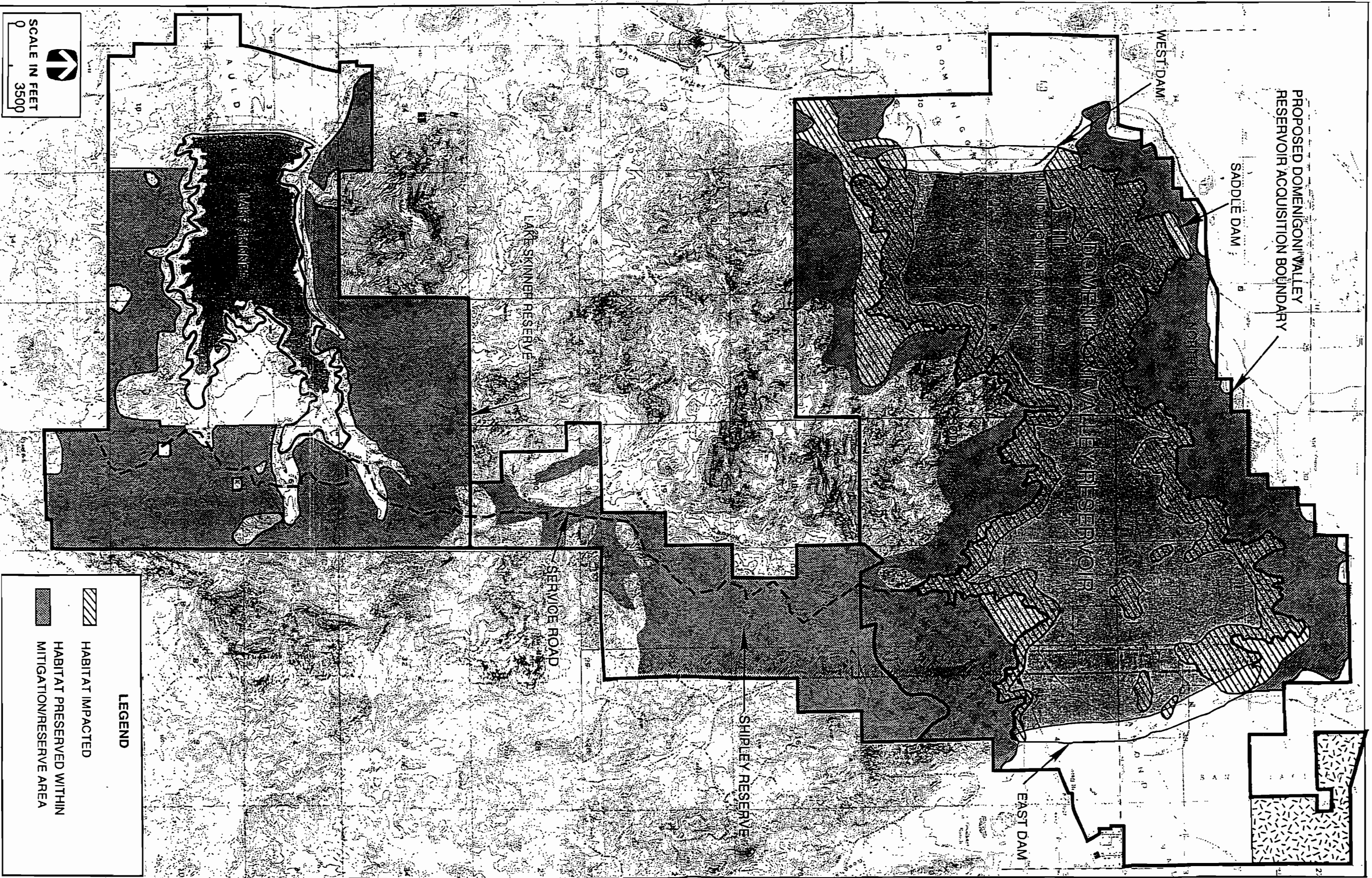
The loggerhead shrike is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

**The Planning Process**

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-3-1).

**PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to the loggerhead shrike will occur during initial construction periods, when suitable habitat will be lost. The estimated level of take at project completion is 2,200 acres with low population densities.



Habitat of Loggerhead Shrike, Impact Area and Mitigation Area (reserve).

Based on preliminary field observations.

FIGURE A-3-1

## **THE LOGGERHEAD SHRIKE**

### **Distribution and Habitat Associations**

Loggerhead shrikes are part of an Old World group of 74 carnivorous songbirds that reach their greatest diversity in tropical Africa (Weathers 1983). Only two species inhabit the temperate regions of North America (Weathers 1983). Within the western hemisphere, shrikes are found from southern Canada through parts of both mainland and Baja California (Miller 1931, Bent 1950, Weathers 1983, Fraser and Luukkonen 1986, Ehrlich et al. 1988).

The California loggerhead shrike is a subspecies especially common in the central valley and throughout coastal southern regions (Miller 1931, Bent 1950, Grinnell and Miller 1984, Unitt 1984), although it is also found in eastern Oregon, parts of Washington and Idaho, the northern part of the Great Basin desert, and possibly on some islands off the shore of Upper and Lower California (Miller 1931, Bent 1950, Garrett and Dunn 1981, Grinnell and Miller 1984, Phillips 1986). Shrikes are almost exclusively associated with open areas that have well dispersed bushes, trees or man-made objects for perches, and studiously avoid dense chaparral or brush that would obscure their prey (Miller 1931, Bent 1950, Harrison 1978, Garrett and Dunn 1981, Weathers 1983, Unitt 1984, Grinnell and Miller 1986, Bohall-Wood 1987, Ehrlich et al. 1988). Weathers (1983), for example, found that population densities at Deep Canyon near Palm Springs, California were greatest on open rocky slopes that contained scattered ocotillo and palo verde trees.

Perch sites are very important to the ecology of this species. Shrikes locate their prey visually and then quickly swoop down upon it (Miller 1931, Bent 1950, Craig 1978, Morrison 1980). Interestingly, traditional forms of agriculture employing hedgerows probably provided excellent habitat (Bent 1950), and even today roadside areas containing barbed wire fences, power lines or telephone poles are preferred habitats (Bent 1950, Grinnell and Miller 1986, Bohall-Wood 1987). Bohall-Wood (1987) reported that of 1661 birds she observed, more than 82% were perched on man-made items, with the great majority (61%) on power lines.

### **Population Density and Space Use**

Loggerhead shrikes are migratory above 38-40 degrees latitude, but tend to be permanent residents to the south (Miller 1931, Bent 1950, Grinnell and Miller 1986). Densities may be seasonally dependent, especially if migratory birds add to the resident population. At Deep Canyon mean annual density was 1.8 - 3.2 birds/40 ha (Weathers 1983). Although not directly comparable, Christmas bird counts at 664 sites across the United States gave an estimate of 2.8 individuals spotted per hour (Root 1988).

Regardless of whether migratory or resident, shrikes establish and aggressively defend exclusive territories (Miller 1931, Bent 1950, Smith 1973, Weathers 1983, Fraser and Luukkonen 1986, Ehrlich et al. 1988). Males, in particular, demonstrate strong territory fidelity, and migratory birds will return to the same area repeatedly (Miller 1931, Bent 1950, Smith 1973, Fraser and Luukkonen 1986, Ehrlich et al. 1988). Somewhere within their domain (not necessarily centrally located) is what has been euphemistically termed a "headquarters" that usually contains the roost or nest (Miller 1931, Bent 1950). It is from this vantage point that shrikes maintain a lookout for intruders (Bent 1950). Shrikes will defend their territories, but generally only through ritualized displays; little physical contact actually occurs (Smith 1973).

Size of the territory appears to be labile (Bent 1950). Estimates in California range from 14-18 hectares in the Mojave (Miller 1931) to 20 hectares at Deep Canyon (Weathers 1983). Bent (1950) felt that territory size was dependent not only on habitat characteristics, but also on the local abundance of prey. Shrikes share space only during the breeding season, and are exclusively solitary the remainder of the year (Miller 1931, Bent 1950, Weathers 1983). The birds are active diurnally, from just before sunrise to approximately half an hour after sunset (Miller, Bent 1950). Evenings are spent at the roost during the non-reproductive season (Miller 1931, Bent 1950).

## **Reproduction**

The shrike breeding season is earlier than most passerines. Birds may begin to pair as early as mid November in southern regions (Miller 1931, Bent 1950, Weathers 1983). During courtship the male will exhibit flight displays and feed the female. Mock pursuits may also occur (Bent 1950, Ehrlich et al. 1988). Double broods are common, and triples sometimes occur as well, depending on the geographic range (Miller 1931, Harrison 1978, Weathers 1983, Ehrlich et al. 1988). Construction of a cup-like nest takes place during late February to early April and is primarily engineered by the female (Bent 1950, Harrison 1978, Weathers 1983; but see Fraser and Luukkonen 1986, Ehrlich et al. 1988). It is normally built 3 to 30 feet up in the crotch of a large tree limb with overhanging vines or other vegetation to hide it (Bent 1950, Ehrlich et al. 1988). Shrikes are not finicky, and so nest materials consist of whatever is most abundant locally (Bent 1950). Twigs, grasses, forbs and even sheep wool are all utilized (Bent 1950, Harrison 1978, Ehrlich et al. 1988).

Eggs begin appearing by late March in southern latitudes (Bent 1950, Unitt 1984), and possibly again in July (Bent 1950). Normally, 5 to 6 grayish eggs constitute a brood (Miller 1931, Bent 1950, Harrison 1978, Weathers 1983, Ehrlich et al. 1988). Eggs weigh about 4.6 grams and are 24.1 by 18.5 mm on average (Bent 1950). Incubation begins before the last egg is laid and consequently, the last chick is always smaller than its siblings (Miller 1931, Harrison 1978, Weathers 1983).

Female shrikes incubate their eggs for 16 days, during which time the male provides food (Miller 1931, Bent 1950, Applegate 1977, Harrison 1978, Weathers 1983, Ehrlich et al. 1988). Hatchlings are bright orange at birth (Bent 1950) and are cared for by both parents. The male, however, furnishes the bulk of the food (Miller 1931, Bent 1950, Applegate 1977, Ehrlich et al. 1988). Fledging occurs at about three weeks, but the parents continue to feed the young for an additional period, sometimes up to three or four more weeks (Miller 1931, Bent 1950, Applegate 1977, Ehrlich et al. 1988).

Family groups begin to disintegrate starting in early July, when parents drive off their young and refuse to feed them (Miller 1931, Bent 1950, Weathers 1983).

## **Food Habits**

Loggerhead shrikes come by their common name "butcher birds" because of their unique habit of impaling prey items (such as birds, lizards and mice) on thorns, barbed wire fences, yucca blades or other sharp objects. Although many hypotheses have been proposed to explain this behavior (e.g. Watson 1910, see Fraser and Luukkonen 1986), it is mostly likely an adaptation for consumption of large prey items and not primarily a caching behavior (Bent 1950, Weathers 1983). Apparently the birds' feet are too weak to hold the prey while it is being torn apart.



Loggerhead shrikes have been characterized as having a nondiscriminate taste for "all sorts of animal matter" (Bent 1950). They are certainly catholic in their feeding habits and consume rodents, birds, reptiles, and snakes (Miller 1931, Bent 1950, Slack 1975, Craig 1978, Morrison 1980, Fraser and Luukkonen 1986, Grinnell and Miller 1986). Their main food source, however, appears to be insects (Bent 1950, Grinnell and Miller 1986, Root 1988). Orthoptera alone constitute between 30-75% of the diet (Bent 1950). Shrikes have a distinctive foraging strategy. They sit immobile on a perch and scan the immediate area for potential prey items. If nothing is seen within a few minutes, they hop to another perch and repeat the process (Bent 1950, Morrison 1980). This technique is apparently used successfully to prey upon nestling gnatcatchers, vireos and other birds (Miller 1983, Weathers 1983).

### **Factors Affecting Distribution**

Since Loggerhead Shrikes are relatively indiscriminate in their foraging habits, prey density does not seem likely to affect their distribution patterns, but do affect abundance within a given area. The availability of suitable territories, however, may be limiting. Shrikes are virtually nonexistent in dense chaparral or forest and require open areas with suitable perches (Bent 1950, Bohall-Wood 1987).

### **Status of Endangered Species Listing**

Loggerhead shrikes have been on the American Birds' Blue List since 1972 because of declining numbers (Tate 1981). Estimates range from an annual decline of 8.9% in California (U.S. Fish and Wildlife 1985) to 70% in Connecticut (Tate 1981). Fraser and Luukkonen (1986) report a 4% annual decline since 1968. Numerous reasons have been cited, focussing on the effects of habitat loss and pesticides (Tate 1981, U.S. Fish and Wildlife 1985, Fraser and Luukkonen 1986, Robbins et al. 1986).

### **Conservation Issues**

Development and agriculture in the project area may affect populations of this species by reducing habitat and causing pesticide-related mortality or morbidity.

### **MITIGATION STRATEGIES**

The species' foraging habits suggest that no specific actions beyond habitat preservation are needed to ensure species viability. Management of the Reserve's 7,000 acres of suitable habitat, which will improve habitat quality by reducing grazing and restoring native communities, should have a positive impact on this species. The habitat within the Reserve, with its variety of structures and high number of potential prey species will support a viable population of the species. In addition, enhancement of sage scrub habitat, including low-cost efforts to return non-native grasslands on the North Hills to a more natural community type such as sage scrub would improve foraging habitat within the Reserve.

### **SUPPORT FOR A "NO JEOPARDY" FINDING**

Loggerhead shrike populations in the reservoir impact area are probably not significant, and removal of their habitat will not affect regional population viability. The Reserve will provide a large area of suitable habitat for the species, allowing the birds currently using lower-elevation habitat to move into suitable habitat outside of the impact area. The result of acquisition and preservation of the Reserve will be long-term population viability.

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## HABITAT CONSERVATION PLAN FOR MITIGATION OF IMPACTS TO BELL'S SAGE SPARROW (*Amphispiza belli belli*)

### GENERAL

This HCP describes the general status of current knowledge concerning Bell's sage sparrow. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section Five of this HCP.

Development of the Domenigoni Valley Reservoir at the Domenigoni Valley location would impact approximately 2,200 acres of habitat for the Bell's sage sparrow, a California Species of Special Concern and proposed for federal Candidate Species (Category 2). The Bell's sage sparrow population density in the impact area habitat is not known, but during FEIR studies it was found to be relatively common within RSS and chaparral habitat throughout the impact area and the proposed Reserve boundaries. The focus of this plan is on 1) avoidance of impact and 2) preservation of RSS and chaparral habitat for the species as a part of the Reserve.

### THE PLANNING PROCESS

#### Other Programs

Bell's sage sparrow is not currently a focus of other conservation programs, although it is currently being reviewed for federal candidate status (Category 2). Significant planning for this species at the agency level is not anticipated for at least several years.

#### The Planning Process

The HCP for the Bell's sage sparrow outlined in this was developed from a review of field data from the Domenigoni Valley Reservoir Project FEIR. During the field surveys for this project, biologists recorded observations of Bell's sage sparrow. Based on these observations and on a review of the literature, it has been possible to identify habitats within the project impact area and within the Reserve which are suitable for occupation by Bell's sage sparrow (Figure A-4-1). These observations suggest that the Reserve will provide mitigation for project impacts to this species on a more than 3:1 ratio. More precise delineations of occupied habitat of Bell's sage sparrow within the Reserve will be developed during planned resource inventories and focused research to be conducted under this HCP.

### PROJECT SCHEDULE AND TIMING OF IMPACTS

Impacts to Bell's sage sparrow, which generally inhabits the sage scrub habitat and chaparral in the impact area, will occur early in the project implementation, when habitat is taken for archeological explorations, geotechnical investigations, and fire control. Following construction initiation in 1995, additional impacts may occur as construction activity increases and noise and dust affect the birds near the valley floor. The final phase of impact will occur when the reservoir is filled. The estimated level of take at the project completion is 2,200 acres of occupied and suitable habitat

## **BELL'S SAGE SPARROW**

### **Status and Distribution**

Although extensive research has been conducted on sage sparrows associated with Great Basin sagebrush, work on the coastal Bell's sage sparrow has been limited. Bell's sage sparrow is a recognized subspecies (Garrett and Dunn, 1981) which utilizes a variety of habitats in southern California, with a range extending from Santa Barbara to San Diego Counties and extending inland to the base of the San Gabriel, San Bernardino, and San Jacinto mountains. In the south of the range, Bell's sage sparrow has been found as far inland as El Cajon. It has generally been found in dense chamise chaparral and in coastal sage scrub, and in the ecotone between chaparral and sage scrub habitat types. Sage sparrows in general are known to use less structurally complex habitats, but Bell's sage sparrow has generally been associated with more mature, dense patches of vegetation. The particular habitat requirements of Bell's sage sparrow are not well documented. Regional distribution of Bell's sage sparrow is currently under investigation in support of studies regarding potential listing (CFR 56: 58804-58836).

Bell's sage sparrow is described as uncommon to fairly common throughout its range, depending on the characteristics of the local habitat (Garrett and Dunn 1981; Grinnell and Miller 1944; AOU 1957; AOU 1983; CDFG 1988). Within the impact and proposed Reserve, it was observed frequently during field surveys conducted in 1989 through 1991. In the FEIR, field biologists classified it as "common" both on the hills within the Domenigoni Valley and on the north-facing aspect of the North Hills, part of the Reserve. *It was found in sage scrub on the Reserve during preliminary surveys of this site, and in similar habitat at the Motte Reserve and at the Harford Springs site.* It is a resident, sedentary species, with an unknown territory size. Population estimates are not available at this time.

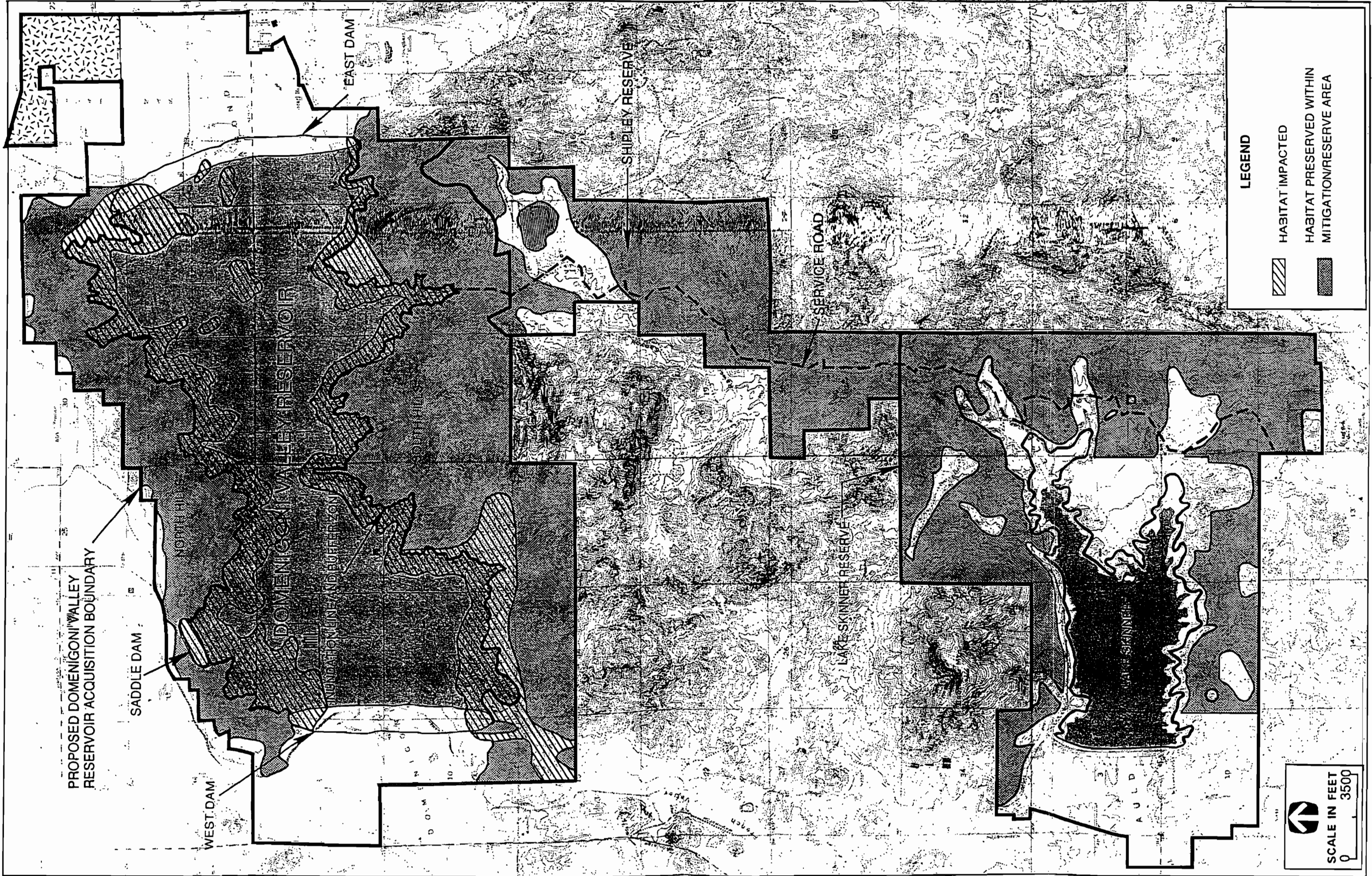
Because Bell's sage sparrow has not been proposed for listing, detailed studies of its life history, habitat requirements, and distribution have not yet been undertaken. Considered common in many areas, it is being considered for listing primarily because of loss of sage scrub and chaparral habitats within its historic range. It is assumed that loss of these habitats will necessarily result in fragmentation and reduction of populations, threatening population viability throughout its range; thus the recent decision to consider the species for federal Candidate (Category 2) status.

### **Status of Endangered Species Listing**

Bell's sage sparrow is proposed for Federal Candidate (Category 2).

### **Conservation Issues and Options**

Conservation of this species would appear to be related to preservation and enhancement of coastal sage scrub and chamise-dominated chaparral communities. Both of these communities are subject to disturbance from fire and grazing, with subsequent type-conversion to exotic grasslands communities. The primary conservation goal at this time is therefore preservation of these communities and prevention of type-conversion following disturbance. Development of coastal sage scrub habitat is also a significant concern; in response to the potential listing of the California gnatcatcher (*Poliophtila californica californica*), sage scrub communities are being lost rapidly, as landowners clear their land of this community in anticipation of having to meet the requirements of the Endangered Species Act. This issue affects planning for Bell's sage sparrow as well.



Habitat of Bell's Sage Sparrow, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.

## MITIGATION STRATEGIES

Bell's sage sparrow is relatively common in the region at this time and probably well distributed within its range; therefore preservation of habitat is the primary conservation strategy to be pursued in the near future. Preservation of large contiguous blocks of RSS and chaparral communities would appear to be a viable method for ensuring the continued survival of the species.

Within the project area, take may be limited to some extent by the ability of the sage sparrow to move into habitat outside of the impact zone. There are approximately 7,000 acres of suitable sage scrub and chaparral habitat above the long-term reservoir inundation line which birds within the impact zone should move to readily when impacts begin to occur in 1992-1994. Efforts to enhance the recovery and re-growth of sage scrub habitat on the North and South hills for future occupation by the California gnatcatcher will contribute to the reservoir of suitable habitat for the sage sparrow as well. The areas being enhanced were very probably occupied by the sage sparrow prior to disturbance. Initial surveys in 1992 confirm that this sage scrub habitat is shared by these two species.

Impacts to this species will be monitored during construction, with focused searches for the birds being conducted within the impact area and within the Reserve. Banding studies will be conducted throughout the Reserve and the impact area; focused searches on a periodic basis should be adequate to determine the viability of the habitat above the inundation line of 1750 feet NGVD.

Long-term net gain of Bell's sage sparrow within the Reserve will be ensured by management of the Reserve's approximately 9,000 acres. Grazing within the Reserve has resulted in degraded sage scrub and chaparral habitat in many areas. Removal of this disturbance and other human disturbance will permit much of the native habitat to reestablish itself. Protection of the Reserve from excessive fire, a part of the overall HCP will also help prevent further type conversion of sage scrub and chaparral habitats. Acquisition of the North Hills mitigation area, which would otherwise be threatened by development and human disturbance, will ensure an area of high quality RSS habitat for this species. Finally, adding habitat at Lake Skinner to the Reserve, and management of this habitat to reduce disturbance, will result in long-term viability of Bell's sage sparrow in this area.

Comparing reservoir project impacts to the actions proposed under the HCP, the net effect of implementation of the HCP will be:

<u>Impact</u>		<u>Mitigation</u>
Loss of 2,200 acres of suitable habitat	vs	Preservation of 7,000 acres of suitable habitat and Enhancement of habitat

In addition to preservation and enhancement of habitat, resource inventories and more focused studies of the Reserve will document the relative abundance of Bell's sage sparrow in various habitats within the Reserve and lead to a better understanding of life history and habitat requirements of this species within the region. Initially, survey biologists will characterize habitat in which the bird is observed by habitat type, density, aspect, and slope. Focused studies will then be designed and conducted, both on the Reserve and in other areas of the region, in support of efforts to determine the population viability of the species in the region.

This research will result in additional data which may be used to characterize the habitat requirements of the species within western Riverside County. The resource inventories will also document occupation of the Reserve by Bell's sage sparrow. The intensive monitoring of the sage scrub enhancement proposed in this HCP will also contribute to an understanding of the habitat requirements of the species. Observations of Bell's sage sparrow within the recovering sage scrub communities of the North Hills and South Hills may be correlated with the detailed data collected about the habitat characteristics in these areas. This correlation between habitat characteristics and observations of use may add insight into the habitat requirements of this species.

Specific research design for Bell's sage sparrow studies to be undertaken as a part of this HCP will be developed as described in Section Three and appended to this HCP.

### **IMPLEMENTATION AND FUNDING**

Implementation and funding of this HCP is described in Section Three. Research proposed will be designed in 1992 and carried out from 1993 through 1998.

### **SUPPORT FOR A "NO JEOPARDY" FINDING**

The Domenigoni Valley Reservoir Project will not, by itself, pose a threat to the viability of the population of Bell's sage sparrow, either in Riverside County or within its range. The species is relatively common within the project area and the Reserve, and utilizes the most common native habitat types in the region, chamise chaparral (over 200,000 acres) and RSS (over 100,000 acres). The Reserve will protect a large contiguous area of occupied habitat, including approximately 5,600 acres of RSS and 1,400 acres of chamise chaparral. Development in the region is already extensive in the basin surrounding the Reserve. The presence of the Reserve will therefore protect a population of Bell's sage sparrow which might otherwise be threatened. The Reserve may also be expanded to the east and west by other habitat conservation agencies, linking it (to the east) to the Cleveland National Forest. Fencing and fire control of the North Hills, combined with the extensive habitat enhancement program for the area, will result in preservation of over 700 acres of sage scrub which, based on experience, would otherwise have been lost to development or fire.

The project will result in a net habitat reduction for this species; however, long term preservation, management, and habitat enhancement of the Reserve will result in an increase in habitat quality in areas which until recently have been heavily disturbed by grazing and fire. By reducing this type of activity (with fencing and a fire control program), the management of the Reserve should result in an increase in habitat quality. This potential for improved habitat quality on over 7,000 acres within the Reserve should more than offset the habitat losses due to reservoir construction and inundation.

Creation of the Reserve and its use as a research resource will also promote long-term preservation of the species. The Reserve may be the core of a proposed county-wide reserve area, ultimately linked to other key habitat areas in this portion of the county. The Reserve may therefore contribute to long-term recovery efforts for this species.

The project will have localized short-term adverse impacts and may interfere with territorial and nesting behavior of Bell's sage sparrow the construction and inundation period; however, the project, with the proposed mitigation implemented and preservation of approximately 7,000 acres of suitable and occupied habitat, will not contribute to the potential extinction of Bell's sage sparrow.



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## A-5 HABITAT CONSERVATION PLAN FOR MITIGATION OF IMPACTS TO SOUTHERN CALIFORNIA RUFIOUS-CROWNED SPARROW (*Aimophila ruficeps canescens*)

### GENERAL

This HCP describes the general status of current knowledge concerning Southern California rufous-crowned sparrow. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section Five of this HCP.

Development of the Domenigoni Valley Reservoir at the Domenigoni Valley location would impact approximately 2,200 acres of habitat for the Southern California rufous-crowned sparrow, a California Species of Special Concern proposed for federal Candidate Species (Category 2). The Southern California rufous-crowned sparrow population density in the impact area habitat is not known, but during FEIR studies it was found to be relatively common within RSS and to a lesser degree in chaparral habitat throughout the impact area and the proposed Reserve boundaries. The focus of this plan is on 1) avoidance of impact and 2) preservation of RSS and chaparral habitat for the species as a part of the Reserve.

### THE PLANNING PROCESS

#### Other Programs

Southern California rufous-crowned sparrow is not currently a focus of other conservation programs, although it is currently being reviewed for federal candidate status (Category 2). Significant planning for this species at the agency level is not anticipated for at least several years.

#### The Planning Process

The HCP for the Southern California rufous-crowned sparrow outlined in this was developed from a review of field data from the Domenigoni Valley Reservoir Project FEIR. During the field surveys for this project, biologists recorded observations of Southern California rufous-crowned sparrow. Based on these observations and on a review of the literature, it has been possible to identify habitats within the project impact area and within the Reserve which are suitable for occupation by Southern California rufous-crowned sparrow (Figure A-5-1). These observations suggest that the Reserve will provide mitigation for project impacts to this species on a more than 3:1 ratio. More precise delineations of occupied habitat of Southern California rufous-crowned sparrow within the Reserve will be developed during planned resource inventories and focused research to be conducted under this HCP.

### PROJECT SCHEDULE AND TIMING OF IMPACTS

Impacts to Southern California rufous-crowned sparrow, which generally inhabits the sage scrub habitat and chaparral in the impact area, will occur early in the project when land is cleared for archeological explorations, geotechnical investigations, and fire control. Following construction initiation in 1995,

additional impacts may occur as construction activity increases and noise and dust affect the birds near the valley floor. The final phase of impact will occur post-1998 when the reservoir is filled and habitat is inundated. The estimated level of take at the project completion is 2,200 acres of occupied and suitable habitat.

## **SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW**

### **Status and Distribution**

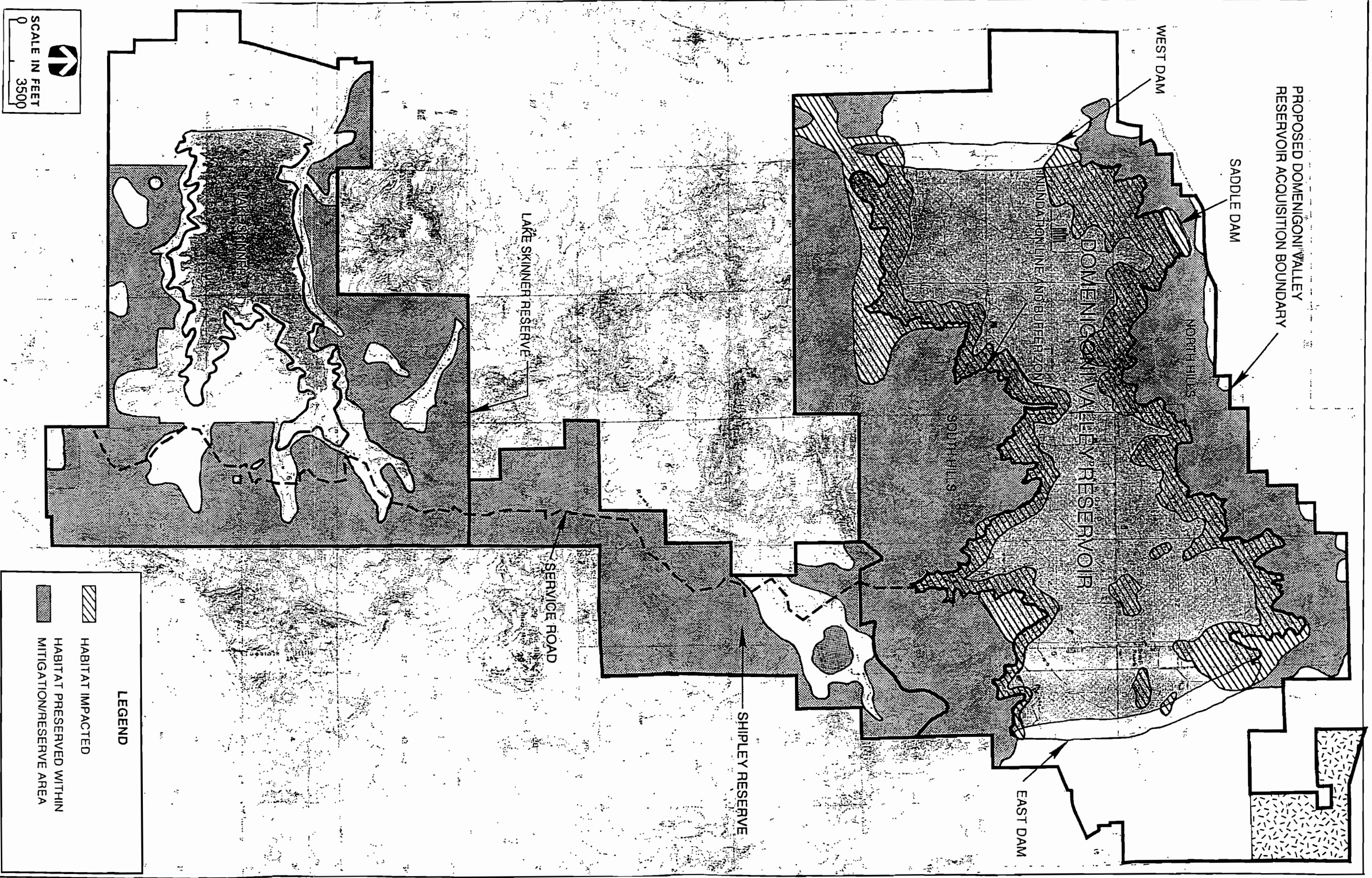
Existing data on the distribution, life history, and habitat requirements of the Southern California rufous-crowned sparrow is generally limited to incidental observations of the species. Southern California rufous-crowned sparrow is a recognized subspecies (AOU 1983; Garrett and Dunn 1981; Grinnell and Miller 1944) which utilizes a variety of habitats in southern California, with a range extending throughout coastal and inland valleys of southern California, west of the mountain ranges which separate the region from the desert regions. Its range extends from Santa Barbara to Northwest Baja California (Grinnell and Miller 1944). Southern California rufous-crowned sparrow has been found as far inland as the western edges of the deserts. It has generally been found in grass-covered hillsides admixed with sparse low brushes (Grinnell and Miller 1944).

The AOU Checklist (1983) notes the this species prefers rocky habitat. Coastal sage scrub is considered the preferred habitat with the species utilizing buckwheat, sage, and taller shrubs. The rufous-crowned sparrow does not generally occur in dense, contiguous stands of chaparral (Garrett and Dunn 1981). Southern California rufous-crowned sparrow is described as uncommon to fairly common throughout its range, depending on the characteristics of the local habitat (Garrett and Dunn 1981; Grinnell and Miller 1944; AOU 1957; AOU 1983; CDFG 1988). Within the impact and proposed Reserve areas, it was observed frequently during field surveys conducted in 1989 through 1991. In the FEIR, field biologists classified it as "common" both on the hills within the Domenigoni Valley and on the north-facing aspect of the North Hills, part of the Reserve. It was found in RSS on the Reserve during preliminary surveys of this site.

Because Southern California rufous-crowned sparrow has not been formally proposed for listing, detailed studies of its life history, habitat requirements, and distribution have not yet been undertaken. Considered common in many areas, it will be considered for listing primarily because of loss of sage scrub and chaparral habitats within its historic range. It is assumed that loss of these habitats will necessarily result in fragmentation and reduction of populations, threatening population viability throughout its range; thus the recent decision to consider the species for federal Candidate (Category 2) status.

### **Status of Endangered Species Listing**

Southern California rufous-crowned sparrow is proposed for Federal Candidate (Category 2).



Habitat of Southern California Rufous-crowned Sparrow, Impact Area and Mitigation Area (reserve).

Based on preliminary field observations.

## **Conservation Issues and Options**

Conservation of this species would appear to be related to preservation of coastal sage scrub, with secondary emphasis on ecotonal areas between RSS and chamise chaparral. These habitats are subject to disturbance from fire and grazing, with subsequent type-conversion to exotic grasslands communities. The primary conservation goal at this time is therefore preservation of these communities. Development of coastal sage scrub habitat is also a significant concern; in response to potential listing of the California gnatcatcher, sage scrub communities are being lost rapidly as landowners clear their land of this community in anticipation of having to meet requirements of the FESA or Fish and Game Code. This issue affects planning for the Southern California Rufous-crowned sparrow as well.

## **MITIGATION STRATEGIES**

The Southern California rufous-crowned sparrow is relatively common in the region at this time and probably well distributed within its range; therefore preservation of habitat is the primary conservation strategy to be pursued in the near future. Preservation of large contiguous blocks of sage scrub and mixed RSS and grasslands communities would appear to be a viable method for ensuring the continued survival of the species.

Within the project area, the effects of incidental taking may be limited to some extent by the ability of the sparrow to move into habitat outside of the impact zone. There are approximately 7,000 acres of suitable sage scrub and chaparral habitat above the long-term inundation line which sparrows within the impact zone may move to readily when impacts begin to occur in 1992-1995. Efforts to enhance the recovery of 300+ acres of disturbed sage scrub on the north and south hills of the valley will contribute to the suitable habitat for the Southern California rufous-crowned sparrow. The areas to be enhanced were found to be occupied by the sparrow prior to their recent disturbance by fire (North Hills) and grazing (South Hills).

Impacts to this species will be monitored during construction, with focused searches for the sparrows being conducted within the Reserve. Banding studies may be conducted as well. Periodic focused searches above elevation 1750 feet NGVD will document the long-term viability of the species within the Reserve.

Long-term net gain for the Southern California rufous-crowned sparrow within the Reserve will be ensured by management. grazing within the Reserve has resulted in degraded sage scrub and chaparral habitat in many areas. Removal of disturbance will permit much of the native habitat to recover. Protection of the Reserve from catastrophic fires will further reduce the potential for long-term type-conversion of sage scrub and chaparral habitats. Acquisition of the North Hills mitigation area, which would otherwise be threatened by development, will ensure an area of high-quality RSS habitat for this species. Finally, adding habitat at Lake Skinner to the Reserve, and management of this habitat to reduce disturbance, will result in long-term viability of the sparrow in this area. In addition, some of the area to be managed for SKR will consist of disturbed rocky grasslands mixed with some vegetative components of RSS habitat; these areas may also provide suitable habitat for the Southern California rufous-crowned sparrow.

Comparing reservoir impacts to the actions proposed under this HCP, the net effect of implementation will be:

<u>Impact</u>		<u>Mitigation</u>
Loss of 2,200 acres of suitable habitat	vs	Preservation of 7,000 acres of suitable habitat and enhancement of 300+ acres

In addition to preservation and enhancement of habitat, research will document the relative abundance of the sparrow in various habitats of the Reserve and will lead to a better understanding of life history and habitat requirements of this species within the region. Initially, survey biologists will characterize habitat in which the bird is observed by habitat type, density, aspect, slope, and community structure. Focused studies will then be designed and conducted, both on the Reserve and elsewhere in the region, in support of efforts to determine the population viability of the species in the region.

This research will result in additional data which may be used to support long-term protection and management efforts for the Southern California rufous-crowned sparrow. Studies which correlate habitat variables with occupation and use of habitat by the sparrow will lead to a better understanding of the factors which influence the viability of populations in the inland areas of southern California.

#### **IMPLEMENTATION AND FUNDING**

Implementation and funding of this HCP is described in Section Three. Research proposed will be designed in 1992 and carried out from 1993-1998.

#### **SUPPORT FOR A "NO JEOPARDY" FINDING**

The Domenigoni Valley Reservoir Project will not, by itself, pose a threat to the viability of the population of the Southern California rufous-crowned sparrow, either in Riverside County or within its general distribution. The species is relatively common at this time, and utilizes a wide variety of habitats in the region, taking advantage of disturbed areas of sage scrub and grasslands. The species preference for rocky hillsides keeps it outside of the path of most currently planned development. Preservation and protection of the Reserve, with its extensive areas of rocky outcrops and mixed sage scrub and grassland habitat, will create a reservoir of this habitat within the region. Fencing and fire control of this area, combined with the extensive habitat enhancement for the SKR at Lake Skinner and the Shipley Reserve, will result in maintenance of the sparse, mixed habitat favored by this species.

The project will result in a net reduction in habitat for this species; however, long-term preservation, enhancement, and management of habitat within the Reserve will increase habitat quality in areas which have recently been disturbed by over-grazing and catastrophic fires. By reducing this type of disturbance with fencing, fire control, and intensive patrols, the management of the Reserve should result in an increase in quality of habitat available to the species. The Reserve will contain over 7,000 acres of habitat suitable for occupation by this species.

Creation of the Reserve and its use as a research resource will also promote long-term preservation of the species. The Reserve will be the core of a proposed county-wide reserve area, ultimately linked to other key habitat areas in this portion of the county (the extent of reserve expansion will depend on county funding sources). The Reserve may therefore contribute to long-term recovery efforts for this

species. The project will have short-term adverse impacts and may interfere with territorial and nesting behavior of the species during the construction and inundation period; however, the project (with the proposed mitigation implemented and preservation of approximately 7,000 acres of suitable habitat, will not contribute to the potential for extinction of Bell's sage sparrow.



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## **A-6 HABITAT CONSERVATION PLAN FOR THE ORANGE-THROATED WHIPTAIL (*Cnemidophorus hyperythrus*)**

### **GENERAL**

This HCP describes the general status of current knowledge concerning orange-throated whiptail. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program adopted for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR.

Impacts to the orange-throated whiptail will occur as a result of all aspects of construction within the Domenigoni Valley. The orange-throated whiptail inhabits the coastal sage scrub and grasslands surrounding the valley floor, with population concentrations probably occurring in disturbed sage scrub areas (Figure A-6-1). Impacts to this species will be mitigated under this HCP through preservation and management of approximately 7,000 acres of suitable sage scrub, chaparral, and grasslands habitat in the Reserve.

### **THE PLANNING PROCESS**

#### **Other Plans and Programs**

The orange throated-whiptail will be a beneficiary of the on-going regional planning for preservation of coastal sage scrub communities associated with the program to preserve the California gnatcatcher and several other avian species. The California NCCP program for this habitat is the primary planning effort for the habitat of the orange-throated whiptail underway at this time.

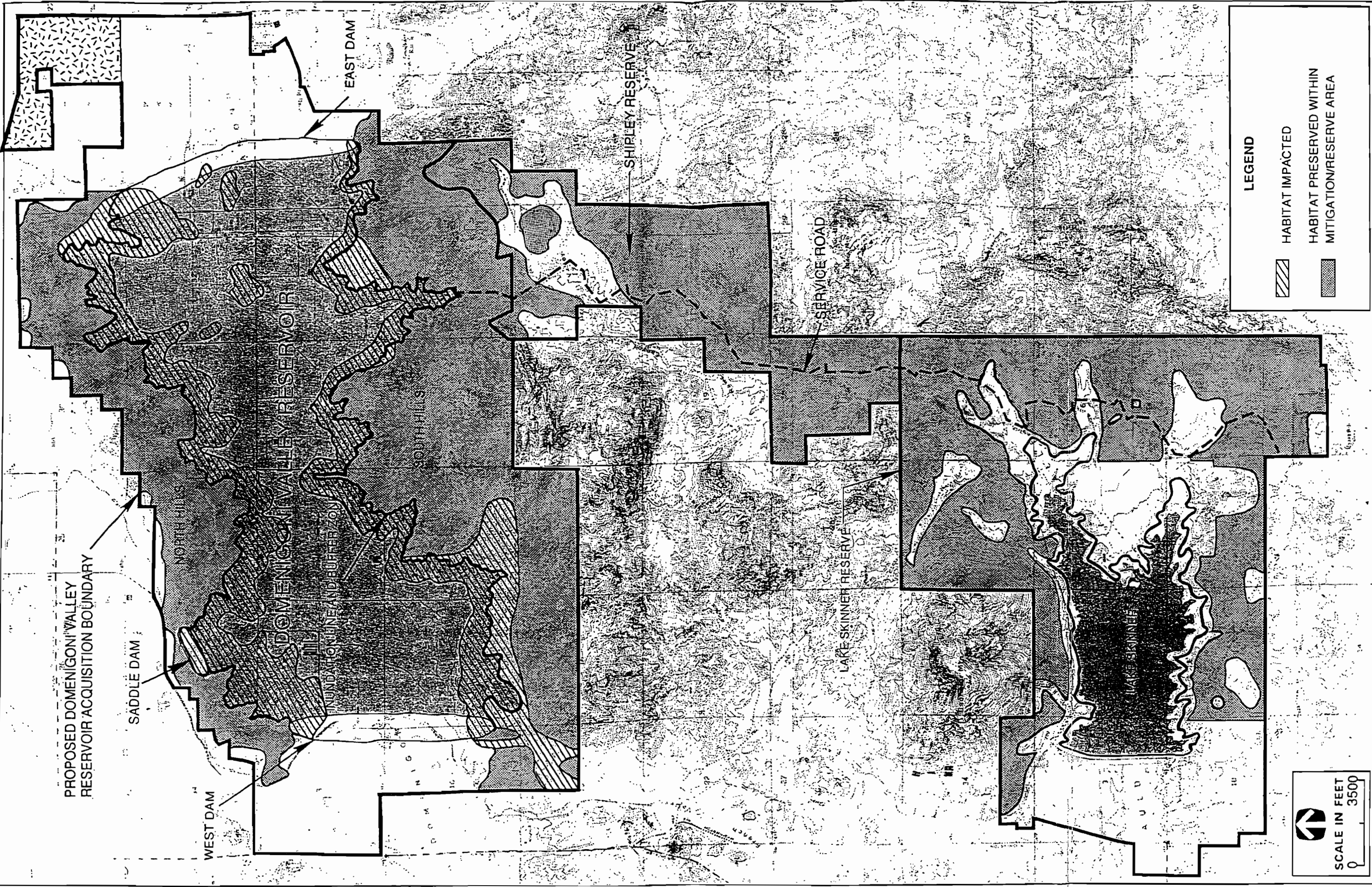
#### **The Planning Process**

This HCP was prepared by Metropolitan and the RCHCA with the assistance of its biological consultants. It is a direct outgrowth of extensive habitat evaluations carried out during project EIR studies. See Section Three for a description of the planning process and the public coordination undertaken during Domenigoni Valley Reservoir Project studies.

### **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to this species will occur in phases. Initial impacts will occur early in 1992-93 when geotechnical investigations, archeological explorations, and fire control activities begin. General construction activities will cause habitat disturbance, particularly at lower elevations, where significant dust can be expected to accumulate during dry months of the year. Inundation will be the final phase of impact, with a slow inundation of habitat occurring over a 4 to 6 year period.

Based on FEIR field studies, the orange-throated whiptail tends to favor disturbed sage scrub habitat at the site. Occupied habitat to be disturbed will therefore be approximately 2,200 acres, with the highest populations probably occurring on the south slope of the North Hills of the Domenigoni Valley. Lower population concentrations will also be affected in more mature sage scrub.



Habitat of Orange-throated Whiptail, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.

## **THE ORANGE-THROATED WHIPTAIL**

### **Status and Distribution**

The orange-throated whiptail is native to the inland hills and plains east of the Pacific Ocean with its range extending east to the foothills of the San Jacinto Mountains and to San Geronio Pass (Glaser 1970). It is considered uncommon to relatively common within this range, with sightings in Riverside; Box Springs Mountains; Mockingbird Lake; Temescal Mountains; Gavilan Hills; Woodcrest; Reche Canyon; Moreno Valley; the badlands west of Beaumont; Diamond Valley; the San Jacinto Valley, the Shipley Reserve, Lake Skinner, and the hills between San Jacinto and Beaumont to an elevation of 1500 feet (Glaser 1970; Domenigoni Valley Reservoir FEIR 1991). In recent years, the species has been found in southern Orange County, and San Diego County south to Baja California (Pacific Southwest Biological Services, Inc. 1991). The species feeds almost exclusively on termites, and its range may therefore be limited by the availability of this food species. Based on observations during the Domenigoni Valley Reservoir Project field surveys, it appears to prefer open scrubland, a finding supported by other recent field surveys (Pacific Southwest Biological Services 1991).

According to McGurty (1980), the orange-throated whiptail prefers a generally open habitat of alternating open space and dense vegetation dominated by sage scrub and chaparral species on a rocky or shallow sandy soil. Distribution appears to be determined by the occurrence of its primary food, the western subterranean termite (Bostic 1964; Bostic 1966; Stebbins 1972). The species is occasionally found in grasslands in alluvial valleys (Pequegnat 1951; Presh 1969; Stebbins 1972). There is little information on the species life history or specific habitat requirements. The orange-throated whiptail is reputed to be a sedentary species; no migration of the species has been noted (CDFG 1988). The species is noted to begin breeding activity in April, with juveniles hatching in mid-July (CDFG 1988).

### **Status of Endangered Species Listing**

The species has been classified as a Federal candidate for listing (Category 2), primarily as a result of loss of its primary habitat, coastal sage scrub.

### **Conservation Issues**

Conservation of the orange-throated whiptail would appear to depend on preservation of large contiguous parcels of occupied habitat; habitat fragmentation and isolation of populations of this non-migratory species would probably threaten population viability.

### **MITIGATION STRATEGIES**

The Reserve contains about 5,600 acres of coastal sage scrub habitat of varying quality and an additional 2,800 acres of chaparral and disturbed grasslands, suitable/occupied habitat for the orange-throated whiptail. Population concentrations are likely in the northeast corner of the North Hills, along the south slope of the North Hills (above the inundation line, in disturbed sage scrub at the Shipley Reserve and at Lake Skinner (Figure A-6-1). The primary mitigation strategy for this species will be preservation and management of coastal sage scrub, chaparral, and grasslands habitat. In addition, research into methods for enhancing regrowth of Riversidian sage scrub, along with proposed resource inventories throughout the Reserve, will contribute to a better understanding of the habitat requirements of this species.

Evidence of populations in sage scrub of varying quality will help identify suitable habitat and may lead to better estimates of regional distribution and the factors influencing this distribution.

Finally, resource inventories and subsequent focused studies of the orange-throated whiptail will enhance knowledge of life history and species habitat requirements for use in support of regional planning for this species, as well as for use as the basis of Reserve management.

Comparing reservoir project impacts to the actions proposed in this HCP, the net effect of implementation of the HCP will be:

<u>Impact</u>		<u>Mitigation</u>
Loss of 2,200 acres of suitable habitat	vs	Preservation of 7,000 acres of suitable habitat and Enhancement of RSS habitat

Management strategies to assist the viability of the orange-throated whiptail populations on the Reserve will generally be focused on maintenance of natural communities. Additional management activities, such as providing decaying woody materials to support termites as food for the orange-throated whiptail may be considered, depending on the results of on-going management surveys and the need for such artificial enhancement of these populations.

#### **IMPLEMENTATION AND FUNDING**

Implementation and funding for this HCP is described in Section Three. Research proposed will be designed in 1992 and carried out from 1993 through 1996.

#### **SUPPORT FOR A "NO JEOPARDY" FINDING**

Although there may be a short-term loss of this species due to project impacts, preservation and management of the Reserve may result in long-term net gain for the population. Particular management activities which will ensure this long-term gain will include enhancement of sage scrub habitat; elimination of grazing on the Reserve to promote recovery of coastal sage scrub; management of fire and subsequent type conversion of habitat to exotic grasslands, and management of habitat for the Stephens' kangaroo rat (SKR). The orange-throated whiptail will likely inhabit the habitat at the margin of areas disturbed to promote SKR habitation and more mature, structured sage scrub and chaparral habitat. Finally, the species will very likely move into the scrub habitat which will develop in the corridors at the base of both reservoirs, as well as into less developed portions of the recreation areas themselves. In particular, the species would seem a likely candidate to invade campground areas where there will be significant woody debris and therefore significant termite populations.

Although precise estimates of population are not available at this time for either impact or mitigation areas, the Reserve would contain significantly more habitat than will be impacted by the project. The project will have short-term impacts on the population within the Domenigoni Valley, but these impacts will be offset by preservation and management of over 7,000 acres of suitable habitat for the species. Enhancement of sage scrub habitat, and removal of grazing from other areas, will result in restoration of viable habitat for the species. Except for the loss of populations within the inundation area, the project will not affect the range of the species. There will be a decrease in total habitat available to the species, but management of the Reserve will promote recovery of sage scrub habitats which have been extensively

disturbed, resulting in a probable net gain in habitat quality. The species will therefore have at least equal access to suitable habitat. It should be noted that without the project, virtually all of the species habitat in the Domenigoni Valley would have been lost to development, including most of the habitat in the North Hills.

The mitigation plan will have long-term positive impacts to the species by setting aside habitat for the species and provide a viable core population of the orange-throated whiptail. The creation of the Reserve, much of it involving habitat which would otherwise be lost to development, fire followed by invasion by exotics and type conversion, and other disturbance, will contribute to the long-term viability of the species. As mitigated, the project therefore poses no threat of extinction to the species.

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## HABITAT CONSERVATION PLAN FOR COASTAL WESTERN WHIPTAIL (*Cnemidophorus tigris multiscutatus* Cope)

### GENERAL

This HCP describes the general status of current knowledge concerning the coastal western whiptail. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

Impacts to this species from the reservoir project are likely to occur in open, disturbed sage scrub as opposed to grasslands or chaparral. Approximately 50 percent of the habitat within the project impact area has these characteristics, although it is extremely difficult to map precisely. The impact area shown on Figure A-7-1 therefore overstates the potential impact area. The project area is probably on the fringe of the species' range, and population densities are likely to be low.

### THE PLANNING PROCESS

#### Other Programs

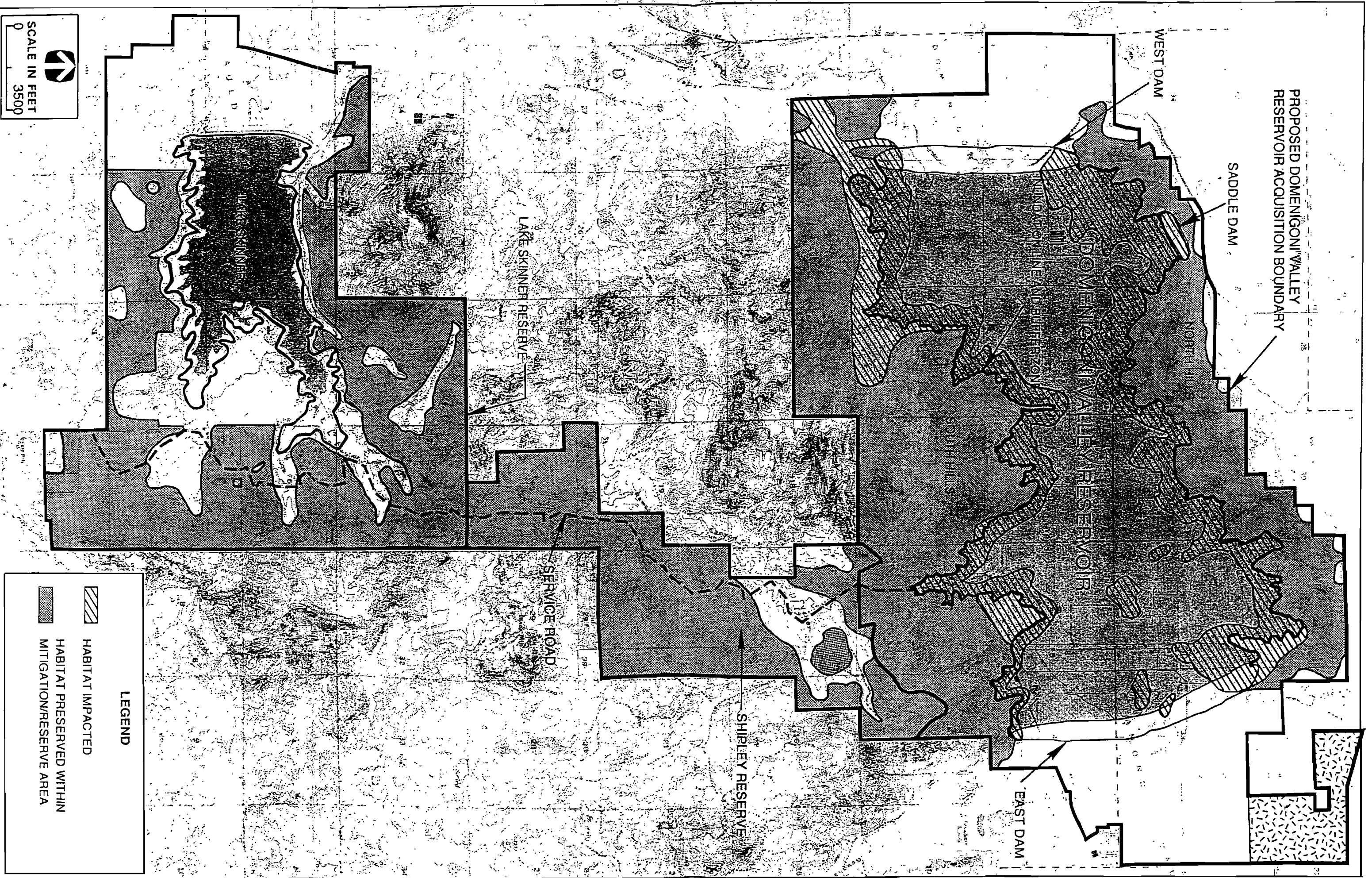
The coastal western whiptail is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

#### The Planning Process

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-7-1). The species has considerable adaptability, and this characteristic was taken into account in planning.

### PROJECT SCHEDULE AND TIMING OF IMPACTS

Impacts to the coastal western whiptail will occur beginning in 1992 and continue throughout construction and reservoir filling, as its habitat is removed. The estimated level of take at project completion is 2,200 acres with low population densities.



Habitat of Coastal Western Whiptail, Impact Area and Mitigation Area (reserve). Based on preliminary field observations. FIGURE A-7-1

## THE COASTAL WESTERN WHIPTAIL

### Distribution and Habitat Associations

The whiptail lizard is a wide ranging inhabitant of arid regions in the United States and northern Mexico (Fitch 1970, Pianka 1966, 1970). The coastal western whiptail is one of twelve recognized subspecies of *Cnemidophorus tigris* and is commonly found in semi-arid and arid regions of southern California and western Baja California, Mexico (Fitch 1970, Glazer 1970, Pianka 1966, 1970). Whiptails, as might be inferred from their name, have long tails, often exceeding twice body length (Turner et al. 1969, Pianka 1986). Snout-vent measurements range from 81-90 mm, but overall dimensions may exceed 275 mm (Turner et al. 1969, Fitch 1970, Case 1983a, 1983b, Pianka 1986). Most workers agree that little to no sexual dimorphism exists in this genus (Benes 1969, Turner et al. 1969, Fitch 1970), although Case (1983b) reported that females were 8% larger in Baja California, Mexico.

Whiptails are active lizards that prefer open habitats to dense shrub or grasslands (Benes 1969, Fitch 1970, Pianka 1966, 1970, 1986). In a study of 1801 animals, Pianka (1986) found that almost half were associated with open areas of little vegetation and that virtually all favored sunny microhabitats. Milstead (1957) reported similar results although he observed some temporal differences in habitat usage. During mid-afternoon, when soil temperatures exceeded 50C, he observed whiptails resting in the shade of rocks or bushes. They became active again when soil temperatures dropped to tolerable levels. Such behavioral adaptations permit ectotherms to regulate body temperature to some degree and *C. tigris* are successful at maintaining a core temperature of 39.5 C (Milstead 1947, Pianka and Pianka 1970).

Teiid lizards commonly dig burrows that are used nocturnally as a predator refuge and as a hibernaculum. Animals may be active for as little as four months of the year, emerging in early April or May and retreating in late summer (McCoy and Hoddenbach 1966, Benes 1969, Turner et al. 1969, Fitch 1970, Pianka 1970, 1986). Emergence dates are geographically variant, with animals from northern areas hibernating for longer periods of time (McCoy and Hoddenbach 1966, Pianka 1970). Aestivation has also been reported during especially warm weather (Pianka 1970, but see Parker 1972).

### Population Density and Home Range

Local abundance of this species seems to be highly correlated with precipitation patterns, with higher annual rainfall resulting in greater population densities (Pianka 1970, 1983). Presumably this occurs because the enhanced plant growth harbors a larger insect fauna (Pianka 1970, 1983), and consequently greater food resources.

Density estimates range from 1.2 - 13 animals/ha, with several reports of over 31 animals/ha after several consecutive years of abundant rainfall (Turner et al. 1966, Parker 1972). Survival for adults is on the order of 54 - 60% a year (Turner et al. 1969) with some animals living as long as 6 to 7 years (Turner et al. 1969, Pianka 1986). Whiptails have a documented home range of 0.11 to 0.51 hectares, but are not territorial (Milstead 1957, Jorgensen and Tanner 1963, Parker 1972). Little intra or interspecific aggression has been reported (Parker 1972, Case 1983a).

## Reproduction

Although some populations of whiptails are parthenogenetic, this species is apparently a bisexual species (Wright and Lowe 1968, Fitch 1970). Typically one to two clutches consisting of two to four eggs are laid between April and August (Milstead 1957, McCoy and Hoddenbach 1966, Turner et al. 1969, Fitch 1970, Pianka 1970, 1986, Parker 1972, Stebbins 1985). Whiptails demonstrate an adaptive reproductive function, with clutch size varying in response to food resources and geographic location (McCoy and Hoddenbach 1966, Pianka 1970, 1986). In northern areas animals typically produce a single clutch with a mean size of 3.4 eggs (Fitch 1970, Pianka 1970, 1986), while in more southern areas, such as Texas, the mean size is 2.2 with several produced per year (Fitch 1970, McCoy and Hoddenbach 1966, Turner et al. 1966, Pianka 1970, 1986). It seems likely that temporal and not physiological constraints hinder reproductive output (Turner et al. 1969). During wet years egg production increases significantly (Pianka 1970, 1986). Additionally, it has been demonstrated that larger females produce more eggs (Turner et al. 1969, Turner 1970, Parker 1972, Pianka 1986), and older females produce on average more eggs than do younger ones (Fitch 1970, Parker 1972, Pianka 1986). Incubation takes 45 - 60 days (Milstead 1957), and young measure 37 - 41 mm snout to vent at emergence (Parker 1972).

## Food Habits

The dietary habits of whiptails have been well characterized. Studies report consumption of a variety of arthropods, including termites, wasps, ants, sow bugs, spiders, scorpions, and snails and other opportunistic foods (Milstead 1957, Benes 1969, Turner et al. 1969, Pianka 1966, 1970, 1986, Case 1983a, Regal 1983). Termites, in particular, are apparently a favored food item and can comprise almost 80% of the diet (Milstead 1957, Case 1983a, Pianka 1970, 1986). *Cnemidophorus tigris* is an active forager, moving almost constantly during its activity period and probing, digging and tasting objects (Pianka 1966, Regal 1983). Milstead (1957) called the western whiptail a "nervous and wary" lizard that made rapid and jerky motions while foraging. He reported movements in excess of 165 meters during a thirty minute period, including vertical jumps of up to 30 cm. Whiptails will apparently turn over sticks and rocks using their nose. If a mud encasement (or "castle") of termites is found, they will flick it into the air and eat insects that escape from the wreckage (Milstead 1957).

Seasonal and age differences in foraging and feeding patterns have been reported (Benes 1969). As one might expect, prey size is influenced by the body size of the lizard (Case 1983). Additionally, the diversity of food items eaten appears to vary inversely with recent precipitation (Pianka 1970, 1986). Thus a larger variety of foods are ingested during dry years and greater numbers of insect larvae, beetles (Coleoptera) and grasshoppers are taken (Pianka 1970, 1986). Olfactory and visual cues are primarily used initially to locate potential prey (Bene 1969). Once captured, the animal will test food by touching it with its tongue, occasionally rejecting unpalatable items (Benes 1969).

## Factors Affecting Distribution

Coastal western whiptails clearly respond to fluctuations in the growth of perennials, and to the density and diversity of the arthropod species associated with such vegetation (Turner et al. 1969). However, they apparently do not demonstrate marked preferences for particular plant species (Milstead 1957), foraging relatively indiscriminately around the base of all plants in their vicinity. Since they depend on swiftness to elude potential predators, availability of open areas is an important determinant of suitable habitat.

## **Status of Endangered Species Listing**

Coastal western whiptails were recently given federal Candidate 2 status, primarily as a result of declines in their coastal sage scrub habitat.

### **Conservation Issues**

Loss of habitat is the primary conservation issue.

### **MITIGATION STRATEGIES**

This lizard will benefit from several specific aspects of Reserve management. First, management to reduce exotic grasslands will create open shrub areas of habitat for this species. Second, creation of a mosaic of different age-class habitats will ensure that significant edge habitat is available for the species. Third, overall habitat improvements will increase the carrying capacity of the Reserve.

No specific management actions for this species are proposed at this time. Management for the species may be proposed following research.

### **SUPPORT FOR A "NO JEOPARDY" FINDING**

This species probably exists in only limited numbers on site, as the project area is on the fringe of its range. Impacts will therefore be limited, and will be offset by significant improvements to habitat quality, in particular removal of exotic grasses, on the Reserve. The species will, in particular, benefit from management which maintains open-habitat, such as the management for the SKR at the Shipley Reserve and Lake Skinner. The net impact of the Reserve and its management, including the research aspects of the Reserve, will therefore be to provide long-term benefits to the species.

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## CONSERVATION PLAN FOR MITIGATION OF IMPACTS TO THE SAN DIEGO HORNED LIZARD (*Phrynosoma coronatum blainvillei*)

### GENERAL

This HCP describes the general status of current knowledge concerning San Diego horned lizard. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program adopted for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR and as summarized in this HCP, Section Five.

Like impacts to the orange-throated whiptail, impacts to the San Diego Horned Lizard will occur as a result of all aspects of construction within the Domenigoni Valley. The San Diego horned lizard inhabits the coastal sage scrub and chaparral surrounding the valley floor with its range extending into the chaparral at higher elevations. Population are probably concentrated in mature sage scrub areas and chaparral (Figure A-8-1). Impacts to this species will be mitigated under this HCP through preservation and management of over 7,000 acres of sage scrub, chaparral, and other habitat within the Reserve.

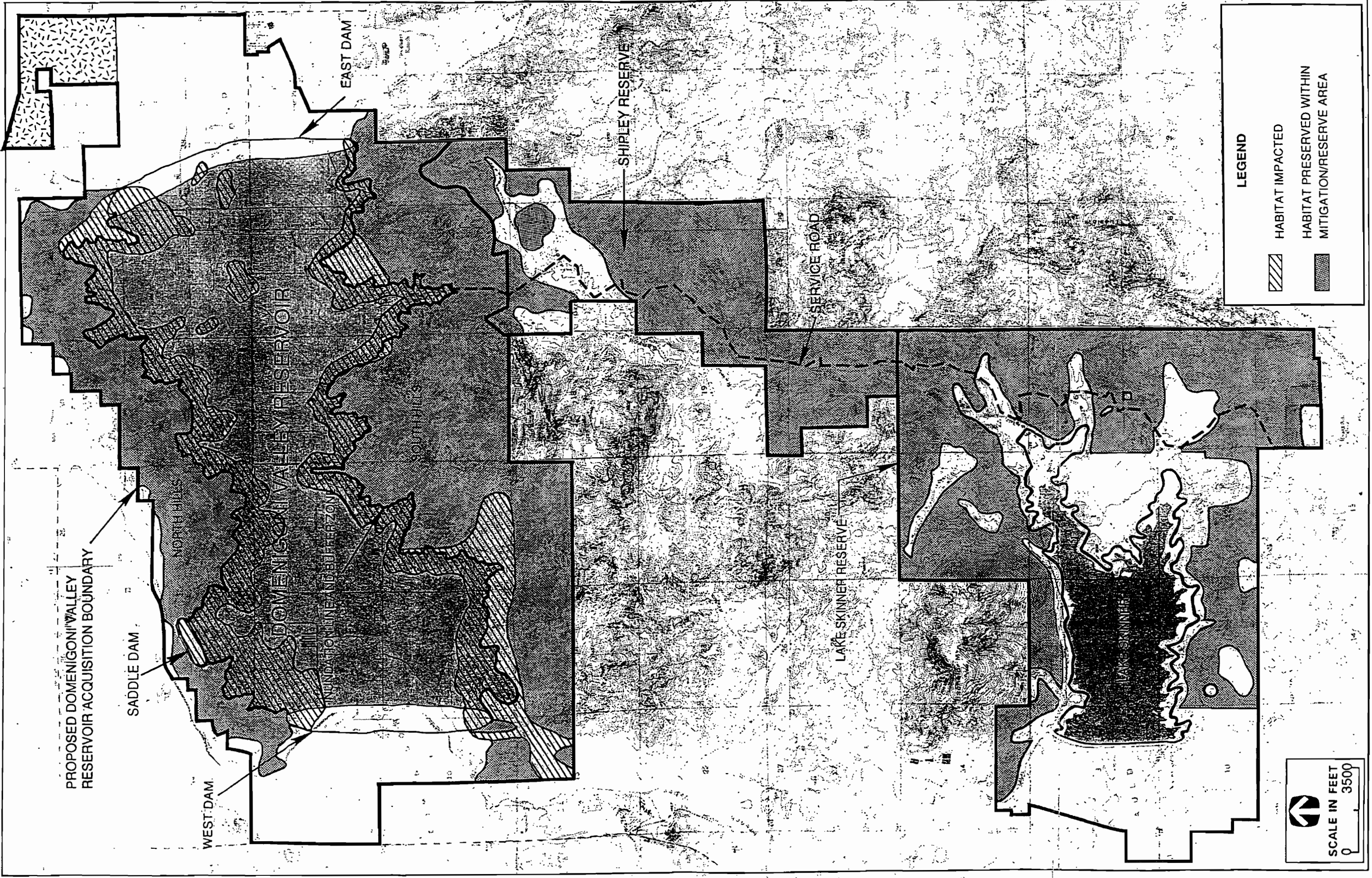
### THE PLANNING PROCESS

#### Other Plans and Programs

The San Diego horned lizard will be a beneficiary of the on-going regional planning for preservation of coastal sage scrub communities associated with the program to preserve the California gnatcatcher and several other avian species. The California NCCP program for this habitat is the primary planning effort for the habitat of the San Diego horned lizard underway at this time.

#### The Planning Process

This HCP was prepared by Metropolitan and the RCHCA with the assistance of its biological consultants. It is a direct outgrowth of extensive habitat evaluations carried out during project EIR studies. See Section Three for a description of the planning process and the public coordination undertaken during Domenigoni Valley Reservoir Project studies.



Habitat of San Diego Horned-lizard, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.

## **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to this species will occur in phases. Initial impacts will occur early in 1992 to 1993 when geotechnical investigations begin in borrow and dam excavation areas. Major impacts will begin when borrow area excavations begin along the South Hills. General construction activities will cause habitat disturbance, particularly at lower elevations, where significant dust can be expected to accumulate during dry months of the year. Inundation will be the final phase of impact, with a slow inundation of habitat occurring over a 5-7 year period.

During field studies for the FEIR, the San Diego horned lizard was found in RSS and chaparral. It was incidentally observed during field surveys on the north slopes of the South Hills, Shipley Reserve, and Lake Skinner, and evidence of occupation (distinctive scats) was found. Based on field observations, occupied habitat to be disturbed will therefore be approximately 2,200 acres, mostly on the north slope of the South Hills of the Domenigoni Valley. Lower population concentrations will also be affected in disturbed sage scrub.

### **THE SAN DIEGO HORNED LIZARD**

#### **Distribution**

The San Diego horned lizard is native to the inland hills and mountains of Orange, Riverside, San Bernardino, and San Diego Counties, with its range extending to over 6000 feet above NGVD. (Stebbins 1972; Glaser 1970), primarily in inland mountain areas. McGurty (1980) notes that the species is found within this range from the crest of the Peninsular range west to the Pacific Ocean. It is generally considered relatively common within this range, with many sightings reported in mostly arid mountain and foothill areas.

Evidence of habitat occupation was found at Lake Skinner, the Shipley Reserve, and at Domenigoni Valley. The San Diego horned lizard is highly specialized, feeding almost exclusively on large ants, and it generally occurs in low densities (McGurty 1980). Its distribution and relative population density within sage scrub and chaparral habitat is not well documented. In 1990-91 Domenigoni Valley Reservoir Project surveys, evidence of occupation was found in both open RSS habitat and in relatively dense patches of mixed sage scrub and chamise chaparral. The species is therefore likely to inhabit much of the sage scrub habitat within the Reserve. According to McGurty (1980), the most constant and distinctive characteristic of San Diego horned lizard habitat is the predominance of low, sparse, drought-resistant vegetation on level and gently sloping fine-grained soils of sandy-loam texture.

The San Diego horned lizard utilizes dense habitat for camouflage and burrows into loose soil to avoid intense heat and predators (CDFG 1988). Its primary food appears to be ants, and its distribution may therefore be influenced by the availability of this food type (CDFG 1988). Stebbins (1954) notes that coast horned lizards in general feed on a variety of insects. The species does not appear to migrate, nor does it appear to defend a territory (CDFG 1988).

The San Diego horned lizard's life history is also not well documented. The species has a single clutch of eggs (up to 16) each year, with breeding beginning in mid-April through mid-May and hatching occurring after two months (McGurty 1980; CDFG 1988).

## **Endangered Species Status**

The species has been classified as a Federal candidate for listing (Category 2), primarily as a result of loss of its primary habitat, coastal sage scrub, and type conversion of chaparral habitat to exotic grasslands. It is threatened by development, fire, and collection (McGurty 1980).

## **Conservation Issues**

Loss of coastal sage scrub habitat and protection of the species from collectors are the primary conservation issue for this species. Lack of data about the species distribution, life history, and habitat requirements is also an important conservation issue.

## **MITIGATION STRATEGIES**

### **Strategies for Short-Term Mitigation**

The Reserve contains about 7,000 acres of suitable sage scrub, grasslands, and chaparral habitat of varying quality which appears suitable for this species, with concentrations likely in RSS and chaparral habitat. The species is likely to be found to some extent throughout the habitats within the Reserve. The primary mitigation strategy for this species will be preservation and management of the RSS in the Reserve. Control of human access to the Reserve will restrict collection.

### **Strategies for Long-Term Gain**

Research into methods for enhancing regrowth of RSS, along with proposed resource inventories and focused studies of this species throughout the Reserve, will contribute to a better understanding of the habitat requirements of this species. Evidence of populations in RSS of varying quality will help identify suitable habitat and may lead to better estimates of regional distribution and the factors influencing this distribution.

Although there may be a short-term net loss of this species due to project impacts, preservation and management of the Reserve may result in long-term net gain for the population. Particular management activities which will ensure this long-term gain will include enhancement of RSS; elimination of grazing on the Reserve to promote recovery of RSS; control of fire and subsequent type conversion of habitat to exotic grasslands, and management of habitat for the SKR. Management of SKR within the Reserve, where SKR inhabit flat to gently sloping areas of mixed soil types, will probably also ensure that these areas are suitable for the San Diego horned lizard. Some researchers (McGurty 1980; CDFG 1988) have noted that the San Diego horned lizard prefers habitat at the margin of more mature, structured sage scrub and chaparral habitat. Management for the SKR will create such ecotonal habitat.

In addition to habitat management, management which promotes growth of plants used by harvester ants may be a feature of this HCP if food for this forage species for the horned lizard appears to be in decline.

## **IMPLEMENTATION AND FUNDING FOR THIS HCP**

Implementation of this HCP will be in accordance with the plans described in Section Three, above.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

The project will have short-term impacts on the population within the Domenigoni Valley, but these impacts will be offset by preservation and management of over 7,000 acres of suitable habitat for the species. Enhancement of sage scrub habitat, and removal of grazing from other areas, will result in restoration of viable habitat for the species. Except for the loss of populations within the inundation area, the project will not affect the range of the species, except that populations may move into areas now in agricultural lands in the corridors at the base of the dams and in low-intensity development areas in the project recreation areas. There will be a decrease in total habitat area available to the species, but management of the Reserve will promote recovery of sage scrub habitats which have been extensively disturbed, resulting in a probable net gain in habitat quality. The species will therefore have at least equal access to suitable habitat. It should be noted that without the project, virtually all of the species habitat in the Domenigoni Valley would have been lost to development, including most of the habitat in the North Hills.

The mitigation plan will have long-term positive impacts to the species by setting aside a Reserve for the species which will provide a reservoir of the species within the region. The existence of this Reserve, much of it involving habitat which would otherwise be lost to development, fire followed by invasion by exotics and type conversion, and other disturbance, will contribute to the long-term viability of the species. As mitigated, the project therefore poses no threat of extinction to the species.

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## HCP FOR THE NORTHERN RED-DIAMOND RATTLESNAKE (*Crotalus ruber ruber*)

### GENERAL

This HCP describes the general status of current knowledge concerning the northern red-diamond rattlesnake. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

This species will be impacted by construction and inundation of approximately 2,200 acres of suitable habitat, although the species will primarily be found in dense shrubs and the entire 2,200 acres may not be occupied.

### THE PLANNING PROCESS

#### Other Programs

The northern red-diamond rattlesnake is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

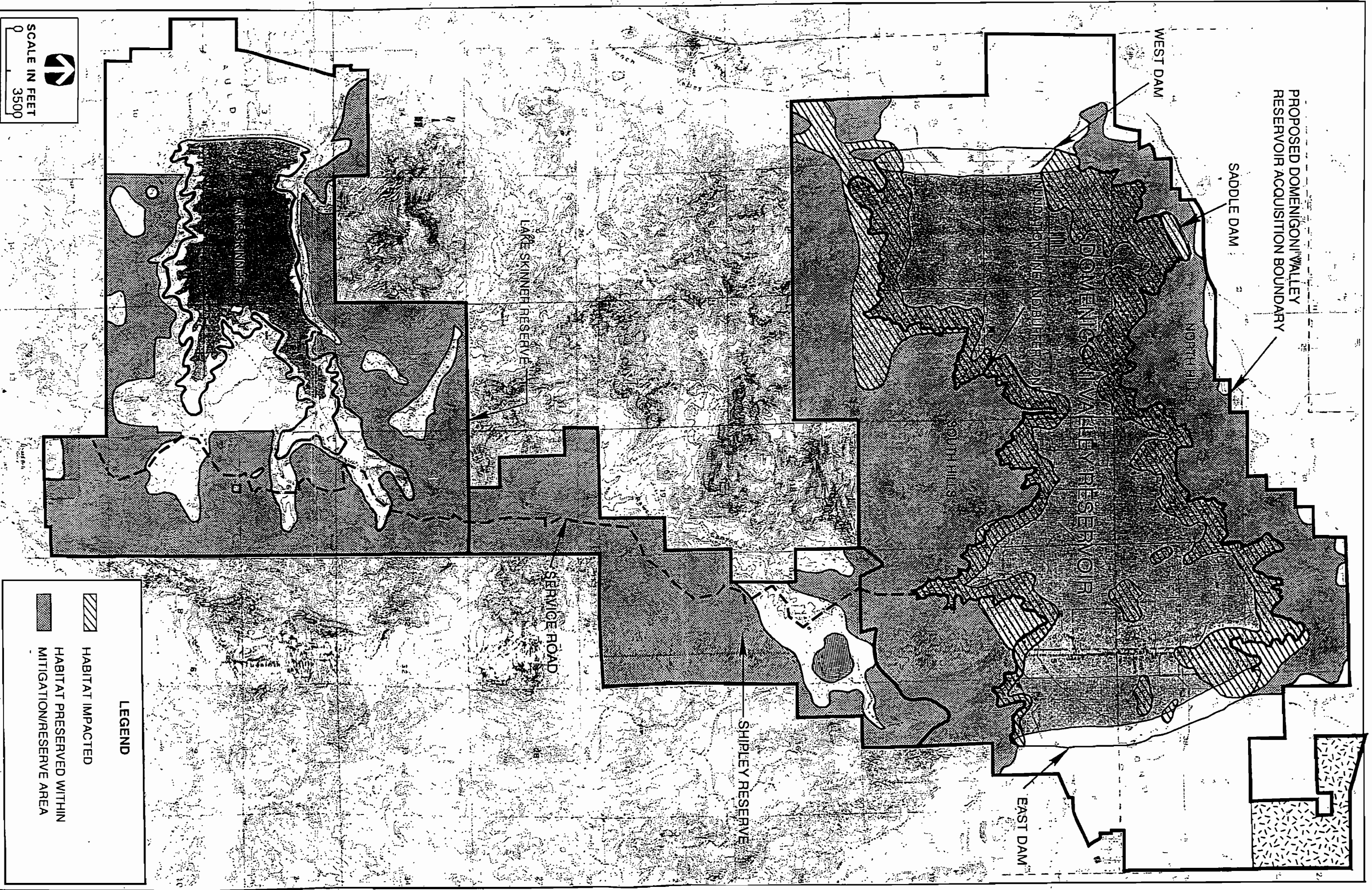
#### The Planning Process

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-9-1). Given the species' adaptability, it is likely that this snake may be found in a majority of both the reservoir impact area and the Reserve.

### PROJECT SCHEDULE AND TIMING OF IMPACTS

Impacts to the northern red-diamond rattlesnake will begin in 1992 and continue throughout pre-construction, construction, and reservoir filling, as its habitat is removed. The estimated level of take at project completion is low because of the species' tendency to prefer dense areas of sage scrub and chaparral, which are not well represented within the project impact area.





Habitat of Northern Red Diamond Rattlesnake, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.

## THE NORTHERN RED-DIAMOND RATTLESNAKE

### Distribution and Habitat Associations

Rattlesnakes are a wide spread genus inhabiting much of North and Central America, from Canada to tropical south America, and reaching their highest diversity in the southwestern United States (Parker 1965, Fitch 1970, Stebbins 1954, 1985). All *Crotalus* are characterized by a unique adaptation in which the terminal scales are not shed and dry into "rattles" (Parker 1965). With successive moults the specialized scales accumulate, but eventually many fall off under normal wear (Parker 1965). In captivity, animals with as many as 29 rattles have been reported (Parker 1965).

The red diamond rattlesnake is a large (74 - 163 cm) rose colored species found in San Diego, San Bernardino, and Riverside counties within California, and extending well into Baja California, Mexico (Stebbins 1954, 1985, Glaser 1970, Case 1978).

It is also present on nine islands in the Gulf of California (Case 1978). It is interesting that on two of the islands inhabited by the species (Santa Catalina and San Lorenzo Sur) the animals no longer develop rattles (Case 1978).

The coastal subspecies, *Crotalus ruber ruber*, prefers mesic regions of dense chaparral in the foothills and brush covered boulders or cactus patches within the coastal sage shrub community (Stebbins 1954, 1985, Fitch 1970). Like many *Crotalidae*, red diamond rattlesnakes hibernate gregariously during the winter (Fitch 1970, Keenlyne 1972, Gillingham 1987, Gregory et al. 1987, Seigel and Ford 1987). It is not clear whether this is due to a requirement for water conservation or thermoregulation, or perhaps to facilitate mating in spring (Fitch 1970, Gillingham 1987, Seigel and Ford 1987). There is some evidence that gravid females are gregarious as well (Fitch 1970). This has been attributed to the greater protection afforded by a group (the "selfish herd" theory) when females are slow and non-mobile (Fitch 1970).

Because rattlesnakes are ectotherms, the cool nights during spring result in mostly diurnal foraging activity (Stebbins 1954, 1985). By summer, however, they are almost strictly nocturnal, as are the majority of their prey (Stebbins 1954, 1985).

### Population Density and Home Range

Density estimates are very scarce for the rattlesnakes. Closely related species average > 1 - 3 animals/ha with adult survivorship around 75 - 85% (Parker and Plummer 1987). Reportedly, diamondbacks can live 15 - 21 years (Parker and Plummer 1987). There is little evidence to suggest that snakes are territorial (Gillingham 1987, Gregory et al. 1987), although they may be dominant within a particular spatial region, and relatively subordinate outside this area (Gillingham 1987). Gregory et al. (1987) suggest that snakes instead maintain an "individual distance" that changes with environmental conditions. High overlap in space use is reported, especially if resources are clumped (Gregory et al. 1987). Normally, however, snakes avoid each other using olfactory cues. Presumably such avoidance prevents foraging in areas that have already been depleted of accessible resources (Gregory et al. 1987).

Movement patterns are highly erratic (Fitch and Shirer 1971, Keenlyne 1972, Gregory et al. 1987) and rattlesnakes seldom return to a specific point. Fitch and Shirer (1971) observed average daily movements of 45 meters, but on 50% of the days no activity was detected at all. During ten percent of the tracking

time, radiotelemetered red diamond rattlesnakes travelled distances greater than 150 meters. Gregory *et al.* (1971) suggests that many snakes follow a "loop" migration pattern. This species is considered one of the most docile rattlesnakes, and aggression has been observed only in rare instances, and then among captive animals (Gillingham 1987).

### **Reproduction**

Pit vipers, such as rattlesnakes, are viviparous, giving birth to live young in July or August (Perkins 1943, Stebbins 1954, 1985, Fitch 1970, Seigel and Ford 1987). Mating occurs at spring emergence or when the aggregates form in the fall (Fitch 1970, Gillingham 1987, Seigel and Ford 1987). Males leave the hibernaculum first and then court females for several days or weeks as they arouse (Gillingham 1987, Seigel and Ford 1987). Timing of emergence and hence courtship seem to be correlated with temperature, presumably as an adaptation to ensure optimal thermal conditions during gestation (Seigel and Ford 1987). Male rattlesnakes can locate females by following their pheromone trail (Gillingham 1987).

Clutch size and mass vary geographically and with the body size of the female (Fitch 1970, Case 1983, Seigel and Ford 1987). Females generally reach reproductive age between 3 - 7 years (Parker and Plummer 1987), and reproduce biennially thereafter depending on their foraging success and fat body production (Seigel and Ford 1987). Gestation averages 139 - 152 days and the number of young range from 3 to 20, with a mean of slightly more than 8 (Perkins 1943, Stebbins 1954, 1985, Fitch 1970). First year survivorship is approximately 40 - 46% (Parker and Plummer 1987). Little or no parental care occurs among *Crotalus* (Seigel and Ford 1987), although there are some reports of hatchling prairie rattlesnakes remaining within 5 meters of their mother for the first few hours extramaternally (Gillingham 1987).

### **Food Habits**

Red diamond rattlesnakes are opportunistic foragers, and eat small rabbits, birds, ground squirrels, kangaroo rats and other rodents as they are encountered in the environment (Tevis 1943, Stebbins 1954, 1985, Cowles and Phelan 1958, Reinert et al. 1984). There are several reports of red-diamond rattlesnakes feeding on carrion (Patten and Banta 1980) or showing a preference for "slightly putrefied mice" (Cowles and Phelan 1958). They locate prey by using vision, thermal receptors, chemoreception (tongue flicks), vibrations and low frequency sound (Tevis 1943, Parker 1964, Reinart et al. 1984). The facial pit or heat-receptor sense organ is located between the nostril and eye on each side of the head and is very accurate. Amazingly, it is able to detect temperature variations as low as 0.2 C and allows the snake to determine both the direction of and distance to potential prey (Parker 1964).

### **Factors Affecting Distribution**

Prey density affects the population dynamics of red diamond rattlesnakes. The availability of suitable dens, however, both as a hibernacula and for gravid females may be more of a limiting factor (Keenlyne 1972). Rocky outcrops appear to be important to this species' distribution.

### **Status of Endangered Species Listing**

The northern red-diamond rattlesnake was recently accorded federal Candidate 2 status.

## **Conservation Issues**

The species is currently thought to be well-distributed in chaparral and dense sage scrub habitats throughout the region. Conservation of the species is threatened by fire, followed by type conversion of burned chaparral areas to grasslands. Development, particularly development affecting dense patches of sage scrub and rocky substrates, is also a threat to the species.

## **MITIGATION STRATEGIES**

The Reserve, managed to prevent significant type conversion of shrub habitat to grasslands following fire or other disturbance will result in preservation of large areas of habitat for this species. Removal of grazing and exotic grasslands from Reserve habitat (except for areas maintained for the SKR) will improve shrub density in both disturbed sage scrub and disturbed chaparral habitats. As a result, habitat for this species should be maintained, or perhaps increase, when compared to existing conditions. In addition, borrow activities may create rocky habitat for hibernation (in areas where the borrow site adjoins suitable habitat).

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

The northern red-diamond rattlesnake population in the Domenigoni and Diamond valleys is probably concentrated in the more dense stands of habitat, primarily in chaparral above the reservoir project impact line and in dense sage scrub habitat both within and outside of the reservoir impact area. There is significantly more of the preferred dense habitat in the Reserve than in the impact area. Suitable habitat in the Reserve is approximately 7,000 acres.

Given the species' adaptability, and the fact that prey availability and shrub density appear to be major factors affecting distribution, the species should benefit from management of the reserve, which will increase the carrying capacity for many prey species. Individuals within the impact zone may therefore be able to move into adjacent habitat (as inundation or slow habitat removal occurs prior to construction activities); the viability of the population will therefore not be affected.

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## HCP FOR MITIGATION OF IMPACTS TO THE SAN DIEGO BLACK-TAILED JACKRABBIT (*Lepus californicus bennetti* Gray)

### GENERAL

This HCP describes the general status of current knowledge concerning the San Diego black-tailed jackrabbit. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

The San Diego blacktailed jackrabbit was recorded within the impact area of the reservoir project, and within the Reserve, in both non-native grasslands and Riversidian sage scrub. The species probably inhabits other habitats on the reserve as well.

### THE PLANNING PROCESS

#### Other Programs

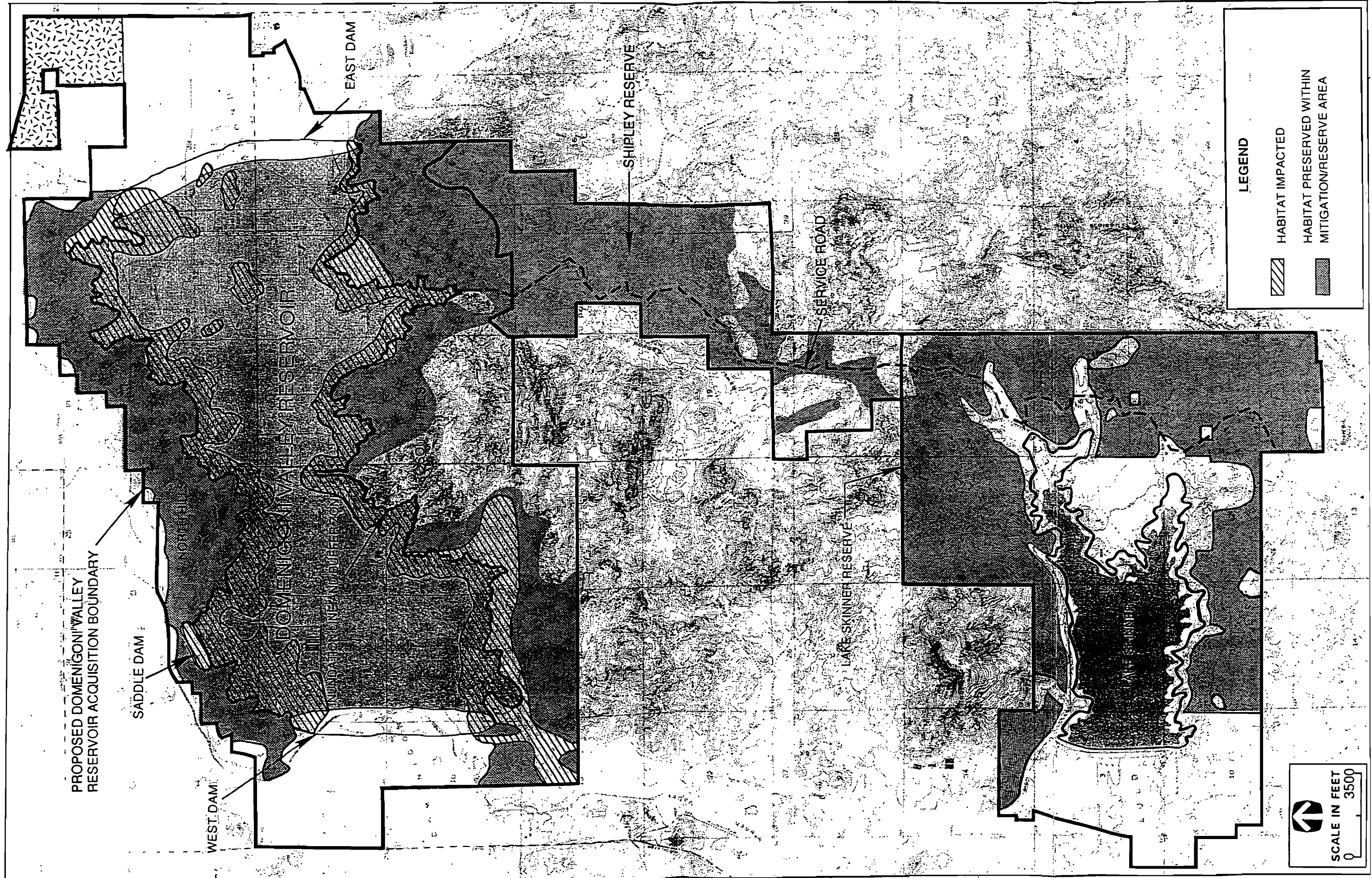
The San Diego black-tailed jackrabbit is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

#### The Planning Process

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-10-1). Given the species' adaptability, it is likely that this jackrabbit may be found in a majority of both the reservoir impact area and the Reserve.

### PROJECT SCHEDULE AND TIMING OF IMPACTS

Impacts to the San Diego black-tailed jackrabbit will begin with archeological investigations, geotechnical investigations, and fire control activities in 1992 and continue throughout construction and reservoir filling, as its habitat is removed. The estimated level of take at project completion is 2,200 acres with low population densities.



Habitat of San Diego Black-tailed Jackrabbit, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.



## THE SAN DIEGO BLACK-TAILED JACKRABBIT

### Status and Distribution

Black-tailed jack rabbits are the most widely distributed hares in North America, occupying habitats throughout much of the United States (Hall 1981). The San Diego black-tail jack rabbit is a subspecies confined to the western coast of southern California from approximately San Luis Obispo to San Quintin, Baja California, Mexico (Huey 1964, Hall 1981; Fig. x). *Lepus californicus* may be replacing other related species throughout parts of its range (Nowak and Paradiso 1983). This is occurring primarily because of its greater flexibility in responding to habitat changes due to overgrazing by domestic animals (Nowak and Paradiso 1983).

Jack rabbits are associated with grassy and/or shrubby locales and range over large areas. In coastal habitats, they select grassy areas to forage in and retreat to dense shrub cover during portions of both day and night (Johnson and Anderson 1984). In arid regions, however, the animals are primarily crepuscular or nocturnal, presumably to reduce thermal stress (Leichleitner 1958, Costa et al. 1976, Shoemaker et al. 1976). No burrows or dens are constructed. Instead shallow depressions (referred to as "forms") under bushes or shrubs are used as resting sites (Leichleitner 1958, Costa et al. 1976). Nests for young resemble those of adults, but are occasionally lined with fur (Leichleitner 1958). Forms may be used on more than one occasion (Leichleitner 1958).

Jack rabbits are sexually dimorphic, with females larger than males. Mean weights for females range from 2450-2800 grams, and for males 2210-2500 grams (Leichleitner 1959, Swihart 1984, 1986).

### Population Density and Home Range

Generally, jack rabbits are fairly well dispersed, with higher densities arising when resources, such as food or daytime resting areas, are clumped (Bronson and Tiemeier 1959). Population estimates range from 0.04 to 6 animals/ha (Leichleitner 1958, Bronson and Tiemeier 1959, Chew and Chew 1970, Clark and Innis 1982, Swihart 1986), and may oscillate with some regularity (Clark and Innis 1982). Populations are reportedly inversely density dependent because of the much greater fecundity of hares as compared to their predators (Clark and Innis 1982). Natural limitations on population growth are not well understood, but are apparently not related to resource depletion (Clark and Innis 1982).

Jackrabbits are not territorial, although they may inhabit a definite, overlapping home range of approximately 14.2 - 18.5 ha (Leichleitner 1958, 1959, Swihart 1986). However, some examples have been observed of aggressive behavior towards conspecifics during the breeding season (Leichleitner 1958). At other times, jack rabbits appear oblivious of each other and very few aggressive interactions are reported (Leichleitner 1958). Swihart (1986) has suggested that territorial defense is impractical because of the large home range size.

Adult survivorship is very low, on the order of 19 - 23% per year (Swihart 1984). Most of the population at any given time is composed of juveniles, with less than 30% adults (Bronson and Tiemeier 1958, Leichleitner 1959).

## **Reproduction**

Relatively low maternal investment, extremely high fetal and neonatal growth rates and a short gestation time are common to all hares (Leichleitner 1959, Millar 1977, 1981). Estimates of the mean litter size for black-tailed jack rabbits vary from 2.1 to 3.6 (Bronson and Tiemeier 1958, Leichleitner 1959, Millar 1981, Nowak and Paradiso 1983, Swihart 1984). Six mammae are present (Leichleitner 1959). There is some suggestion that seasonal changes may occur in the size of litters, with fewer offspring being produced early in the reproductive cycle (Leichleitner 1959).

Jackrabbits are very fecund. A single female, for example, can produce from 10 -18 leverets (young rabbits) in one breeding season (Bronson and Tiemeier 1958, Leichleitner 1959, Swihart 1984). This is possible because they can undergo estrus immediately after parturition (Leichleitner 1959). In fact, Leichleitner (1959) reported that virtually all jack rabbits on his study site were both pregnant and lactating at the same time.

Breeding takes place primarily in late January through August, although sporadic reproduction apparently occurs all year (Bronson and Tiemeier 1958, Leichleitner 1959, Nowak and Paradiso 1983). Gestation averages about 43 days (Haskell and Reynolds 1947, Leichleitner 1959, Millar 1981). Young weigh 63 - 68 grams at birth (Millar 1981) and are extremely precocial, running within a few minutes (Haskell and Reynolds 1947, Nowak and Paradiso 1983, Swihart 1984). They grow at an accelerated rate, becoming reproductive at 20 - 28 weeks (Leichleitner 1959, Millar 1981) and reach adult mass at about 32 weeks (Haskell and Reynolds 1947). Leverets consume vegetation beginning at 10 days and are weaned at three weeks (Haskell and Reynolds 1947). Little maternal investment is exhibited; the mother does not watch over the litter or distract predators from the form (Stoddart 1984). In fact, excluding nursing; the mother may not even be in the vicinity of her offspring (Nowak and Paradiso 1983, Stoddart 1984). This may reduce the vulnerability of both the litter and mother to predators (Stoddart 1984).

## **Food Habits**

Jackrabbits have been described as generalist herbivores demonstrating seasonal consumption patterns (Johnson and Anderson 1984). In general, they browse on a large variety of plants with grasses comprising the bulk of the diet during spring and summer (Leichleitner 1958, Nowak and Paradiso 1983, Johnson and Anderson 1984). Various forbs and shrubs, especially members of the groups Boraginaceae and Leguminosae, are taken to some extent during fall and winter (Johnson and Anderson 1984). Other workers have reported hares foraging on *Halogeton*, *Artemisia*, *Sarcobatus*, *Opuntia*, *Larrea*, *Lycium* and *Atriplex* (Chew and Chew 1970, Shoemaker et al. 1976, Clark and Innis 1982, Johnson and Anderson 1984). Large quantities of vegetation are required. One study showed, for example, that 63 jack rabbits ingest the same quantity of forage as does one 454 Kg cow (Leichleitner 1958).

## **Factors Affecting Distribution**

It is not clear what factors are most important in determining the distribution of black-tailed jack rabbits. They are a relatively ubiquitous species and can apparently survive on a wide variety of vegetation (Chew and Chew 1970, Shoemaker et al. 1976, Clark and Innis 1982, Johnson and Anderson 1984). Shelter requirements seem to be very flexible since no elaborate resting area is constructed. Temperature may play a role in restricting the elevational distribution because of the lack of burrows to protect against thermal extremes.

## **Status of Endangered Species Listing**

The San Diego black-tailed jackrabbit was recently elevated to Federal Candidate status (Category 2).

## **Conservation Issues and Options**

Given the species' viability in many habitats, and its reproductive capability in high quality habitat, the primary conservation issue is maintenance of large contiguous reserve areas with high quality and diverse habitat. Accomplishing this goal would appear to assure species survival.

## **MITIGATION STRATEGIES**

The San Diego black-tailed jackrabbit is relatively common in the region at this time, and may be extending its range somewhat. Habitat preservation and enhancement is therefore the primary mitigation strategy.

To minimize impacts, phased impact of impact-area habitat will permit the jackrabbit to move to Reserve habitat. Removal of grazing from the Reserve will enhance the carrying capacity of the habitat for this species significantly, and this will offset loss of habitat due to reservoir construction. There are approximately 7,000 acres of suitable habitat outside of the impact area which the species can move to. Given the species' fecundity, movement should not affect reproductive success significantly.

The species should also benefit from efforts to manage the Reserve for habitat diversity.

## **IMPLEMENTATION AND FUNDING**

Implementation and funding of this HCP are described in Section Three. Research proposed will be designed in 1992 and carried out from 1993 through 1998.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

The Domenigoni Valley Reservoir Project will not, by itself, pose a threat to the viability of the population of San Diego black-tailed jackrabbits, either in Riverside County or within its range. The species is relatively common within a wide range, and is capable of utilizing many types of habitat within its range. The Reserve will protect a large contiguous area of habitat for the species.

The project will result in a net reduction in the aerial extent of habitat, but this reduction will be offset by an increase in the habitat quality on the Reserve. Given the species' response to improvements in habitat, a net gain in population may occur as a result of management activities under this HCP.

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## **A-11 HABITAT CONSERVATION PLAN FOR THE SAN DIEGO DESERT WOODRAT (*Neotoma lepida intermedia* Rhoads)**

### **GENERAL**

This HCP describes the general status of current knowledge concerning the San Diego desert woodrat. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

Reservoir project impacts to this species are likely to be minor, due to the lack of its preferred habitat on site. However, some suitable habitat is likely to exist in patches where rocky outcroppings occur in the impact area. The lack of reliable water supplies in the impact area probably means that the species is not found on the south slope of the North Hills, and is found primarily in drainage areas on the north slope of the South Hills. There are few areas of suitable habitat in the impact zone; concentrations of the woodrat are probably found only in borrow areas and a few ephemeral drainages of the South Hills. Of the total impact area of 2503 acres, it is likely that less than 100 acres of suitable habitat for this species exists. However, the species may utilize up to 2,200 acres of sage scrub to some extent. The larger figure has been used to designate suitable habitat.

### **THE PLANNING PROCESS**

#### **Other Programs**

The San Diego desert woodrat is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

#### **The Planning Process**

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-11-1).

### **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to the San Diego desert woodrat will occur initially during borrow site activity, where rocky outcrops are likely to be affected. Further impact will occur throughout construction and reservoir filling, as the species' habitat is removed. The estimated level of take at project completion is less than 100 acres with low population densities.

## THE SAN DIEGO DESERT WOODRAT

### Distribution and Habitat Associations

The San Diego desert woodrat is one of 31 recognized subspecies of the desert woodrat (Hall 1981) and is found along the coastal regions of western California and Baja California, Mexico, from approximately Morro Bay to Catalina (Hall 1981, Huey 1964). It is a fairly large, sexually dimorphic subspecies with body mass estimates ranging from 130-152 g for females and 151-190 g for males (Lee 1963, Schwartz and Bleich 1975, Compton 1978, Smith, *in press*).

Within coastal sage scrub communities, the San Diego desert woodrat is almost invariably associated with prickly pear (*Opuntia occidentalis*), although it is also found in rocky outcroppings and boulder covered hillsides in chaparral or oak woodlands (Lee 1963, Huey 1964, MacMillen 1964, Schwartz and Bleich 1975, Compton 1978). The animal constructs "houses" of sticks, cactus joints or other items within the prickly pear patches, with building materials largely dependent on what is available in the habitat (Cameron 1971). Dens not only provide protection from predators (Rainey 1956, Compton 1978), but also serve as a food and/or water source (Axelrod 1983, MacMillen 1964, Compton 1978, F.A. unpublished observations) and because of their highly insulated internal chambers, protect the animals against severe weather conditions (Lee 1963, Cameron and Rainey 1972). The thermal and predator protection of the house has been cited as crucial to the successful occupation of a wide geographic range (Cameron and Rainey 1972).

In chaparral, rock dens are usually located near primary food sources to minimize travel time and exposure to predators (Atsatt and Ingram 1983). Woodrats have been shown to have a minimum requirement of dense shrub cover to persist in a habitat (M'Closkey 1976).

### Population Density and Home Range

Within their range woodrats are very common. Density estimates for similar sage shrub communities range from a low of 0.5 animals/ha (MacMillen 1964) to 120 animals/ha (Axelrod 1983, F.A. Smith, unpublished data) depending on the season, and are probably normally in the range of 10-30 animals/ha (Bleich and Schwartz 1975, Axelrod 1983, F.A. Smith, unpublished data). Population density normally peaks in the summer and is lowest in winter before the onset of breeding (MacMillen 1964). The average life span is probably on the order of four months (MacMillen 1964).

Most woodrat species are solitary and aggressively territorial. In sage shrub communities, however, animals may be more socially compatible permitting the coexistence of a number of individuals within the same prickly pear patch (MacMillen 1964, F.A. Smith, unpublished observations). This is important since cactus patches can blanket very large areas in excess of 87 m<sup>2</sup> (MacMillen 1964, Axelrod 1983, F.A. Smith, unpublished observations).

Woodrats tend to have small home ranges and restricted movement compared to other rodent species with patterns dependent on season and vegetative cover (MacMillen 1964, Bleich and Schwartz 1975, Thompson 1982). Estimates range from 371-433 m<sup>2</sup> when animals are restricted by lack of cover (Bleich and Schwartz 1975) to 2023 m<sup>2</sup> (MacMillen 1964). The degree of overlap may be much higher in the San Diego woodrat than in other species because of the communal nature of prickly pear patches.

## Reproduction

Although other woodrats species reproduce primarily in the early and late spring, the abundant supply of food and water permits breeding most of the year in coastal populations (MacMillen 1964, Schwartz and Bleich 1975, Axelrod 1983, F.A. Smith, unpublished data). Mean litter size is approximately 2.6 (MacMillen 1964, Cameron 1973, Schwartz and Bleich 1973) with one to four litters produced per year (MacMillen 1964). Four mammae would appear to provide a natural limit to the number of offspring produced. Although litters of five individuals have been reported, the mothers apparently died due to nutritional stress (Cameron 1973). Young weigh about 6-10 grams at birth (Cameron 1973) and are weaned after 16-42 days (Cameron 1973, Schwartz and Bleich 1973).

## Food Habits

Food habits are relatively well documented for this species. Woodrats are small hindgut herbivores capable of digesting significant amounts of complex plant fibers such as cellulose, hemicellulose, and to some extent lignins (Justice and Smith 1992). *Neotoma* diets are locally dominated by one to three plant species but dietary composition varies from habitat to habitat (Atsatt and Ingram 1983, Justice and Smith 1992). Local specializations may reflect microfloral adaptations, and are probably developmentally acquired (Atsatt and Ingram 1983, Justice 1985). Animals are highly selective and discriminate with respect to leaf age and condition and also on the basis of interplant differences (Thompson 1982, Atsatt and Ingram 1983, Justice and Smith 1992). This behavior presumably reflects adaptations to reduce the ingestion of secondary compounds and/or fiber (Atsatt and Ingram 1983, Justice and Smith 1992). Plants consumed in large quantities include *Opuntia* pads and fruit, *Artemisia californica*, *Lotus scoparius*, *Eriogonum*, *Salvia apiana*, *Quercus agrifolia*, *Larrea* or *Juniperus* when available (Meserve 1974, M'Closkey 1976, Atsatt and Ingram 1983). *Rhus integrifolia* and *Quercus dumosa* are occasionally ingested (Meserve 1974).

## Factors Affecting Distribution

Within chaparral and coastal sage shrub communities, *Neotoma lepida* occur in the greatest densities where cactus patches are present (Lee 1963, MacMillen 1964, M'Closkey 1976, Meserve 1974). The lack of prickly pear within the Domenigoni Valley probably indicates a low population largely confined to rocky outcrops. Shrub cover is also very important in determining the distribution patterns of woodrats, providing predator cover and a food source (M'Closkey 1976). Woodrats are relatively inefficient at conserving water and so a predictable water supply such as that afforded by cacti and/or perennial shrubs is very important to the ecology of these animals (MacMillen 1964, Meserve 1974).

Relationships with other rodent species, and in particular with *Neotoma fuscipes* (the dusky footed woodrat) probably also influence distribution patterns. The dusky footed woodrat has been described as behaviorally dominant over the desert woodrat resulting in dietary shifts by *Neotoma lepida* in areas of sympatry (Cameron 1971). Other workers (MacMillen 1964, Meserve 1974) have described the two species as mutually intolerant. In any case, the presence of *Neotoma fuscipes* within the chaparral communities undoubtedly limits the utilization of shrubs and den sites by *Neotoma lepida*.



## **Status of Endangered Species Listing**

The San Diego desert woodrat was recently accorded federal Candidate 2 status.

## **Conservation Issues**

Preservation of chaparral and sage scrub habitats, particularly in areas where there is a relatively constant water supply or where cactus are present, is the primary conservation issue.

## **MITIGATION STRATEGIES**

The Reserve has significantly more suitable habitat for the San Diego desert woodrat than the impact area and its creation and management will more than offset losses due to reservoir project impacts. A total of up to 7,000 acres of habitat within the Reserve may be utilized by the species. Management of the Reserve will also have positive impacts on the species. In particular, removal of cattle will increase the density of cover in sage scrub areas, improving the carrying capacity of these areas for this species. Second, fire breaks are planned as part of the Reserve; cactus may be planted along these breaks to increase fire protection. This will provide significant new habitat for this species, as well as for other species such as cactus wrens.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

Only a small population of the San Diego desert woodrat is likely to be impacted by the project. For the most part, this population can be expected to move into Reserve habitat as impact area habitat is removed prior to destructive construction operations. Reserve management will improve habitat carrying capacity for the species, particularly if fire breaks include planting of cactus. This type of management activity will ensure that the net effect of this HCP is a long-term gain in the population of this species within the HCP area.

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## **A-12 HABITAT CONSERVATION PLAN FOR THE NORTHWESTERN SAN DIEGO POCKET MOUSE (*Chaetodipus fallax fallax*)**

### **GENERAL**

This HCP describes the general status of current knowledge concerning the Northwestern San Diego pocket mouse. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project and in Section 4 of this HCP.

San Diego pocket mice are likely to be found in rocky and shrub areas of the impact area and the adjacent Reserve, with higher population densities in heavy cover where they are better protected from predators. Thus, the population at Domenigoni and Diamond valleys is likely to be concentrated on the north slope of the South Hills, where shrub cover and rocky outcrops are relatively abundant.

### **THE PLANNING PROCESS**

#### **Other Programs**

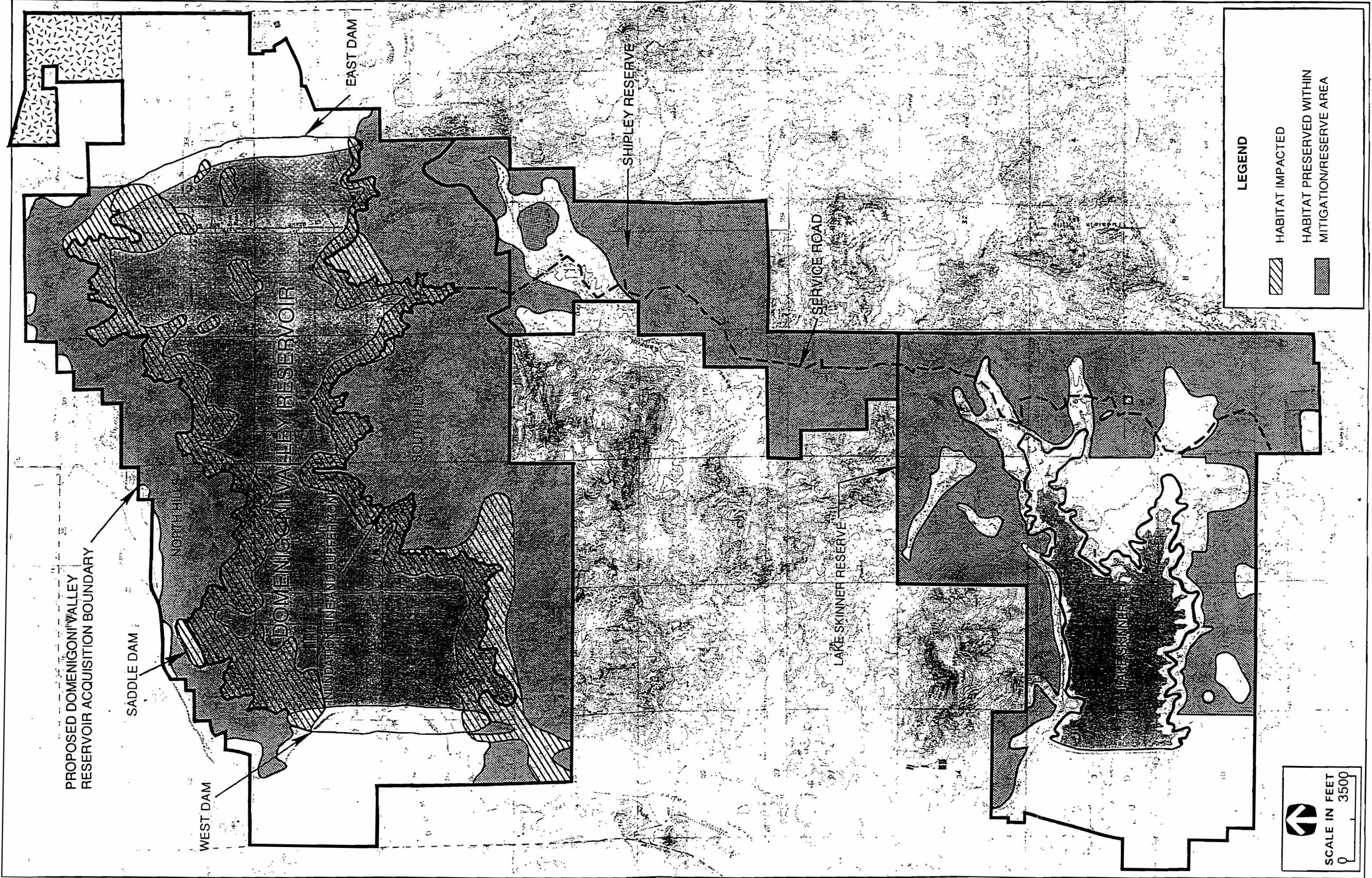
The San Diego pocket mouse is not currently the focus of other conservation programs. Indeed, the species is relatively common in the region and has been accorded Federal Candidate status primarily because of threats to its habitat. Significant planning for this species at the agency level is not anticipated for several years.

#### **The Planning Process**

This HCP was developed primarily from a review of current literature and an analysis of the habitat likely to be available for the species on the Reserve (Figure A-12-1).

### **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Impacts to the San Diego pocket mouse will begin in 1992 with archeological investigations, geotechnical studies, and fire control activities and will continue throughout construction and reservoir filling, as its habitat is removed. The estimated maximum level of take at project completion is 2,200 acres, although actual take may be considerably less and will probably be concentrated in habitat on the north slope of the South Hills.



PROPOSED DOMENIGONI VALLEY RESERVOIR ACQUISITION BOUNDARY

SADDLE DAM

WEST DAM

NORTH HILLS

DOMENIGONI VALLEY RESERVOIR

NUNATAK LINE AND BUFFER ZONE

SOUTH HILLS

LAKE SKINNER RESERVE

SHIPLEY RESERVE

SERVICE ROAD

LAKE SKINNER

LEGEND

-  HABITAT IMPACTED
-  HABITAT PRESERVED WITHIN MITIGATION/RESERVE AREA
-  MITIGATION/RESERVE AREA



SCALE IN FEET  
0 3500

Habitat of Northwestern San Diego Pocket Mouse, Impact Area and Mitigation Area (reserve). Based on preliminary field observations.

## **NORTHWESTERN SAN DIEGO POCKET MOUSE**

### **Distribution and Habitat Associations**

The San Diego pocket mouse is a small granivorous rodent found throughout much of southwestern California and northern Baja California, Mexico (Huey 1964, Hall 1981, Nowak and Paradiso 1983). In California, it inhabits coastal sage and/or chaparral communities within portions of San Diego, Riverside, and San Bernardino Counties. Distribution limits in Mexico are from Jacumba west to the Pacific Ocean, south to El Valle de la Trinidad and to Ensenada, primarily on western mountain slopes (Huey 1964).

Pocket mice demonstrate a strong microhabitat affinity for rocky substrates, and to a lesser extent, shrubby areas (Price and Kramer 1984). Presumably this reflects predator avoidance behavior. Pocket mice, in general, dig relatively shallow burrows with several entrances (Mares 1983, Nowak and Paradiso 1983, Reichman 1983), although nest chambers have occasionally been reported as deep as 85-193 cm below the surface (Kenagy 1973). Burrows not only protect against predators, but when sealed with a loose mound of soil, provide insulation and regulate the temperature and humidity within (Kenagy 1973, Reichman 1983).

Under inhospitable surface conditions or periods of resource scarcity, pocket mice often become torpid (Eidemiller 1982, MacMillen 1983, Mares 1983, Reichman 1983). This is a facultative ability that reduces energetic expenses when foraging would not provide enough energy to compensate and may occur for periods on the order of several days (MacMillen 1983, Mares 1983, Reichman 1983). Animals may save up to 97% of energetic costs by becoming torpid (MacMillen 1983).

### **Population Density and Home Range**

Pocket mice exhibit very large home ranges, often equivalent to animals of much larger size (Reichman 1983). MacMillen (1964) estimated a mean home range for San Diego pocket mouse of 3116 m<sup>2</sup>, with little overlap between individuals. There was no difference with regard to sex. Population density has been reported as low, approximately 0.09 - 0.54 animals/ha, but relatively constant, with little seasonal fluctuations (MacMillen 1964). Estimates for other related species range from 1 - 9 animals/ha (Hoover et al. 1977). Nowak and Paradiso (1983) suggest a physiological life span in excess of seven years for captive pocket mice, but the only available estimate of life span in the wild is on the order of 4 months (MacMillen 1964). Animals are solitary except for brief periods during the breeding season (MacMillen 1964, Reichman 1983).

### **Reproduction**

Heteromyids, in general, are characterized as having small litters, low population densities and long life spans (Mares 1983, Nowak and Paradiso 1983). Reproduction occurs seasonally during the spring months (Mares 1983). Pregnant and/or lactating San Diego pocket mouse have been captured in April and May (MacMillen 1964) and litters occur once or twice per year (MacMillen 1964, Reichman 1983). Data on mean litter size are not available, although gestation has been reported to be approximately 18 - 30 days (Reichman 1983). Onset of reproduction in heteromyids has been hypothesized to be triggered by the ingestion of green vegetation (Chew and Butterworth 1964, Kenagy and Bartholomew 1981) and so precipitation patterns are probably very important.

## **Food Habits**

Pocket mice are almost exclusively granivorous, although they may occasionally consume vegetation or insects (Meserve 1976, Eidemiller 1982, Reichman 1983). Their long front claws enable them to sift through sand for seeds, which are then cached in their external cheek pouches (Nowak and Paradiso 1983, Reichman 1983). All members of the rodent family Heteromyidae contain fur-lined external cheek pouches which are used for carrying food items. The San Diego pocket mouse, for example, can transport nearly 20% of its body weight in seeds (Morton et al. 1980).

The diet is composed of almost pure grass seeds in summer, autumn and early winter (Meserve 1976, Eidemiller 1982). During late winter and spring, the seeds of several annuals and perennial shrubs such as *Eriogonum*, *Rhus*, and *Artemisia* are also consumed (Meserve 1976). Ingestion of insects occurs occasionally, but it is unclear whether they provide extra water and/or nitrogen or are simply opportunistic captures (Reichman 1983). Pocket mice depend on their keenly developed olfactory sense to find seeds (Reichman and Oberstein 1977, Reichman 1983). Several studies have demonstrated their ability to detect seeds buried deeply within soil (Reichman and Oberstein 1977, Reichman 1983).

Pocket mice can survive indefinitely without drinking water (MacMillen 1964, 1983). Not only are they extremely efficient at water conservation, but they are capable of obtaining metabolic water from seeds (MacMillen 1964, 1983).

## **Factors Affecting Distribution**

It is not clear what factors are most important in influencing the distribution of San Diego pocket mouse. Studies on other related species have demonstrated that soil type and vegetative cover and composition are correlated with abundance of the species (Hoover et al. 1977). Soil type may determine the suitability of an area for a burrow, affecting water holding capabilities, and/or temperature (Hoover et al. 1977).

Interactions with other animals are undoubtedly of some significance. Several studies suggest that pocket mice are behaviorally subordinate to many desert and coastal rodent species (MacMillen 1964, Eidemiller 1982). Removal experiments have demonstrated increases in abundance of pocket mice when potential competitors are removed (Brown and Davidson 1977, Munger and Brown 1981, Axelrod 1983).

## **Status of Endangered Species Listing**

This species was recently accorded federal Candidate 2 status, although it is relatively abundant in sage scrub and chaparral habitats from the coast to inland Riverside and San Diego counties.

## **Conservation Issues**

Loss of sage scrub and chaparral habitat is the primary conservation issue. Conversion of these habitats following fire and/or as a result of development is anticipated to reduce the species' range.

## **MITIGATION STRATEGIES**

This species was found commonly in the reservoir project impact area. It is likely, however, that population densities on the Reserve's 7,000 acres of suitable habitat are higher due to the more suitable (dense) cover and the abundance of rocky substrate. Reserve management activities which result in restoration of dense cover (by removing grazing and converting exotic grasslands to scrub habitat) will favor this species, increasing Reserve carrying capacity. Reserve creation and management will therefore offset reservoir project impacts. Pocket mice can be expected to move into the improved Reserve habitat as impact area habitat is removed, particularly when habitat is removed prior to destructive activities such as blasting and excavation.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

The San Diego Pocket mouse population at the Domenigoni and Diamond valleys will be impacted by the reservoir project, but a majority of the affected individuals will move into adjacent improved Reserve habitat. The reservoir project will therefore not reduce the population appreciably. The Reserve management effort will improve habitat quality in a number of areas, providing more dense shrub cover in the North Hills, the South Hills, and at the Shipley Reserve; this will occur as a result of removing grazing and exotic grasses from the habitat, thereby encouraging the recovery of coastal sage scrub. The net impact of these activities on the San Diego pocket mouse will more than offset reservoir project impacts.



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## CONSERVATION PLAN FOR MITIGATION OF PROJECT IMPACTS TO PAYSON'S JEWELFLOWER (*Caulanthus simulans*)

### GENERAL

This HCP describes the general status of current knowledge concerning Payson's jewelflower. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program adopted for Metropolitan's proposed Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR and as summarized in this HCP, Section Five.

Construction of the Domenigoni Valley Reservoir at the Domenigoni Valley site would impact approximately 21,500 Payson's jewelflower individuals, primarily located at the base of the south-facing slopes of the North Hills and on small outcroppings in the valley itself. The mitigation plan for the Domenigoni Valley Reservoir fully addressed these impacts and proposed an extensive revegetation plan to mitigate for them. That plan, combined with management of habitats within the Reserve, constitutes the plan for this species, as detailed below.

As noted in Section Three, there is no legal requirement for Metropolitan and the RCHCA to pursue mitigation actions for this species under the FESA or the CESA. The plan described below is intended to meet HCP requirements for the species as if it were a listed *animal* species.

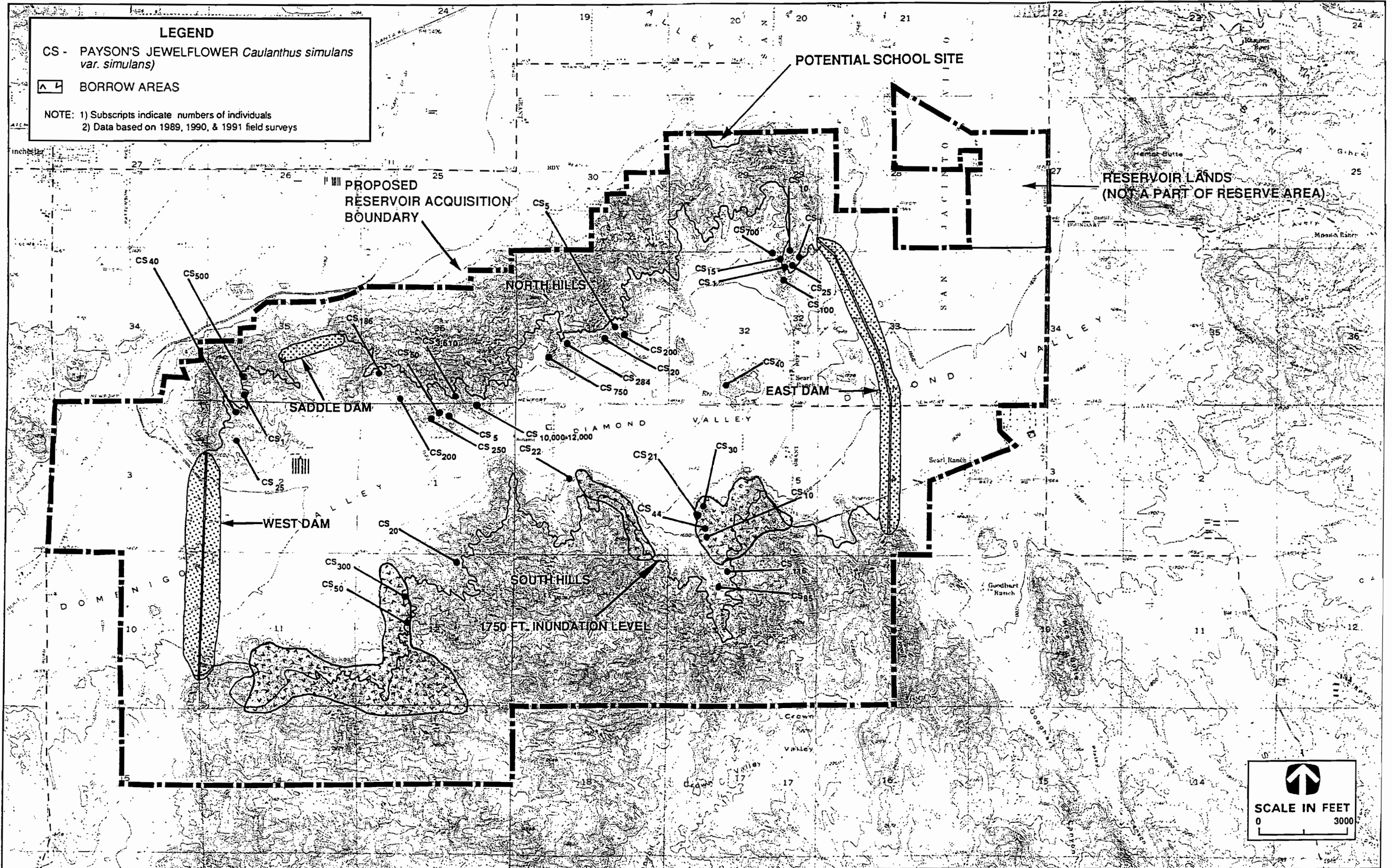
### THE PLANNING PROCESS

#### Other Plans and Programs

Studies of propagation potential for this species have been limited. A majority of the work done on *Caulanthus* species has been conducted with *Caulanthus lasiophyllus*, a similar appearing close relative of Payson's jewelflower. Propagation of this related species has been relatively successful, and suggests that propagation of Payson's jewelflower can also be accomplished.

#### The Planning Process


Development of the HCP for Payson's jewelflower was based on studies conducted during the Domenigoni Valley Reservoir Project environmental planning effort. The process began with a literature review, followed by field studies of the reservoir impact areas and the Reserve mitigation areas. Based on these studies, areas suitable for mitigation for Payson's jewelflower were identified, based on data available to date on habitat requirements. A number of mitigation areas were identified and evaluated. Studies of seed propagation were then conducted to determine the feasibility of mitigation actions.



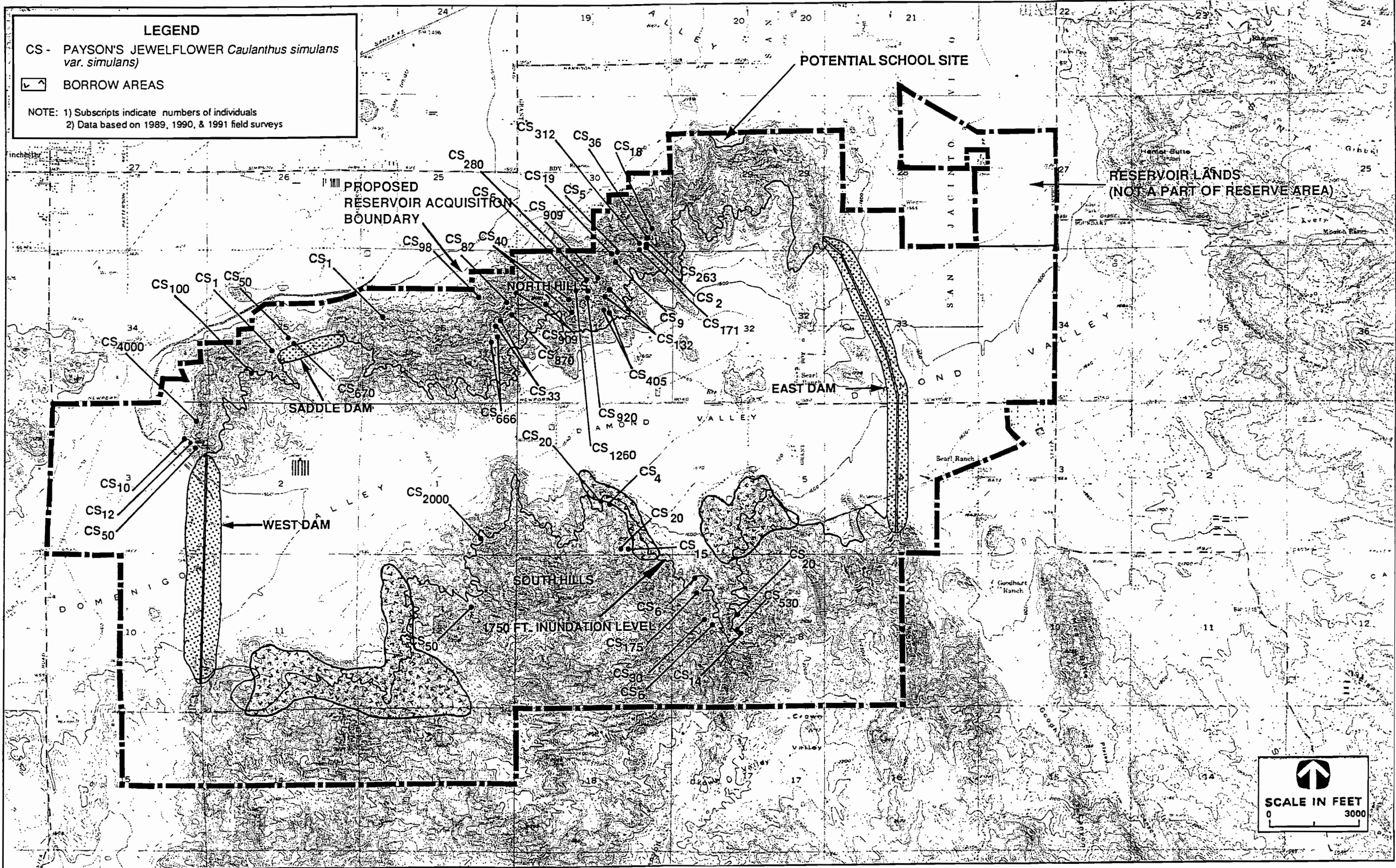
Payson's Jewelflower Locations - Domenigoni Valley Impact Area

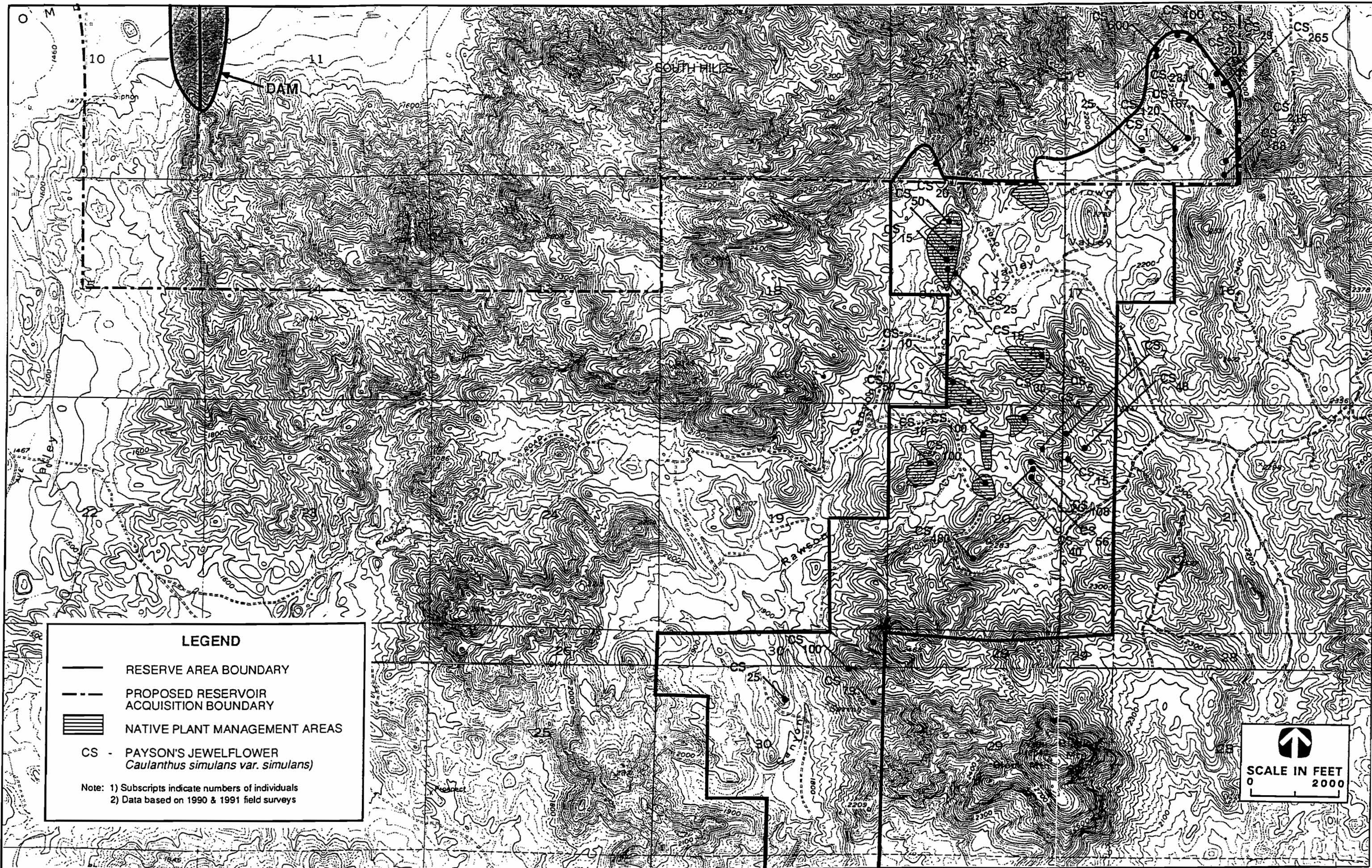
**LEGEND**

CS - PAYSON'S JEWELFLOWER *Caulanthus simulans* var. *simulans*)

 BORROW AREAS

NOTE: 1) Subscripts indicate numbers of individuals  
2) Data based on 1989, 1990, & 1991 field surveys





Payson's Jewelflower Locations - Shibley Reserve

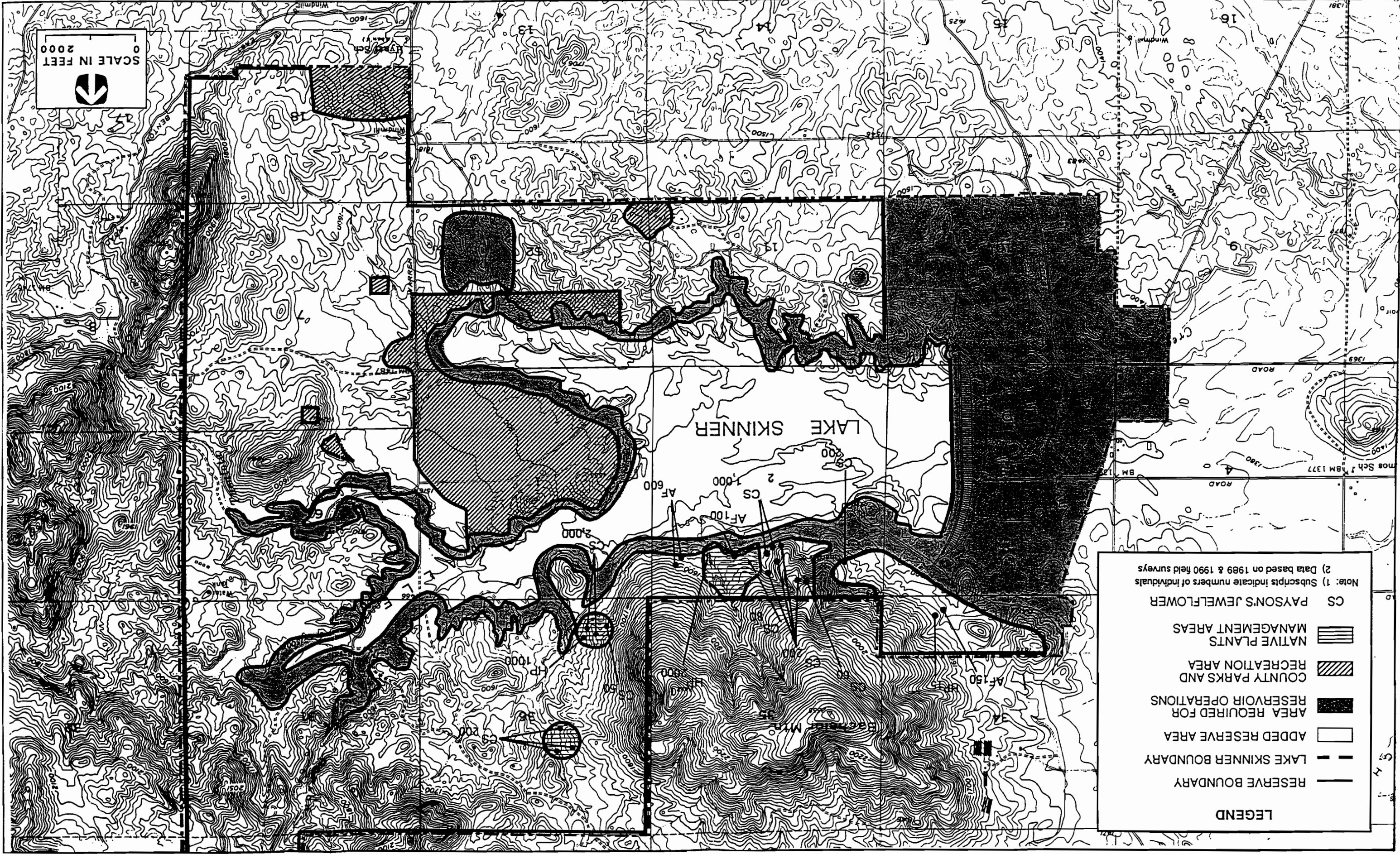


FIGURE A-13-4

## **PROJECT SCHEDULE AND THE TIMING OF POTENTIAL IMPACTS**

Payson's jewelflower was found at lower elevations in the project area, in scattered sage scrub and grasslands habitat along the south-facing slopes of the North Hills; the species was also found adjacent to the north abutments of both proposed main embankments (Figure A-13-1 through A-13-4). These areas are likely to be among the first impacted by project construction, as lands and vegetation area cleared for construction lay-down areas and haul routes and as geotechnical investigations occur in the abutment areas. Impacts to this species are therefore likely as early as 1992 during archeological and geotechnical investigations, and all Payson's jewelflower areas identified in the impact area can expect to be impacted by ground disturbance before 1995.

### **PAYSON'S JEWELFLOWER**

#### **Status and Distribution**

Payson's jewelflower is a small white-flowered, spring-blooming, annual which occurs in sage scrub communities in Riverside and San Diego counties. The species generally flowers from March to May, with the latter being more typical. The species occurs in open and/or disturbed areas of granitic soils and is considered a "fire follower," often found in recently burned sage scrub and chaparral. Previous studies (LaPre 1982 in CNDDDB 1987a, b) found the plant to be common but widely scattered in the Lakeview Mountains and the Gavilan Hills. The species has also been found in sage scrub habitat at Murietta, Winchester, the region between Lake Elsinore and Menifee, the Motte Reserve, near Sage, and Reche Canyon (CNDDDB 1987b). Populations were also found at the Vail Lake reservoir alternative site (11,000 individuals); some individuals were found in chamise or southern mixed chaparral and in burned or unburned habitat adjacent to Highway 79. At Lake Skinner, the species was associated with clay soils along the recently burned base of Bachelor Mountain. The species may therefore be adapted to a wider variety of soil and community types than indicated in the literature. The major threat to the species is urbanization and loss of habitat (Smith and Berg 1988).

Payson's jewelflower propagates by seed. The population found within the Domenigoni Valley Reservoir Project impact area is considered regionally significant. Relatively smaller populations of Payson's jewelflower were also found in similar disturbed sage scrub habitat at Potrero Creek, on the Shipley Reserve, and at Lake Skinner (on the recently burned Bachelor Mountain lower slopes). The habitat requirements for this species are not well documented and there are no reliable distribution and population estimates; the species is associated with inland coastal sage scrub habitats and may be assumed to be threatened by actions which affect these habitats. At the Domenigoni Valley site, the species was found in disturbed sage scrub, either recently burned or mixed sage scrub and grasslands. It was generally found on south or west-facing slopes. In general, the species can be considered threatened by development which impacts sage scrub communities.

#### **Status of Endangered Species Listing**

Payson's jewelflower is a candidate for federal listing (Category 2) and can be expected to be listed as endangered during the project design and construction period (1992-1998). Payson's jewelflower is on California Native Plant Society List 4.



## **Conservation Issues**

There are two primary conservation issues related to Payson's jewelflower: preservation of sage scrub habitat and study to determine the propagation requirements of this particular species. Metropolitan's consultants conducted initial seed propagation studies for this species during 1991, using seed collected at the impact site. Three separate stratification techniques were used: cold stratification, charate, and fire treatment. Germination rates varied from 3% (cold) to 12% (charate). Additional germination and propagation studies are essential to developing a successful long-term strategy for species survival.

## **MITIGATION STRATEGIES: SHORT-TERM MITIGATION AND LONG-TERM GAIN**

### **Strategies for Short-Term Mitigation**

The primary focus of mitigation efforts for this species must be on preservation and management of sage scrub habitats. The Reserve proposed accomplishes this by setting aside almost 6,000 acres of RSS for long-term management. Mitigation for losses of Payson's jewelflower due to the Domenigoni Valley Reservoir Project will also require replacement of the communities impacted. To accomplish this, Metropolitan proposed (in the project FEIR) to conduct additional seed propagation studies and, when seed propagation was better understood, to plant significant numbers of Payson's jewelflower to enhance populations at two sites where the species was found during 1991 surveys: on a 72-acre plot at the Shipley Reserve and on a 48-acre plot at the base of Bachelor Mountain north of Lake Skinner. Following these efforts, plantings would be monitored for 5 years, both to ensure that the mitigation was successful and to learn more about the life history and habitat requirements of this rare species.

### **Strategies for Long-Term Gain**

Finally, it may be possible to manage some habitat areas within the Reserve specifically for Payson's jewelflower, by carefully managing fire. It may prove feasible to combine efforts to eradicate exotic species in sage scrub habitat with efforts to promote propagation of this species. Metropolitan's revegetation consultants have a large stock of seed available at this time for additional propagation research. Carefully managed burns, involving removal of grasses and forbs between patches of RSS, may also create conditions which enhance the propagation of this fire-following species. This thesis may be tested as a part of the RSS enhancement research proposed under the HCP for the California gnatcatcher. Long-term habitat gains for this rare plant will probably depend on research into propagation methods, both for re-establishing the plant in areas where it may once have grown and for enhancing the plant's propagation within its existing range. This research is part of the mitigation plan for this species described in the project FEIR. It includes a series of experiments in propagation techniques and appropriate research into population genetics at various sites prior to full initiation of a propagation program on appropriate lands within the Reserve. It is anticipated that the populations within the impact area (seed source) and those in the Reserve will be compatible because they are contiguous and no significant barriers separate them; they are probably not distinct populations.

## **HCP IMPLEMENTATION**

Funding for this HCP is explained in the discussion of general funding in Section Three. As noted in this discussion, plant propagation studies and enhancement efforts at the Shipley Reserve and Lake Skinner are anticipated.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

Although the project will affect a significant population of this species, the Reserve will preserve almost 5,600 acres of RSS. Populations of Payson's jewelflower have been identified within the Reserve, and removal of grazing and other human disturbance from the Reserve may enhance these populations, even without additional management. The project will therefore not significantly affect the range of the species, instead providing a core area of suitable habitat as well as an area where significant research can be undertaken into the species' habitat requirements and appropriate methods for long-term propagation within the region.

As a result of the proposed research into species propagation, it is probable that effective methods for ensuring species recovery and enhancing survival within the region will be developed. Without this research effort, efforts to initiate recovery efforts could be delayed due to lack of data. The Reserve, and the management plan for this species, will therefore have a long-term net benefit to the species, helping to ensure that recovery efforts are successful and contributing to efforts to prevent extinction of the species.

## REFERENCES

CNDDDB. 1987a. Report on El Casco, Lakeview, Perris and Sunnymead USGC 7.5' quadrangles.

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## A-14 HABITAT CONSERVATION PLAN FOR MITIGATION OF PROJECT IMPACTS TO PARRY'S SPINEFLOWER (*Chorizanthe parryi* var *parryi*)

### GENERAL

This HCP describes the general status of current knowledge concerning Parry's spineflower. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program adopted for Metropolitan's proposed Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR.

Construction of the Domenigoni Valley Reservoir at the Domenigoni Valley site would impact approximately 5,000 individual Parry's spineflowers, primarily located in sage scrub areas at the base of the south-facing slopes of the North Hills, on the north-facing slopes of the South Hills, and on small outcroppings in the valley itself. The mitigation plan for the Domenigoni Valley Reservoir fully addressed these impacts and proposed an extensive revegetation plan to mitigate for these impacts. That plan, combined with management of habitats within the Reserve, constitutes the habitat conservation plan for this species, as detailed below.

Although the mitigation plan described below is not required under either the FESA or the Fish and game Code, it has been prepared to meet the requirements as if the species were a listed *animal* species.

### THE PLANNING PROCESS

#### Other Plans and Programs

Parry's spineflower has not received a CNPS sensitivity rating, and there are few programs directed at either research or enhancement of existing populations. There is some controversy regarding the range and requirements of the species as a result of recent taxonomic revisions. Review of specimens at the UCR herbarium suggest some confusion between *C. procumbens* and Parry's spineflower. Based on available evidence from the UCR studies (Reveal and Hardham 1989), all reported occurrences of the former may now be considered to be Parry's spineflower.

#### The Planning Process

Development of the HCP for Parry's spineflower was based on studies conducted during the Domenigoni Valley Reservoir Project environmental planning effort. The process began with literature review and field surveys of impact and proposed mitigation areas. Areas suitable for mitigation of project impacts to Parry's spineflower were then identified, based on field surveys and a habitat requirements analysis. A number of mitigation areas were identified and evaluated.

## **PROJECT SCHEDULE AND THE TIMING OF POTENTIAL IMPACTS**

Parry's spineflower was found at lower elevations in the project area, in scattered sage scrub and grasslands habitat along the south-facing slopes of the North Hills and the north-facing slopes of the South Hills; the species was also found on outcroppings in the agricultural plain (Figure A-14-1, A-14-2, A-14-3). These areas are likely to be among the first impacted by project construction, as lands and vegetation area cleared for construction lay-down areas and haul routes, for archeological investigations, and as geotechnical investigations occur in the abutment areas. Impacts to this species are therefore likely before 1993, and all Parry's spineflower areas identified in the impact area can expect to be impacted by ground disturbance before 1995.

### **PARRY'S SPINEFLOWER**

#### **Status and Distribution**

Parry's spineflower is a small yellowish-green, annual which is associated with RSS communities in Riverside and northern San Diego counties. The species occurs in the San Gabriel, San Bernardino, and San Jacinto mountain foothills. The species blooms in late spring to early summer, and lives primarily in sandy soils on flat areas in foothill areas. Within the project area, the species was detected primarily on sandy loam soils on the slopes surrounding the valley. The species propagates by seed, but little is known about its propagation and life history.

During FEIR studies for the Domenigoni Valley Reservoir, Parry's spineflower was also found at Potrero Creek (20,000+ individuals), Vail Lake (900+ individuals), Cactus Valley (26 individuals), and Harford Springs (425 individuals). This suggests a relatively wide distribution of the species within the general project region. However, the status of the species in the region is unknown, in part due to the taxonomic problems noted above. A thorough re-evaluation of the species distribution and population viability is needed.

#### **Conservation Issues**

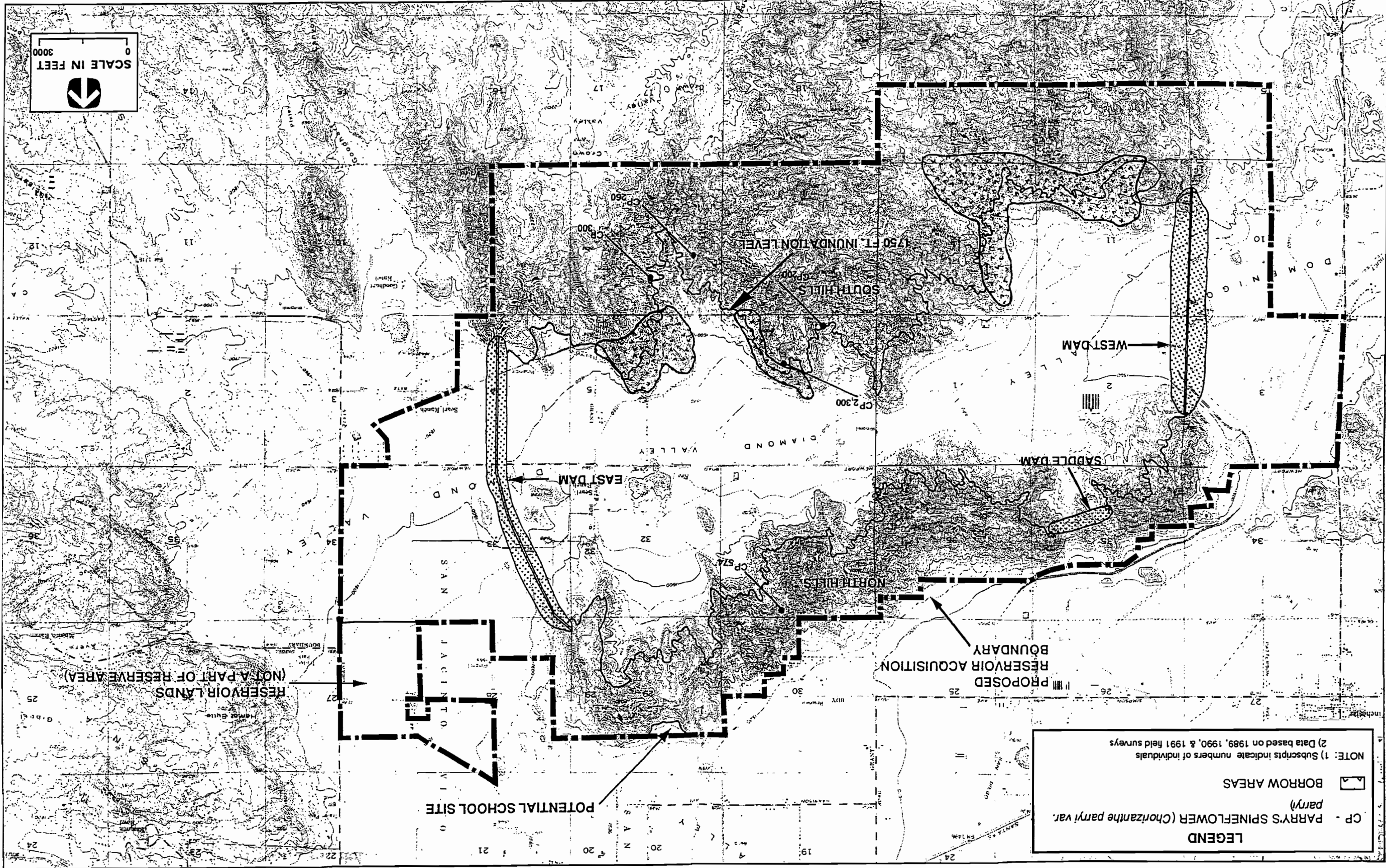
The primary conservation issues for this species are preservation of coastal sage scrub and the paucity of data available about the species, its distribution, the genetic characteristics of various populations in the region, and its propagation potential.

### **MITIGATION STRATEGIES**

#### **Short-Term Mitigation Strategies**

The primary focus of mitigation efforts for this species must be on preservation and management of RSS. The Reserve proposed accomplishes this by setting aside almost 5,600 acres of RSS for long-term management. Parry's spineflower is known to occur in some of this habitat, and may be more extensively distributed than previously documented during FEIR studies for the Domenigoni Valley Reservoir Project. The mitigation plan proposed in the FEIR for the Domenigoni Valley Reservoir Project anticipates preservation of all Parry's spineflower habitat within the Domenigoni Valley and outside of the impact area as well as preservation of the large population found during initial surveys at the Shipley Reserve. It is likely that additional surveys at Shipley Reserve and Lake Skinner will identify additional populations of this species.





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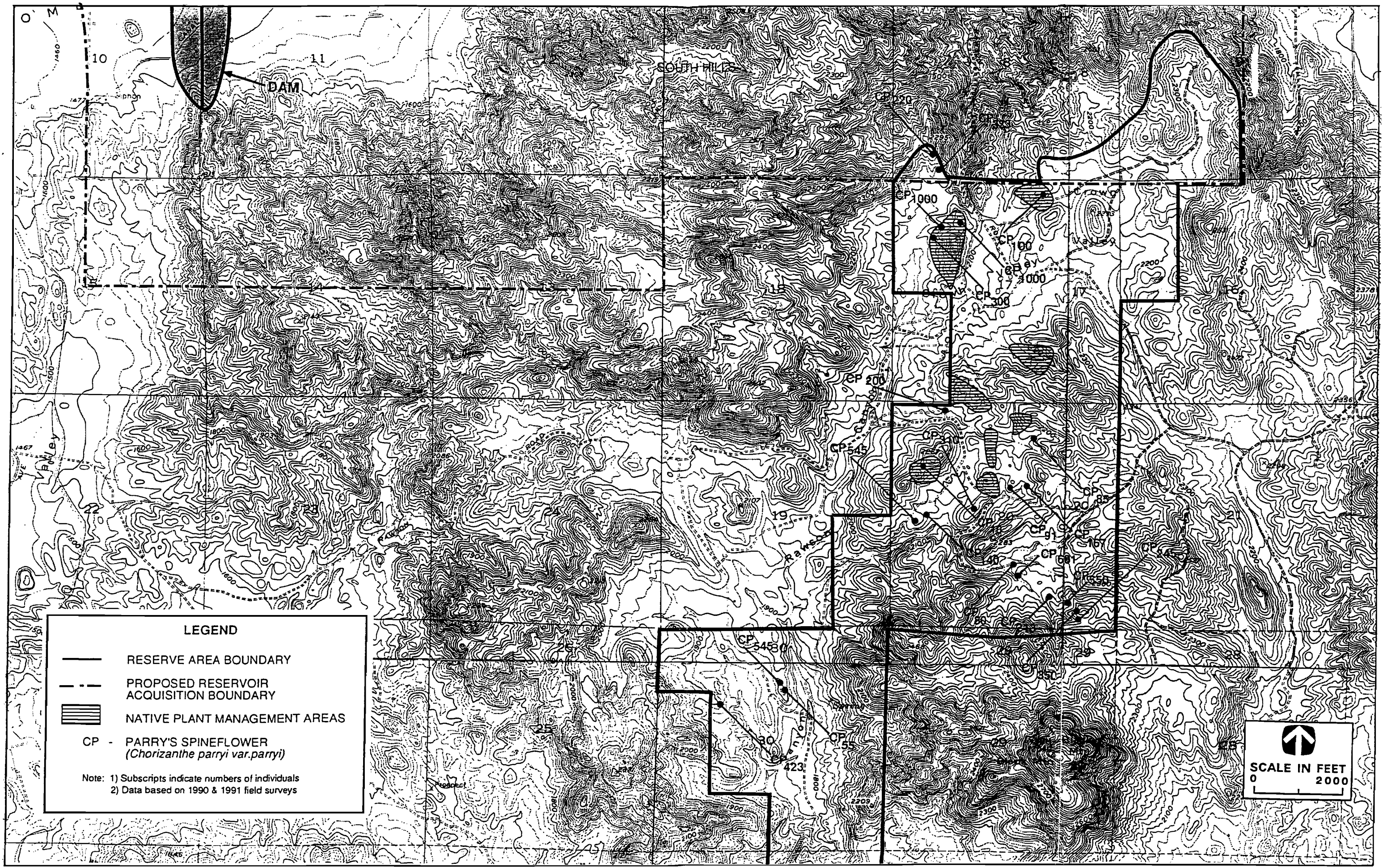
**LEGEND**

CP - PARRY'S SPINEFLOWER (*Chorizanthe parryi* var. *parryi*)

BORROW AREAS

NOTE: 1) Subscripts indicate numbers of individuals  
2) Data based on 1989, 1990, & 1991 field surveys

FIGURE A-14-2



**LEGEND**

- RESERVE AREA BOUNDARY
- - - PROPOSED RESERVOIR ACQUISITION BOUNDARY
- ▨ NATIVE PLANT MANAGEMENT AREAS
- CP - PARRY'S SPINEFLOWER (*Chorizanthe parryi* var. *parryi*)

Note: 1) Subscripts indicate numbers of individuals  
 2) Data based on 1990 & 1991 field surveys

↑  
 SCALE IN FEET  
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Parry's Spineflower Locations - Shibley Reserve



## **Strategies for Long-Term Gain**

Long-term gain for the species will require research into the habitat requirements, propagation, and life-history of the species. A significant element of this research may be accomplished as a part of monitoring of vegetation enhancement programs on the North Hills of the Domenigoni Valley, or on vegetation enhancement areas of the South Hills. Transects for this monitoring effort will be placed across probable habitat for Parry's spineflower, and 5 years of intensive monitoring will be conducted. The occurrence of the species within these transects will be noted in this monitoring effort, along with data on slope, soils, soil moisture, and other variables likely to influence the species' growth.

Research conducted in preparation for propagation of this species in areas of suitable habitat will include genetic studies which will assist in evaluations of the population characteristics in the region.

## **HCP IMPLEMENTATION AND FUNDING**

Funding for this HCP is explained in the discussion of general funding for the HCP. The primary funding for Parry's spineflower will be propagation studies, propagation and enhancement efforts, and for research related to the monitoring of enhanced RSS habitats.

## **SUPPORT FOR A "NO JEOPARDY" FINDING**

Although the project will affect a significant population of this species, the species at present appears to be well-distributed within the general region, with a large population at Potrero Creek. The Reserve will preserve almost 5,600 acres of RSS; known populations of Parry's spineflower within the Reserve exceed populations impacted and it is likely that additional populations will be identified on the Reserve. Management of the Reserve, in particular management to reduce exotic vegetation which has moved into RSS degraded by grazing, will probably result in increased populations of all native plants. Management which includes carefully controlled use of fire to remove exotics may favor Parry's spineflower, which is thought to be a fire follower.

As a result of the proposed research as a part of RSS enhancement efforts, it is also probable that greater understanding of the species and its life history will be gained. Preservation of the species in the Reserve will provide a reservoir of native seed stock for the species. Additional data on the life history and habitat requirements of the species will assist in long-term recovery efforts, reducing the likelihood of eventual extinction of the species.

## REFERENCES

Reveal, J.L. and C.B. Hardham. 1989. A revision of the annual species of *Chorizanthe* (Polygonaceae:Erigonoideae). *Phytologia* 66(2): 98-197.

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## **A-15 HABITAT CONSERVATION PLAN FOR MITIGATION OF IMPACTS TO THE SMOOTH TARPLANT (*Hemizonia laevis*)**

### **GENERAL**

This HCP describes the general status of current knowledge concerning the smooth tarplant. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR for the project.

The Domenigoni Valley Reservoir Project will affect a population of approximately 20,000 smooth tarplant individuals, about 7,000 to 8,000 of them growing in the flat saline-alkali loams on the floor of the Domenigoni Valley. The largest population is within a 50-to-60 acres plot in the middle of the valley. Mitigation for these impacts involves an extensive effort to propagate and re-establish a population on similar soils within the proposed recreation area at the west end of the reservoir. Outside of the reservoir site itself, a larger population of smooth tarplant exists along the proposed pipeline corridors for the pipeline/canal leading from the terminus of the Colorado River Aqueduct and the new reservoir.

Although there is no legal requirement for mitigation of impacts to this species under the FESA or the Fish and Game Code, the mitigation plan described below is intended to meet HCP requirements as if the species were a listed *animal* species.

### **THE PLANNING PROCESS**

#### **Other Plans and Programs**

Given the current status of smooth tarplant, there are no long-term planning efforts in southwestern Riverside County underway for its protection and recovery.

#### **The Planning Process**

Planning for the recovery of this species and for mitigation of project impacts focused on determining the feasibility of propagation of the species so that revegetation of areas affected could be accomplished, and new populations established where revegetation was not feasible. In a series of 1990-1991 propagation studies, Metropolitan's consultant (ERC Environmental) and Rancho Santa Ana Botanic Garden determined that the smooth tarplant is suitable for propagation and cultivation. Plants propagated from native seed stock grew vigorously and produced seed under nursery conditions; they proved suitable for transplanting. Plants from all three populations tested propagated successfully.

### **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Within the impact area, virtually all plants found were on the valley floor; these populations would be impacted early. Plants in the west embankment area may be impacted by geotechnical explorations in summer of 1992 or fall of 1993. The major population in the mid-valley will be impacted by construction operations in early 1994. Populations along the pipeline and transmission line alignments will be impacted in phases, as construction occurs along the alignments, from 1993 to 1998.

## THE SMOOTH TARPPLANT

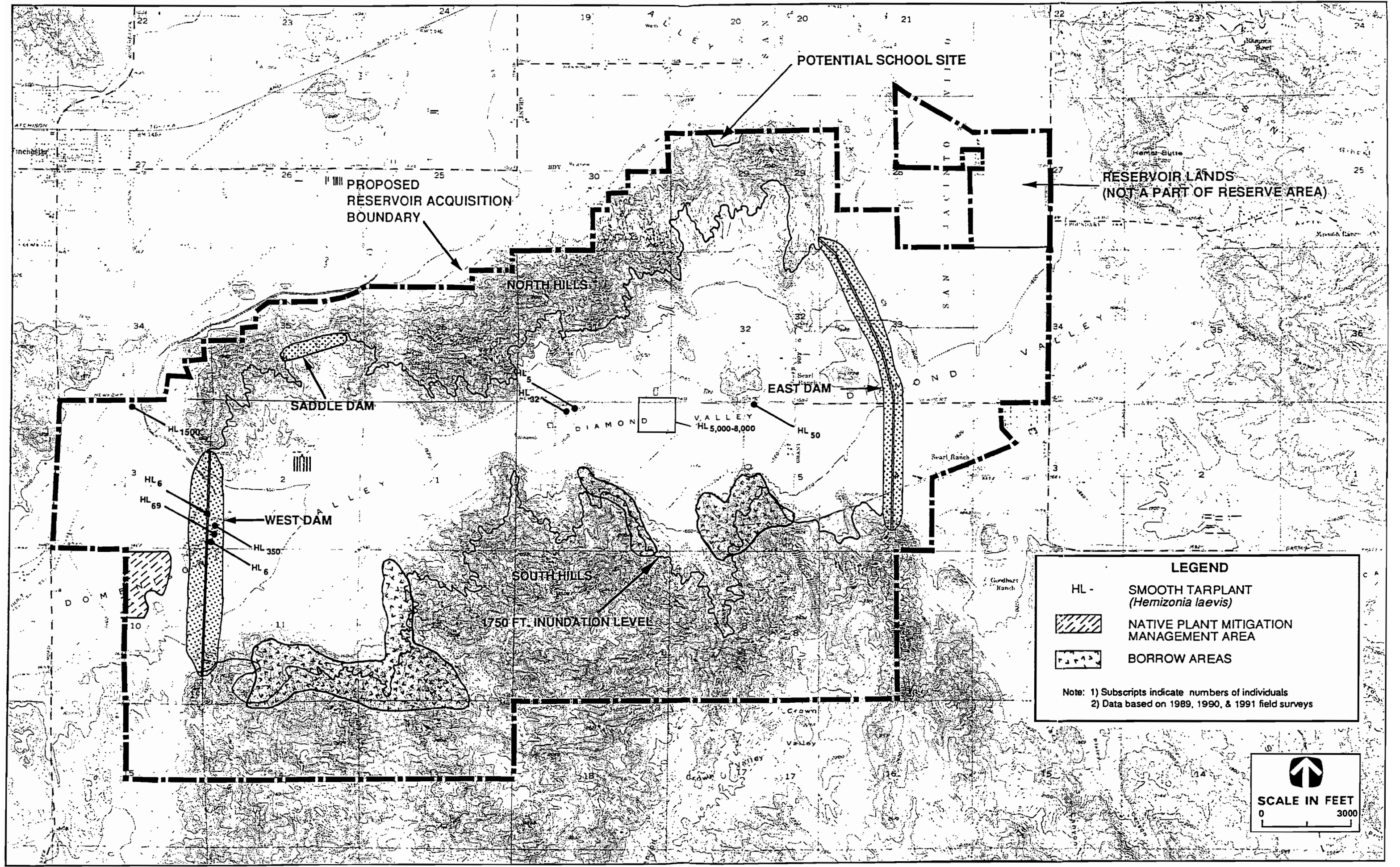
### Status and Distribution

The smooth tarplant is a yellow-flowered, summer-blooming annual species which occurs in grassy fields or alkaline meadows at low elevations away from the coast (Munz 1974; Boyd 1983) throughout southern California. A vast majority of the development in southern California's inland areas has occurred on this "buildable" habitat, and flood control projects have also been sited in this low-lying habitat throughout the region. In Riverside County, the species is most threatened by development, and by flood control projects which remove the threat of inundation from its habitat, thereby permitting the habitat to be developed (Smith and Berg 1988).

During studies of mitigation areas in Riverside County, the smooth tarplant was found at only two of the nine sites surveyed, at Lake Skinner (at the base of Bachelor Mountain) and in the San Jacinto River corridor, suggesting that its distribution is, indeed, limited in the region. Within the Reserve, the only area of documented appropriate habitat is at the base of Bachelor Mountain. There is, however, an area of appropriate alkaline soils (USDA 1971) in the middle of the proposed West Recreation area (Figure A-15-1). This area totals over 50 acres. Some of the suitable soils are outside of the project take line and some are too close to the dam or re-routed alignment for the San Diego Canal to be used for a revegetation effort. However, there is adequate acreage for propagation of this species.

### Conservation Issues

The primary conservation issues for the smooth tarplant are 1) rapid loss of habitat due to agriculture and development of flatlands in the region and 2) lack of knowledge of the species' suitability for propagation and enhancement. Limited habitat is also an issue due to the species' apparent need for alkaline soils. Finally, the genetics of the various populations, now isolated by agriculture but probably contiguous in recent history, must be established to ensure the viability of the species.



Domenigoni Valley Impact and Mitigation Area for the Smooth Tarplant

## **MITIGATION STRATEGIES**

Mitigation for impacts along the pipeline alignment will first focus on avoidance of impacts by adjustment of the alignment. Second, construction areas may be concentrated (if feasible) on the already-disturbed portions of the alignment which do not contain sensitive species. Finally, where impacts cannot be avoided, seed will be collected and topsoil may be removed and stored off-site until construction is complete. Topsoil would then be replaced and the area restored.

### **Reservoir Area**

There is no potential for avoidance of impacts to the existing populations of the smooth tarplant in the reservoir area because they plants are within the inundation area and/or dam excavation areas. Impacts may be mitigated in several ways. First, the existing population at Lake Skinner may be preserved and enhanced in conjunction with other management plans. Second, a seed bank will be created by collecting seed from the impacted populations well in advance of impact. Third, using some seed from this bank, a series of propagation and genetic studies will be undertaken to determine the feasibility propagation at several potential sites.

Three possible long-term sites for propagation and preservation of these plants have been identified to date. First, there is an area of suitable habitat within the recreation area to the west of the west dam. There is approximately 80 acres of alkaline soils within an existing agricultural area which could be utilized as a propagation area. For this to be successful, the area would be treated as a demonstration project, an interpretive resource within the overall recreation area. There are similar permanent native plant areas associated with recreation areas in the region, such as the native plant area at Lake Perris. This propagation area would be unavailable, however, until approximately 1998 when construction activities were completed.

Additional areas to be considered include an immediately outside of the border of the San Jacinto Wildlife Area (southwest end) and an area on-site at the northeast end of the east recreation area. Both of these areas have appropriate soils and support existing populations of the smooth tarplant. Both are disturbed and could be enhanced with a significant increase in smooth tarplant populations likely.

Prior to selection of any site, the genetic characteristics of the populations involved will be examined to ensure appropriateness of the proposed propagation programs. Sites within the immediate vicinity of the project area will generally be preferred over more distant sites to ensure against mixing of distinct populations.

These strategies will ensure both no net loss from the project and a long-term population gain. In the absence of a reservoir project, the populations within the Domenigoni Valley would likely be destroyed by development, with adequate mitigation in doubt as long as the tarplant was not protected by the FESA or the Fish and Game Code. Implementation of this pre-listing HCP will ensure survival of the regional population at existing levels, in areas protected in perpetuity.

If it is feasible to propagate at interim sites (Lake Skinner and/or the area outside of the San Jacinto Wildlife Area), and there are no genetic contamination issues at these sites, then a net population gain might be achieved from this HCP. Populations established at interim sites may be left in place, and the west recreation area propagation site developed from seed taken from these areas. The result would be a net increase in habitat and populations compared to the without-project condition. Finally, the research

which will be conducted will assist resource agencies in developing regional conservation plans for this species. The proposed mitigation will result in reestablishment of a population at least as large as that impacted.

### **Support Facilities**

There is a significant potential for avoidance of impacts to the smooth tarplant along the pipeline corridors, provided that construction activities can be contained on the side of the right-of-way that does not have significant populations of this plant (or of the San Jacinto Valley saltbush). To the extent that impacts cannot be avoided, mitigation will involve a carefully planned program of seed collection and banking, plant propagation, and possible removal of topsoil prior to construction and replacement of topsoil and vegetative communities following construction. This will take place in phases as the pipeline passes through areas with significant populations of the smooth tarplant.

### **HCP IMPLEMENTATION AND FUNDING**

Funding for this mitigation and preservation work are described in Section Three.

### **SUPPORT FOR A "NO JEOPARDY" FINDING**

In recent work on the San Diego Canal, disturbance of these populations was followed by rapid unassisted revegetation of communities, indicating that temporary disturbance may not affect long-term population viability. In addition, by preserving the seed from populations impacted and reestablishing these populations on suitable areas, either in the West Recreation area, in other areas in the immediate vicinity of the project, or along the pipeline corridors following construction, the genetic potential of existing populations will be preserved. There will therefore be no net loss of population as a result of the project, not will the permanent range of the species be significantly affected. There will be no loss of total habitat area; if agricultural sites currently unpopulated are restored there may even be a long-term net gain in population.

From a long-term perspective, research and propagation of the smooth tarplant will contribute to knowledge of methods for enhancing and ensuring the recovery of this species in the region. First, propagation and monitoring will yield valuable data about the species response to disturbance and potential propagation and habitat requirements. Second, it is possible that populations in the areas selected for reestablishment will, with proper management and protection, exceed those within the impact area. Third, creation of a seed bank may permit revegetation of other areas which were historically occupied by this species but which have been extensively disturbed, such as areas adjacent to flood control levees. Given these prospects, the project will neither interfere with the long-term reproductive potential of the species nor will it contribute to the extinction of the species.

## **REFERENCES**

**Boyd, S. 1983. A flora of the Gavilan Hills, in Western Riverside County, California. Master's Thesis, UC Riverside.**

**Munz, P.A. 1974. A flora of southern California. UC Press, Berkeley. 1086 pp.**

**Smith, J.P., Jr, and K. Berg. 1988. Inventory of rare and endangered vascularplants in California. CNPS, special publication no. 1 (4th edition).**

**USDA, 1971. Soil Survey. Western Riverside Area, California.**



## CONSERVATION PLAN FOR IMPACTS TO THE SAN JACINTO VALLEY SALTBUSH (*Atriplex coronata*)

### GENERAL

This HCP describes the general status of current knowledge concerning the San Jacinto Valley saltbush. It, in conjunction with the research and management proposed for the Reserve, creates a framework which will ensure that the requirements of the FESA and the Fish and Game Code are fulfilled. It has been prepared to be consistent with the overall mitigation program adopted for Metropolitan's Domenigoni Valley Reservoir Project, as described in the October 1991 FEIR.

Project impacts to the San Jacinto Valley saltbush would occur only along transmission line and pipeline corridors for the support facilities for the Domenigoni Valley Reservoir Project (Figure A-16-1). Construction impacts would be temporary, and there is no legal obligation to mitigate for these impacts under either the FESA or the Fish and Game Code. However, the mitigation program proposed in the FEIR and described below treats these species as if they were listed *animal* species and provides for full restoration of the habitat disturbed by construction. This includes re-planting of native populations of two sensitive plants, the smooth tarplant and the San Jacinto Valley saltbush.

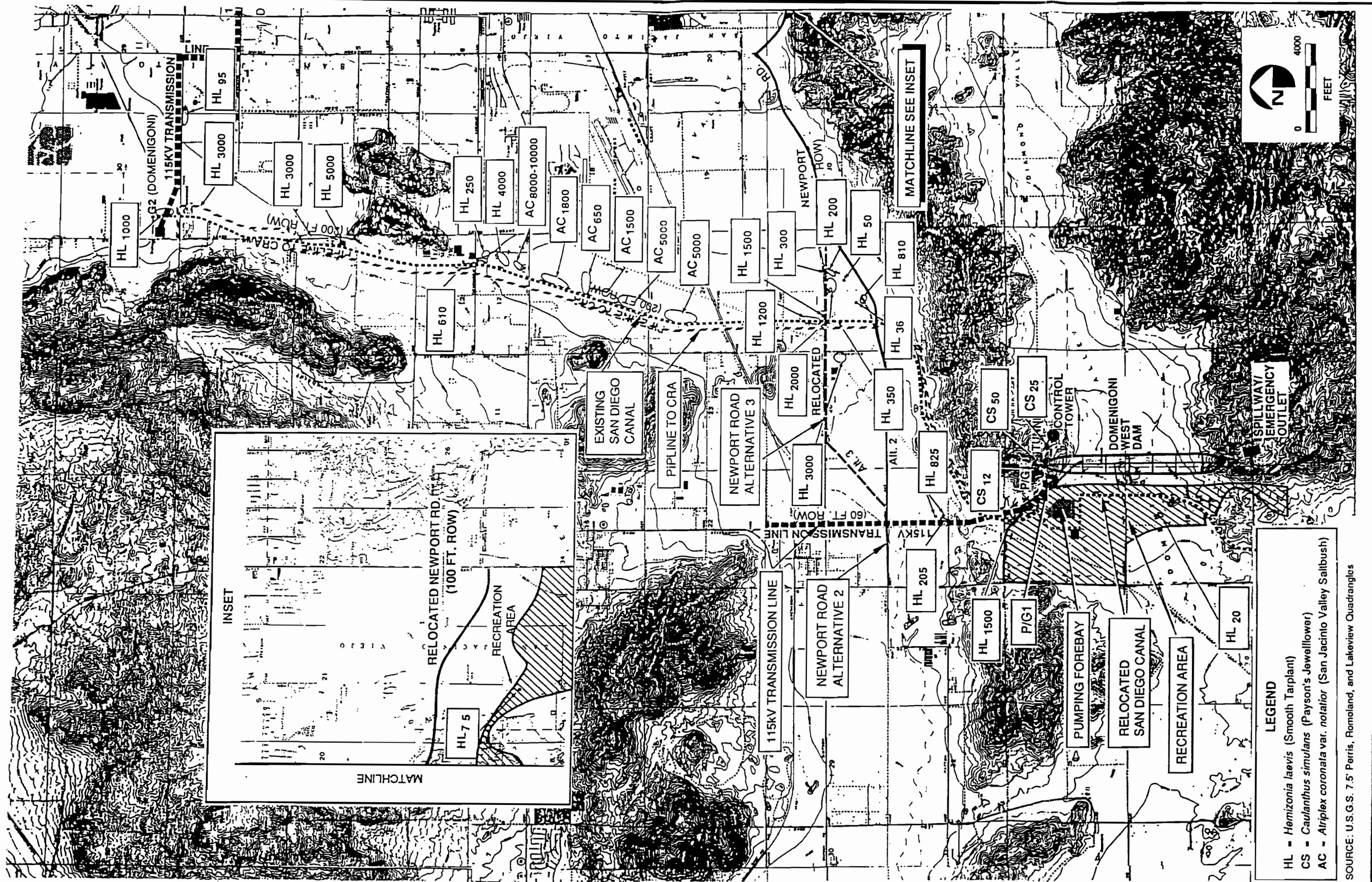
### THE PLANNING PROCESS

#### Other Plans and Programs

Given the current status of the San Jacinto Valley saltbush, there are no significant long-term planning efforts underway for its protection and recovery in the region.

#### The Planning Process

Planning for the recovery of this species and for mitigation of project impacts focused on determining the feasibility of propagation of the species so that revegetation of areas affected could be accomplished, and new populations established where revegetation is not feasible. In a series of 1990-1991 propagation studies, Metropolitan's consultant (ERC Environmental) and Rancho Santa Ana Botanic Garden determined that the San Jacinto Valley saltbush is suitable for propagation and cultivation. Plants propagated from native seed stock grew vigorously and produced seed under nursery conditions; they proved suitable for transplanting. Plantings from all three populations tested were successful.



- LEGEND**
- HL - *Hemizonia laevis* (Smooth Tarplant)
  - CS - *Caulanthus similans* (Payson's Jewellflower)
  - AC - *Atriplex coronata* var. *notator* (San Jacinto Valley Saltbush)

SOURCE: U.S.G.S. 7.5' Perris, Romoland, and Lakeview Quadrangles

Populations of San Jacinto Valley Saltbush, along the pipeline corridor for the Eastside Reservoir Project

## **PROJECT SCHEDULE AND TIMING OF IMPACTS**

Populations along the pipeline and transmission line alignments will be impacted in phases, as construction occurs along the alignments, from 1993 to 1998.

## **THE SAN JACINTO VALLEY SALTBUSH**

### **Status and Distribution**

The San Jacinto Valley saltbush is an erect or decumbent summer-blooming annual which is endemic to the San Jacinto Valley (Munz 1974; Smith and Berg 1988). The species occurs in alkaline flats and is generally associated with valley sink scrub vegetation. The species is threatened by flood control projects, agriculture, and urban development. The species is known to occur within the San Jacinto Valley Wildlife Area and was found at 7 locations adjacent to the right-of-way of the pipeline between the Colorado River Aqueduct terminus and the proposed Domenigoni Valley Reservoir. At these 7 locations, a total of 21,950 individuals were identified in 1989-1991 surveys. These populations were detected from just south of Stetson Avenue to 0.2 miles north of Highway 74. The species was not found at any other area surveyed for the Domenigoni Valley Reservoir Project. Based on these surveys, the San Jacinto Valley saltbush would appear to be under considerable threat within its historic range.

### **Conservation Issues**

Like the smooth tarplant, the primary issues for this species are loss of habitat due to conversion of alkali flats to agricultural or residential-commercial uses.

## **MITIGATION STRATEGIES**

There is a significant potential for avoidance of impacts to the San Jacinto Valley saltbush along the pipeline corridors, provided that construction activities can be contained on the side of the right of way that does not have significant populations of this species. The primary mitigation strategy to be employed will be avoidance. The plant does not lie within the direct impact zone of the pipelines, but rather outside of public lands and the project right-of-way in areas which may be used for construction laydown. Construction laydown areas may be sites to avoid this plant in many instances, thus avoiding impacts. The exact extent of impact will be determined when final construction alignments have been selected and construction methods finalized. At that time, a more detailed plan for this species will be developed.

To the extent that impacts cannot be avoided, mitigation will involve a carefully planned program of seed collection and banking, plant propagation, and possible removal of topsoil prior to construction followed by replacement of topsoil and vegetative communities following construction. This will take place in phases when the pipeline passes through areas with significant populations of the San Jacinto Valley saltbush.

In addition to replacing the impacted populations along the pipeline corridors, the re-planting program for the species and subsequent monitoring of revegetation success and the factors affecting success will provide further data useful in general habitat recovery programs in the future. The preliminary results of propagation studies support a finding that the San Jacinto Valley saltbush is suitable for nursery propagation, and that this approach will succeed in replacing all populations lost due to pipeline construction.

Depending on surveys of habitat and the genetic characteristics of various populations in the general project area, it may also be feasible to consider propagation of these plants off site, on public lands where they can be fully protected.

#### **HCP IMPLEMENTATION AND FUNDING**

Funding for this HCP is described in Section Three.

#### **SUPPORT FOR A "NO JEOPARDY" FINDING**

Following recent construction activities on the San Diego Canal, affected populations of the San Jacinto Valley saltbush recovered naturally and have reestablished themselves along the outside of the right-of-way for the canal. This suggests that natural recovery of populations will occur. Action to assist in this recovery should therefore ensure full recovery following construction. By preserving the seed from populations impacted along pipeline corridor areas and re-establishing the populations on site following disturbance, the genetic potential of the existing populations will be preserved. There will thus be no net loss of population as a result of the project. The range of the species will also not be affected, as populations will remain along the pipeline corridors. There will be no loss of total habitat.

From a long-term protection perspective, there will be a net gain for the species as a result of implementing the program described in this HCP. First, propagation studies and monitoring of the populations following revegetation will yield valuable data about the propagation potential for the species and about its habitat requirements. This data will ultimately prove invaluable in future species recovery efforts. Second, creation of a seed bank may permit revegetation of other areas which were historically occupied by the species but which have been extensively disturbed, such as areas adjacent to flood control levees. Given these prospects, the project will neither interfere with the long-term reproduction potential of the species nor will it contribute to the extinction of the species.

## REFERENCES

Munz, P.A. 1974. A flora of southern California. UC Press, Berkeley. 1086pp.

Smith, J.P., Jr and K. Berg. Inventory of rare and endangered vascular plants of California. CNPS, special publication no. 1 (4th edition).

**APPENDIX B**

to

**MULTI-SPECIES HABITAT CONSERVATION PLAN  
for SOUTHWESTERN RIVERSIDE COUNTY, CALIFORNIA**

**COOPERATIVE MANAGEMENT AGREEMENT**

APPENDIX B  
to  
MULTI-SPECIES HABITAT CONSERVATION PLAN  
for SOUTHWESTERN RIVERSIDE COUNTY, CALIFORNIA  
COOPERATIVE MANAGEMENT AGREEMENT

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to  
COOPERATIVE MANAGEMENT AGREEMENT**

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**APPENDIX B**

to

**MULTI-SPECIES HABITAT CONSERVATION PLAN  
for SOUTHWESTERN RIVERSIDE COUNTY, CALIFORNIA**

**COOPERATIVE MANAGEMENT AGREEMENT**

THIS COOPERATIVE MANAGEMENT AGREEMENT (CMA) dated for reference only as of \_\_\_\_\_, is made and entered into by and among the DEPARTMENT OF FISH AND GAME OF THE STATE OF CALIFORNIA (DEPARTMENT); the FISH AND WILDLIFE SERVICE OF THE UNITED STATES DEPARTMENT OF THE INTERIOR (SERVICE); THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA (METROPOLITAN); the RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY (RCHCA); the RIVERSIDE COUNTY REGIONAL PARK AND OPEN SPACE DISTRICT (DISTRICT); the COUNTY OF RIVERSIDE, a political subdivision of the State of California (COUNTY), and THE RIVERSIDE COUNTY PARK FACILITIES CORPORATION (FACILITIES CORPORATION).

**I. DEFINITIONS**

All terms as originally defined and utilized in the Multi-Species Habitat Conservation Plan (MSHCP), shall have the same meaning when utilized in this Cooperative Management Agreement (CMA).

## II. RECITALS OF PURPOSE AND STATEMENT OF FACTS

This CMA is entered into with reference to the following facts:

A. **MSHCP:** METROPOLITAN and RCHCA have jointly submitted the MSHCP to the SERVICE and the DEPARTMENT. The MSHCP provides for the acquisition, management, operation and maintenance of certain lands located in the southwestern portion of Riverside County, California, (the Multi-Species Reserve) for the conservation, protection, restoration, and enhancement of certain species of flora and fauna indigenous to that area, as well as the execution and performance of certain research activities designed to provide scientific information regarding the species.

B. **MSHCP LANDS:** The area included within the MSHCP constitutes lands owned or to be acquired by METROPOLITAN, as well as lands owned by the FACILITIES CORPORATION, as more particularly set forth on Exhibit "1" attached hereto as the District Reserve Area and by this reference made a part hereof (collectively, the MSHCP lands). Exhibit "2" attached hereto and by this reference made a part hereof is identical to Exhibit "1", except for certain detail, including the legend stating the basis for bearings on the map, as well as increased clarity resulting from its scale.

**C. METROPOLITAN MSHCP LANDS:** The MSHCP lands owned by METROPOLITAN consist of the following: All of which are more particularly shown in Exhibit "1".

1. A portion of the lands encompassed within the MSHCP and owned by METROPOLITAN are leased to the COUNTY which DISTRICT operates and maintains as the Lake Skinner Recreation Area pursuant to the Lake Skinner Lease, and which has previously set aside a part thereof included in the Lake Skinner Reserve Area for the protection of Stephens' kangaroo rats, an endangered species, pursuant to the terms of the Lake Skinner Subordination Agreement. Pursuant to the MSHCP, the Lake Skinner Reserve Area includes additional lands.

2. Domenigoni Valley Reservoir Area, shown in Exhibit "1" as the northern part of the "MWD Operational Area." This part is separate from the southern part of the MWD Operational Area referred to as the Lake Skinner Reservoir Area.

3. Domenigoni Valley and Lake Skinner Reservoir Recreation Areas.

4. Shipley Reserve Area.

5. Domenigoni Reserve Area.

6. Lake Skinner Reservoir Area, shown in Exhibit "1" as the southern part of the "MWD Operational Area."

**D. FACILITIES CORPORATION MSHCP LANDS:** With respect to the MSHCP lands owned by the FACILITIES CORPORATION, the entirety thereof is leased to COUNTY and is set aside to be a

part of the Multi-Species Reserve. These lands are referred to as the District Reserve Area and are more particularly shown on Exhibit "1".

**E. MULTI-SPECIES RESERVE LANDS:** The MSHCP requires that the Lake Skinner Reserve Area, the Shipley Reserve Area, the District Reserve Area (marked as "County Property" on Exh. 1), and the Domenigoni Reserve Area be managed, operated and maintained as the Multi-Species Reserve. Both parts of the MWD Operational Area, the Domenigoni Valley and the Lake Skinner Recreation Areas are not part of the Multi-Species Reserve. The Multi-Species Reserve is more particularly shown on Exhibit "1".

**F. PREVIOUS AGREEMENTS:** The Lake Skinner Reserve Area, the Shipley Reserve Area and the District Reserve Area (but not the Domenigoni Reserve Area) are affected by the Shipley Mitigation Agreement and the Shipley Management Agreement, both of which were previously entered into among the parties hereto.

By execution hereof, METROPOLITAN, SERVICE, AND DEPARTMENT reaffirm and ratify the terms of the Shipley Mitigation Agreement, and all parties terminate the Shipley Management Agreement, and substitute in its place, the terms hereof, in order that the entire Multi-Species Reserve (including the Domenigoni Reserve Area) may be managed pursuant to the terms of this CMA. The parties further reaffirm and ratify management activities previously begun under the Shipley Management Agreement which are to be continued as provided for

in this CMA. In the event of conflict, the CMA shall control over the Shipley Mitigation Agreement.

**G. PURPOSE:** The purpose of this Agreement is to provide for the management of the Multi-Species Reserve in conformance with and to fulfill the requirements of the MSHCP and the Shipley Mitigation Agreement.

### **III. TERM**

**A. TERM:** The term of this Agreement shall commence upon the date of execution by all the parties and shall remain in effect until terminated by the parties. In the event this Agreement is terminated, the fee owners shall manage, operate, and maintain their respective lands in accordance with the conservation easements previously granted.

### **IV. LANDS GOVERNED**

**A. THE MULTI-SPECIES RESERVE LANDS:** This CMA and each of its terms, covenants and conditions is intended to provide for the management of the Multi-Species Reserve, and each of its constituent parts, all of which are more particularly shown in Exhibit "1".

**B. OTHER LANDS GOVERNED BY THE MSHCP:** This CMA and each of its terms, covenants, and conditions is intended to establish the relationship of both parts of the MWD Operational

Area, and the Domenigoni Valley and Lake Skinner Recreation Areas to the Multi-Species Reserve.

C. **ADDITIONAL LANDS:** Subject to the unanimous approval of the Management Committee, any party hereto, or any other person, firm or entity may, subject to such terms and conditions as the Management Committee may prescribe, agree to have lands not now governed by the terms of this CMA become subject to the provisions hereof.

D. **SUBSTITUTE LANDS:** METROPOLITAN may, subject to the unanimous approval of, and such terms and conditions as the Management Committee may prescribe, substitute lands for any portion of those shown in Exhibit "1" determined to be infeasible to acquire or required for operation of the Reservoir. If any lands proposed for substitution result in a loss of suitable habitat or cause impact to a sensitive species, which were not previously addressed by the MSHCP, METROPOLITAN shall provide a comparable additional protection of MSHCP Reserve Lands to maintain the integrity and management for the purposes of the MSHCP.

#### V. **MANAGEMENT COMMITTEE -- RATIFIED**

A. **REPRESENTATIVES:** The Management Committee established by the Shipley Management Agreement and consisting of a representative of each of the following parties to this CMA is hereby ratified in accordance with the terms herein.



Commencing as of the date hereof, the representative of each of the parties is:

DEPARTMENT ----- Its Regional Manager, Region V.

SERVICE ----- Its Field Supervisor, Carlsbad Office.

METROPOLITAN --- Its General Manager.

RCHCA ----- Its Executive Director.

DISTRICT ----- Its General Manager.

Any party may change its representative at any time and from time to time during the term hereof by giving written notice to each of the other parties.

**B. PARTIES NOT ON COMMITTEE:** The COUNTY and the FACILITIES CORPORATION are parties to this CMA solely for the purpose of accomplishing certain transactions. Neither the COUNTY nor the FACILITIES CORPORATION shall serve on the Management Committee.

**C. CHAIR:** Unless changed by the Management Committee, the representative of the DISTRICT shall serve as Chair of the Management Committee and shall prepare agendas and convene meetings.

**D. PURPOSE AND OBLIGATION:** The purpose of the Management Committee, and the obligation of each of its members, is to manage the Multi-Species Reserve and the natural resources contained therein in a fashion consistent, and in compliance with the terms of the Shipley Mitigation Agreement and the MSHCP.

## VI. RESERVE AND RESOURCE DIRECTORS

A. **RESOURCE DIRECTOR:** A Resource Director shall be responsible for implementing the MSHCP in the manner prescribed by the Management Committee throughout the Multi-Species Reserve in accordance with the CMA. Until replaced by the Management Committee, METROPOLITAN shall be the Resource Director.

B. **SHIPLEY RESERVE DIRECTOR:** A Reserve Director shall be responsible for administering the Shipley, DISTRICT, and Lake Skinner Reserve Areas, under the direction of the Resource Director which shall be consistent with and subject to the actions of the Management Committee. Until replaced by the Management Committee, the DISTRICT shall be the Shipley Reserve Director.

C. **DOMENIGONI RESERVE DIRECTOR:** A Domenigoni Reserve Director shall be responsible for administering all portions of the Domenigoni Reserve, under the direction of the Resource Director in the manner prescribed by the Management Committee. Until replaced, METROPOLITAN shall be the Domenigoni Reserve Director.

## VII. MANAGEMENT COMMITTEE -- MEETINGS

A. **REGULAR MEETINGS:** Regular meetings of the Management Committee shall be held at least annually, and at more frequent

times as the Management Committee may from time to time determine. The Chair shall give at least fifteen (15) days written notice of regular meetings to all members.

1. Notice for the regular annual meeting shall be provided by District and accompanied by financial statements of receipts and expenditures for the previous year, a proposed operating budget for the ensuing year, reports from consultants and scientists doing research upon the Multi-Species Reserve during the previous year, and a proposed work plan for the next year.

2. At its annual meeting, the Management Committee shall review and approve the annual budget and the work plan for the next year.

B. **SPECIAL MEETINGS:** Special meetings may be called by any member of the Committee upon fifteen (15) days written notice, including a proposed agenda, to each other member.

C. **TELEPHONE MEETINGS:** With the consent of all members, and except for the annual meeting, meetings may be held telephonically by conference call or seriatim.

D. **QUORUM AND VOTE REQUIREMENTS:** Three members shall constitute a quorum for the transaction of business, and no business may be conducted in the absence of a quorum. A quorum must include either the SERVICE member or the DEPARTMENT member. If the SERVICE member or the DEPARTMENT member is absent, the Chair shall attempt to contact the absent member or members telephonically. Any member who is contacted shall be

permitted to participate in the meeting telephonically. Except as otherwise required herein, all actions of the Management Committee shall require the unanimous consent of members present and participating telephonically. No action of the Management Committee shall be inconsistent with the MSHCP.

#### VIII. MANAGEMENT COMMITTEE -- ACTIONS

A. **CONSISTENCY:** All actions of the Management Committee shall be consistent with the requirements of the Shipley Mitigation Agreement and the MSHCP.

B. **ANNUAL OPERATING BUDGET AND WORK PLAN:** The Management Committee shall adopt an annual operating budget and annual work plan which will set forth specific activities to be carried on during the ensuing year to fulfill the requirements of the Shipley Mitigation Plan and the MSHCP. Except as otherwise provided herein, only activities approved in the annual work plan shall be allowed within the Multi-Species Reserve.

1. Any member wishing to propose an activity for the annual work plan shall submit a detailed activity proposal, together with an estimate of the expense of that activity, in writing, to the Resource Director at least sixty (60) days prior to the annual meeting date for the purpose of assisting the Resource Director in preparing a proposed annual operating budget and annual work plan.

2. The annual work plan shall consist of all the activities proposed to be carried on within the Multi-Species Reserve, such as but not limited to, scientific research, natural resource management activities, security actions, public access, natural resource interpretation activities and historical and cultural resource activities. The work plan shall designate the member(s) or consultant responsible to carry out each activity.

3. The annual operating budget shall reflect the amount of funds then available for expenditure from all sources, including, but not limited to, income from any endowment or grant created by or for a party or a consultant, earnings from the Metropolitan Endowment and the RCHCA Endowment administered by the Shipley Reserve Director, annual appropriations from any member, revenue from fees for use of any part of the Multi-Species Reserve, annual payments from METROPOLITAN for on-going natural resource management and protection activities and donations. It shall also reflect in-kind services or other non-monetary support or donations received for the administration and management of the Multi-Species Reserve.

C. **ACTIVITIES NOT INCLUDED IN ANNUAL WORK PLAN:** In the event any member wishes to propose an activity within the Multi-Species Reserve at a time other than at the annual meeting, that member shall call a special meeting, and shall include a description of the activity in the notice of that

meeting. The description of the proposal shall be in writing, be in sufficient detail to allow members to make an informed judgment regarding the proposal and the competence of the person, firm or entity that will conduct the activity, together with an estimate of the cost of the activity. The proposal shall also suggest the source of the funds to carry on the activity. The Management Committee may not authorize any activity pursuant to this Paragraph if any member has objected to the activity either in writing or in person at the special meeting.

**D. EMERGENCIES:** Notwithstanding the provisions of Paragraphs B and C of this Section, any member may respond immediately to any emergency which presents an imminent threat to habitat values, structures or facilities located on the Multi-Species Reserve or damage to or interference with the natural resources of the Multi-Species Reserve or which presents an immediate threat to public safety. Any member taking any such emergency action shall promptly notify each of the other members.

#### **IX. MANAGEMENT COMMITTEE -- RESPONSIBILITIES**

**A. ATTENDANCE:** Each member of the Management Committee shall attend and participate in the meetings of the Committee.

**B. RULES, REGULATIONS, AND ORDINANCES:** Each member of the Management Committee may, subject to its respective legal

or regulatory authority, adopt such rules, regulations or ordinances deemed necessary to govern the use of, and permissible activities upon the Multi-Species Reserve in a fashion consistent with the Shipley Mitigation Agreement and the MSHCP.

**C. PROTECTION OF RESOURCES:** Consistent with the terms of this CMA, each member of the Management Committee shall conduct its respective programs and otherwise exercise its authority in a manner designed to protect the natural, historical and cultural resources of the Multi-Species Reserve.

**D. RESPONSIBILITY OF METROPOLITAN:** METROPOLITAN shall:

1. Serve as Resource Director until it is replaced as provided hereinafter.
2. Serve as Domenigoni Reserve Director until it is replaced as provided hereinafter.

3. Irrespective of METROPOLITAN's status as Domenigoni Reserve or Resource Director it shall, in a manner consistent with the MSHCP:

- a. In construction areas within the MSHCP lands, provide patrol, natural resource protection and related-facilities maintenance services, as well as implement MSHCP and other natural resources monitoring and management program activities.

- b. Furnish, at its own cost, personnel and equipment for grading, and otherwise keeping in good repair,

principal unpaved service roads within Multi-Species Reserve areas.

c. Maintain fencing and service roads around Domenigoni Valley Reservoir.

d. During construction and initial filling of the Domenigoni Valley Reservoir, provide all security on lands owned or controlled by METROPOLITAN north of the Shipley Reserve headquarters complex, in conjunction with providing natural resource protection, as provided in subparagraph (a) of this paragraph.

4. Make only the following payments for any activities on, or related to, the Multi-Species Reserve or any of its constituent areas.

a. As more particularly set forth in the MSHCP, provide through periodic installments, commencing in 1992 and terminating December 31, 1998, a total sum of Thirteen Million Eight Hundred Eighty-Six Thousand Dollars (\$13,886,000) to the Management Committee for expenditure by it to fulfill the goals and objectives of the MSHCP.

b. Provide, from income received as a result of activities upon the Reservoir Recreation Areas, for management and protection of the Multi-Species Reserve an annual sum of Two Hundred Thousand Dollars (\$200,000), or fifty percent (50%) of the net income, whichever is greater.

c. Pursuant to the Shipley Mitigation Agreement, payment of the sum of One Million Twenty-One



Thousand Dollars (\$1,021,000) as an endowment (Metropolitan Endowment), receipt of which is hereby acknowledged by the DISTRICT, for the future protection and restoration of the plants, wildlife and their habitats on the Shipley and Lake Skinner Reserves.

d. As more particularly set forth in a Memorandum of Understanding dated June 14, 1991, between METROPOLITAN and the University of California, Riverside (University), METROPOLITAN has paid to the University the sum of \$479,000 for surveying, monitoring, studying and otherwise providing advice and special expertise to the Management Committee relevant to the protection and propagation of native plants and coastal sage scrub on the Shipley and Lake Skinner Reserves.

5. Subject to availability, furnish any water which may be required for use on the Multi-Species Reserve, which water shall not be deemed delivered by any Metropolitan member public agency; provided, however, that the Multi-Species Reserve shall pay for any water so delivered.

6. Grant to a Designated Agent a conservation easement in substantially the same form as that set forth in Exhibit "3" attached hereto and by this reference made a part hereof, affecting the Lake Skinner Reserve Area, the Shipley Reserve Area and the Domenigoni Reserve Area.

7. Acknowledge that this CMA continues the non-exclusive right granted to the DISTRICT by the Shipley

Management Agreement to use the Shipley Reserve Area which is to be in a manner that will not interfere with METROPOLITAN's water operations, with the natural resource management activities undertaken under the direction of the Management Committee, or with any possessory interests retained by Dr. Roy E. Shipley pursuant to any agreement with METROPOLITAN. Further, by execution of this CMA, and consistent with Paragraph XXI.B. (Conservation Easements and Lease Subordination) confirm the continuation of the Lake Skinner Lease.

**E. RESPONSIBILITY OF DISTRICT:** The DISTRICT shall serve as Shipley Reserve Director, unless it is replaced by the Management Committee. In the event the DISTRICT is replaced, the Management Committee may, subject to the approval of DISTRICT, provide that the DISTRICT shall continue to function as Reserve Director for the District Reserve. It is agreed by all the parties that DISTRICT's duties, responsibilities, and obligations under this CMA do not exceed and shall not be construed as exceeding the DISTRICT's previous duties, responsibilities, and obligations under the Shipley Management Agreement. Specifically, DISTRICT is not required to provide personnel or funding for maintenance of the Multi-Species Reserve.

Upon exhaustion of the endowments set forth in subparagraph A of Section XV (Shipley Reserve Director--Financial Responsibilities), the DISTRICT in its sole

discretion may terminate its duties, responsibilities and obligations under this CMA. Should an alternate funding source be ascertained and committed to the DISTRICT for its use, DISTRICT shall continue to comply with the terms of this CMA. Nothing in this paragraph shall relieve Metropolitan of its obligations for the continuation of the Multi-Species Reserve as provided in this agreement.

**F. RESPONSIBILITY OF DEPARTMENT:** The DEPARTMENT shall:

1. Exercise all of its powers as trustee over the fish and wildlife resources of the State of California to manage the native species located upon the Multi-Species Reserve.

2. Issue, subject to applicable laws and regulations, permits to properly qualified persons to conduct research upon the Multi-Species Reserve.

3. Consult with other members of the Management Committee regarding biological issues upon the Multi-Species Reserve, and participate in carrying out the purposes of this CMA.

4. Conduct law enforcement activities.

**G. RESPONSIBILITY OF SERVICE:** The SERVICE shall:

1. Consult with other members of the Management Committee regarding biological issues upon the Multi-Species Reserve, and participate in carrying out the purposes of this CMA, subject to the availability of appropriated funds.

2. Review research proposals and issue, subject to applicable rules and regulations, permits to properly qualified persons to conduct research upon the Multi-Species Reserve.

3. Whenever federal laws administered by the SERVICE are involved, the SERVICE may supplement law enforcement activities upon the Multi-Species Reserve.

**H. RESPONSIBILITY OF RCHCA: The RCHCA shall:**

1. Participate on the Management Committee and assure that the Multi-Species Reserve is managed in conformance with the terms of the conservation easements granted to RCHCA and the Stephens' Kangaroo Rat Short-Term Habitat Conservation Plan, as it exists, or may hereafter be amended.

2. As more particularly set forth in the Shipley Mitigation Agreement, the RCHCA has paid into a DISTRICT trust account the RCHCA Endowment. These payments are to continue to be utilized for the designated purposes.

**X. RESOURCE DIRECTOR -- DESIGNATED**

**A. METROPOLITAN AS RESOURCE DIRECTOR:** Commencing on the date hereof and terminating upon the earlier of the completion of the initial filling of the Domenigoni Valley Reservoir, or notification by METROPOLITAN to the Management Committee that METROPOLITAN no longer desires to serve in the capacity of Resource Director, METROPOLITAN shall serve as Resource

Director, without compensation. METROPOLITAN shall continue to serve as Resource Director until the Management Committee has chosen a successor.

**B. SUCCESSOR RESOURCE DIRECTOR:** At such time as a successor Resource Director is chosen, the successor Resource Director shall serve at the Management Committee's pleasure and upon such other terms and for such compensation as the Management Committee and the designated successor may agree.

#### **XI. RESOURCE DIRECTOR -- RESPONSIBILITIES IN GENERAL**

**A. MINUTES:** The Resource Director shall prepare and circulate minutes of all meetings of the Management Committee.

**B. REPORTS:** The Resource Director shall prepare and circulate to all members, at least thirty (30) days prior to the annual meeting, a financial statement which sets forth, in detail, expenditures paid and income earned during the preceding year, a proposed annual work program and a proposed annual operating budget for the ensuing year. To assist the Resource Director in the preparation of the proposed annual operating budgets and proposed work plan, each party shall annually submit reports listing past, actual, and future expenditures and income relating to each of the Reserve Areas. In addition, the Resource Director shall receive and circulate to all members, at least thirty (30) days prior to the annual meeting, reports from all consultants, scientists and

researchers conducting activities upon the Multi-Species Reserve.

**C. ADMINISTER CONTRACTS:** Except as provided in Paragraph XIV.C. (Contract Administration), the Resource Director shall enter into and administer all contracts affecting the Multi-Species Reserve, including, but not limited to, those contemplated in the MSHCP to fulfill research requirements set forth therein. The Resource Director shall administer the contract between METROPOLITAN and the University for surveying, monitoring, studying and otherwise providing advice and special expertise relevant to the protection and propagation of native plants and coastal sage scrub on the Shipley and Lake Skinner Reserves.

**D. GENERAL ADMINISTRATION:** The Resource Director shall carry out and administer the MSHCP annual operating budgets, annual work plans, project site-specific plans, and facilitate the activities of botanists and biologists. In the event that a question of interpretation arises among the parties concerning a provision of the MSHCP, an annual work plan, or a project or site-specific plan, the Resource Director shall make a determination. If the Resource Director's determination does not resolve the question to the satisfaction of all parties, the parties shall attempt to remove or correct the unclear or ambiguous provision, in accordance with the procedure set forth in Paragraph XVIII (Amendment Process). If the parties are unable to agree, then the matter shall be resolved in

accordance with the dispute resolution procedure set forth in Paragraph XVI (Dispute Resolution).

### **XII. RESOURCE DIRECTOR -- FINANCIAL MANAGEMENT**

**A. RESERVE ACCOUNT:** Except as otherwise provided in Paragraph XV (Shipley Reserve Director -- Financial Responsibilities), all funds appropriated by any party pursuant to this Agreement or received as revenues, grants or donations for the administration, management, operation, and maintenance of the Multi-Species Reserve shall be administered by the Resource Director in a separate account (Multi-Species Reserve Account) established by its treasurer for the sole and exclusive purpose of the management of the Multi-Species Reserve, and shall not be commingled with other funds of the Resource Director. Initially, the Multi-Species Reserve Account shall consist of the following:

1. Funds transferred into the Reserve Account by METROPOLITAN, when and as included in a budget pursuant to METROPOLITAN's obligation to provide up to Thirteen Million Eight Hundred Eighty-Six Thousand Dollars (\$13,886,000) for purposes specified in the MSHCP.

2. Except for special fees for recreational or interpretative programs as provided in Paragraph XIV.B.5., all fees for access to, or use of the Multi-Species Reserve after

deducting therefrom an amount equal to the direct costs, if any, incurred in collecting the revenues.

3. Annual payments provided by METROPOLITAN for management and protection of the Multi-Species Reserve from reservoir recreation activities pursuant to Paragraph IX.D.4.b. (Responsibility of Metropolitan) hereof.

4. Any other funds subsequently made available for use on all or any portions of the Multi-Species Reserve.

**B. INVESTMENTS:** The Multi-Species Reserve Account shall be managed, invested and reinvested by the Resource Director in accordance with the investment requirements established by law for the investment of its own funds, and with the objective of earning sufficient return to finance those activities established in the annual work plan.

**C. MANAGEMENT OF FUNDS:** The funds on deposit shall initially be managed with the objective of producing annual income sufficient to finance the activities described in the MSHCP. In the course of preparing future annual operating budgets, the Management Committee shall, whenever it is feasible to do so without jeopardizing natural resource management, provide for the retention in the account of any income that is not needed in the succeeding year for operations on the Multi-Species Reserve.

**D. AUDIT:** The Management Committee may, from time to time, audit the financial records of the Resource Director.



The cost of the audit shall be expended from the Multi-Species Reserve Account.

**E. FINANCIAL REPORTS:** The Resource Director shall prepare the proposed annual operating budget and work plan for the entire Multi-Species Reserve for review and approval by the other parties. Prior to submitting each proposed operating budget for the Multi-Species Reserve, the Resource Director shall prepare and distribute to the parties a full accounting of the disbursements from the accounts, during the last previous year for which the records are complete. In addition, the Resource Director shall, at the request of any member, and upon thirty (30) days written notice, provide financial reports, including the current status of the Multi-Species Reserve Account as well as income received and disbursements made since the last annual meeting; provided, however, that the Resource Director shall not be required to provide financial statements more frequently than once each quarter.

### **XIII. RESERVE DIRECTORS -- DESIGNATED**

**A. METROPOLITAN AS DOMENIGONI RESERVE DIRECTOR:**  
METROPOLITAN shall serve as Domenigoni Reserve Director, commencing on the date hereof and terminating upon the Management Committee's appointment of a successor Director. The Management Committee may appoint a successor Director upon the earlier of the completion of the initial filling of the

Domenigoni Valley Reservoir or written notification by METROPOLITAN to the Management Committee that it no longer desires to serve in the capacity of Domenigoni Reserve Director. METROPOLITAN shall serve as Domenigoni Reserve Director, without compensation. METROPOLITAN shall give at least one calendar year notice of any decision to terminate in advance of completion of the initial filling.

B. DISTRICT AS SHIPLEY RESERVE DIRECTOR: The DISTRICT shall serve as Shipley Reserve Director, commencing on the date hereof and terminating when the Management Committee appoints a successor Director. The Management Committee may only appoint a successor Director if the DISTRICT furnishes written notification that it no longer desires to serve in such capacity. The DISTRICT shall give at least one calendar year notice of any such decision.

C. SUCCESSOR RESERVE DIRECTOR: At such time as a successor Reserve Director is chosen, the successor shall be appointed by the Management Committee to serve upon such terms and for such compensation as the Management Committee and the designated successor may agree.

#### XIV. RESERVE DIRECTORS -- RESPONSIBILITIES IN GENERAL

A. OPERATIONAL DUTIES: The Reserve Directors shall have the following operational duties as to the portions of the Multi-Species Reserve they administer:

1. Provide, or contract for the provision of, the day to day operation and maintenance at the direction of the Management Committee, including, but not limited to, security, litter control, and maintenance of fences and other improvements except for roads.

2. Temporarily prohibit or restrict access to any area of the Multi-Species Reserve by the general public if the Resource Director determines access would adversely affect natural resources under circumstances that were not foreseen in the MSHCP or the applicable annual work plan. Notice of any closure or restriction shall be given promptly to the other parties and as feasible to the consultants.

**B. SHIPLEY RESERVE DIRECTOR OPERATIONAL DUTIES:** The Shipley Reserve Director shall provide the following:

1. Patrol, related human access management, and facilities maintenance services on the Shipley, District and the Lake Skinner Reserve Areas. Shipley Reserve Director personnel paid from funds available pursuant to subparagraph A of Paragraph XV (Shipley Reserve Director -- Financial Responsibilities), shall perform their duties exclusively upon the Shipley, District and Lake Skinner Reserve Areas.

2. In addition, and consistent with the terms of the Lake Skinner Lease at no expense to the Multi-Species Reserve, existing DISTRICT personnel located at Lake Skinner shall assist in the protection of the Lake Skinner Reserve Area by providing patrol, natural resource protection and

facilities maintenance services within the Lake Skinner Reserve Area. To the extent that these services are currently provided, DISTRICT may in its sole discretion, reduce the level of patrol, natural resource protection and facilities maintenance services currently provided within the Lake Skinner Reserve Area if said reduction is consistent with the terms of the Lake Skinner Lease.

3. Coordinate responses to emergencies by the COUNTY, the DEPARTMENT, law enforcement and fire departments and search and rescue units throughout the entire Multi-Species Reserve.

4. Provide, if feasible, at the request of the Management Committee, and for compensation agreed upon by the Management Committee and the Reserve Director, additional Reserve Director employees with responsibility for day-to-day operations affecting the utilization of the Multi-Species Reserve by the public; the supervision, safety and comfort of the general public who may be allowed upon the Multi-Species Reserve; the interpretation of the natural, cultural and historical resources of the Multi-Species Reserve, and the special needs of sensitive or fragile environments.

5. Allow, subject to the direction of the Resource Director and the Management Committee, public access to the Multi-Species Reserve upon payment of an admission fee. The amount of the admission fee shall be set by the DISTRICT and shall be consistent with the annual DISTRICT user fee

schedule for park and recreation services and facilities as well as comply with applicable state law and county ordinances and regulations. Prior to setting the amount of the admission fee, DISTRICT shall confer with METROPOLITAN to obtain its recommendation as to the amount of the admission fee. Any proceeds shall be used exclusively for natural resources management within the Multi-Species Reserve lands. DISTRICT currently charges an admission fee for public access to the Lake Skinner County Park. This admission fee, and any increase thereof, neither of which is attributed to entrance into Reserve Areas other than the Lake Skinner Reserve area, shall continue to be collected and retained by DISTRICT. The DISTRICT may also charge special fees for recreational or interpretive programs conducted on Multi-Species Reserve lands. All costs associated with such programs shall be the DISTRICT's responsibility and any special fees collected shall be retained by DISTRICT.

C. **CONTRACT ADMINISTRATION:** In addition to the contracts provided for in subparagraph A of this Paragraph XIV, the Shipley Reserve Director shall continue to administer the contract between DISTRICT and Dr. Michael O'Farrell, dated March 29, 1991, regarding Stephens' kangaroo rat populations upon the Shipley and Lake Skinner Reserves with funding to be from the METROPOLITAN and RCHCA endowments.

#### **XV. SHIPLEY RESERVE DIRECTOR -- FINANCIAL RESPONSIBILITIES**

**A. ADMINISTRATION OF EXISTING ENDOWMENTS:** The Shipley Reserve Director shall continue to administer in a separate account, which shall not be commingled with other funds:

1. The Metropolitan Endowment of One Million Twenty-One Thousand Dollars (\$1,021,000) created by METROPOLITAN as required by the Shipley Mitigation Agreement and managed in accordance with this CMA solely for the purpose of funding activities that are related to the management of wildlife resources on the Shipley and Lake Skinner Reserves, and the management of the human activities so as to avoid or minimize their adverse impacts on natural resources on those lands, pursuant to the MSHCP.

2. The RCHCA Endowment of Five Hundred Thousand Dollars (\$500,000) which it has granted for the management of those portions of the Shipley, DISTRICT, and Lake Skinner lands occupied by the Stephens' kangaroo rat.

3. The net proceeds of other monies received in regard to the Shipley Reserve.

**B. MANAGEMENT AND INVESTMENT:** The account shall be managed and invested so as to earn interest in the same manner required for the Multi-Species Reserve Account. The investment requirements established by law for the investment of the Shipley Reserve Director's own funds shall be complied with. The Shipley Reserve Director shall annually prepare and

distribute to all the parties a full accounting of the disbursements from the accounts during the last year for which the records are complete. In addition, the Shipley Reserve Director shall, at the request of any member, and upon thirty (30) days written notice, provide financial reports, including the current status of the Reserve Account as well as income received and disbursements made since the last annual meeting; provided, however, that the Shipley Reserve Director shall not be required to provide financial statements more frequently than once each quarter.

C. **AUDIT:** The Management Committee may, from time to time, audit the financial records of the Shipley Reserve Director. The cost of the audit shall be expended from the Account being audited.

D. **DISBURSEMENTS:** In addition to making disbursements incidental to meeting its obligations under this CMA, the Shipley Reserve Director shall also, to the extent funds are available from the METROPOLITAN endowment and the RCHCA endowment, make disbursements for the following, consistent with the annual budget:

1. Costs incurred by the DEPARTMENT in carrying out its responsibilities on the Shipley Reserve pursuant to this CMA. The Management Committee may authorize creation of a revolving fund for this purpose.

2. Payment of Dr. Michael O'Farrell's fees and reimbursement of his expenses, in amounts not to exceed those

set forth in the contract between DISTRICT and Dr. Michael O'Farrell, dated March 29, 1991.

3. The Shipley Reserve Director shall annually notify the parties of the amount of available monies. Such monies may only be expended in accordance with approved budgets.

#### XVI. DISPUTE RESOLUTION

A. In the event of a dispute arising under the CMA that does not involve the SERVICE, on a matter for which unanimous or individual consent or approval is required, the parties other than the SERVICE shall endeavor to resolve the dispute by using the services of a mutually acceptable consultant.

B. If a consultant cannot be agreed upon, or if the consultant's recommendations are not accepted by those parties, they agree to be bound by the majority decision of a three-member panel, to be selected as follows:

1. One member shall be appointed jointly by those parties who agree with the proposed action.

2. One member shall be appointed by the party who disagrees, or jointly by those parties who disagree, with the proposed action.

3. The third member shall be selected by the other two members of the panel.



C. If a member cannot be appointed or selected, any of those parties may petition a court to appoint the member pursuant to section 1281.6 of the Code of Civil Procedure.

D. This dispute resolution process shall be governed by the California Arbitration Act (Part 3 [commencing with §1280], Tit. 9, Calif. Code Civ. Proc.). Each party shall be responsible for any fees and expenses of the member of the panel appointed by that party, and the fees and expenses of the third member of the panel shall be shared equally among the parties participating in the dispute resolution process.

E. This Article shall not be applied to deprive a party of any right created by or arising pursuant to the CMA nor shall it be applied to reduce the DEPARTMENT's statutory authority.

#### XVII. RIGHTS RETAINED BY METROPOLITAN

Conservation easements affecting the Shipley Reserve Area, the Lake Skinner Reserve Area and the Domenigoni Reserve Area have been previously conveyed. In addition, METROPOLITAN shall, pursuant to Paragraph IX.D.6. (Responsibility of Metropolitan), convey a conservation easement to a Designated Agent. These conservation easements recognize the obligation and right of METROPOLITAN to conduct its water service operations upon portions of the Multi-Species Reserve. The

parties acknowledge and agree that METROPOLITAN has the right to:

**A. CLOSE TO PUBLIC:** Close or otherwise restrict public access at any time to the Multi-Species Reserve whenever it determines it is necessary to do so in the interest of its water service obligation or operations, public safety or national security.

**B. USE EXISTING FACILITIES:** Maintain and use existing roads, water pipelines and ancillary improvements.

**C. CONSTRUCTION AND USE:** Conduct activities to maintain water quality in the Domenigoni Valley Reservoir and, subject to the prior written approval of the SERVICE and DEPARTMENT, which approval shall not be unreasonably withheld, to designate, construct and use or authorize the use of rights of way for roads, trails, irrigation works, flood control structures and channels, utility corridors, sewers, facilities for metering of natural water inflow into the Domenigoni Valley Reservoir, water pipelines and ancillary improvements, and telephone and electric power lines across the Multi-Species Reserve.

**D. AUTHORIZE OTHERS:** Authorize its directors, officers, employees, licensees, agents and contractors to enter on, pass over, and egress from the Multi-Species Reserve as necessary to protect any right or carry out METROPOLITAN's water service obligations or operations, including, but not limited to, activities relating to the protection of water quality.

**E. DEMOLITION:** To remove or demolish any unauthorized structure or other improvement located on the Multi-Species Reserve that may conflict with METROPOLITAN's water service obligations or operations.

#### **XVIII. AMENDMENT PROCESS**

**A. UNANIMOUS CONSENT:** This CMA may be amended only by a written instrument executed by all of the parties hereto.

**B. PROPOSED AMENDMENTS:** Any member of the Management Committee may propose an amendment to this CMA by providing a written copy of the proposed amendment to each other member at least forty-five (45) days prior to the meeting at which the proposed amendment is to be considered.

#### **XIX. INDEMNIFICATION**

**A. PARTIES OTHER THAN SERVICE, COUNTY, AND FACILITIES CORPORATION:**

Except for the SERVICE, COUNTY and FACILITIES CORPORATION, each party hereto shall indemnify and hold harmless each other party hereto, and their officers, agents, employees, subcontractors, and independent contractors free and harmless from any liability whatsoever, based or asserted upon any act or omission of that party, its directors, officers, agents, employees, subcontractors or independent contractors, for

property damage, bodily injury or death or any other element of damage of any kind or nature, relating to or in anywise connected with or arising from the activities of that party pursuant to this CMA, except for, and to the extent that, such damage, injury or death is caused by the sole negligence of the other party or parties or their officers, agents, employees, subcontractors or independent contractors; and each party shall defend, at its expense, including attorney fees, each other party, their officers, agents, employees, subcontractors, and independent contractors in any legal action based upon such alleged acts or omissions. This paragraph shall apply to all parties other than the SERVICE, COUNTY, and the FACILITIES CORPORATION.

**B. COUNTY AND FACILITIES CORPORATION: METROPOLITAN** agrees to indemnify COUNTY and FACILITIES CORPORATION, their respective supervisors, directors, officers, and employees against any liabilities and expenses, including the reasonable expense of legal representation whether by special counsel or their staff attorneys, which in any manner may arise out of their status as parties and participation by COUNTY in the transactions referred to in Paragraph XXI.B. (Conservation Easements and Lease Subordination) of this CMA.

**IX. TERMINATION OF SHIPLEY MANAGEMENT AGREEMENT  
AND SUBSTITUTION OF THE SHIPLEY PLAN**

The parties hereby terminate the Shipley Management Agreement. DEPARTMENT, METROPOLITAN and SERVICE hereby revise Exhibit "3" to Appendix B, Part (3) of the Shipley Mitigation Agreement to substitute the MSHCP for the Shipley Plan. For purposes of Article II, Paragraph 1(b) of the Shipley Mitigation Agreement, the lands at Lake Skinner suitable for conservation easements within the Multi-Species Reserve are shown in Figure ES-1 of the MSHCP.

**XXI. RESERVE AREA LAND MATTERS**

A. COVENANT RUNNING WITH THE LAND: This CMA and all of its provisions shall inure to the benefit of, and apply to and bind the successors and assigns of the parties, and to the extent permitted by law shall constitute a covenant running with the land. This CMA, together with any exhibits and other ancillary documents, shall be recorded in the Official Records of the County of Riverside, California.

B. CONSERVATION EASEMENTS AND LEASE SUBORDINATION: The COUNTY shall subordinate the Lake Skinner Lease to any conservation easement granted by METROPOLITAN to a Designated Agent. The form of the subordination shall be substantially the same as that attached hereto as Exhibit "4" and by this

reference made a part hereof. The FACILITIES CORPORATION's sole responsibility under the CMA is to agree to the termination of the Shipley Management Agreement and the substitution of the terms hereof, in its place. The FACILITIES CORPORATION reserves the right to seek to receive mitigation credit for granting any conservation easement over its property not previously dedicated by easement.

**C. STATUS OF COUNTY AND FACILITIES CORPORATION AS PARTIES:** Upon completion of the transaction referred to in Paragraph XXI.B. (Conservation Easements and Lease Subordination), the parties hereby agree that the COUNTY's and the FACILITIES CORPORATION's status as parties shall be automatically terminated and the COUNTY and the FACILITIES CORPORATION will have no further duties, obligations or rights under the CMA other than the right to indemnification provided by Article XIX.B. (COUNTY and FACILITIES CORPORATION).

## **XXII. MISCELLANEOUS**

**A. APPLICABILITY OF LAW:** Notwithstanding any other provision in this CMA, this CMA is subject to, shall be carried out in accordance with, and shall not be interpreted to be inconsistent with, any requirement of the federal Endangered Species Act (16 U.S.C. §1531 et seq.), the California Endangered Species Act (California Fish & G. Code, §2050 et seq.), or any other applicable federal or state law or

regulation. Nothing in this CMA shall prejudice, waive or impair any right, remedy or defense the DEPARTMENT may have as a statutory trustee. Moreover, this CMA is also subject to, shall be carried out in accordance with, and shall not be interpreted to be inconsistent with any requirement of any permit issued under authority of the federal or California Endangered Species Acts and the conservation easement, as set forth in Part (1) of Exhibit "4" to Appendix B to the Shipley Mitigation Agreement, that was granted by METROPOLITAN to the RCHCA in fulfillment of the conditions of U.S. Fish and Wildlife Service Permit No. PRT-739678. This CMA is not intended, and shall not be construed, however, to require METROPOLITAN to exceed its legal obligations under applicable natural resource protection laws and regulations.

**B. LIMIT ON PARTICIPATION BY SERVICE:** Participation by the SERVICE pursuant to the terms of this CMA shall be subject to the availability of appropriated funds. However, the unavailability of funding shall not operate to suspend, terminate or nullify in whole or in part any provision of this CMA.

**C. OFFICIALS NOT TO BENEFIT:** No member of or delegate to the Congress or resident commissioner shall be entitled to any share or part of this CMA, or to any benefit that may arise from it.

**D. SEVERABILITY:** If any provision of this CMA is determined or held to be invalid for any reason, that

invalidity shall not be imputed to any other provision hereof that was not so determined or held to be invalid.

**E. CONFLICT:** In the event of any conflict between this CMA and the remainder of the MSHCP, this CMA shall prevail.

**F. ENTIRE AGREEMENT:** This CMA consists of the principal document executed by the parties (in which this sentence occurs) as well as all exhibits. This CMA incorporates the full and complete understanding of the parties. Any oral or written understanding not incorporated herein or in the MSHCP shall not be effective to modify the terms hereof nor be utilized for the purpose of interpreting any provision hereof.

**G. NOTICE:** Any notice which may or shall be given as provided in this CMA shall be in writing and either personally delivered to the persons set forth below or shall be deemed delivered three (3) days after deposit in the United States mail, certified and postage prepaid, return receipt requested and addressed as follows or at such other address which any party hereto from time to time shall notify each other party:

The Metropolitan Water District of Southern California  
P.O. Box 54143  
Los Angeles, California 90054  
Attention General Manager

Riverside County Regional Park and Open Space District  
P.O. Box 3507  
Riverside, California 92519  
Attention General Manager

Riverside County Habitat Conservation Agency  
4080 Lemon Street, 12th Floor  
Riverside, California 92501  
Attention Executive Director



California Department of Fish and Game  
330 Golden Shore, Suite 50  
Long Beach, California 90802  
Attention Regional Manager, Region V

United States Fish and Wildlife Service  
2730 Loker Avenue West  
Carlsbad, California 92008  
Attention Field Supervisor

H. **LITIGATION:** The DEPARTMENT, the SERVICE, the RCHCA, and METROPOLITAN shall cooperate in the defense of any litigation that challenges the validity of this CMA, the MSHCP, or any action taken by the parties pursuant to it, to the extent permitted by law.

I. **OPINIONS AND DETERMINATIONS:** Where the terms of this Agreement provide for action to be based upon the opinion, judgment, approval, review, or determination of any party, those terms are not intended to be and shall not be construed as permitting the opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

J. **CAPTIONS:** The captions on Articles and Paragraphs in this CMA are solely for the convenience of the parties, and no meaning shall be ascribed to them in interpreting this CMA.

K. **SUCCESSORS AND ASSIGNS:** This CMA and all of its provisions and exhibits shall apply to and bind the successors and assigns or the parties to this CMA.

L. **EXECUTION:** This CMA may be executed in any number of counterparts, each of which shall be deemed an original.

M. **EFFECTIVE DATE:** This CMA shall become effective upon execution by all parties and shall be recorded in the office of the County Recorder of the County of Riverside.

**WITNESS OUR HANDS AND SEALS** effective on the date executed by all of the parties and recorded in the Office of the County Recorder of Riverside County, California.

**DEPARTMENT OF FISH AND GAME  
OF THE STATE OF CALIFORNIA**

By   
Director

Date Oct. 27, 1992

**FISH AND WILDLIFE SERVICE OF  
THE UNITED STATES DEPARTMENT  
OF THE INTERIOR**

By \_\_\_\_\_  
Field Supervisor

Date \_\_\_\_\_

Approved as to form  
and legality

By \_\_\_\_\_

Date \_\_\_\_\_

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

By \_\_\_\_\_  
Carl Boronkay  
General Manager

Date \_\_\_\_\_

Approved as to form  
and legality

Fred Vendig  
General Counsel

By \_\_\_\_\_  
Sr. Deputy General Counsel

Date \_\_\_\_\_

M. **EFFECTIVE DATE:** This CMA shall become effective upon execution by all parties and shall be recorded in the office of the County Recorder of the County of Riverside.

**WITNESS OUR HANDS AND SEALS** effective on the date executed by all of the parties and recorded in the Office of the County Recorder of Riverside County, California.

**DEPARTMENT OF FISH AND GAME  
OF THE STATE OF CALIFORNIA**

By \_\_\_\_\_  
Director

Date \_\_\_\_\_

**FISH AND WILDLIFE SERVICE OF  
THE UNITED STATES DEPARTMENT  
OF THE INTERIOR**

Approved as to form  
and legality

By *Martin L. Olench*  
Regional Director

By \_\_\_\_\_

Date October 28, 1992

Date \_\_\_\_\_

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

Approved as to form  
and legality

By *Carl Boronkay*  
Carl Boronkay  
General Manager

Fred Vendig  
General Counsel

Date Oct 28, 1992

By *Judith Oley*  
St. Deputy General Counsel

Date OCTOBER 28, 1992

**RIVERSIDE COUNTY HABITAT  
CONSERVATION AGENCY**

By [Signature]  
Executive Director  
Date Oct 28, 1992

Approved as to form  
and legality

By [Signature]  
Date 10-28-92

**RIVERSIDE COUNTY REGIONAL PARK  
AND OPEN SPACE DISTRICT**

By [Signature]  
Chairman  
Date Oct 28, 1992

Approved as to form  
and legality

By \_\_\_\_\_  
Date \_\_\_\_\_

**COUNTY OF RIVERSIDE  
a political subdivision of  
the State of California**

By [Signature]  
Chairman, Board  
of Supervisors  
Date Oct 28, 1992

Approved as to form  
and legality

By \_\_\_\_\_  
Date \_\_\_\_\_

**THE RIVERSIDE COUNTY PARK  
FACILITIES CORPORATION**

By [Signature]  
President  
Date Oct 28, 1992

Approved as to form  
and legality

By \_\_\_\_\_  
Date \_\_\_\_\_

**RIVERSIDE COUNTY HABITAT  
CONSERVATION AGENCY**

Approved as to form  
and legality

By \_\_\_\_\_  
Executive Director

By \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**RIVERSIDE COUNTY REGIONAL PARK  
AND OPEN SPACE DISTRICT**

Approved as to form  
and legality

By \_\_\_\_\_  
Chairman

By Karin Watts-Bazan  
Deputy County Counsel

Date \_\_\_\_\_

Date October 26, 1992

**COUNTY OF RIVERSIDE  
a political subdivision of  
the State of California**

Approved as to form  
and legality

By \_\_\_\_\_  
Chairman, Board  
of Supervisors

By Karin Watts-Bazan  
Deputy County Counsel

Date \_\_\_\_\_

Date October 26, 1992

**THE RIVERSIDE COUNTY PARK  
FACILITIES CORPORATION**

Approved as to form  
and legality

By Roland N. Jefferson  
President

By Karin Watts-Bazan  
Deputy County Counsel

Date Oct. 27, 1992

Date October 26, 1992

**Southwestern Riverside County  
Multi-Species Habitat Conservation Plan**

**MAP B-76244**

**Depicting Reserve Areas**

11/20

24/36

**CONSERVATION EASEMENT GRANT**



EXHIBIT 3

CONSERVATION EASEMENT GRANT

THIS CONSERVATION EASEMENT GRANT (this "Easement") is made this \_\_\_\_ day of \_\_\_\_\_, by THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public entity ("Grantor"), in favor of THE RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY, a public entity ("Grantee").

WITNESSETH:

WHEREAS, Grantor is a public entity organized and existing under the Metropolitan Water District Act of the State of California (stats 1969, ch. 209, as amended) for purposes including acquiring, developing, storing, transporting, providing and delivering water, ("Water Service") and is the sole owner in fee simple of certain real property located in the County of Riverside, State of California, more particularly depicted on the map attached as the Exhibit hereto (except those areas designated as "District Reserve Area"), a copy of which map is Filed Map # \_\_\_\_\_ in the records of the Road Department of the County of Riverside and is also filed at Grantor's headquarters as Engineering Drawing B-76244 which Exhibit is incorporated by this reference (the "Protected Property"); and

WHEREAS, the Grantee is a public entity formed under the laws of the State of California for the purpose of acquiring,

administering, operating and maintaining land and facilities for protecting habitat required to maintain ecosystems essential for the preservation of species of plants and animals and is authorized to hold conservation easements for these purposes; and

WHEREAS, the Protected Property possesses significant ecological and native habitat values (Collectively, "Conservation Values") of great importance to Grantor and Grantee; and

WHEREAS, significant portions of the Property, consisting of approximately \_\_\_\_\_ acres, have been presently identified as being occupied by significant species of native plants and wildlife, which Grantor and Grantee desire to conserve, protect, restore, and enhance in accordance with that certain multi-species habitat conservation plan for South Western Riverside County, California dated for reference as of \_\_\_\_\_ ("MSHCP").

WHEREAS, Grantor intends to convey to Grantee the right to conserve, protect, restore, and enhance the conservation values of the property.

WHEREAS, Grantee agrees by accepting this grant to honor the intentions of Grantor stated herein and to conserve, protect, restore, and enhance in perpetuity the conservation values of the Protected Property in accordance with the terms of this Easement and the Management Agreement.

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to the laws of California and Civil Code section 815 et seq., Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Protected Property of the nature and character and to the extent hereinafter set forth ("Easement").

1. PURPOSE

It is the purpose of this Easement to assure that the Protected Property will be retained forever in an open space condition and to prevent any use of the Property that will significantly impair or interfere with the Conservation Values of the Protected Property. Grantor intends that this Easement (i) will assure that the Protected Property will be used for such activities as are consistent with the purpose of this Easement, and (ii) shall be implemented consistently with the Cooperative Management Agreement (CMA), included in the MSHCP.

2. RIGHTS OF GRANTEE

To accomplish the purpose of this Easement, the following rights are conveyed to Grantee by this Easement:

(a) To conserve, protect, restore, and enhance the Protected Property in a manner consistent with the MSHCP.

(b) To enter upon and traverse all portions of the Property at all times in order to have access to the Protected Property and to monitor Grantor's compliance with and otherwise enforce the terms of this Easement; provided that such entry

shall not unreasonably impair or interfere with Grantor's use and quiet enjoyment of the Property or unreasonably disturb natural resources on the Property; and

(c) To prevent any activity on or use of the Protected Property that is inconsistent with the purpose of this conservation easement and to require the restoration of such areas or features of the Protected Property that may be damaged by any inconsistent activity or use.

3. PROHIBITED USES

Subject to the provisions of Paragraph 4 herein, any activity on or use of the Protected Property inconsistent with the purposes of this Easement is prohibited. Without limiting the generality of the foregoing, unseasonal watering, use of herbicides or biocides, surface mining and oil exploration, incompatible fire protection activities, introduction of exotic plant species, and any and all other incompatible uses which may adversely affect the preserve purposes of the Protected Property are prohibited.

4. RESERVED RIGHTS

Grantor reserves to itself, and to its personal representative, heirs, successors, assigns, agents and lessees all rights accruing from its ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Protected Property that are not expressly prohibited herein and are not inconsistent with the purpose of this Easement. Without in any way limiting the

foregoing Grantor hereby reserves the right to do all of the following:

(a) To close or otherwise restrict public access at any time to the Protected Property whenever Grantor determines it is necessary to do so in the interest of its Water Service obligations or operations, public safety or national security.

(b) To maintain and use existing roads, and water pipelines and ancillary improvements, construct, maintain and use facilities for metering of natural water inflow into Grantor's proposed Domenigoni Valley Reservoir and, subject to the prior written approval of the Department, and the United States Fish and Wildlife Service ("Service"), when and if it accepts the MSHCP, which approval shall not be unreasonably withheld; to designate, construct, and use or authorize rights of way for roads, trails, irrigation works, flood control structures and channels, utility corridors, sewers, water pipelines, and ancillary improvements, telephone and electric power lines, across the Protected Property.

(c) To authorize its directors, officers, employees licensees, agents and contractors to enter on, pass over, and egress from the Protected Property as necessary to protect any right or carry out Grantor's Water Service obligations or operations, including, but not limited to, the protection of water quality.

(d) To remove or demolish any unauthorized structure or other improvement located on the Protected Property that may

conflict with Grantor's Water Service obligations or operations.

5. REMEDIES

If either party determines that the other party is in violation of the terms of this Easement or that a violation is threatened, such party shall give written notice to the other party of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Property resulting from any use or activity inconsistent with the purpose of this Easement, to restore the portion of the Protected Property so injured. If a party fails to cure a violation within sixty (60) days after receipt of notice thereof from the other party, or under circumstances where the violation cannot reasonably be cured within a sixty (60) day period, or fails to continue diligently to cure such violation until finally cured, the aggrieved party may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Easement or injury to any conservation values protected by this Easement, including damages for the loss of scenic, aesthetic, or environmental values, and to require the restoration of the Protected Property to the condition that existed prior to any such injury. If a party, in its good faith and reasonable discretion, determines that

circumstances require immediate action to prevent or mitigate significant damage to the conservation values of the Protected Property, such party may pursue its remedies under this paragraph without prior notice to the other party or without waiting for the period provided for the cure to expire. Each party's rights under this paragraph apply equally in the event of either actual or threatened violations of the terms of this Easement, and each party agrees that the other party's remedies at law for any violation of the terms of this Easement are inadequate and that such party shall be entitled to the injunctive relief described in this paragraph, both prohibitive and mandatory, in addition to such other relief to which such party may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Each party's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity. Furthermore, the provisions of Civil Code section 815 et seq., are incorporated herein by this reference and this grant is made subject to all of the rights and remedies set forth therein. If at any time in the future either party or any subsequent transferee or assign uses or threatens to use such lands for purposes not in conformance with the provisions of this Easement notwithstanding Civil Code section 815 et seq., California Attorney General or third-party entities organized

for conservation purposes have standing as interested parties in any proceeding affecting this Easement.

5.1 Costs of Enforcement. Any costs incurred by either party in enforcing the terms of this Easement against the other, including, without limitation, costs of suit and attorneys fees, and any costs of restoration necessitated by a violation of the terms of this Easement shall be borne by the breaching party. If a party prevails in any action to enforce the terms of this Easement, such party's costs of suit including, without limitation, attorneys fees, shall be borne by the other party.

5.2 Grantee's Discretion. Enforcement of the terms of this Easement shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Easement in the event of any breach of any term of this Easement by Grantor shall not be deemed or construed to be a waiver by Grantee of such term or of any subsequent breach of the same or any other term of this Easement or of any of Grantee's rights under this Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver.

5.3 Acts Beyond Grantor's Control. Nothing contained in this Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from causes beyond Grantor's control,



including, without limitation, fire, drought, flood, storm, and earth movement, or from any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.

6. ACCESS

Grantee, its successors, assigns, agents, invitees and licensees shall have the right of access to the Property at all times subject to such rules and regulations as may be approved by the parties. Such right of access shall include the right of ingress to and egress from the Property over that portion of Rawson Road lying within lands owned by Grantor northerly of the Property until terminated at such time as the exercise of such rights shall, in Grantor's sole judgement, interfere with Grantor's construction of the proposed Domenigoni Valley Reservoir. Upon termination Grantor shall grant to Grantee such alternative access easements for ingress and egress as shall be agreed upon by and between Grantor and Grantee.

7. COSTS AND LIABILITIES

Except as set forth in this Easement, the Management Agreement or as otherwise agreed in writing between the parties hereto, Grantor retains all responsibilities related to the ownership, operation, upkeep, and maintenance of the Property.

8. ASSIGNMENT

This Easement is transferable, but Grantee shall give Grantor at least thirty (30) days prior written notice of the transfer and may assign its rights and obligations under this

Easement only to an organization that is a qualified organization at the time of transfer under section 170(h) of the Internal Revenue Code of 1954, as amended (or any successor provision then applicable), and the applicable regulations promulgated thereunder, and authorized to acquire and hold conservation easements under Civil Code section 815 et seq. (or any successor provision then applicable). As a condition of such transfer, Grantee shall require that the conservation purposes that this grant is intended to advance continue to be carried out.

9. SUBSEQUENT TRANSFERS

Grantor agrees to incorporate the terms of this Easement in any deed of other legal instrument by which Grantor divests itself of any interest in all or a portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee of the transfer of any interest at least fifteen (15) days prior to the date of such transfer. The failure of Grantor to perform any act required by this paragraph shall not impair that validity of this Easement or limit its enforceability in any way. Grantee agrees to transfer this easement to the California Department of Fish and Game if required to by Paragraph 3 of the Agreement entered into pursuant to Fish and Game Code sections 2081/2835. Grantor and Grantee expressly acknowledge that immediately following recordation of this Easement, Grantor shall lease portions of the Property and certain improvements thereon to Dr. Roy E. Shipley, his family and personal guests

and invitees for his personal enjoyment and use during his lifetime, but only to the extent that such use is consistent with this Easement.

10. ESTOPPEL CERTIFICATES

Upon request by Grantor, Grantee shall within fifteen (15) days execute and deliver to Grantor any document, including an estoppel certificate, which certifies Grantor's compliance with any obligation of Grantor contained in this Easement and otherwise evidences the status of this Easement as may be requested by Grantor.

11. NOTICES

Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and either served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor:       The Metropolitan Water District  
                          of Southern California  
                          P. O. Box 54153  
                          Los Angeles, California 90054  
                          Attention General Manager

To Grantee:       Riverside County Habitat  
                          Conservation Agency  
                          4080 Lemon Street, 12th Floor  
                          Riverside, California 92501  
                          Attention Executive Director

or to such other address or the attention of such other officer as either party from time to time shall designate by written notice to the other.

A copy of such notice shall also be sent by the party to the Service and the California Department of Fish and Game at the respective addresses provided for in the CMA.

12. RECORDATION

Grantee shall promptly record this instrument in the official records of Riverside County, California and may re-record it at any time as may be required to preserve its rights in this Easement.

13. GENERAL PROVISIONS

(a) Controlling Law. The interpretation and performance of this Easement shall be governed by the laws of the State of California.

(b) Construction. Any general rule of construction to the contrary notwithstanding, this Easement shall be construed in favor of the grant to effect the purpose of this Easement and the policy and purpose Civil Code section 815 et seq. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If any provision of this Easement, or the application thereof to any person or circumstances, is found to be invalid, the remainder of the provisions of this Easement, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

(d) Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to the Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Easement.

(e) No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors. The covenants, terms, conditions, and restrictions of this Easement shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall continue as servitude running in perpetuity with the Property.

(g) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon construction of interpretation.

(h) Counterparts. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

IN WITNESS WHEREOF, Grantor and Grantee have entered into this Easement the day and year first above written.

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

Approved as to form  
and legality

Fred Vendig  
General Counsel

By \_\_\_\_\_  
Carl Boronkay  
General Manager

By \_\_\_\_\_  
Sr. Deputy General Counsel

**THE RIVERSIDE COUNTY HABITAT  
CONSERVATION AGENCY**

Approved as to form  
and legality  
BEST, BEST & KRIEGER

By \_\_\_\_\_  
Title \_\_\_\_\_

By \_\_\_\_\_  
Daniel E. Olivier, Esq.

**SUBORDINATION AND NON-DISTURBANCE AGREEMENT**

EXHIBIT 4

**SUBORDINATION AND NON-DISTURBANCE AGREEMENT**

**NOTICE: THIS SUBORDINATION AND NON-DISTURBANCE RESULTS IN THE LEASEHOLD ESTATE IN THE PROPERTY BECOMING SUBJECT TO AND OF LOWER PRIORITY THAN THE LIEN OF A CONSERVATION EASEMENT.**

This Subordination and Non-disturbance Agreement (Agreement) is made as of \_\_\_\_\_, 1991, by and among the County of Riverside, a political subdivision of the State of California (Lessee), Riverside County Habitat Conservation Agency (Agency), and The Metropolitan Water District of Southern California, a public corporation (Lessor) with respect to the following circumstances:

**RECITALS**

A. Lessor is the owner of certain real property located in the County of Riverside, State of California (the Property), more particularly shown on Exhibit A attached hereto.

B. A portion of the Property has been leased by Lessor to Lessee pursuant to the terms and conditions of a Lease (the Lease), dated January 2, 1973, as amended July 2, 1974.

C. Lessor has previously executed a Conservation Easement which encumbers the Property, in favor of Agency, dated \_\_\_\_\_, 1991, recorded on \_\_\_\_\_, as Instrument No. \_\_\_\_\_, Official Records, County of Riverside, State of California, in which Lessor conveyed to Agency the



right to preserve and protect those ecologically sensitive portions of the Property consisting of approximately 1277 acres which provide natural habitat for the Stephens' kangaroo rat (the Protected Property). The location of the Protected Property is depicted on Exhibit A as "SKR Management Zone." Lessor also intends to execute future conservation easements to Agency in implementation of a Multi-species Habitat Conservation Plan ("Plan"). All of such easements are referred to herein as the Easements.

D. Lessor has executed, or is about to execute a Cooperative Management Agreement (the Management Agreement) as part of the Plan. The purpose of the Management Agreement is, among other things, to provide for the management and maintenance of all lands to be encumbered by the Easements. The Management Agreement provides that Lessor is to convey a conservation easement affecting the Lake Skinner Reserve Area, which is included in the property leased to Lessee.

E. On or about June 13, 1991, the parties previously executed a Subordination and Non-disturbance Agreement which this Agreement is intended to supersede.

F. In order to insure the priority of the Easements, the partners intend that the leasehold interest or other possessory estate or interest in favor of the Lessee stated in the Lease shall by this Agreement become subject and subordinated to the terms and provisions of the Easements.

G. The parties by this Agreement desire to memorialize their various understandings and agreements with respect to the matters described in the above recitals.

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants, terms and conditions hereinafter set forth, the parties agree as follows:

1. All of Lessee's right, title, possession and interest in, to and under the Lease and any renewal, modification, substitution, replacement or extension thereof, shall be subject and subordinate to the terms and conditions of the Easements with the same force and effect as if the Easements had been executed, delivered and recorded prior to the execution and delivery of the Lease.

2. Lessor agrees that in the event any proceedings are brought for default under any of the Easements, or any successor in interest to Lessor comes into title or possession of the Property, or takes over the rights of lessor in the Property, it will not disturb the possession, use, or enjoyment of the Property including, but not limited to any existing roads, trails, firebreaks and man-made facilities by Lessee, or disaffirm the Lease or Lessee's rights thereunder, so long as all of Lessee's obligations are fully performed under the Lease.

3. The terms, covenants and agreements contained herein shall be binding upon and inure to the benefit of the

parties hereto, their personal representatives, successors and assigns.

4. All notices, demands, or requests, and responses thereto, required or permitted to be given pursuant to this Agreement shall be in writing and shall be sent postage, certified mail, return receipt requested. All notices shall be deemed delivered when received. Rejection or other refusal to accept or inability to deliver because of change of address which no notice has been given shall constitute receipt of notice, demand, or request sent. Any such notice shall be addressed as follows:

Lessee: Riverside County Regional Park and Open Space  
District  
4600 Crestmore Road  
P.O. Box 3507  
Riverside, California 92519  
Attention General Manager

Agency: Riverside County Habitat Conservation Agency  
4080 Lemon Street, 12th Floor  
Riverside, California 92501  
Attention Executive Director

Lessor: The Metropolitan Water District of  
Southern California  
P.O. Box 54153  
Los Angeles, California 90054  
Attention General Manager

or to such other address or the attention of such other officer as either party from time to time shall designate by written notice to the other.

A copy of such notice shall also be sent by the party to the United States Fish and Wildlife Service and the

California Department of Fish and Game at the respective addresses provided for in the CMA.

5. This Agreement is the whole and only agreement among the parties regarding the subordination of the Lease, the leasehold estate created thereby, and all rights and privileges of lessee to the Easements.

6. The Agreement supersedes the Subordination and Non-disturbance Agreement executed by the parties on or about June 13, 1991.

7. Lessor agrees to pay reasonable attorney's fee and all other costs and expenses which may be incurred by Agency in the enforcement of this Agreement.

8. Any provisions hereof which may be deemed invalid or unenforceable under any applicable laws or a governmental regulation shall be deemed omitted therefrom or deemed modified as appropriate. Such omissions shall not invalidate the remaining provisions of this Agreement.

9. This Agreement shall be governed and construed in accordance with the laws of the State of California.

**RIVERSIDE COUNTY REGIONAL PARK  
AND OPEN SPACE DISTRICT**

Approved as to form  
and legality

By \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

**THE RIVERSIDE COUNTY HABITAT  
CONSERVATION AGENCY**

Approved as to form  
and legality

By \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

Approved as to form  
and legality

By \_\_\_\_\_  
Carl Boronkay  
General Manager

Fred Vendig  
General Counsel

By \_\_\_\_\_  
Sr. Deputy General Counsel

State of California )  
County of ~~Los Angeles~~ Sacramento ) ss.

On this the 27<sup>th</sup> day of October 1992,  
before me, Sandy Daniel, the undersigned Notary Public,  
personally appeared Boyd Gibbons

personally known to me

proved to me on the basis of satisfactory evidence  
to be the person(~~s~~) whose name(~~s~~) is subscribed to the  
within instrument, and acknowledged that he executed  
it. WITNESS my hand and official seal.

Sandy Daniel  
Notary's Signature



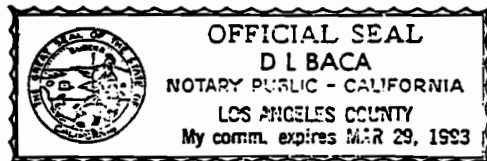
State of California            )  
  )  
County of Los Angeles        )    ss.

On this the 28th day of October 1992, before  
me, D. L. Baca, the undersigned Notary Public, personally  
appeared Marvin L. Plenert,

personally known to me

proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he/she executed  
it. WITNESS my hand and official seal.

*D. L. Baca*  
Notary's Signature



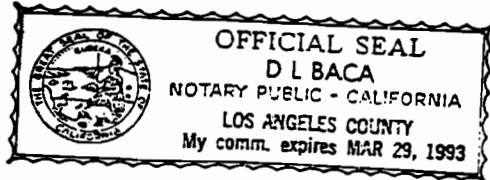
State of California            )  
  )    ss.  
County of Los Angeles        )

On this the 28th day of October 1992, before  
me, D. L. Baca, the undersigned Notary Public, personally  
appeared Carl Boronkay

personally known to me

proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he/she executed  
it. WITNESS my hand and official seal.

*D. L. Baca*  
Notary's Signature





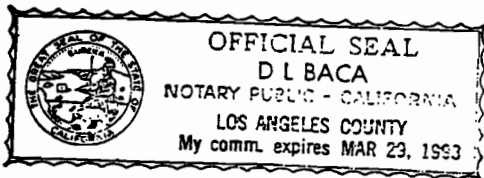
State of California            )  
  )    ss.  
County of Los Angeles        )

On this the 28th day of October 1992, before  
me, D. L. Baca, the undersigned Notary Public, personally  
appeared Norton Younglove

[ ] personally known to me

[ X ] proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he/she executed  
it. WITNESS my hand and official seal.

D. L. Baca  
Notary's Signature



**ALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

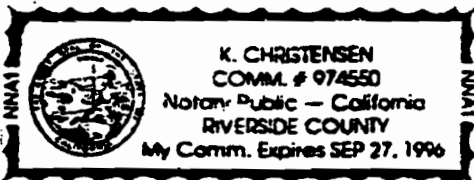
No. 51

State of California  
County of Riverside

On 10/27/92 before me, K. Christensen, Notary Public  
DATE NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Roland N. Jefferson  
NAME(S) OF SIGNER(S)

personally known to me - OR -  proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.  
K. Christensen  
SIGNATURE OF NOTARY

**OPTIONAL SECTION**  
**CAPACITY CLAIMED BY SIGNER**

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

- INDIVIDUAL
- CORPORATE OFFICER(S)  
TITLE(S) \_\_\_\_\_
- PARTNER(S)  LIMITED  GENERAL
- ATTORNEY-IN-FACT
- TRUSTEE(S)
- GUARDIAN/CONSERVATOR
- OTHER: pres - park facilities

**SIGNER IS REPRESENTING:**  
NAME OF PERSON(S) OR ENTITY(IES)

**OPTIONAL SECTION**

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED AT RIGHT:

Though the data requested here is not required by law, it could prevent fraudulent reattachment of this form.

TITLE OR TYPE OF DOCUMENT multi species plan

NUMBER OF PAGES \_\_\_\_\_ DATE OF DOCUMENT 10/27/92

SIGNER(S) OTHER THAN NAMED ABOVE \_\_\_\_\_

**APPENDIX C**

**MEMORANDUM OF UNDERSTANDING**

**SOUTHWESTERN RIVERSIDE COUNTY  
MULTIPLE SPECIES HABITAT CONSERVATION PLAN**

**AMONG**

**UNITED STATES FISH AND WILDLIFE SERVICE**

**AND**

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

**AND**

**RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY**

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**MEMORANDUM OF UNDERSTANDING**  
**SOUTHWESTERN RIVERSIDE COUNTY**  
**MULTI-SPECIES HABITAT CONSERVATION PLAN**

**THIS MEMORANDUM OF UNDERSTANDING ("MOU")** is made and entered into this 28th day of October, 1992 by and between the United States Fish and Wildlife Service ("Service"), the Riverside County Habitat Conservation Agency ("RCHCA"), and The Metropolitan Water District of Southern California ("MWD").

**I. RECITALS**

**A. RCHCA**

The RCHCA is a Joint Powers Authority created pursuant to the provisions of Article 1, Chapter 5, Division 7, Title 1 of the Government Code of the State of California relating to the joint exercise of powers common to public agencies. The RCHCA was created by and among the County of Riverside and the cities of Riverside, Moreno Valley, Hemet, Perris, Lake Elsinore, Corona and Temecula to plan for, acquire, administer, operate and maintain land and facilities for ecosystem conservation and habitat reserves and to implement habitat conservation plans for plants and animals which are either candidates for or listed as Threatened or Endangered pursuant to the terms of the federal Endangered Species Act, 16 U.S.C. 1531 et. seq. [FESA] and the California Endangered Species Act, California Fish and Game Code, Section 2050 et. seq. [CESA]. RCHCA has prepared and is implementing the terms of the

Short Term Habitat Conservation Plan for the Stephens' Kangaroo Rat ("SKR"), and has been issued a Permit (PRT 739678) for the incidental take of the SKR pursuant to the provisions of Section 10(a) of the FESA. In addition, in coordination with the Riverside County Open Space and Parks District ("RCOSPD") and the Western Riverside Council of Governments, it is participating in the preparation of a multi-species preservation strategy for the entirety of Western Riverside County, California, and intends the Multi-Species Reserve, as contemplated herein, to be a cornerstone of an integrated multi-species reserve system.

**B. MWD**

MWD is a public agency created pursuant to the provisions of California Stats. 1969, Chapter 209, as amended, whose primary purpose is to provide municipal and domestic use water to southern California communities within its service area. In order to fulfill that purpose, MWD has planned and has commenced implementation of the construction of a reservoir in the southwestern portion of Riverside County, California ("Reservoir"), and adjacent to an area the RCHCA has designated as one in which a multi-species reserve should be established for the preservation and enhancement of many plant and animal species indigenous to that area. It is contemplated that the cost of construction of the Reservoir will exceed \$1.5 billion, and that it will take over 10 years to construct and fill.

**C. CANDIDATE SPECIES**

Among other plant and animals species residing or located in the area of the Reservoir and the Multi-Species Reserve are the

following species which are candidates, or have been proposed, for listing by the Service as Threatened or Endangered (collectively, "Candidate Species"):

- o California gnatcatcher (*Polioptila californica*), [Gnatcatcher]
- o Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*)
- o San Diego horned lizard (*Phrynosoma coronatum blainvillei*)
- o Northern red-diamond rattlesnake (*Crotalus ruber ruber*)
- o Coastal western whiptail (*Cnemidophorus tigris multiscutatus*)
- o Southwestern pond turtle (*Clemmys Marmoraria pallida*)
- o Bell's sage sparrow (*Amphispiza belli belli*)
- o California horned lark (*Eremophila alpestris actia*)
- o Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- o San Diego desert woodrat (*Neotoma lepida intermedia*)
- o San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
- o Northwestern San Diego pocket mouse (*Chaetodipus fallax*)
- o Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)
- o Ferruginous hawk (*Buteo regalis*)
- o Loggerhead shrike (*Lanius ludovicianus*)
- o Payson's jewelflower (*Caulanthus simulans*)
- o Parry's spineflower (*Chorizanthe parryi var parryi*)
- o Smooth tarplant (*Hemizonia laevis*)
- o San Jacinto Valley saltbush (*Atriplex coronata var notatior*)



#### **D. MWD RESERVOIR**

MWD is concerned that during the construction and filling stages of its Reservoir project one or more of the Candidate Species may be listed as Threatened or Endangered which listing could have the effect of substantially disrupting and delaying MWD's ability to construct and fill the Reservoir and thus to perform its mission of providing water to Southern California and its residents. To that end, MWD has participated with RCHCA, the County of Riverside and others in habitat and species conservation efforts throughout the western portions of Riverside County with the hope that sufficient habitat might be preserved to avoid the listing of the Candidate Species. However, the range of each of the Candidate Species extends beyond the borders of Riverside County, and, despite conservation efforts by RCHCA, MWD, the County and others, one or more of the Candidate Species may be listed as Threatened or Endangered.

#### **E. MULTI-SPECIES HABITAT CONSERVATION PLAN**

In order to preserve additional habitat for the Candidate Species and other species indigenous to the western portions of Riverside County, and in order to qualify as soon as possible for an Incidental Take Permit issued by the Service pursuant to the provisions of Section 10(a) of the FESA [10(a) Permit], should any of the Candidate Species be listed as Threatened or Endangered, RCHCA and MWD have prepared a Multi-Species Habitat Conservation Plan (MSHCP) for the preservation of the Candidate Species. The MSHCP has been prepared as if all of the Candidate Species were already listed as Threatened or Endangered, and based upon the best

scientific and commercial data currently available, and subject to Unforeseen Circumstances, the MSHCP meets each of the requirements of a conservation plan as prescribed by Section 10(a)(2)(A) of the FESA.

**F. MULTI-SPECIES RESERVE AND MANAGEMENT THEREOF**

Pursuant to the terms of the MSHCP, a copy of which is attached hereto as Appendix "A", MWD is acquiring a multi-species reserve ("Multi-Species Reserve") for the preservation and enhancement of the Candidate Species. RCHCA intends to acquire other and adjacent lands for addition to the Multi-Species Reserve as part of the long term multiple species strategy mentioned hereinabove. The Multi-Species Reserve will be managed by FWS, CDFG, MWD, RCHCA, and RCOSPD, pursuant to the terms of a Cooperative Management Agreement ("CMA"), a copy of which is attached to the MSHCP as Appendix "B".

**G. CONGRESSIONAL INTENT**

Each of the parties hereto recognizes that Congress has expressed its intention that the federal government work closely with local governmental entities and the private sector to protect ecosystems as well as listed and unlisted species over the long term, as follows:

"Although the conservation plan is keyed to the permit provisions of the Act which only apply to listed species, the Committee intends that conservation plans may address both listed and unlisted species.

\* \* \*

The Committee intends that the Secretary may utilize this provision to approve conservation plans which provide long-term commitments regarding the conservation of listed as well as unlisted species and long-term assurances to the proponent of the conservation plan that the terms of the plan will be adhered to and that further mitigation requirements will only be imposed in accordance with the terms of the plan. In the event that an unlisted species addressed in an approved conservation plan is subsequently listed pursuant to the Act, no further mitigation requirements should be imposed if the conservation plan addressed the conservation of the species and its habitat as if the species were listed pursuant to the Act.

\* \* \*

It is also recognized that circumstances and information may change over time and that the original plan might need to be revised. To address the situation the Committee expects that any plan approved for a long term permit will contain a procedure by which the parties will deal with unforeseen circumstances." H.R. Rep. No. 97-835, 97th Cong., 2d Sess. 30-31 (1982).

#### **H. FISH AND WILDLIFE COORDINATION ACT**

In addition, Congress has authorized the Secretary of Interior to provide assistance to and cooperate with state and local governments in efforts to protect all species of wildlife and

their habitats pursuant to the terms of the Fish and Wildlife Coordination Act.

**I. INCORPORATION OF MSHCP AND CMA**

The MSHCP and the CMA and each of their terms are intended to be, and by this reference are, incorporated herein. In the event of any direct contradiction between the terms of this MOU and the MSHCP or the CMA, the terms of MSHCP and the CMA shall control. In all other cases, the terms of this MOU and the terms of the MSHCP and the CMA shall be interpreted to be supplementary to each other.

**J. LEGAL REQUIREMENTS**

In order to fulfill the legal requirements which will allow the Service to issue a Section 10(a) Permit in the event any of the Candidate Species is listed, the MSHCP and the CMA provide measures that are intended to assure that any take occurring within the MSHCP Area will be incidental; that the impacts likely to result from the take will, to the maximum extent practicable, be monitored, minimized and mitigated; that adequate funding for the MSHCP will be provided; that the take will not appreciably reduce the likelihood of the survival and recovery of the Candidate Species in the wild; and that all other requirements of 50 CFR 17.22(b) and 50 CFR 17.32(b), as applicable, are complied with.

**K. COOPERATIVE EFFORT**

In order that each of the legal requirements as set forth in Subparagraph "J" hereof are fulfilled, each of the Parties to this MOU must perform certain specific tasks. The MSHCP thus

describes a cooperative federal, state and local program of conservation for the Candidate Species.

**L. UTILIZATION OF TERMS**

Terms defined and utilized in the MSHCP and the FESA shall have the same meaning when utilized in this MOU, except as specifically noted.

**M. RELIANCE**

1. In reliance upon the terms of this MOU, MWD will convey conservation easements to the RCHCA covering more than 5,000 acres within the Multi-Species Reserve which, when added to more than 3,200 acres as to which MWD has previously conveyed conservation easements to RCHCA, will result in the Multi-Species Reserve containing more than 8,700 acres. RCHCA has determined that, but for the conveyance of the conservation easements by MWD, it would be required to expend more than Fifty Million (\$50,000,000) Dollars to purchase that land or comparable land to serve as a Multi-Species Reserve. In addition, as more particularly set forth in the MSHCP, MWD will expend more than \$13 million dollars in research, management and conservation activities within the Multi-Species Reserve involving Candidate Species. Finally, MWD will provide to the Reserve management committee, from income derived from recreational facilities associated with the Reservoir an annual sum of Two Hundred Thousand (\$200,000) Dollars or 50% of the net income, whichever is greater, to further carry out these research, management and conservation activities.

2. RCHCA, in reliance on the terms of this MOU, will expend significant sums of money acquiring lands surrounding the

Multi-Species Reserve in order to expand the Multi-Species Reserve and to provide additional protection for the Candidate Species.

3. The Service acknowledges and agrees that:

a. But for this MOU, the dedications of land and interests in land, and the expenditure of time and money by both the RCHCA and MWD would not occur; and,

b. MWD and RCHCA are relying upon each and every commitment, covenant and promise made by the Service herein, and that those commitments, covenants and promises are the only consideration for MWD and the RCHCA to enter into this MOU; and,

c. The benefits accruing to the Candidate Species and the habitat occupied by them as a result of the MSHCP, the CMA and this MOU are significant and result in the preservation of irreplaceable ecosystems which would likely otherwise be lost as a result of development within the near term.

## II. PURPOSES

This MOU is intended to state the relationship and activities of the parties prior to any listing of any Candidate Species and in the event any of the Candidate Species should be listed and a Section 10(a) Permit issued; thus, the purposes of this MOU are:

A. To provide for the implementation of each of the provisions of the MSHCP and the CMA in order to protect the Candidate Species and their habitat regardless of whether any of them are ever listed as Threatened or Endangered; and,

B. In the event any of the Candidate Species is listed and in the event a Section 10(a) Permit is issued, to bind each of the Parties to fulfill and faithfully perform the obligations, responsibilities and tasks assigned to it pursuant to the terms of the MSHCP, the CMA and the Section 10(a) Permit; and,

C. In the event any of the Candidate Species is listed and in the event a Section 10(a) Permit is issued, to provide remedies and recourse should any party fail or refuse to perform its obligations, responsibilities and tasks as set forth in the MSHCP, the CMA, the Section 10(a) Permit or this MOU; and,

D. To provide assurances to the RCHCA and MWD that in the event any Candidate Species is hereafter listed:

1. Any formal Section 7 Conference Opinion ("Formal Conference Opinion"), and any incidental take statement contained therein, issued in connection with a Section 7 Conference with respect to any Candidate Species will be expeditiously adopted by the Service, subject to requirements of 50 CFR 402.10(d) or other applicable provisions of law.

2. Upon the submission of an application for a Section 10(a) Permit by RCHCA and MWD, or either of them, based on the MSHCP and CMA, and provided that RCHCA and MWD have fully and faithfully performed their obligations under this MOU, the MSHCP and the CMA, the Service shall process the application as expeditiously as possible, and shall, subject to then applicable requirements of law, issue a Section 10(a) Permit without the requirement of additional mitigation except as provided herein, in the MSHCP, or as may be required by law.

### III. TERM

#### A. STATED TERM

This MOU shall become effective on the date hereof and shall remain in full force and effect for a period of fifty (50) years ("Stated Term").

#### B. EFFECT OF PERMIT

Notwithstanding the Stated Term as herein set forth, the Parties anticipate that during the Stated Term of this MOU, one or more of the Candidate Species may be listed. In the event that a Section 10(a) Permit or Permits are issued and the term of such Permit or Permits extends beyond the Stated Term hereof, this MOU shall not terminate at the conclusion of the Stated Term, but shall continue and thereafter terminate upon the date of termination of such Section 10(a) Permit or Permits.

#### C. PERMANENCE OF MULTI-SPECIES RESERVE

Notwithstanding the Stated Term of this MOU or any extension thereof as provided in Subsection "B" hereof, the Parties agree and recognize that once any Candidate Species that has been listed and for which an incidental take statement or Section 10(a) Permit has been issued by the Service as herein contemplated, has been incidentally taken and its habitat modified, the take and habitat modification will be permanent. It is therefore the intention of the Parties that in the event that any of the Candidate Species is listed and an incidental take statement or Section 10(a) Permit has been issued by the Service as herein contemplated, the provisions of the MSHCP, the CMA and of this MOU



regarding the establishment and maintenance of the Multi-Species Reserve shall likewise, to the extent permitted by law and except as otherwise provided herein, be permanent and extend beyond the Stated Term of this MOU or any extension thereof. Unless terminated pursuant to other provisions of this MOU, it is the parties' intent that the Multi-Species Reserve will be permanent and extend beyond the stated term of this MOU or any extension hereof, even if no listings occur.

#### **IV. OBLIGATIONS OF THE PARTIES**

##### **A. MINIMIZATION AND MONITORING OF THE IMPACTS OF INCIDENTAL TAKE WITHIN THE MSHCP AREA**

In the event any Candidate Species is listed and in the event an incidental take statement or Section 10(a) Permit is issued by the Service, in order to minimize and monitor the impacts of incidental take within the MSHCP Area, RCHCA, MWD and the Service agree that they shall each undertake and fulfill the tasks, responsibilities and obligations assigned to each of them as more particularly set forth in the MSHCP and the CMA.

##### **B. MITIGATION OF THE IMPACTS OF INCIDENTAL TAKE: THE ESTABLISHMENT, MAINTENANCE AND MONITORING OF THE MULTI-SPECIES RESERVE.**

1. In the event any incidental take statement or Section 10(a) Permit is issued by the Service, in order to mitigate the impacts of incidental take, the RCHCA, MWD and the Service

agree that they shall each undertake and fulfill the tasks, responsibilities and obligations assigned to each of them as more particularly set forth in the MSHCP and the CMA.

2. In addition to the tasks, responsibilities and obligations assigned to it in the MSHCP, the Service agrees that it:

a. Assistance to Committee. Shall cooperate with and provide technical assistance to the Committee.

b. Evaluation of Annual Management Plan. Shall evaluate and comment upon the Annual Management Plan submitted by the Reserve Manager to assure that the terms of the MSHCP, the CMA, this MOU, and if issued, any Section 10(a) Permit are being fulfilled.

**C. FUNDING OF THE MSHCP**

1. RCHCA and MWD. RCHCA and MWD shall each provide the funds and in kind services as more particularly set forth in the CMA and the MSHCP. In addition, the RCHCA agrees that it shall seek additional funding and conveyances of land or interests in land for the expansion of the Multi-Species Reserve from sources such as adjacent land owners, the Land and Water Conservation Fund, land trades with the Bureau of Land Management and the like.

2. THE SERVICE. The Service agrees that it shall include in its annual budget request adequate funding to allow it to fully perform the obligations and tasks assigned to it pursuant to the terms hereof, including, but not limited to the review of the Annual Management Plan as well as cooperate with and provide technical assistance to the Committee.

## **V. FORMAL CONFERENCE OPINIONS**

### **A. REQUESTS FOR ADOPTION**

In the event any of the Candidate Species for which a Formal Conference Opinion has been completed is thereafter listed as Threatened or Endangered, the Federal Action Agency shall immediately request that the Service adopt the Formal Conference Opinion, including any incidental take statement, issued with respect to the Section 7 Conference, pursuant to the provisions of 50 CFR 402.10(d) or other applicable provisions of law. In the event that the Federal Action Agency has not requested the Service to do so within 48 hours after any Candidate Species for which a Formal Conference Opinion has been completed, is listed, presentation of a copy of the Formal Conference Opinion to the Service by any applicant shall serve as such request.

### **B. ACTION BY THE SERVICE**

Upon receipt of a request that it adopt a Formal Conference Opinion rendered with respect to any Candidate Species for which a Section 7 Conference has been completed, the Service shall adopt the Formal Conference Opinion, including any Incidental Take Statement, subject to the requirements of 50 CFR 402.10(d) or other applicable provisions of law.

## VI. SECTION 10(a) PERMITS

### A. FINDINGS

Upon review of the MSHCP, the CMA and this MOU, the Service finds, based upon the best scientific and commercial data currently available and subject to Unforeseen Circumstances, that:

1. INCIDENTAL TAKE.

Any taking of any Candidate Species within the MSHCP Area will be incidental to the carrying out of otherwise lawful activities; and,

2. MINIMIZE AND MITIGATE.

The MSHCP, the CMA and this MOU will, to the maximum extent practicable, minimize and mitigate the impacts of such incidental taking; and,

3. ADEQUATE FUNDING.

The funding sources identified and provided for in the MSHCP, the CMA and this MOU will ensure that adequate funding for the MSHCP will be provided; and,

4. NO LIKELY JEOPARDY.

Any permitted taking of any Candidate Species will not appreciably reduce the likelihood of the survival and recovery of any of the Candidate Species in the wild; and,

5. OTHER MEASURES.

The measures set forth in the MSHCP and required by the Service as being necessary or appropriate for the purposes of the MSHCP will be fulfilled.

## **B. CONSIDERATION OF APPLICATIONS**

1. Upon receipt from MWD and/or RCHCA of an application for a Section 10(a) Permit for any Candidate Species which has been listed, after opportunity for public comment, and subject to Unforeseen Circumstances, as hereinafter defined, and only if consideration of Unforeseen Circumstances is legally required, the Service shall issue its Section 10(a) Permit to MWD and/or RCHCA without any additional mitigation other than that provided in the MSHCP, this MOU, or otherwise required by law. The application for a Section 10(a) Permit and the issuance thereof shall be processed as expeditiously as possible.

2. As utilized in this MOU, the term "Unforeseen Circumstances" shall mean any significant adverse change in the population of a Candidate Species, or in the habitat or natural resources of the Multi-Species Reserve, or in the anticipated impacts of development or in other factors upon which the MSHCP is based, or any significant new information relevant to the MSHCP (including information presented during a public comment period on a permit application or proposed rule) that was unforeseen by the parties on the date hereof.

3. In the event the Service finds that Unforeseen Circumstances have occurred, and consideration of such Unforeseen Circumstances is then legally required, this MOU, the MSHCP, and the CMA may be amended to deal with the Unforeseen Circumstances.

4. In the event the parties are unable to agree on amendments to deal with the Unforeseen Circumstances and consideration of such Circumstances is legally required, which

inability to agree results in any substantial delay in or termination of the project for which incidental take would otherwise be permitted as provided in the MSHCP, MWD may, at its sole option, terminate this MOU, and in such event, the RCHCA shall immediately reconvey the conservation easements to MWD, and all parties shall be free of any responsibility or liability hereunder.

**C. ISSUANCE AND MONITORING**

After issuance of any Section 10(a) Permit, the Service shall monitor the implementation thereof, including each of the terms of this MOU, the MSHCP and the CMA, including, but not limited to the acquisition, expansion, management, operation, maintenance and monitoring of the Multi-Species Reserve in order to assure compliance with the Section 10(a) Permit, the MSHCP, the CMA and this MOU. In addition, the Service shall, to the maximum extent possible ensure the availability of its staff to cooperate with and provide technical and research assistance to the Management Committee as well as to attend informal meetings with the other parties to this MOU.

**VII. REMEDIES AND ENFORCEMENT**

**A. IN GENERAL**

In the event any Candidate Species is listed and in the event a Section 10(a) Permit is issued, except as set forth hereinafter, each of the Parties hereto shall have all of the remedies available in equity (including specific performance and injunctive relief) and at law to enforce the terms of this MOU and

the Section 10(a) Permit and to seek remedies for any breach hereof, consistent with and subject to the following:

1. NO MONETARY DAMAGES.

No party shall be liable in damages to any party or other person for any breach of this MOU, any performance or failure to perform a mandatory or discretionary obligation imposed by this MOU or any other cause of action arising from this MOU. Notwithstanding the foregoing:

a. Retain Liability. All parties shall retain whatever liability they would possess for their present and future acts or failure to act without the existence of this MOU.

b. Land Owner Liability. All parties shall retain whatever liability they possess as owners of interests in land.

2. INJUNCTIVE AND TEMPORARY RELIEF.

The Parties acknowledge that each of the Candidate Species is unique and that its loss as a species would result in irreparable damage to the environment and that therefore injunctive and temporary relief may be appropriate in certain instances involving a breach of this MOU or any Section 10(a) Permit.

B. REGARDING A SECTION 10(a) PERMIT.

1. AUTHORITY OF PERMITTEE.

In the event any Section 10(a) Permit is issued, a permittee shall have the right to revoke, terminate or suspend the right of any landowner to enjoy or have the benefit, right or privileges under the Permit by terminating or suspending subpermits in the event such landowner violates any significant provision of the Section 10(a) Permit, or breaches any significant term of the

CMA or this MOU. In the event any Permittee shall terminate or suspend any subpermit, it shall promptly notify the Service in writing of such termination or suspension and shall set forth in writing the basis for such termination or suspension.

2. SEVERABILITY.

A violation of a Section 10(a) Permit by a landowner or by any Permittee with respect to any one or more particular parcels of land or portions thereof within the jurisdiction of any such Permittee shall not adversely affect or be attributed to nor shall it result in a loss or diminution of any right, privilege or benefit hereunder of any other Permittee, or landowner.

3. SUSPENSION AND REVOCATION OR TERMINATION.

In the event any Section 10(a) Permit is issued, suspension or revocation thereof shall be governed by 50 CFR 13.27-13.29 or other applicable provisions of law.

C. LIMITATIONS AND EXTENT OF ENFORCEABILITY.

1. LIMITATIONS ON FURTHER MITIGATION IN MSHCP AREA.

It is acknowledged that the purpose of this MOU is to set forth the obligations and rights of the Parties hereto with respect to the MSHCP and to provide for the conservation of the Candidate Species and the mitigation and compensatory measures required in connection with incidental taking of the Candidate Species in the course of otherwise lawful activities within the MSHCP Area. Accordingly, except as otherwise required by law, by the terms of the MSHCP or this MOU, no further mitigation or compensation for the conservation of any of the Candidate Species will be required by any party hereto or the owner of any non-federally owned land within the MSHCP Area, as described



herein, or as later amended as part of the RCHCA Multi-Species strategy for western Riverside County.

2. OTHER PROVISIONS.

Except as otherwise specifically provided in the MSHCP, the CMA, this MOU or any Section 10(a) Permit, nothing herein contained shall be deemed to limit the power of any person, firm, or public or private entity to use their lands. Furthermore, nothing herein contained is intended to limit the authority or responsibility of the United States government to invoke the penalties or otherwise fulfill its responsibilities under the FESA.

**VIII. MISCELLANEOUS PROVISIONS**

**A. AMENDMENTS**

Except as otherwise set forth herein, this MOU may be amended only with the written consent of each of the Parties hereto. The parties understand and agree that this MOU may be amended in the future in order to accommodate Unforeseen Circumstances or the expansion of both the Multi-Species Reserve as well as the MSHCP Area as part of the overall western Riverside County multi-species strategy.

**B. NO PARTNERSHIP**

Except as otherwise expressly set forth herein, neither this MOU nor the MSHCP nor the CMA shall make or be deemed to make any party to this MOU the agent for or the partner of any other party.

**C. SUCCESSORS AND ASSIGNS**

This MOU, and each of its covenants and conditions shall be binding upon and shall inure to the benefit of the Parties hereto and their respective successors and assigns.

**D. NOTICE**

Any notice permitted or required by this MOU shall be delivered personally to the persons set forth below or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested and addressed as follows or at such other address which any Party may from time to time notify each of the other Parties, in writing:

The Riverside County Habitat Conservation Agency  
4080 Lemon Street, 12th Floor  
Riverside, CA 92501

The Metropolitan Water District of Southern California  
1111 Sunset Boulevard  
P.O. Box 54153  
Los Angeles, CA 90054

United States Fish and Wildlife Service  
500 NE Multnomah, Suite 607  
Portland, OR 97232

United States Fish and Wildlife Service  
2730 Loker Avenue West  
Carlsbad, CA 92028

**E. ENTIRE MOU**

This MOU and the CMA supersede any and all other agreements, either oral or in writing between the Parties hereto with respect to the subject matter hereof and contain all of the covenants and agreements among them with respect to said matters, and each Party acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any other

party or anyone acting on behalf of any party which are not embodied therein.

**F. ATTORNEYS FEES**

If any action at law or equity, including any action for declaratory relief, is brought to enforce or interpret the provisions of this MOU, all parties to the litigation shall bear their own attorneys fees and costs. Attorneys fees and costs recoverable against the United States, however, shall be governed by applicable Federal law.

**G. ELECTED OFFICIALS NOT TO BENEFIT**

No member of or delegate to Congress or Federal Resident Commissioner, shall be entitled to any share or part of this MOU, or to any benefit that may arise from it.

**H. DUPLICATE ORIGINALS**

This MOU may be executed in any number of duplicate originals. A complete original of this MOU shall be maintained in the official records of each of the Parties hereto.

**I. THIRD PARTY BENEFICIARIES**

Without limiting the applicability of the rights granted to the public pursuant to the provisions of 16 USC 1540(g), this agreement shall not create the public or any member thereof as a third party beneficiary hereof, nor shall it authorize anyone not a party to this MOU to maintain a suit for personal injuries or property damages pursuant to the provisions of this MOU.

**J. AVAILABILITY OF APPROPRIATED FUNDS**

Implementation of this MOU by the Service shall be subject to the availability of appropriated funds.

THIS MEMORANDUM OF UNDERSTANDING HAS BEEN EXECUTED ON THE DAY SET BY EACH SIGNATURE ATTACHED HERETO AND SHALL BECOME EFFECTIVE ON THE DAY AND YEAR FIRST ABOVE WRITTEN.

DATE: 10-28-92

**RIVERSIDE COUNTY HABITAT  
CONSERVATION AGENCY**

BY: [Signature]

DATE: Oct. 28, 1992

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

BY: [Signature]

DATE: 10-28-92

**U.S. FISH & WILDLIFE SERVICE**

BY: [Signature]

**APPENDIX D**

**FISH AND GAME CODE SECTIONS 2081 AND 2835 AGREEMENT  
AMONG  
THE CALIFORNIA DEPARTMENT OF FISH AND GAME,  
THE METROPOLITAN WATER DISTRICT OF  
SOUTHERN CALIFORNIA,  
AND THE RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY  
ACCEPTING PLAN, PURSUANT TO  
FISH AND GAME CODE SECTIONS 2081 AND 2835  
FOR MANAGEMENT OF SENSITIVE SPECIES, PURSUANT TO  
SOUTHWESTERN RIVERSIDE COUNTY MULTI-SPECIES  
HABITAT CONSERVATION PLAN**

**FISH AND GAME CODE SECTIONS 2081 AND 2835 AGREEMENT  
AMONG  
THE CALIFORNIA DEPARTMENT OF FISH AND GAME,  
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,  
AND THE RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY  
ACCEPTING PLAN, PURSUANT TO  
FISH AND GAME CODE SECTIONS 2081 AND 2835  
FOR MANAGEMENT OF SENSITIVE SPECIES, PURSUANT TO  
SOUTHWESTERN RIVERSIDE COUNTY MULTI-SPECIES  
HABITAT CONSERVATION PLAN**

This Agreement, dated for reference only as of September 10, 1992, is made and entered into by and among the Department of Fish and Game of the State of California ("DEPARTMENT") and The Metropolitan Water District of Southern California ("METROPOLITAN"), and the Riverside County Habitat Conservation Agency, a public agency ("RCHCA"), and is based on the following representations and statements of purpose which the parties accept as true and correct:

A. METROPOLITAN and RCHCA have prepared, and DEPARTMENT accepts, the Southwestern Riverside County Multi-Species Habitat Conservation Plan ("MSHCP") appended as Exhibit A which provides for the management of certain species ("sensitive species") which may become listed in the future under the provisions of the California Endangered Species Act ("CESA"); Chapter 1.5 (commencing with §2050) of Division 3 of the Fish and Game Code ("Code"). The MSHCP is prepared and accepted for the purposes of conservation, preservation, restoration and enhancement of the sensitive species. All of these purposes are collectively encompassed in the management activities.

B. The MSHCP was initiated by METROPOLITAN and RCHCA in August 1991, and was discussed and reviewed by DEPARTMENT's personnel in successive drafts on numerous subsequent occasions, including field reconnaissance trips at the Multi-Species Reserve for which the MSHCP has been prepared. This Agreement is being entered into, and the MSHCP was prepared, prior to the establishment of administrative procedures and guidelines for implementing the Natural Community Conservation Planning Act ("NCCP Act" [Fish & G. Code, §2800 et seq.]). However, the scope, content, methodology, data presentation, and purpose of the MSHCP are intended to reflect the draft administrative procedures and guidelines for natural communities conservation plans, and the parties desire to obtain the benefits of the MSHCP, particularly as it relates to the management of sensitive species, as a natural communities conservation plan, but without waiting for those administrative procedures and guidelines to be established in final form.

C. DEPARTMENT acceptance of the MSHCP is made with the understanding that, as specified in the MSHCP, detailed plans will be prepared in cooperation with the DEPARTMENT and research into the life history and habitat requirements of the covered sensitive species will be conducted during implementation of the MSHCP.

D. The DEPARTMENT recognizes that the management actions proposed in the MSHCP are in addition to, and not a substitute for, management actions involving the acquisition,

preservation, and management of the Santa Rosa Plateau and the Roy E. Shipley Reserve. The DEPARTMENT further recognizes that these prior management actions will have unquantified benefits for many of the sensitive species covered by the MSHCP.

E. This Agreement assures that by implementing the MSHCP, METROPOLITAN can respond to the impacts of its projects in advance of potential future listing of sensitive species in exchange for the assurances that take can occur.

F. Substantial public benefits will result from the conservation, protection, restoration, and enhancement of natural habitats that will occur as a result of the implementation of the MSHCP approved by this Agreement. The Agreement complements and assists in the implementation of regional open space and habitat conservation plans.

G. METROPOLITAN intends to undertake the habitat and other management activities described in the MSHCP for the conservation, protection, restoration and enhancement of the sensitive species.

H. Pursuant to section 1802 of the Code, the DEPARTMENT is trustee for fish and wildlife resources and has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitats necessary for biologically sustainable populations of these species.

I. Nothing herein shall waive any rights METROPOLITAN may have under section 1913 of the Code.



J. The NCCP Act authorizes the DEPARTMENT to enter into agreements for the purpose of preparing and implementing natural community conservation plans, which are equivalent to multi-species habitat conservation plans, to provide comprehensive management and conservation of multiple wildlife species. Section 2835 of the Code authorizes the DEPARTMENT to permit the taking, as provided in the Code, of identified species whose conservation and management is provided for in such a Plan. The DEPARTMENT's authorization to take applies to identified species when they become listed species under the provisions of CESA.

K. METROPOLITAN and RCHCA have requested the DEPARTMENT to approve the MSHCP appended to this Agreement and to permit take of species by METROPOLITAN in accordance with the MSHCP, pursuant to section 2835 as well as section 2081 of the Code.

L. The "Cooperative Management Agreement" ("CMA"), which is Appendix B to the MSHCP, provides for implementation of the MSHCP which encompasses the Multi-Species Reserve and other lands, including the Domenigoni Valley Reservoir, all as described in the CMA.

M. The DEPARTMENT recognizes, consistent with CESA and the NCCP Act, that the permanent protection for the species and their habitats identified in the MSHCP is intended to assure their conservation, protection, restoration and enhancement irrespective of any future listing. Should listing

subsequently occur under the provisions of CESA, the DEPARTMENT authorizes "take" by METROPOLITAN in accordance with the MSHCP and this Agreement.

WHEREFORE, the parties mutually agree as follows:

1. **ACCEPTANCE OF MSHCP.**

The DEPARTMENT accepts the appended MSHCP as a Natural Community Conservation Plan complying with the requirements of the NCCP Act and authorizes the take, pursuant to section 2835, of any of the species specifically identified in the MSHCP. The DEPARTMENT also accepts the appended MSHCP as complying with the requirements, purposes and intent of CESA and authorizes the take, pursuant to section 2081, of any of the species specifically identified in the MSHCP once the species becomes listed pursuant to CESA, and the operative effect of any permit for purposes of CESA is the date of listing. No further actions need be taken to comply with CESA. These authorizations will extend to species not specifically identified if a management plan is implemented which provides for the long-term viability of the species in a manner approved by the DEPARTMENT. With this acceptance, the DEPARTMENT may characterize the coastal sage scrub habitat and other Reserve lands that are subject to the MSHCP as lying within the planning area for a Natural Community Conservation Plan for the region in which the Multi-Species Reserve is located but additional requirements shall not result due to such characterization.

**2. DEPARTMENT FINDINGS AND DETERMINATIONS.**

The DEPARTMENT has determined and agreed that only METROPOLITAN is authorized to take the habitat and wildlife located on lands encompassed by the MSHCP. Take shall be consistent with the MSHCP. This authorization shall continue after an identified species is listed under the provisions of CESA. This authorization shall apply to employees and agents of METROPOLITAN acting consistently with the MSHCP.

**3. IMPLEMENTATION OF PLAN.**

METROPOLITAN shall transfer conservation easements to implement the MSHCP to the DEPARTMENT or to an approved designated agent. "Designated Agent" means RCHCA or any non-profit entity organized for conservation purposes, which is acceptable to the DEPARTMENT. Any disputes arising hereunder shall be decided in accordance with the CMA.

The DEPARTMENT may assume the function of Designated Agent if:

(a) The Designated Agent becomes unable to comply with its duties under a conservation easement grant; or

(b) The Designated Agent fails, or threatens to fail to enforce the terms of the easement and remedies available under the conservation easement grant will not cure the violation.

Upon such assumption, the Designated Agent shall transfer the conservation easement to the DEPARTMENT.

**4. SHIPLEY MITIGATION AGREEMENT CONSERVATION EASEMENTS.**

Paragraph 4 of the "Agreement for the Use of the Shipley Ranch, Bailey Property, and Certain Lands at Lake Skinner in Mitigation of Habitat Losses Resulting from Facilities of The Metropolitan Water District of Southern California to be Constructed in Western Riverside County and Environs" ("Mitigation Agreement"), dated May 31, 1991, and entered into by METROPOLITAN, the DEPARTMENT and the United States Fish and Wildlife Service provides that those of the conservation easements which are granted for mitigation as a result of usage of lands shall be granted to the DEPARTMENT. These easements have not yet been granted to the DEPARTMENT. However, a conservation easement has been granted to RCHCA, which qualifies as a Designated Agent for certain of the lands providing habitat for the Stephens' kangaroo rat. The DEPARTMENT agrees that all conservation easements required under the Mitigation Agreement may be granted to a Designated Agent. This change is not intended to otherwise change powers of the parties to the Mitigation Agreement except as expressly stated herein.

**5. COMPENSATION OF DEPARTMENT FOR PARTICIPATION COSTS.**

Compensation for DEPARTMENT's costs in preparing the MSHCP is provided for in a separate agreement dated July 1, 1992. Except as provided in other agreements, all other actual

costs incurred by DEPARTMENT's participating in implementation of the MSHCP will be reimbursed by METROPOLITAN.

**6. OPINIONS AND DETERMINATIONS.**

Where the terms of this Agreement provide for action to be based upon the opinion, judgment, approval, review, or determination of any party, those terms are not intended to be and shall never be construed as permitting the opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

**7. LITIGATION.**

The parties shall cooperate in the defense of any litigation that challenges the validity of this Agreement or any action taken by the parties pursuant to this Agreement, to the extent permitted by law.

**8. CONTENT OF AGREEMENT.**

This Agreement consists of the principal document executed by the parties (in which this sentence occurs) as well as all exhibits. This Agreement incorporates the full and complete understanding of the parties. Any oral or written understanding not incorporated in this Agreement by amendment shall not be effective to modify the terms of this Agreement or be utilized for the purpose of interpreting any provision herein.

**9. AMENDMENT.**

This Agreement may only be amended in writing by agreement of all of the parties.

10. SUCCESSORS AND ASSIGNS.

This Agreement and all of its provisions and exhibits shall apply to and bind the successors and assigns of the parties to this Agreement.

11. CAPTIONS.

The captions on articles and paragraphs in this Agreement are solely for the convenience of the parties, and no meaning shall be ascribed to them in interpreting this Agreement.

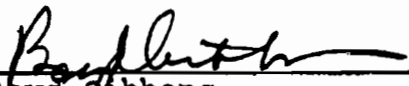
12. EFFECTIVE DATE.

This Agreement shall become effective upon execution by all parties and shall be recorded in the Office of the County Recorder of the County of Riverside.

13. FORM.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original. The escrow officer may assemble separate signature pages into a single document for recording.

DEPARTMENT OF FISH AND GAME,  
an agency of the State  
of California

By   
Boyd Gibbons  
Director

Date Oct. 27, 1992

**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

Approved as to form  
and legality

By *Carl Boronkay*  
Carl Boronkay  
General Manager

Fred Vendig  
General Counsel

By *Janet Wiley*  
Sr. Deputy General Counsel

Date *Oct. 27, 1992*

Date *28 OCT 92*

**RIVERSIDE COUNTY HABITAT CONSERVATION  
AGENCY, a public agency**

By *[Signature]*  
Chairman of Board of Directors

Date *Oct 28, 1992*

State of California )  
County of Sacramento ) ss..  
~~Los Angeles~~ )

On this the 27<sup>th</sup> day of October 1992,  
before me, Sandy Daniel, the undersigned Notary Public,  
personally appeared Boyd Gibbons

personally known to me

proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he executed  
it. WITNESS my hand and official seal.

Sandy Daniel  
Notary's Signature





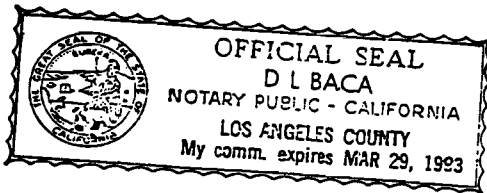
State of California            )  
  )  ss.  
County of Los Angeles        )

On this the 28th day of October 1992, before  
me, D. L. Baca, the undersigned Notary Public, personally  
appeared Carl Boronkay,

personally known to me

proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he/she executed  
it. WITNESS my hand and official seal.

D. L. Baca  
Notary's Signature



State of California            )  
  )    ss. .  
County of Los Angeles        )

On this the 28th day of October 1992, before  
me, D. L. Baca, the undersigned Notary Public, personally  
appeared Norton Younglove

[ ] personally known to me

[x] proved to me on the basis of satisfactory evidence  
to be the person(s) whose name(s) is subscribed to the  
within instrument, and acknowledged that he/she executed  
it. WITNESS my hand and official seal.

*D. L. Baca*  
Notary's Signature

