Joint Environmental Assessment
and
Mitigated Negative Declaration

Regarding

Authorization for Issuance of an Incidental Take Permit
Under Section 10(a)(1)(B) of the Endangered Species Act

and

Implementation of the
Lake Mathews Multiple Species Habitat Conservation Plan and
Natural Community Conservation Plan

August 1995

U.S. Department of the Interior
Fish and Wildlife Service
Carlsbad Field Office

The Metropolitan Water District
of Southern California

Contents

List of Figures

List of Tables

1. Introduction

The Lake Mathews Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (Lake Mathews MSHCP/NCCP or Lake Mathews Plan) is a joint conservation effort initiated by The Metropolitan Water District of Southern California (Metropolitan) and the Riverside County Habitat Conservation Agency (RCHCA) in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). The Lake Mathews MSHCP/NCCP establishes and provides management for a 5,110.4-acre multiple species reserve (Multiple Species Reserve) on Metropolitan's Lake Mathews properties in western Riverside County (Plan Area). Lake Mathews itself is not included in the Plan Area.

The Lake Mathews MSHCP/NCCP also provides management for the Stephens' kangaroo rat (SKR, *Dipodomys stephensi*) on lands in public ownership within the RCHCA's proposed Lake Mathews-Estelle Mountain Core Reserve (Core Reserve or SKR Core Reserve). The Multiple Species Reserve together with the other publicly owned lands in RCHCA's proposed Core Reserve comprise the Combined Reserve in the Lake Mathews Plan. The Multiple Species Reserve consists of a 2,544.9-acre mitigation bank (Mitigation Bank) adjacent to an existing 2,565.5-acre State Ecological Reserve (Existing Reserve). The Mitigation Bank provides mitigation for (1) Metropolitan's ongoing and future operations at Lake Mathews and future construction projects and (2) RCHCA's projects and activities as specified in the RCHCA's proposed Habitat Conservation Plan (HCP) for the Stephens' kangaroo rat (SKR).

The Lake Mathews MSHCP/NCCP would serve as the basis for the issuance of incidental take permits pursuant to the provisions of Section 10 of the federal Endangered Species Act (ESA) to authorize the incidental take of 6 currently listed species and 59 additional species that may become listed in the future (Target Species). For each Target Species that is not currently listed under the federal ESA, the Section 10(a) permit would become effective upon its listing. The Lake Mathews MSHCP/NCCP would also serve as the basis for a Section 2081 management authorization under the California ESA and a Section 2835 authorization under the Natural Community Conservation Planning Act for the Target Species. Because the USFWS is proposed to be an active participant in the cooperative management of the Combined Reserve, the Lake Mathews MSHCP/NCCP would be the basis for Section 7 consultations for the Target Species under the federal ESA as and when appropriate or required by law.

Pursuant to Section 15222 of the California Environmental Quality Act (CEQA) Guidelines and Section 1506.2 of the Regulations for Implementing the National Environmental Policy Act (NEPA), Metropolitan and the USFWS have prepared a joint Mitigated Negative Declaration/Environmental Assessment (MND/EA) for the Lake Mathews Plan (Proposed Project). Under CEQA, Metropolitan is both the project proponent and the lead agency responsible for the preparation of the Mitigated Negative Declaration for its actions described in the Lake Mathews MSHCP/NCCP. The USFWS is the Lead Agency responsible for the preparation of the Environmental Assessment (EA) for its proposed action--issuance of permits under the federal ESA--for the Proposed Project. Other than

management for SKR in the Combined Reserve, environmental effects associated with the RCHCA's actions related to the Lake Mathews MSHCP/NCCP (e.g., use of SKR mitigation credits and creation of the proposed Lake Mathews-Estelle Mountain SKR Core Reserve under the RCHCA's Habitat Conservation Plan) would be addressed by RCHCA in separate environmental documentation pursuant to CEQA and NEPA.

This joint MND/EA describes the potential environmental effects and mitigation measures associated with implementation of the Lake Mathews MSHCP/NCCP (Proposed Project) and evaluates alternatives to the Proposed Project. This document has been prepared in accordance with Sections 15063 and Articles 6 and 14 of the CEQA Guidelines, the NEPA Guidelines established by the Council on Environmental Quality (CEQ) (40 CFR Part 1500), Appendix 7 of the USFWS 1994 Preliminary Draft Handbook for Habitat Conservation Planning and Incidental Take Permit Processing, and Section 10(a)(1)(B) of the federal ESA. Throughout this document, the term "effect" is used and is considered to be equivalent to "impact" as defined by CEQA. The term "Proposed Action" is used in this document to mean issuance of permits under the federal ESA by USFWS for the Proposed Project. The term "No Action" is used and is considered to be equivalent to "No Project."

This MND/EA is organized as follows:

- Section 1, Introduction, provides a brief description of the Lake Mathews MSHCP/NCCP, the MND/EA, and the organization of the MND/EA.

- Section 2, Purpose, Need, and Decisions, describes Metropolitan's objectives for the Lake Mathews MSHCP/NCCP, the need for a permit from the USFWS for implementing the Lake Mathews Plan, and the decisions to be made by the USFWS in the process.

- Section 3, Description of the Proposed Project and Alternatives, describes the proposed Lake Mathews MSHCP/NCCP and three alternative actions, including the No Action alternative.

- Section 4, Affected Environment, describes the existing environmental conditions in the Plan Area and immediate vicinity.

- Section 5, Environmental Consequences, describes the environmental effects of the Proposed Project and No Action alternatives.

- Section 6, Comparison of Effects, provides a summary matrix which presents the environmental effects of the alternatives in a tabular form.

- Section 7, CEQA Determination, concludes that a Mitigated Negative Declaration is the appropriate document for the Proposed Project.

- Section 8, Persons and Agencies Consulted, is a listing of the regulatory agencies and other persons consulted during the preparation of this document.

- Section 9, List of Preparers, identifies the persons involved in the preparation of this document.

- Section 10, References, provides a list of the references used in the preparation of this document.

A detailed summary of the Lake Mathews MSHCP/NCCP serves as the project description in this MND/EA. The environmental effects and mitigation measures summarized herein are described in detail in the Lake Mathews MSHCP/NCCP which is incorporated by reference.

2. Need, Purpose, and Decisions

A. Need for the Proposed Project

1. Metropolitan

Metropolitan is a 27-member public entity that delivers water from the California and Colorado River Aqueducts to cities and communities within a 5,125-square-mile service area in southern California. Lake Mathews is a critical component of Metropolitan's system since it is the terminal reservoir of Metropolitan's Colorado River Aqueduct. The reservoir, located in northwestern Riverside County, provides regulatory storage in order to most effectively and economically utilize and distribute Colorado River resources. Metropolitan's primary needs regarding the Lake Mathews Plan are to:

1. Conduct operations and maintenance activities at the Lake Mathews facility as necessary to provide reliable water deliveries to southern California;

2. Establish a conservation program, including a Mitigation Bank, to mitigate future biological effects from operation and maintenance activities at the Lake Mathews facility, projects in the Plan Area, and projects outside the Plan Area;

3. Secure federal and state authorizations for take of already listed species in the Plan Area, together with assurances that additional conservation would not be required and authorization for take would be given if other species covered by the Lake Mathews Plan become listed in the future; and

4. Establish, in terms of the Lake Mathews Plan, Metropolitan's coordination with the RCHCA's SKR and multiple species conservation programs.

2. RCHCA

The RCHCA is an eight-member joint powers agency representing the county of Riverside and the cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Perris, Riverside, and Temecula. It was established in April 1990 to:

> . . . plan for, acquire, administer, operate, and maintain land and facilities for ecosystem conservation and habitat reserves to implement a habitat conservation plan for the Stephens' kangaroo rat and other listed or candidate threatened and endangered species (RCHCA 1994).

Its primary needs regarding the Lake Mathews Plan are to:

1. Acquire and conserve SKR habitat in accordance with the Short-term and proposed Long-term SKR Habitat Conservation Plan (HCP) by obtaining conservation easements over 1,269.3 acres occupied by SKR in the area being conserved as a Mitigation Bank, and

2. Establish and provide for the ongoing management of the Combined Reserve.

B. Purpose of the Proposed Project

Metropolitan seeks an incidental take permit from the USFWS pursuant to Section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended. The permit would authorize incidental take of 6 currently listed species and 59 additional species that may become listed in the future (Target Species). For each Target Species that is not currently listed under the federal ESA, the Section 10(a) permit would become effective upon its listing. The proposed taking would be incidental to Metropolitan's projects and activities covered in the Lake Mathews MSHCP/NCCP. Pursuant to Section 10(a)(2)(A), Metropolitan has submitted the Lake Mathews MSHCP/NCCP with the permit application. The Lake Mathews MSHCP/NCCP is a statutory requirement of the permit application, estimates the level of incidental take expected to occur during proposed activities, and specifies how the effects of the taking would be minimized and mitigated.

A Section 10 permit constitutes an exception to the taking prohibition of Section 9. Section 9 of the federal ESA prohibits the "take" of federally listed species of wildlife unless authorized under the provisions of Section 7, Section 10(a), or Section 4(d) of the federal ESA. Section 3 of the federal ESA defines take as "to harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Federal regulation defines the terms "harass" and "harm" as follows: Harass means "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 which include, but are not limited to, breeding, feeding or sheltering." Harm means "an act which actually kills or injures wildlife" and "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." Section 10(a)(1)(B) defines "incidental take" as take that is "incidental to, and not the purpose of, the carrying out of the otherwise lawful activity."

The purpose of the Proposed Project described in Section 3 of this document is to authorize incidental taking of 65 Target Species (if and when listed), including habitat modification during ongoing and future projects and activities covered in the Lake Mathews MSHCP/NCCP. Such authorization is necessary because activities associated with the Proposed Project may result in take of 65 Target Species (if and when listed), despite the comprehensive mitigation and effect minimization program proposed by Metropolitan in the Lake Mathews MSHCP/NCCP. Metropolitan and the USFWS consider implementation of the MSHCP/NCCP in connection with a Section 10(a)(1)(B) permit to be an effective means to reconcile ongoing and future operations and other projects and activities in the Plan Area with the Section 9 prohibition and other conservation mandates under the federal ESA.

Metropolitan also seeks assurances from CDFG that the Lake Mathews Plan is a Natural Community Conservation Plan (NCCP), complying with the requirements of the NCCP Act. Metropolitan seeks authorization from CDFG for the take of the Target Species pursuant to Section 2835 of the NCCP Act and Section 2081 of the California Fish and Game Code.

C. Decisions Needed

The needs and goals of the USFWS with respect to the Proposed Action are to:

1. Conserve the Target Species and their habitat during implementation of the Proposed Project; and

2. Ensure compliance with the federal ESA, NEPA, and other applicable federal laws and regulations.

The Proposed Action is the USFWS issuance of permits, under the federal ESA, to Metropolitan to allow for incidental take of 65 Target Species (if and when listed) during the course of the projects and activities covered under the Lake Mathews MSHCP/NCCP. Pursuant to Section 10(a)(2)(B) of the federal ESA, decisions to be made by the USFWS regarding the issuance of permits for the Proposed Project are as follows:

- Is the proposed take incidental to an otherwise lawful activity?

- Are the effects of the proposed taking minimized and mitigated to the maximum extent practicable?

- Has the applicant ensured that adequate funding will be provided to implement the measures proposed in the HCP?

- Is the proposed take such that it will not appreciably reduce the likelihood of the survival and recovery of the species in the wild?

- Are there other measures that should be required as a condition of the permit?

The USFWS may choose to (1) issue a permit conditioned on implementation of the HCP as submitted by Metropolitan, (2) issue a permit conditioned on implementation of the HCP as submitted together with other measures specified by the USFWS, or (3) deny the permit.

As a result of its proposed participation in the cooperative management of the Combined Reserve and as a requirement of approval of the 10(a) permit, the USFWS also has responsibility for coordinating consultation requirements of Section 7 of the federal ESA. As part of that consultation, the USFWS must determine the following:

- Whether its action would jeopardize the continued existence and recovery of any federally listed species, species proposed for federal listing, or other species of concern;

- Whether its action would adversely affect areas designated or proposed as critical habitat for federally listed species; and

- Whether its action would preclude the viability of larger regional conservation planning efforts.

Some of the related projects and activities mentioned in the Lake Mathews MSHCP/NCCP may require Section 7 consultations through the U.S. Army Corps of Engineers associated with permits issued under Section 404 of the federal Clean Water Act. Such consultations would be carried out on a project-by-project basis as required.

In order to be "incidental to an otherwise lawful activity," take authorized by the USFWS must result from projects and activities that are in compliance with state laws, other federal laws, and local laws. In this regard, take of species protected by the California ESA as well as the federal ESA must be authorized by the CDFG pursuant to Sections 2081, 2090, or 2835 of the California Fish and Game Code. Additionally, for federal authorization of take to be given under the special 4(d) rule for the coastal California gnatcatcher, the CDFG must concur that the proposed conservation and mitigation measures are consistent with the NCCP Process and Conservation Guidelines. Individual projects and activities covered by the Lake Mathews MSHCP/NCCP also may require authorization from the CDFG pursuant to Sections 1601 and 1603 of the Fish and Game Code and 401 certification pursuant to the Clean Water Act from the Regional Water Quality Control Board.

3. Description of the Proposed Project and Alternatives

CEQ regulations stipulate that an EA must include appropriate alternatives as specified in Section 102(2)(E) of NEPA. Accordingly, this section describes the four alternatives considered for analysis in this document. Two alternatives, Proposed Project and No Action, were selected for detailed environmental analysis and are discussed below. Two other alternatives were studied but were determined to be impracticable. Reasons for rejection of these two alternatives are discussed in Section C of this section.

A. The Proposed Project

1. Scope

The Lake Mathews MSHCP/NCCP provides a habitat conservation and mitigation program for habitat effects and take of the 65 Target Species (if and when listed) that are expected to occur as a result of ongoing and future operations, maintenance activities, and capital construction projects at Lake Mathews (see Figure 3-1, Project Location). Specifically, the Lake Mathews Plan:

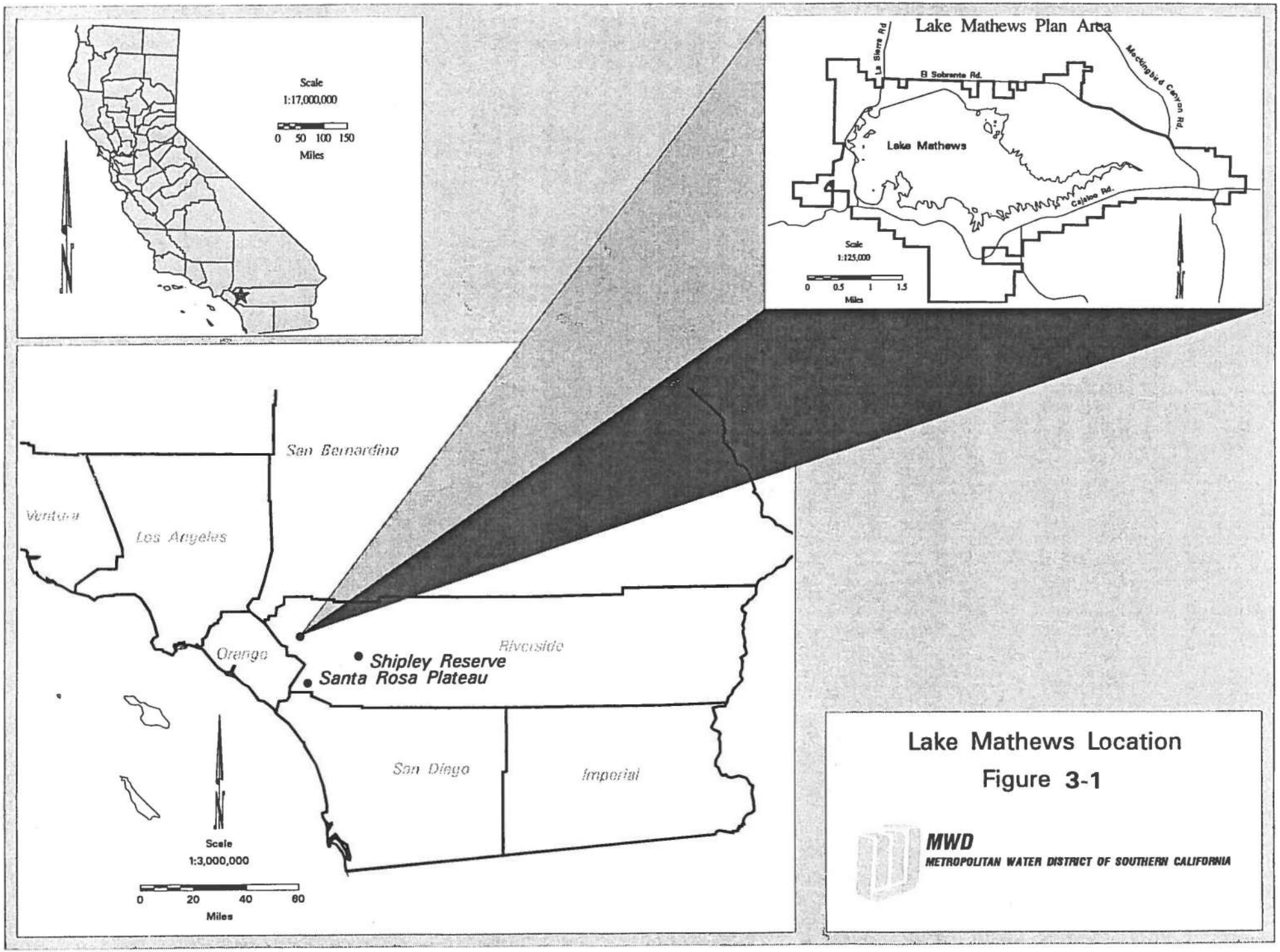
1. Creates a 5,110.4-acre Multiple Species Reserve at Lake Mathews in western Riverside County through a mitigation banking agreement that conserves the 2,544.9-acre Mitigation Bank adjacent to the 2,565.5-acre Existing Reserve;

2. Minimizes and mitigates the effects of projects and activities in a way that satisfies the requirements and intent of Sections 7 and 10(a) of the federal ESA, Section 2081 of the California ESA, and Section 2835 of the California NCCP Act;

3. Coordinates the establishment, management, and future expansion of the Multiple Species Reserve with RCHCA's proposed Lake Mathews-Estelle Mountain Core Reserve (Core Reserve or SKR Core Reserve) which it proposes to establish as part of its conservation program for the SKR and which is included in the RCHCA's Memorandum of Understanding (MOU) with USFWS, CDFG, and U.S. Bureau of Land Management (BLM) regarding multiple species habitat conservation planning (see Figure 3-2); and

4. Results in a multi-jurisdictional reserve (Combined Reserve) consisting of over 12,000 acres managed for various species of flora and fauna indigenous to western Riverside County. The Combined Reserve is composed of the Multiple Species Reserve and the lands in public ownership within the RCHCA's proposed SKR Core Reserve outside the Plan Area.

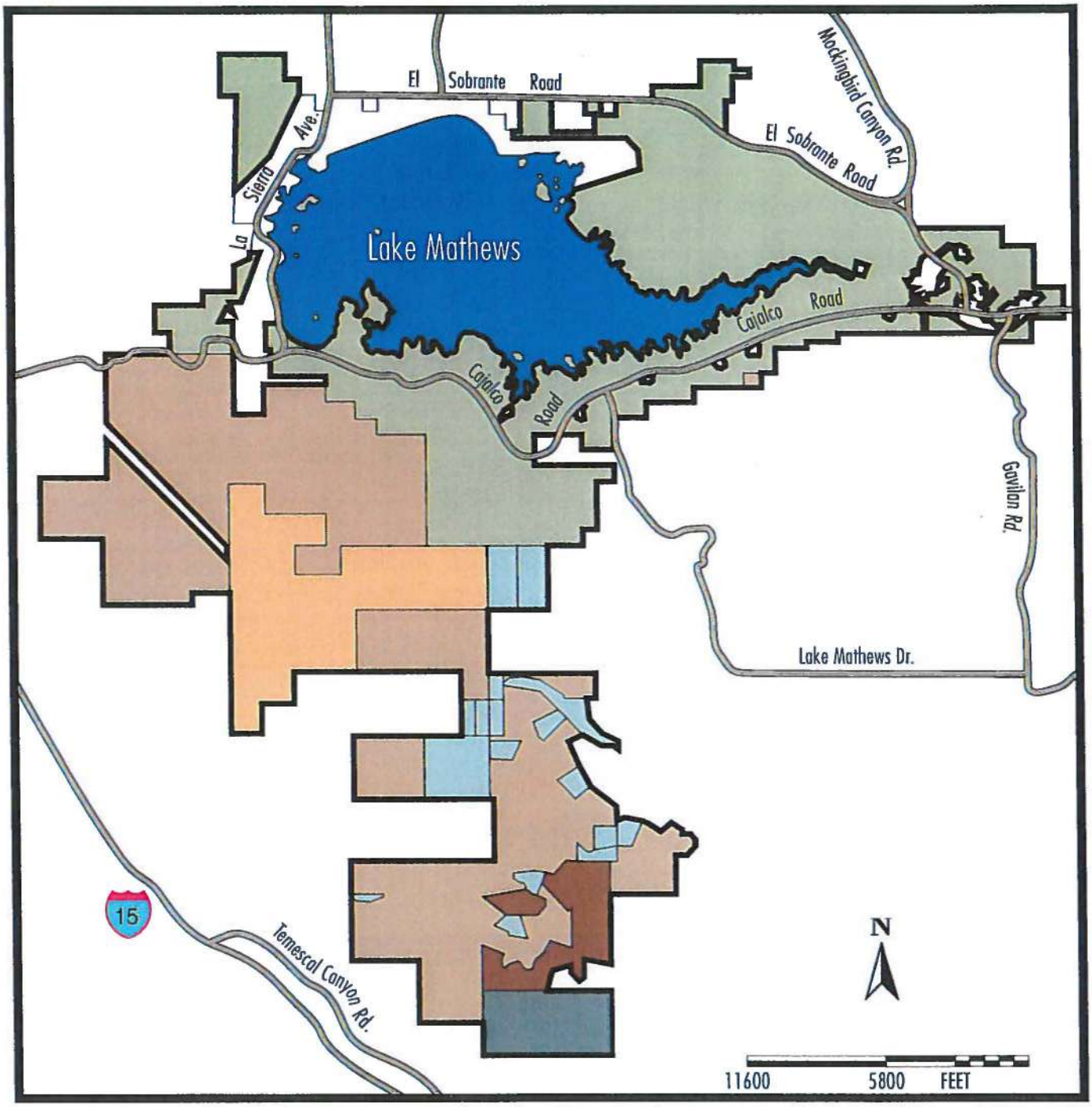
The Plan Area consists of two primary components (see Figure 3-3, Plan Area Components):



Lake Mathews Location

Figure 3-1

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



- Land Under Negotiation for Conservation Easements
- RCHCA
- State Wildlife Conservation Board
- MWD Ownership in Core Reserve
- Private
- BLM
- Core Reserve Boundary
- Roads/Highways

Proposed Lake Mathews - Estelle Mountain Core Reserve Under Long-Term SKR HCP

Figure 3-2

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Source: Riverside County

Plan Area Components

Figure 3-3

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

El Sobrante Road

El Sobrante Road

Lake Mathews

(Maximum Inundation Level 1390')

Cajalco Road

Cajalco Road

Cajalco Road

Cajalco Road

Cajalco Road

LEGEND

- Existing State Ecological Reserve
- Plan Area Projects
- Operations Areas
- Mitigation Bank
- Property Line
- Lake Mathews Inundation Level (1390')
- Roads

N

W

E

S

Scale
1:30000

0 1250 2500 3750
Feet
One Inch = 2500 Feet

December 22, 1994

- The Multiple Species Reserve, which includes the Existing Reserve and Mitigation Bank and

- Areas excluded from the Multiple Species Reserve, including 728.6 acres designated for operation and maintenance activities at the Lake Mathews facility (Operations) and 154.5 acres designated for water facility improvements and related projects inside the Plan Area (Plan Area Projects).

The reservoir itself is not included in the Plan Area. Projects and activities covered by the Lake Mathews Plan include:

1. Biological management of the Combined Reserve;

2. Property management in the Plan Area, including maintenance of roads and fences and implementation of a Fire Management Plan;

3. Facility improvements and related projects in Operations and operation and maintenance activities at the Lake Mathews facility;

4. Construction, operation, and maintenance of the Plan Area Projects;

5. Metropolitan's projects and/or activities outside the Plan Area (within the mitigation region described in Part B of Volume 3 of the Lake Mathews Plan) that would use the Mitigation Bank credits for effects on habitats and/or sensitive species (Outside Projects); and

6. Construction, operation, and maintenance of additional projects within the Multiple Species Reserve.

2. Target Species

As documented in detail in Volume 2 of the Lake Mathews MSHCP/NCCP, the Plan Area is part of a unique biological community composed of 14 habitat types (Table 3-1 and Figure 4-1) and over 350 different species of plants and animals. Of the many species associated with these habitats, 65 have been selected for coverage under the Lake Mathews Plan: 50 species that were observed in focused surveys or incidentally in the Plan Area (Table 4-2) and 15 species that were not observed but have the potential to occur in the Plan Area based on distribution and habitat requirements for the species (Table 4-3). Each of these Target Species is a "sensitive species" as defined in the Lake Mathews Plan; i.e., it is:

- Federally or state-listed as threatened or endangered,

- A candidate for federal or state listing,

- A bird species protected by the Migratory Bird Treaty Act or Bald Eagle Protection Act,

- A species of special concern in California as identified by CDFG,

- On the California Native Plant Society (CNPS) list of sensitive plants,

Table 3-1
Habitat Types
in the Lake Mathews Multiple Species Reserve
(acres)

Habitat Type	Mitigation Bank			Existing Reserve	Total in Multiple Species Reserve
	Metropolitan Lands	RCHCA Lands	Total		
Non-native grassland	394.3	679.3	1,073.6	1,648.0	2,721.6
Riversidian sage scrub	415.2	506.3	921.5	727.7	1,649.2
Mule fat scrub	27.1	2.8	29.9	18.1	48.0
Southern willow scrub	20.5	0.0	20.5	8.1	28.6
Juniper woodland	10.1	29.9	40.0	42.5	82.5
Sycamore riparian woodland	1.9	0.0	1.9	0.0	1.9
Agriculture	316.3	8.1	324.4	0.0	324.4
Disturbed	84.6	41.6	126.2	108.0	234.2
Exotic trees	1.9	0.6	2.5	9.1	11.6
Natural barren	0.4	0.0	0.4	0.5	0.9
Ruderal	3.1	0.7	3.8	1.4	5.2
Freshwater marsh	0.0	0.0	0.0	1.0	1.0
Saltbush stand	0.2	0.0	0.2	1.1	1.3
TOTAL	**1,275.6**	**1,269.3**	**2,544.9**	**2,565.5**	**5,110.4**

- On the NCCP list of sensitive coastal sage scrub species, and/or
- Of special local concern because of its rarity or unique biological value.

The biological communities and the Target Species in the Plan Area are the focus of the conservation and mitigation measures presented in the Lake Mathews Plan.

The Target Species are covered by authorizations and assurances that USFWS and CDFG are being asked to approve.

3. Components of Proposed Project

The Proposed Project (Lake Mathews MSHCP/NCCP) that Metropolitan and the RCHCA propose to implement is based on what is known about resources and habitat values in the Plan Area. It has seven components:

a. Habitat conservation and management
b. Mitigation Bank terms and conditions
c. Project-level effect minimization and mitigation measures
d. ESA authorizations and assurances
e. Funding and assurances for implementation of the Lake Mathews Plan
f. Provisions for emergencies, listings, and unforeseen circumstances
g. Plan amendment process

a. Habitat Conservation and Management

Under the Lake Mathews MSHCP/NCCP, provisions are made for the establishment of the 5,110.4-acre Multiple Species Reserve and the management of the more than 12,000-acre Combined Reserve. The Cooperative Management Agreement among Metropolitan, RCHCA, USFWS, and CDFG in Volume 3 of the Lake Mathews MSHCP/NCCP establishes the Combined Reserve. The Combined Reserve is composed of (1) the Multiple Species Reserve which consists of the Existing Reserve and the Mitigation Bank, (2) RCHCA ownership within its proposed Lake Mathews-Estelle Mountain Core Reserve, (3) the Estelle Mountain Ecological Reserve owned by CDFG, and (4) approximately 320 acres administered by the United States Bureau of Land Management located within the RCHCA's proposed Core Reserve. The Multiple Species Reserve would be managed to benefit the 65 Target Species. Biological management on the other lands within the Combined Reserve would focus on management of SKR.

1) Multiple Species Reserve

The Multiple Species Reserve includes the Mitigation Bank and Existing Reserve as shown in Figure 3-3 and excludes the areas designated for Operations and Plan Area Projects. The Mitigation Bank area is further delineated into Metropolitan and RCHCA Mitigation Bank lands based on the distribution of SKR-occupied habitat.

The permanent conservation of the lands in the Mitigation Bank area doubles the amount of habitat being preserved and managed at Lake Mathews. Non-native grassland and Riversidian sage scrub are the primary habitat types in the Multiple Species Reserve, covering 4,370.8 acres (86%) of the 5,110.4 acres (Table 3-1).

Conservation easements over the Mitigation Bank component of the reserve would be conveyed by Metropolitan to the RCHCA. The Existing Reserve would remain subject to the provisions of agreements that were executed in 1979 and 1982 by CDFG and Metropolitan (Volume 3 of the Lake Mathews MSHCP/NCCP).

2) Management of the Combined Reserve

Management of the Combined Reserve would be guided by a Management Committee composed of one representative each from Metropolitan, RCHCA, CDFG, and USFWS and chaired by Metropolitan. Metropolitan would have responsibility for its properties within the Multiple Species Reserve, and RCHCA would have responsibility for the lands it owns or otherwise controls in the remainder of the proposed SKR Core Reserve. Decisions by the Management Committee would be based on consensus.

Day-to-day management would be carried out by a Reserve Manager retained under contract with Metropolitan. For purposes of the Lake Mathews Plan, the term "Reserve Manager" is meant to include the full-time and part-time staff and the consultants necessary to manage the biological resources in the reserve. It is assumed that reserve management would involve the services of a full-time Reserve Manager who resides onsite, together with one or more part-time staff

and, within the constraints of available funding, biological consultants. Tasks and responsibilities would be identified in annual work plans prepared by the Reserve Manager for review and approval by the Management Committee. Funding for reserve management would be provided through an endowment established by the RCHCA and managed by Metropolitan (see Subsection A5, Funding and Assurances for Plan Implementation).

Biological management of the Multiple Species Reserve will be performed by the Reserve Manager. Biological management will involve projects and activities undertaken for the purpose of monitoring, studying, maintaining, restoring, or enhancing the biological values of the Multiple Species Reserve.

In addition, the Reserve Manager and Metropolitan will carry out property management functions on the Multiple Species Reserve. Property management activities in the Multiple Species Reserve include maintenance of roads and fences, installation of additional fencing, construction of the Reserve Manager's office and residence, and control of public access and uses. Two alternative sites for the Reserve Manager's office/residence are described and their environmental effects analyzed in Section 5 of this document.

(A) Fire Management

Within the Plan Area, fire management will be conducted according to a comprehensive fire management program developed by the California Department of Forestry and Fire Prevention (CDF) and Metropolitan. A Fire Management Plan was prepared in 1994. The Fire Management Plan describes:

1) presuppression measures (developed in accordance with the *Chaparral Management Program, Program Environmental Impact Report* (CDF, 1981) and Public Resources Code Sections 4475 and 4476) which include controlling fire hazards, improving habitat conditions, mitigating negative impacts to the atmosphere, and increasing water yield and quality;

2) suppression prescriptions which include controlling and extinguishing fires and controlling erosion and sedimentation; and

3) postsuppression measures (developed in accordance with Public Resources Code Sections 4674 - 4677) to be implemented after fires have occurred and which include conducting and formulating plans for emergency watershed protection measures while minimizing impacts to biological and water resources.

Presuppression measures include but are not limited to clearing and maintenance of fire breaks, prescribed burns, and other forms of fuel management. Suppression measures include but are not limited to air drops of water and/or chemicals, use of heavy equipment as mobile pumping stations and to construct control lines, and use of back fires. Postfire activities include but are not limited to reshaping of areas modified by control lines, construction of water bars where needed and monitoring of affected resources.

Based on the fuel break strategy in the Fire Management Plan, an estimated 65 acres in the Plan Area, including about 27 acres of non-native grassland, will need to be cleared on a regular basis to protect both the resources in the Multiple Species Reserve and adjacent residences. Manual and mechanical brush

clearing will occur together with prescribed burns. A prescribed burn plan will be developed by the Management Committee and CDF to guide implementation and monitoring of prescribed burns. Fire management on the publicly owned lands within the Combined Reserve outside the Plan Area will occur as required under state and local regulations.

(B) Public Access and Uses

Public access and uses fall into two distinct categories: authorized access to the property for educational or recreational purposes and illegal access and uses by trespassers and poachers. Currently, authorized access to Metropolitan's property is limited to tours of the Existing Reserve under the supervision of CDFG or Metropolitan. Under the Lake Mathews MSHCP/NCCP, guided tours would be continued. No additional recreation is planned for the Multiple Species Reserve.

Illegal access and uses have been an ongoing threat to habitat values and individual species in parts of the Plan Area. Trespassers have degraded habitat in some portions of the Mitigation Bank area through illegal dumping, biking, and target shooting. Poaching also is known to occur. The potential for such effects would be reduced through the installation of additional fencing and by coordinating and increasing patrols of the area.

Public access to the proposed SKR Core Reserve lands outside the Plan Area is generally limited by the topography of the area. The Long-term SKR HCP does not propose or preclude public uses. Decisions regarding access and uses would be made by the Management Committee after the proposed Core Reserve has been established.

3) Expansion of the Multiple Species Reserve

Over time, it is anticipated that the Multiple Species Reserve would be expanded through acquisitions by Metropolitan and/or the RCHCA. It is intended that proposed SKR Core Reserve lands within the Combined Reserve shall become part of the Multiple Species Reserve and be managed for their multiple species values with the consent of the Management Committee. Expansions through acquisitions by Metropolitan and/or the RCHCA also may be proposed any time following approval of the Lake Mathews Plan and their inclusion and method of funding would be subject to approval by the Management Committee. The added lands would be managed under institutional arrangements established by the Lake Mathews MSHCP/NCCP, provided that adequate funding is or is made available.

b. Mitigation Bank Terms and Conditions

The establishment and use of the Mitigation Bank would be governed by the Mitigation Banking Agreement in Volume 3 of the Lake Mathews MSHCP/NCCP. In general, the agreement:

1. Identifies Metropolitan's and RCHCA's shares of the Mitigation Bank based on the distribution of occupied SKR habitat, with the SKR-occupied areas credited to the RCHCA and credit for the other lands retained by Metropolitan;

2. Establishes that Metropolitan would use its share of the Mitigation Bank to secure ESA authorizations and assurances and/or for California Environmental Quality Act (CEQA) mitigation needs for projects and activities in the areas designated for Operations and Plan Area Projects and for Outside Projects; and

3. Specifies that the RCHCA would acquire conservation easements over the SKR-occupied areas in the Mitigation Bank, use those lands as replacement habitat under the SKR HCPs, and be given conservation credit toward a future multiple species plan for the other biological values of the habitat.

1) Metropolitan Mitigation Bank Lands

Metropolitan's Mitigation Bank lands include 1,275.6 acres (Table 3-1). As advance mitigation for effects on Target Species and their habitats, Metropolitan would precommit one acre of habitat in the Mitigation Bank for every one acre of such habitat in the areas designated for Operations and Plan Area Projects. Such mitigation is not provided for disturbed land and exotic trees. This advance commitment of mitigation would retire 618.3 acres of mitigation credit (505.5 acres for Operations and 112.8 acres for Plan Area Projects), leaving 657.3 acres in Metropolitan's share of the Mitigation Bank (Table 3-2). These remaining credits would be available for Outside Projects and/or other projects and activities covered by the Lake Mathews Plan.

2) RCHCA Mitigation Bank Lands

The RCHCA's Mitigation Bank lands consist of 1,269.3 acres of SKR-occupied habitat (Table 3-2). This habitat would be credited as replacement habitat under the Short-term and Long-term SKR HCP and toward the multiple species plan that the RCHCA intends to prepare. Any use by the RCHCA of the 1,269.3 acres as mitigation for effects other than take of SKR would be contingent on USFWS and CDFG approval of a multiple species plan that encompasses the RCHCA's proposed SKR Core Reserve lands.

3) Transfer and Increase of Mitigation Credits

Metropolitan and RCHCA may transfer available mitigation credits assigned to their Mitigation Bank lands to one another or to third parties any time after approval of the Lake Mathews Plan, with written notice of the transfer provided to USFWS and CDFG. However, such third parties would still need to apply for any required permits. In addition, if some of the credits designated for Plan Area Projects are not needed for the proposed projects and activities in those areas, Metropolitan may use those credits for other projects and activities covered by the Lake Mathews Plan.

Metropolitan and the RCHCA may increase their mitigation credits by acquiring land and adding it to the Multiple Species Reserve, enhancing riparian habitat in the Multiple Species Reserve, and restoring disturbed areas in the Multiple Species Reserve to natural habitats. In addition, Metropolitan would receive mitigation credit for restoring agricultural lands in the Mitigation Bank to SKR habitat and would use those credits as mitigation for the Cajalco Creek Dam and Detention Basin Project and for Outside Projects with SKR effects.

Table 3-2
Metropolitan and RCHCA Mitigation Bank Lands
(acres)

Habitat Type[1, 2, 3]	Metropolitan				RCHCA
	Designated for Operations Areas	Designated for Plan Area Projects	Available for Other Projects	Total	
Non-native grassland	193.8	41.6	158.9	394.3	679.3
Riversidian sage scrub	303.2	40.9	71.1	415.2	506.3
Mule fat scrub	1.0	7.3	18.8	27.1	2.8
Southern willow scrub	0.5	8.9	11.1	20.5	0.0
Juniper woodland	0.0	2.4	7.7	10.1	29.9
Sycamore riparian woodland	0.0	0.2	1.7	1.9	0.0
Agriculture	7.0	11.5	297.8	316.3	8.1
Disturbed	0.0	0.0	84.6	84.6	41.6
Exotic trees	0.0	0.0	1.9	1.9	0.6
Natural barren	0.0	0.0	0.4	0.4	0.0
Ruderal	0.0	0.0	3.1	3.1	0.7
Saltbush stand	0.0	0.0	0.2	0.2	0.0
TOTAL	**505.5**	**112.8**	**657.3**	**1,275.6**	**1,269.3**

Notes

1 Effects on wetland habitats for the Cajalco Creek Dam and Detention Basin Project (freshwater marsh, mule fat scrub, southern willow scrub, sycamore riparian woodland, natural barren, ruderal, and saltbush stand) are mitigated separately under a separate wetland mitigation plan.
2 Mitigation is not provided for disturbed lands or exotic trees.
3 Effects on occupied SKR habitat for the Cajalco Creek Dam and Detention Basin Project will be mitigated under a separate Section 7 biological opinion and 2081 authorization.

c. Project-level Effect Minimization and Mitigation Measures

In general, the primary mitigation provided by the Lake Mathews Plan for effects on Target Species and their habitats is the permanent preservation of habitat in the Mitigation Bank and the management of such habitat in the Multiple Species Reserve. Individual projects and activities are covered by this mitigation, subject to the following terms and conditions regarding use of the Mitigation Bank and implementation of effect minimization measures.

1) Operations and Plan Area Projects

All significant habitat effects in Operations and Plan Area Projects, including effects on Target Species, from future projects and activities in these areas are being mitigated in advance of their actual occurrence by the precommitment of mitigation credits for all habitat in those areas (Table 3-2). This advance commitment of mitigation lands covers all effects that would occur in Operations and Plan Area Projects; no additional commitment of mitigation lands or any additional mitigation would be required for any individual project or activity in these areas.

Projects and activities in Operations and Plan Area Projects would avoid effects to the maximum extent practicable. If effects are unavoidable, then projects and activities would comply with the following effect minimization measures:

1. If a listed plant species (or state candidate for listing or species with a proposed federal listing rule) is present, CDFG would be notified at least 10 days prior to any effect occurring and would be given access to the site to salvage the plants and/or collect seeds.

2. To the maximum extent practicable, direct effects on birds which are Target Species would be avoided during their breeding seasons. Any actions that directly affect breeding birds would be coordinated with the Management Committee.

3. To the maximum extent practicable and to the extent compatible with necessary maintenance of the reservoir, the reservoir's ancillary facilities, and facilities in Plan Area Projects, use of pesticides and rodenticides in a manner that would harm SKR or any other listed species would be avoided or minimized.

4. Where effects occur immediately adjacent to the Multiple Species Reserve, boundaries between the Multiple Species Reserve and affected areas would be flagged and construction would be monitored to minimize the possibility that construction activities extend into the Multiple Species Reserve.

Additional information about species-specific considerations is provided in the individual HCPs for Target Species, which are included in Part 2 of Volume 2 of the Lake Mathews MSHCP/NCCP.

2) Outside Projects

Metropolitan Mitigation Bank lands not designated for Operations and Plan Area Projects would be available for use as mitigation for the effects of Outside Projects to habitats and/or Target Species. The same credits may be used coterminously at Metropolitan's option to mitigate effects on habitat under CEQA as well as take under the state and federal ESAs.

Habitat values in affected areas would be matched to the Mitigation Bank credits using the Habitat Quality Analysis (HQA) described in Volume 3 of the Lake Mathews MSHCP/NCCP, or another methodology collectively acceptable to USFWS, CDFG, and Metropolitan. No further multipliers that increase the mitigation-to-effect ratio would be necessary. The required exchange is a 1:1 (acre-for-acre) mitigation-to-effect ratio expressed in the HQA formula. Other methodologies would not require greater than an acre-for-acre mitigation-to-effect ratio. Mitigation for effects on federally listed species, however, would be determined on a case-by-case basis.

3) Projects and Activities in the Multiple Species Reserve

It is not Metropolitan's intent at this time to directly affect habitat in the Multiple Species Reserve. In the unlikely event that projects and activities other than those already existing are necessary in these areas, effect avoidance and minimization measures identified in the Lake Mathews Plan would be implemented and appropriate mitigation would be developed in coordination with

the Management Committee as discussed in Chapter 3 of Volume 1 of the Lake Mathews MSHCP/NCCP.

d. ESA Authorizations and Assurances

Implementation of the Lake Mathews MSHCP/NCCP by Metropolitan and the RCHCA is predicated on USFWS and CDFG approval of the Lake Mathews Plan as an HCP and NCCP for the Target Species. Such approval includes authorizations and assurances under the federal and state ESAs for projects and activities that Metropolitan and the RCHCA propose to undertake, including management of the Multiple Species Reserve and lands in public ownership within RCHCA's proposed SKR Core Reserve lands.

ESA authorization and assurances under the Lake Mathews Plan involve:

1. Authorization to take federally and state-listed species,

2. Authorization from CDFG to take Target Species which are not currently listed but which could become listed in the future pursuant to Section 2835 of the NCCP Act,

3. Authorization from USFWS under Section 10 to take Target Species which are not currently federally listed but which could become listed in the future (for each Target Species that is not currently listed under the federal ESA, the Section 10(a) permit would become effective upon its listing), and

4. Confirmation by the USFWS of the "No Surprises" policy recently adopted by the Department of Interior, namely that:

   "The purpose of this policy is to provide assurances to non-federal landowners participating in Endangered Species Act Habitat Conservation Planning (HCP) that no additional land restrictions or financial compensation will be required for species adequately covered by a properly functioning HCP in light of unforeseen or extraordinary circumstances."

Specific authorizations and assurances for Metropolitan projects and activities, RCHCA projects and activities, and reserve management are described below and in the agreements in Volume 3 of the Lake Mathews MSHCP/NCCP.

1) For Metropolitan Projects and Activities

Metropolitan is seeking a range of ESA authorizations and assurances that are tied to the biological value of the Mitigation Bank area and Multiple Species Reserve for observed and potentially occurring Target Species. For purposes of defining the authorizations and assurances, the species have been divided into three groups related to the type of authorization sought as discussed later in this section (Table 3-3); a process for extending the authorizations and assurances to other species also has been defined.

Mitigation pursuant to these authorizations and assurances would be accomplished on a habitat basis rather than on a species-by-species basis.

Table 3-3
Group 1, 2, and 3 Species

Group 1 (N = 29)	Group 2 (N = 21)	Group 3 (N = 15)
Plants		
Clay bindweed	none	Braunton's milkvetch
Great valley phacelia		Coulter's matilija poppy
Knotweed spineflower		Little mousetail
Large-leaved filaree		Many-stemmed dudleya
Palmer's grappling hook		Munz's onion
Parry's spineflower		Slender-horned spineflower
Small-flowered microseris		Smooth tarplant
		Southern tarplant
Invertebrates		
none	none	Ruth's cuckoo bee
		Quino checkerspot butterfly
Amphibians & Reptiles		
Coastal rosy boa	none	San Diego banded gecko
Coastal western whiptail		
Northern red diamond rattlesnake		
Orange-throated whiptail		
San Bernardino ringneck snake		
San Diego horned lizard		
Western spadefoot toad		
Birds		
Bell's sage sparrow	Bald eagle	Least Bell's vireo
Blue grosbeak	Bank swallow	Southwestern willow flycatcher
Burrowing owl	Black-crowned night heron	Yellow-breasted chat
California horned lark	Cooper's hawk	Yellow warbler
Coastal California gnatcatcher	Ferruginous hawk	
Downy woodpecker	Golden eagle	
Grasshopper sparrow	Great blue heron	
Loggerhead shrike	Long-eared owl	
So. Calif. rufous-crowned sparrow	Northern harrier	
Tricolored blackbird	Red-shouldered hawk	
White-tailed kite	Rough-legged hawk	
	San Diego cactus wren	
	Sharp-shinned hawk	
	Swainson's hawk	
Mammals		
NW San Diego pocket mouse	American badger	none
San Diego black-tailed jackrabbit	Big or pocketed free-tail bat	
San Diego desert woodrat	Cougar	
Stephens' kangaroo rat	Little brown bat	
	Pallid bat	
	Western mastiff bat	
	Western pipistrelle	

Habitat occupied by multiple species in the Mitigation Bank may be used to mitigate for multiple species affected by a given Metropolitan project or activity. In other words:

- if a project affects several species, which at some point during their respective life cycles occupy a single habitat type and
- if these species also occur in the Mitigation Bank,
- then mitigation for these species may be accomplished on a habitat-by-habitat basis rather than on a species-by-species basis.

(A) Take of Target Species in Operations and Plan Area Projects

(i) Authorizations and Assurances for Take of Species in Group 1

Metropolitan is seeking the following authorizations and assurances for take of 29 Group 1 species in Operations and Plan Area Projects, including the federally and state-listed SKR and federally listed coastal California gnatcatcher.

1. Federal and state authorization for take of SKR and federal authorization for take of coastal California gnatcatchers is given, conditioned on implementation of the effect minimization and reserve management measures stated in the Lake Mathews Plan. No additional mitigation would be necessary.

2. State prelisting assurances are given pursuant to Section 2835 that, if any Group 1 species become listed, authorization for take would be given, provided that the effect minimization and reserve management measures identified in the Lake Mathews Plan are implemented. No additional mitigation would be necessary.

3. Federal prelisting assurances are given that, if other Group 1 species become listed, take is authorized, provided that the effect minimization and reserve management measures identified in the Lake Mathews Plan are implemented. Additional assurances are given that the information presented in the Lake Mathews Plan meets the standards set forth in Sections 10(a)(2)(A) and (B) and that no additional mitigation would be necessary.

(ii) Authorizations and Assurances for Take of Species in Group 2

Metropolitan is seeking the following authorizations and assurances for 21 Group 2 species, including the federally and state-listed bald eagle and the state-listed bank swallow and Swainson's hawk.

1. Federal and state authorization for take of the bald eagle and state authorization for take of bank swallows and Swainson's hawks is given, and no additional mitigation would be required, provided that the effect avoidance and minimization measures identified in the Lake Mathews Plan are implemented and the take does not involve the destruction or removal of an occupied nest site during the breeding season.

2. State prelisting assurances are given pursuant to Section 2835 that, if other Group 2 species become listed, authorization for take would be given, provided that the effect minimization and reserve management measures identified in the Lake Mathews Plan are implemented and the take does not involve the destruction or removal of an occupied breeding site during the breeding season.

3. Federal prelisting assurances are given that, if other Group 2 species become listed, take is authorized, provided that the effect minimization and reserve management measures identified in the Lake Mathews Plan are implemented. Additional assurances are given that the information presented in the Lake Mathews Plan meets the standards set forth in Sections 10(a)(2)(A) and (B) and that no additional mitigation would be necessary provided that the take does not involve the destruction or removal of an occupied breeding site during the breeding season.

(iii) Authorizations and Assurances for Potentially Occurring Target Species in Group 3

Metropolitan is seeking the following assurances regarding 15 Group 3 species.

Federal and state assurances would be provided that:

1. The mitigation, effect minimization, and reserve management provisions described in the Lake Mathews Plan are advance mitigation for effects that may result in Operations and Plan Area Projects if one or more of the Group 3 species occur in those areas in the future and

2. Authorization for take would be given without requiring additional mitigation if a Group 3 species that is or becomes listed is found in Operations or Plan Area Projects and the following conditions are met:

    a. The species also occurs in the Multiple Species Reserve as confirmed by existing information or, if necessary, by a survey and

    b. The effect minimization and reserve management measures identified in the Lake Mathews Plan would be implemented.

3. If the conditions in (2) above cannot be met, authorization for incidental take would be considered on a case-by-case basis by USFWS and CDFG as appropriate. In that consideration, any additional mitigation measures needed to ensure compliance with ESA requirements would be provided through reserve management within the constraints of the funding available at the time. Only in those cases where (1) take would result in a jeopardy opinion and (2) reserve management is shown to be ineffective would any additional mitigation be necessary. Additional measures would be determined in consultation with USFWS and/or CDFG as appropriate.

(iv) Authorizations and Assurances for Species Not on the List of Target Species

In addition to the above authorizations and assurances for Group 1, 2, and 3 species, Metropolitan is seeking the following assurances regarding other species that are not currently on the list of Target Species:

1. Federal and state assurances would be provided that if a proposed or listed species is found in Operations and/or Plan Area Projects but is not on the lists of Group 1, 2, and 3 species, no additional mitigation for effects on that species and authorization for take of the species in Operations and Plan Area Projects would be given if:

   a. The species assessment at the time shows that the Multiple Species Reserve contains habitat occupied by the species and the amount of such occupied habitat is at least equal to that actually proposed for removal or modification in Operations and/or Plan Area Projects and

   b. The effect minimization and reserve management measures identified in the Lake Mathews Plan for Group 1, 2, and/or 3 species that occupy the same habitat and have similar needs as the species would be implemented. The determination of habitat needs would be made by the USFWS and/or CDFG as appropriate.

2. If the conditions in (1) above cannot be met, authorization for incidental take would be considered on a case-by-case basis by USFWS and CDFG as appropriate. In that consideration, any additional mitigation measures needed to ensure compliance with ESA requirements would be provided through reserve management within the constraints of the funding available at the time or from sources other than the applicant. Only in those cases where (1) take would result in substantial effects and (2) reserve management is shown to be ineffective would any additional mitigation be necessary. Additional measures would be determined in consultation with USFWS and/or CDFG as appropriate.

(B) Take of Target Species Associated With Outside Projects

Metropolitan is requesting that the authorizations and assurances for take of Target Species (if and when listed) extend to Outside Projects, pending review of Outside Project effects by USFWS and/or CDFG as appropriate. Where such authorizations and assurances are provided, mitigation credits in the bank can be used at Metropolitan's option. Use of the Mitigation Bank established in the Lake Mathews MSHCP/NCCP is intended for Outside Project effects on Target Species both prior to and subsequent to their listing.

For Outside Projects, habitat values for Target Species in affected areas would be matched to the Mitigation Bank credits using HQA or using another methodology collectively acceptable to USFWS, CDFG, and Metropolitan. No further multipliers that increase the mitigation-to-effect ratio would be necessary. The required exchange is a 1:1 (acre-for-acre) mitigation-to-effect ratio expressed in the HQA formula. Other methodologies would not require greater than an acre-for-acre mitigation-to-effect ratio. Mitigation for effects on federally listed species, however, would be determined on a case-by-case basis.

Specifically, Metropolitan is seeking the following assurances related to take of Target Species associated with Outside Projects:

1. Federal and state authorization for take of SKR would be given, conditioned on restoration of occupied SKR habitat on agricultural lands in Metropolitan's share of the Mitigation Bank. These restored agricultural lands are part of

the Mitigation Bank and would serve to compensate for take of SKR associated with Outside Projects.

2. Federal and state authorization for take of Target Species (both currently listed and those listed in the future) would be considered by USFWS (if and when federally listed) and CDFG (if and when state-listed) on a case-by-case basis. Federal and state assurances would be provided that absent a jeopardy opinion, take would be authorized according to the Lake Mathews Plan where available credits in the Mitigation Bank would be used pursuant to the HQA or other agreed upon methodology on a 1:1 basis. If a jeopardy opinion is issued, the federal or state agency would meet with Metropolitan to determine appropriate action to eliminate the jeopardy through reasonable and prudent alternatives.

3. The use of the Mitigation Bank for effects on Target Species associated with Outside Projects is part of the implementation of the Lake Mathews MSHCP/NCCP. Consequently, the authorizations for take and prelisting assurances for Target Species are extended to Outside Projects without requiring a separate HCP and 10(a) permit and/or 2081/2835 management authorization for that project.

(C) Take of Target Species in the Multiple Species Reserve

It is not Metropolitan's intent at this time to directly affect habitat in the Multiple Species Reserve. In the unlikely event that projects and activities other than those already existing are necessary in the Multiple Species Reserve, federal and state authorizations and assurances for take would be provided for Target Species, conditioned on (1) implementation of the effect minimization and reserve management measures described in the Lake Mathews Plan and (2) provision of replacement habitat acceptable to the Management Committee as appropriate using a 1:1 (acre-for-acre) mitigation-to-effect ratio expressed in the HQA formula. Other methodologies would not require greater than an acre-for-acre mitigation-to-effect ratio. Mitigation for effects to federally listed species, however, would be determined on a case-by-case basis.

2) For RCHCA Projects and Activities

The authorizations and assurances sought by the RCHCA are related to implementation of the SKR HCPs and preparation of a multiple species plan under the interagency MOU. Specifically, RCHCA is seeking:

1. USFWS approval and CDFG concurrence that the 1,263.9 acres of occupied SKR habitat that constitute the RCHCA's Mitigation Bank lands are acceptable as, and would be given 100% credit as, replacement habitat under the Short-term and/or Long-term SKR HCPs;

2. USFWS and CDFG assurances that the conservation value of the SKR habitat for other species would be credited toward a multiple species plan if and when adopted and approved; and

3. USFWS and CDFG concurrence that implementation of the Lake Mathews MSHCP/NCCP is part of the establishment and management of the proposed Lake Mathews-Estelle Mountain SKR Core Reserve.

3) For Reserve Management

In addition to the above authorizations and assurances, USFWS and CDFG also are being asked to:

1. Authorize unavoidable incidental take of listed species that would result from reserve management activities and accept the benefits to the species that would accrue from reserve management as mitigation for such take and

2. Provide prelisting assurances that would allow incidental take of other unlisted species should they become listed as a result of reserve management activities and accept the benefits to those species that would accrue from reserve management as mitigation for the effects.

These authorizations and assurances would apply to projects and activities identified in approved annual work plans for reserve management.

e. Funding and Assurances for Plan Implementation

In addition to seeking assurances from USFWS and CDFG, Metropolitan and the RCHCA are providing assurances that adequate funding is made available for implementation of the Lake Mathews Plan and that the conservation and mitigation measures would be carried out as proposed.

1) Funding

Implementation of the Lake Mathews Plan would require adequate funding for management of the Combined Reserve. To fund such management, an endowment would be established by Metropolitan and the RCHCA as follows:

1. The RCHCA would acquire conservation easements from Metropolitan over the 1,269.3 acres of occupied SKR habitat in the Mitigation Bank area for a sum of $5 million, paid in two installments: $2.5 million within 60 days of approval of the Lake Mathews Plan and $2.5 million within 5 years after the first payment.

2. Metropolitan would designate the funds received from the RCHCA for management of the Combined Reserve and deposit the funds in an income-earning account that it would administer on behalf of the Management Committee.

3. Under the terms of the 1979 agreement for the Existing Reserve, Metropolitan would seek payment of the $500,000 assured by DWR for habitat management and, when received, deposit the funds in the reserve management account.

Metropolitan also would contribute to reserve management by identifying a location and providing two trailers for the Reserve Manager's office/residence; maintaining the fences, gates, locks, and internal access roads in the Plan Area; making its boat available to the Reserve Manager; and coordinating its security patrols with public access controls for the Multiple Species Reserve. These contributions reduce the costs of reserve management paid out of the endowment.

A preliminary cost estimate for the first 6 years of implementation of the Lake Mathews Plan indicates that approximately $500,000 would be needed for the first year, and approximately $125,000 per year would be required for years 2 through 6. Assuming that $3 million would be available at the start of implementation ($2.5 million from the RCHCA and $500,000 from DWR), expenditures for initial costs would leave approximately $2.5 million to generate revenue. At a 5% return, the $2.5 million would yield approximately $125,000 for annual operating costs. With the RCHCA's second payment of $2.5 million, approximately $250,000 per year would be available.

2) Plan Implementation

To provide and receive assurances that the provisions of the Lake Mathews Plan would be implemented, Metropolitan and the RCHCA would enter into four agreements:

1. An Implementation Agreement with USFWS regarding implementation of the Lake Mathews Plan and the federal ESA authorizations and assurances,

2. A Section 2081/2835 Memorandum of Understanding/Permit with CDFG regarding approval and implementation of the Lake Mathews Plan as an NCCP and the California ESA/NCCP authorizations and assurances,

3. A Cooperative Management Agreement with USFWS and CDFG regarding management of the Combined Reserve, and

4. A Mitigation Banking Agreement regarding establishment and use of the mitigation credits assigned to the Mitigation Bank lands.

In addition, Metropolitan and the RCHCA would institute a process for record keeping and monitoring. Annual reports on implementation of the Lake Mathews Plan would be prepared in conjunction with the annual work plans for reserve management. If necessary, a comprehensive review of implementation would be conducted by the Management Committee after the first 5 years of implementation and every 5 years thereafter.

f. Emergencies, Listings, and Unforeseen Circumstances

Over the course of implementation of the Lake Mathews Plan, it is anticipated that emergencies would occur, Target Species and other species would become federally or state-listed, and unforeseen circumstances might arise. Procedures have been identified to ensure quick and appropriate responses to such occurrences and are specified in the agreements in Volume 3 of the Lake Mathews MSHCP/NCCP. In general, the procedures involve coordination among the agencies on the Management Committee and, where necessary and feasible, adaptation of reserve management within the constraints of available funding to address problems and changes.

g. Plan Amendment Process

Metropolitan and the RCHCA anticipate that course corrections and other amendments to the Lake Mathews MSHCP/NCCP and accompanying agreements would be necessary over time. To facilitate such changes while maintaining the

integrity of the original plan, procedures have been identified for the following four types of amendments:

- Additions to the lists of Group 1, 2, and 3 species
- Expansion of the Multiple Species Reserve
- Increases in mitigation credits
- Changes in the projects and activities covered by the Lake Mathews Plan in the Plan Area

In general, the procedures specify the information that should accompany the request for a plan amendment and indicate where approval depends on case-by-case determinations by USFWS and CDFG. Procedures would be developed for other types of amendments as necessary.

4. Migratory Bird Treaty Act

The Lake Mathews MSHCP/NCCP conserves and provides for the management of habitat used by several sensitive bird species protected by the Migratory Bird Treaty Act (MBTA); it also includes impact avoidance measures for MBTA species. The MBTA makes it unlawful to pursue, hunt, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the United States and Great Britain, United Mexican States, Japan, and the former Soviet Union. As with the federal ESA, the MBTA also authorizes the Secretary of the Interior to issue permits for take.

B. No Action Alternative

As required by NEPA, the No Action alternative is evaluated in this document. Under the No Action alternative, the Lake Mathews MSHCP/NCCP would not be implemented as proposed. Metropolitan and RCHCA could still seek authorization for take of federally listed species for projects and activities both within and outside the Plan Area on a project-by-project and species-by-species basis. Conservation of habitat for listed and unlisted species would occur in connection with project-by-project mitigation plans. USFWS and CDFG approval would be required for projects and activities involving take of federally and state-listed species, respectively.

The No Action alternative would result in the development and application of mitigation measures on a project-specific basis during CEQA and NEPA processes and related state and federal regulatory permitting processes. This would not be as effective or efficient a mitigation program for the Plan Area as the Proposed Project. The No Action alternative would maintain the single-species conservation management strategy. It would not facilitate the creation and management of a multi-jurisdictional reserve.

Under the No Action alternative, the RCHCA could still purchase conservation easements over SKR-occupied habitat from Metropolitan as necessary under the Short-term and Long-term SKR HCPs, however, Metropolitan would not establish a comprehensive mitigation and management program for multiple species as described in the Proposed Project.

C. Alternatives Not Selected for Detailed Analysis

Two additional alternatives to the taking of species under the Proposed Project were considered for the Plan Area and were eliminated from further consideration:

- Avoidance of Take of Currently Listed Species at Lake Mathews
- No Outside Projects

Each alternative is briefly described below, together with the reasons for which it is not considered further.

1. Avoidance of Take of Currently Listed Species at Lake Mathews

Under this alternative, no Section 10(a) permit would be necessary for projects and activities in the Plan Area. Effects on nonlisted Target Species would be allowed and take of currently listed species would be prohibited on Metropolitan's Lake Mathews properties. Direct harm to currently listed species would need to be avoided and, in the process, habitat for most of the other Target Species would also not be affected. Metropolitan would attempt to design projects and activities in the Plan Area to avoid take of all currently listed species. However, many projects and activities within the Plan Area would be precluded because it would not be possible to completely (1) avoid take of SKR and coastal California gnatcatchers and (2) ensure that effects on habitat for bald eagles, bank swallows, and Swainson's hawks would not constitute take under the state or federal ESA as appropriate. In addition, maintenance of existing facilities would be curtailed or become impossible. Maintenance of the dam and dikes is critical to preserve their integrity and consequently to protect public health and safety.

The RCHCA could still purchase conservation easements over SKR-occupied habitat from Metropolitan as necessary under the Short-term and Long-term SKR HCPs, however, Metropolitan would not need to establish a comprehensive management program for multiple species as described in the Proposed Project.

This alternative was eliminated from further consideration because it could lead to inordinate delays in necessary operation and maintenance activities at Lake Mathews. These delays would result from the need to apply for any necessary individual Section 10(a) permits under the federal ESA. Such a piecemeal approach could result in a lack of comprehensive and coordinated environmental planning. This alternative does not meet Metropolitan's objectives to provide reliable water deliveries from Lake Mathews and could reduce Metropolitan's ability to respond in a timely way to operation and maintenance needs at the Lake Mathews facility as necessary to protect public health and safety.

2. No Outside Projects

Under this alternative, the Mitigation Bank credits and the authorizations and assurances provided under the Lake Mathews Plan would apply only to projects and activities on Metropolitan's Lake Mathews properties; no Outside Projects would be covered. Outside Projects would require additional individual incidental take permits for federally or state-listed species as necessary.

This approach would reduce the total take anticipated under the Lake Mathews Plan by eliminating the category of Outside Projects; however, it would not change the estimated levels of take on Metropolitan's properties. Mitigation for projects that otherwise might have drawn on the Lake Mathews Mitigation Bank would have to be provided elsewhere; however, assuming that appropriate mitigation is provided, the effects of the projects would still occur. Such mitigation planning for Outside Projects would increase total mitigation costs for Metropolitan. In addition, areas to be restored to endangered species habitat under the Proposed Project would not occur, and land in the Mitigation Bank not used for mitigation of projects and activities in the Plan Area and not occupied by listed species could be leased for activities (e.g., agriculture) that are consistent with maintaining water quality in the reservoir. As a result, the size of the managed multiple species reserve under this alternative would be substantially smaller than under the Proposed Project.

The RCHCA could still purchase conservation easements over SKR-occupied habitat from Metropolitan as necessary under the Short-term and Long-term SKR HCPs. The smaller size of the multiple species reserve would reduce the cost of management, however, and the endowment for management of the reserve would be smaller than under the Proposed Project.

This alternative was eliminated from further consideration because precluding the opportunity to mitigate for Outside Projects through the Lake Mathews Plan would result in increased mitigation cost for Metropolitan and a smaller reserve conserved and managed for Target Species. In addition, individual permitting for Outside Projects would be more inefficient than the approach described in the Proposed Project, because it would require additional paperwork and delays related to the separate permit applications for each Outside Project. The alternative does not meet Metropolitan's objectives to establish a conservation program, including a mitigation bank, to mitigate future biological effects of Outside Projects.

4. Affected Environment

A. Environmental Setting

The topography of the Plan Area is generally low, with rolling hills and a series of distinct taller hills, or knobs, and short ridges. Cajalco Creek enters the Plan Area at the eastern end where it forms a braided stream system fed by natural flows and agricultural runoff. Downstream from the lake, the creek continues to flow west in Cajalco Canyon.

The topography to the north and east of Lake Mathews is a gently sloping plateau dissected by numerous ephemeral drainages. A series of small, isolated peaks are located due east of the lake edge. This gently sloping topography transitions to steeper areas as it approaches Gavilan Peak (2,442 feet mean sea level [msl]) and Monument Peak (2,333 feet msl) to the south. Numerous ephemeral drainages are tributary to Lake Mathews on the south. Undeveloped land to the west of Lake Mathews is steep with numerous peaks and intervening intermittent stream courses.

The Lake Mathews Plan Area includes a small dryland farming area to the north of El Sobrante Road at the intersection with Palm Road, undeveloped natural open space to the east of El Sobrante Road, and undeveloped open space to the south of Cajalco Road and to the west of La Sierra Avenue. The Plan Area also includes the 2,565-acre Existing Reserve. Adjacent to the Plan Area, single-family residential and agricultural land uses are located to the north; rural residential, agricultural, and open space uses are located to the east; rural and single-family residential and open space land uses are located to the south; and approximately 1 mile of open space occurs to the west between the project site and the city of Corona.

The Plan Area supports a variety of natural habitats, wildlife, and sensitive species. The prevalent natural vegetation communities are non-native grassland and Riversidian sage scrub, which provide habitat for many sensitive animals such as the federally and state-listed endangered Stephens' kangaroo rat (SKR, *Dipodomys stephensi*) and the federally listed threatened coastal California gnatcatcher (*Polioptilla californica californica*). Riparian vegetation types are much more limited but have a diverse habitat structure important to many sensitive birds, including the tricolored blackbird (*Agelaius tricolor*), blue grosbeak (*Guiraca caerulea*), and many species of raptors. Nonvegetated habitats on the site, such as the lake and geomorphic habitats (rock outcrops), provide additional habitat diversity. The lake provides important resting and foraging habitat for resident and migrant bird species. Several bat species also use the lake for foraging. Many species of herpetofauna and birds use the tall rock outcrops located throughout the Plan Area for sunning and perching.

B. Biological Resources

Detailed surveys of resources were conducted within the Plan Area. These surveys provide information on biological resources in the Plan Area including birds, mammals, reptiles and amphibians, invertebrates, and plants. The detailed

surveys for multiple biological resources described in Volumes 1 and 2 of the Lake Mathews Plan were conducted only on lands owned by Metropolitan and were not conducted on the RCHCA's properties within the remainder of the Combined Reserve. Surveys conducted by the RCHCA in these areas focused on a determination of the distribution of occupied SKR habitat and are described in the RCHCA's Long-term SKR Plan (see Chapter 1 of Volume 1 of the Lake Mathews MSHCP/NCCP for a detailed description of the Long-term and Short-term SKR Plans).

The information on which the Lake Mathews Plan is based comes from the following sources described in more detail in Volume 2 of the Lake Mathews MSHCP/NCCP:

- Two types of biological surveys conducted in 1992 (March through July): (a) quantitative surveys for a Habitat Quality Assessment (HQA) of the Plan Area and (b) focused surveys for all biological resources in the Plan Area;
- Supplemental focused surveys for sensitive plant species conducted in 1993 and added to the database inventory for sensitive species;
- A geographic information system (GIS) database that was developed for the Lake Mathews Plan to illustrate survey results and delineate Plan Area components;
- GIS mapping of occupied SKR habitat in the Plan Area, based on studies conducted in the Plan Area between 1989 and 1992;
- Incidental sightings of wintering raptors and other sensitive species in the Plan Area outside the time frame of the 1992 surveys;
- Historical mapping and reports on habitats in the Plan Area, including maps prepared by Weislander in the 1930s and reports on the Existing Reserve prepared by CDFG in the 1970s and 1980s; and
- Scientific literature on the soils, habitats, and species in the Plan Area.

1. Habitats/Vegetation

As noted previously, 14 habitat types occur in the Plan Area, with non-native grassland and Riversidian sage scrub accounting for 82% of the 5,993.5 acres. Table 4-1 summarizes the habitat types which occur in the Multiple Species Reserve, Operations areas, and Plan Area Projects areas. Figure 4-1 depicts these habitat types in the Plan Area. Brief descriptions of the habitat types follows.

Non-native Grassland: Non-native grassland covers 2,957 acres (49%) of the Plan Area and occurs in nearly equal proportions inside and outside the Existing Reserve. Dominant plant species are foxtail chess (*Bromus rubens*), red-stem filaree (*Erodium cicutarium*), and fescue (*Festuca myuros*). In swales north and south of the lake, low shrubs are a component of the grassland, including species such as coastal sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*) that also are found in the Riversidian sage scrub.

Table 4-1
Habitat Types in the Plan Area
(acres)

Habitat Type	Multiple Species Reserve		Operations Areas	Plan Area Projects	Total Plan Area
	Existing Reserve	Mitigation Bank			
Non-native grassland	1,648.0	1,073.6	193.8	41.6	2,957.0
Riversidian sage scrub	727.7	921.5	303.2	40.9	1,993.3
Mule fat scrub	18.1	29.9	1.0	7.3	56.3
Southern willow scrub	8.1	20.5	0.5	8.9	38.0
Juniper woodland	42.5	40.0	0.0	2.4	84.9
Sycamore riparian woodland	0.0	1.9	0.0	0.2	2.1
Disturbed	108.0	126.2	213.4	30.6	478.2
Agriculture	0.0	324.4	7.0	11.5	342.9
Exotic trees	9.1	2.5	7.8	0.8	20.2
Natural barren	0.5	0.4	0.0	0.0	0.9
Ruderal	1.4	3.8	0.8	8.9	14.9
Freshwater marsh	1.0	0.0	0.0	0.2	1.2
Saltbush stand	1.1	0.2	0.0	1.2	2.5
Water (excluding lake)	0.0	0.0	1.1	0.0	1.1
TOTAL	**2,565.5**	**2,544.9**	**728.6**	**154.5**	**5,993.5**

Riversidian Sage Scrub: Riversidian sage scrub covers 1,993.3 acres (33%) of the Plan Area, with most (64%) of the habitat occurring outside the Existing Reserve. Species composition of the shrub cover varies in the Plan Area, with brittlebush (*Encelia farinosa*) and California buckwheat dominant on south-facing slopes and coastal sagebrush dominant on north-facing slopes.

Mule Fat Scrub: Mule fat scrub covers 56.3 acres (<1%) of the Plan Area, with most (53%) of the habitat occurring in the Mitigation Bank area. It occurs in areas where soils are saturated with moisture much of the year and in drier drainages that are wet for short periods following rain.

Southern Willow Scrub: Southern willow scrub covers 38 acres (<1%) of the Plan Area, with most (53%) of the habitat occurring in the Mitigation Bank. Similar to the mule fat scrub, southern willow scrub occurs within a range of hydrologic conditions along drainages.

Juniper Woodland: Junipers in the Plan Area occur as scattered individuals in non-native grassland and Riversidian sage scrub and in woodlands on north-facing slopes and low areas. The woodlands are generally located to the south and east of the lake, both inside and outside the Existing Reserve. Juniper (*Juniperus californica*) is the dominant tree and shrub.

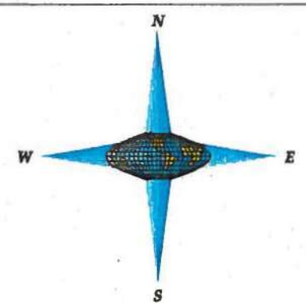
Sycamore Riparian Woodland: Only 2.1 acres of sycamore riparian woodland occur in the Plan Area, all outside the Existing Reserve. This habitat occurs in a narrow drainage in the southern part of the Mitigation Bank area. The drainage

Habitat Types in the Plan Area

Figure 4-1

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Lake Mathews
(Maximum Inundation Level 1390')



Scale
1:30000

0 1250 2500 3750
Feet
One Inch = 2500 Feet

October 27, 1994

LEGEND

- NNG - Non-Native Grassland
- RSS - Riversidian Sage Scrub
- RSS BURN - Riversidian Sage Scrub-Burned
- MFS - Mule Fat Scrub
- SWS - Southern Willow Scrub
- JW - Juniper Woodland
- SRW - Sycamore Riparian Woodland
- DIS - Disturbed
- AG - Agriculture
- EXO - Exotic Trees
- NB - Natural Barren
- R - Ruderal
- SBS - Saltbush Stand
- FWM - Freshwater Marsh
- W - Water

- Property Boundary
- Lake Mathews Inundation Level

is narrow, only 1 meter (3.28 feet) wide at the bottom, and deeply incised, approximately 3 meters (9.84 feet) deep. Sycamore trees are relatively evenly spaced on the lower part of the banks.

Freshwater Marsh: Approximately 1.2 acres of freshwater marsh habitat occur along Cajalco Creek west of the lake and in small, scattered pockets in other riparian areas. Cajalco Creek is narrow, less than 10 meters (32.8 feet) across, with vegetation roughly stratified according to the microtopography and water levels. As noted, during recent biosurveys Cajalco Creek had flowing water several inches deep. The shrub layer was dominated by bulrush (*Scirpus olneyi*) with cattails (*Typha* spp.) occurring in small pockets along the creek. The freshwater marsh occurs in the center of the drainage, the deepest part of the channel. Mule fat and willows (*Salix* spp.) occur on the channel banks and are interspersed with marsh vegetation along the channel.

Disturbed and Agriculture: Disturbed habitat and agriculture account for 821.1 acres (14%) of the Plan Area, with most (55%) of it occurring in the Mitigation Bank. For purposes of the Lake Mathews MSHCP/NCCP, disturbed habitat is defined as areas that are nearly or completely denuded of vegetation due to mechanical disturbance caused by paving, grading, or other human development. Most of 478.2 acres of such land in the Plan Area consists of access roads and the hardscape of the reservoir and its ancillary facilities. Agriculture occurs on 342.9 acres, 254 acres of which are leased to local farmers for dryland farming; almost all (95%) of these lands are in the Mitigation Bank.

Other Types: Other habitat types, including areas without vegetation, account for 39.6 acres (<1%) of the Plan Area. These types include:

- 20.2 acres of exotic trees such as eucalyptus (*Eucalyptus* sp.), California pepper (*Schinus molle*), tamarisk (*Tamarix ramosissima*), and carob (*Ceratonia* sp.);
- 0.9 acre of rock outcrops that are naturally barren of plant cover;
- 14.9 acres with ruderal plant species such as mustards and sow thistles;
- 2.5 acres of saltbush stand; and
- 1.1 acre of open water (excluding the lake).

2. Target Species

Based on surveys and incidental sightings, over 350 different species of plants and animals are known to occur or are closely associated with the habitats in the Plan Area. A brief description of what is known about the occurrence of Target Species and their habitats in the Plan Area follows.

a. Plants

Seven plant species which are Target Species were observed in 1992 and 1993 surveys in the Plan Area. Eight additional plant species were not observed but are considered to be potentially occurring Target Species. Observed Target Species are shown in Table 4-2.

Table 4-2
Target Species Observed in the Plan Area

Species Common and Scientific Name	Sensitivity Status			Habitats in Plan Area		
	Federal	State	Other	NNG	RSS	Other
Plants (N = 7)						
Clay bindweed (small-flowered morning-glory) *Convolvulus simulans*	none	none	CNPS4	X		needs B or P clay soil
Great valley (or clay) phacelia *Phacelia ciliata*	C2	none	CNPS1B	X		needs B clay soil
Knotweed (or long-spined) spineflower *Chorizanthe polygonoides* var. *longispina*	C2	none	CNPS1B	X		needs B or P clay soil
Large-leaved filaree *Erodium macrophyllum*	none	none	LC	X		needs B clay soil
Palmer's grappling hook *Harpagonella palmeri*	C2	NCCP	CNPS2	X	X	needs P clay soil
Parry's spineflower *Chorizanthe parryi* var. *parryi*	C2	NCCP	none		X	
Small-flowered microseris *Microseris douglasii* ssp. *platycarpha*	none	none	CNPS4	X		needs P or B clay soil
Amphibians and Reptiles (N = 7)						
Coastal rosy boa *Lichanura trivirgata roseofusca*	C2	CSC NCCP	none	X	X	in rock outcrops
Coastal western whiptail *Cnemidophorus tigris multiscutatus*	C2	CSC NCCP	none	X	X	JW
Northern red diamond rattlesnake *Crotalus ruber ruber*	C2	CSC NCCP	none	X	X	
Orange-throated whiptail *Cnemidophorus hyperythrus beldingi*	C2	CSC NCCP	none	X	X	JW
San Bernardino ringneck snake[1] *Diadophis punctatus modestus*	C2	CSC	none			MFS, SWS
San Diego horned lizard *Phrynosoma coronatum blainvilleii*	C2	CSC NCCP	none	X	X	
Western spadefoot toad[2] *Scaphiopus hammondii*	C2	NCCP	none	X		FWM, rock outcrops
Birds (N = 25)						
Bald eagle[3] *Haliaeetus leucocephalus*	FE, BEPA MBTA	SE	none			Lake and other
Bank swallow[3] *Riparia riparia*	MBTA	ST	LC			Lake
Bell's sage sparrow *Amphispiza belli belli*	C2 MBTA	CSC NCCP	none		X	
Black-crowned night heron (rookery) *Nycticorax nycticorax*	MBTA	none	LC			SWS, lake
Blue grosbeak *Guiraca caerulea*	MBTA	none	LC			SWS, MFS
Burrowing owl *Speotyto cunicularia*	C2 MBTA	CSC	none	X		AG
California horned lark *Eremophila alpestris actia*	C3c MBTA	CSC NCCP	none	X		AG
Coastal California gnatcatcher *Polioptila californica californica*	FT MBTA	CSC NCCP	none		X	

Table 4-2 (continued)
Target Species Observed in the Plan Area

Species Common and Scientific Name	Sensitivity Status			Habitats in Plan Area		
	Federal	State	Other	NNG	RSS	Other
Birds (continued)						
Cooper's hawk[3] *Accipiter cooperii*	MBTA	CSC	none		X	MFS, SWS, SRW
Downy woodpecker *Picoides pubescens*	MBTA	none	LC			SWS
Ferruginous hawk[3] *Buteo regalis*	C2 MBTA	CSC	none	X	X	AG
Golden eagle[3] *Aquila chrysaetos*	BEPA MBTA	CSC	none	X	X	AG
Grasshopper sparrow *Ammodramus savannarum perpallidus*	MBTA	none	LC	X		
Great blue heron (rookery) *Ardea herodias*	MBTA	none	LC			SWS, lake, exotic trees
Loggerhead shrike *Lanius ludovicianus*	MBTA	CSC NCCP	none	X	X	JW, AG
Long-eared owl[3] *Asio otus*	MBTA	none	LC			SWS
Northern harrier[3] *Circus cyaneus*	MBTA	CSC	none	X	X	AG
Red-shouldered hawk[3] *Buteo lineatus*	MBTA	none	LC			MFS, SWS, SRW
Rough-legged hawk[3] *Buteo lagopus*	MBTA	none	LC	X	X	AG
San Diego cactus wren[3] *Campylorhynchus brunneicapillus couesi*	C3b MBTA	CSC NCCP	none		X	in cactus patches
Sharp-shinned hawk[3] *Accipiter striatus*	MBTA	CSC	LC	X	X	MFS, SWS
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	C2 MBTA	CSC NCCP	none		X	
Swainson's hawk[3] *Buteo swainsoni*	MBTA	ST	none	X	X	AG
Tricolored blackbird *Agelaius tricolor*	C2 MBTA	CSC NCCP	none	X		FWM, SWS
White-tailed kite *Elanus caeruleus*	MBTA	CFP	none	X		MFS, SWS
Mammals (N = 11)						
American badger[3] *Taxidea taxus*	none	CSC	none	X	X	JW
Big or pocketed free-tail bat[3] *Nyctinomops femorosaccus* or *macrotis*	none	CSC	none	X	X	MFS, SWS
Cougar[3] *Felis concolor*	none	CFP	LC	X	X	all other
Little brown bat[3] *Myotis* spp. (probably *M. yumanensis*)	C2	CSC	none			MFS, SWS, FWM, lake
Northwestern San Diego pocket mouse *Chaetodippus fallax fallax*	C2	CSC NCCP	none		X	

Table 4-2 (continued)
Target Species Observed in the Plan Area

Species Common and Scientific Name	Sensitivity Status			Habitats in Plan Area		
	Federal	State	Other	NNG	RSS	Other
Mammals (continued)						
Pallid bat[3] *Antrozous pallidus*	none	CSC	none	X	X	in rock outcrops
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	C2	CSC NCCP	none	X	X	SWS, JW, AG
San Diego desert woodrat *Neotoma lepida intermedia*	C2	CSC	none		X	JW
Stephens' kangaroo rat *Dipodomys stephensi*	FE	ST NCCP	none	X	X	AG, disturbed
Western mastiff bat[3] *Eumops perotis*	C2	CSC	none	X	X	in rock outcrops
Western pipistrelle[3] *Pipistrellus hesperus*	none	none	LC	X	X	in rock outcrops

Sensitivity Status Codes

BEPA Bald Eagle Protection Act (also covers golden eagle)
C2 Category 2 candidate for federal listing; includes taxa for which USFWS has information indicating that proposing to list as endangered or threatened is possibly appropriate but for which persuasive data on biological vulnerability and threat are not currently available to support proposed rules.
C3b Category 3 candidate for federal listing; names that, on the basis of current taxonomic understanding, do not represent distinct species as defined in the federal ESA.
C3c Category 3 candidate for federal listing; includes taxa that have proven to be more abundant or widespread than previously believed and/or those that are not subject to any identifiable threat.
CNPS California Native Plant Society red list
(1B) rare or endangered in California and elsewhere
(2) rare or endangered in California and more common elsewhere
(4) plants of limited distribution
CFP California Fully Protected (special category)
CSC CDFG species of special concern
FE Listed as endangered under the federal ESA
FT Listed as threatened under the federal ESA
LC Species of special local concern
MBTA Protected by the Migratory Bird Treaty Act
NCCP Sensitive species for NCCP coastal sage scrub program
ST Listed as threatened under the California ESA

Habitat Codes

AG Agriculture
B Bosanko (clay soil)
JW Juniper woodland
MFS Mule fat scrub
NNG Non-native grassland
P Porterville (cobbly clay soil)
RSS Riversidian sage scrub
SRW Sycamore riparian woodland
SWS Southern willow scrub

Notes

1 Also occurs in adjacent habitat
2 Observed in rock outcrop areas; requires aquatic conditions for breeding; found in upland habitats in burrows during dry periods
3 Plan Area has foraging and/or sheltering habitat for this species but may not contain suitable breeding habitat (or primary roost sites for bats)

Observed Target Species: With one exception, the observed plant species occur both in the Existing Reserve and Mitigation Bank. The exception is Parry's spineflower (*Chorizanthe parryi* var. *parryi*), which has been observed to date only in the Existing Reserve. None of the Target Species have been observed in the areas reserved for Operations or Plan Area Projects. However, the presence of suitable soils and habitat for each species indicates that these areas have the potential to support additional populations of these species.

Potentially Occurring Target Species: All eight potentially occurring plant species are associated with the two primary habitat types in the Plan Area: non-native grassland and Riversidian sage scrub. Table 4-3 shows potentially occurring Target Species.

b. Invertebrates

No sensitive invertebrate species were observed in the Plan Area surveys; however, potential habitat was identified for two species: Ruth's cuckoo bee (*Holocopasites ruthae*) and Quino checkerspot butterfly (*Occidryas [=Euphydryas] editha quino*).

c. Amphibians and Reptiles

Seven amphibian and reptile species which are Target Species were observed in surveys in the Plan Area; one additional reptile species was not observed but is considered to be a potentially occurring Target Species.

Observed Target Species: The estimated amount of suitable habitat for amphibian and reptile species observed in each Plan Area component is presented in Table 4-4. The habitat estimates are based on the occurrence of the habitats most commonly associated with the species in the Plan Area. As indicated in Table 4-4, the Plan Area has approximately 5,000 acres of suitable habitat for the reptile species.

Potentially Occurring Target Species: Rock outcrops in grassland and sage scrub where other reptile species were observed also have the potential to support the San Diego banded gecko (*Coleonyx variegatus abbottii*).

d. Birds

Birds comprise the largest group of observed Target Species (25 of the 50), and their overlapping habitats encompass nearly all of the Plan Area. In addition to the 25 observed species, 4 sensitive bird species are associated with riparian habitat and are considered to be potentially occurring Target Species in the Plan Area.

Observed Target Species: The 25 bird species include a combination of resident and migratory species that were observed in focused surveys or incidentally in the Lake Mathews Plan Area. Table 4-5 indicates the Plan Area components where the species were observed (except for five wintering raptors) and provides an estimate of the amount of suitable habitat for each species in the Plan Area. Four of the observed bird species are federally and/or state-listed. They include:

Table 4-3
Target Species Not Observed but Potentially Occurring in the Plan Area

Species Common and Scientific Name	Sensitivity Status			Potential Habitat in Plan Area		
	Federal	State	Other	NNG	RSS	Other
Plants (N = 8)						
Braunton's milkvetch *Astragalus brauntonii*	PFE	NCCP	CNPS1B		X	burned RSS
Coulter's matilija poppy *Romneya coulteri*	none	none	CNPS4		X	burned RSS
Little mousetail *Myosurus minimus* var. *apus*	C2	none	CNPS3	X		alkali NNG & vernal pools
Many-stemmed dudleya *Dudleya multicaulis*	C2	NCCP	CNPS1B	X	X	in outcrops & clay soils
Munz's onion *Allium munzii*	PFE	NCCP	CNPS1B	X	X	on clay soils
Slender-horned spineflower *Dodecahema (=Centrostegia) leptoceras*	FE	SE NCCP	CNPS1B	X	X	in alluvial washes
Smooth tarplant *Hemizonia pungens* ssp. *laevis*	C2	none	CNPS1B	X		alkali areas, fallow fields
Southern tarplant *Hemizonia parryi* ssp. *australis*	C2	none	CNPS1B	X		alkali areas, fallow fields
Invertebrates (N = 2)						
Ruth's cuckoo bee *Holocopasites ruthae*	none	none	LC		X	in areas with *Encelia*
Quino checkerspot butterfly *Occidryas (=Euphydryas) editha quino*	PFE	NCCP	none	X		in *Plantago erecta* patches
Reptiles (N = 1)						
San Diego banded gecko *Coleonyx variegatus abbottii*	C2	CSC NCCP	none		X	in rocky areas
Birds (N = 4)						
Least Bell's vireo *Vireo bellii pusillus*	FE MBTA	SE	none			SWS, MFS
Southwestern willow flycatcher *Empidonax trailii extimus*	FE, FSS MBTA	SE	none			SWS, MFS
Yellow-breasted chat *Icteria virens*	MBTA	CSC	none			SWS
Yellow warbler *Dendroica petechia brewsteri*	MBTA	CSC	none			SWS

Sensitivity Status Codes

C1 Category 1 candidate for federal listing; includes taxa for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened. Development and publication of rules on such taxa are anticipated.

C2 Category 2 candidate for federal listing; includes taxa for which USFWS has information indicating that proposing to list as endangered or threatened in possibly appropriate but for which persuasive data on biological vulnerability and threat are not currently available to support proposed rules.

Table 4-3 (continued)
Target Species Not Observed
but Potentially Occurring in the Plan Area

Sensitivity Status Codes (continued)

CNPS	California Native Plant Society red list
	(1B) rare or endangered in California and elsewhere
	(2) rare or endangered in California, more common elsewhere
	(3) more information required before assignment to 1, 2, or 4
	(4) plants of limited distribution.
CSC	CDFG species of special concern
PFE	Proposed for federal listing as endangered
FE	Listed as endangered under the federal ESA
FSS	Federal sensitive species
LC	Species of special local concern
MBTA	Protected by the Migratory Bird Treaty Act
NCCP	Sensitive species for NCCP coastal sage scrub program
SE	Listed as endangered under the California ESA

Habitat Codes

AG	Agriculture
MFS	Mule fat scrub
NNG	Non-native grassland
P	Porterville (cobbly clay soil)
RSS	Riversidian sage scrub
SRW	Sycamore riparian woodland
SWS	Southern willow scrub

- Three migratory species (bald eagle [*Haliaeetus leucocephalus*], bank swallow [*Riparia riparia*], and Swainson's hawk [*Buteo swainsoni*]) that forage and shelter but are not known to nest in the Plan Area and

- One resident Riversidian sage scrub specialist (coastal California gnatcatcher [*Polioptila californica californica*]) that is known to nest, forage, and shelter in all Plan Area components.

The presence of these observed Target Species imposes a combination of year-round and seasonal ESA restrictions on much of the Plan Area. Table 4-6 indicates the distribution of coastal California gnatcatchers and coastal California gnatcatcher habitat by Plan Area component. The other observed bird species include:

- Predominantly grassland species such as burrowing owl (*Speotyto cunicularia*), California horned lark (*Eremophila alpestris actia*), and grasshopper sparrow (*Ammodramus savannarum perpallidus*);

- Predominantly Riversidian sage scrub species such as Bell's sage sparrow (*Amphispiza belli belli*), San Diego cactus wren (*Campylorhynchus brunneicapillus couesi*), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*);

- Species such as ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), loggerhead shrike (*Lanius ludovicianus*), and northern harrier (*Circus cyaneus*) that use a mix of non-native grassland, Riversidian sage scrub, and agricultural habitat types;

- Species such as Cooper's hawk (*Accipiter cooperii*), rough-legged hawk (*Buteo lagopus*), sharp-shinned hawk (*Accipiter striatus*), tricolored blackbird

Table 4-4
Occurrence of and Acres of Habitat for Observed Target Amphibian and Reptile Species in the Plan Area[1]

Target Amphibian and Reptile Species	Multiple Species Reserve		Operations Areas	Plan Area Projects	Total Plan Area
	Existing Reserve	Mitigation Bank			
Coastal rosy boa					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat[2]	2,375.7	1,995.1	497.0	82.5	4,950.3
Coastal western whiptail					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	2,418.2	2,035.1	497.0	84.9	5,025.2
Northern red diamond rattlesnake					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat[2]	2,375.7	1,995.1	497.0	82.5	4,950.3
Orange-throated whiptail					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	2,418.2	2,035.1	497.0	84.9	5,025.2
San Bernardino ringneck snake					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat[3]	26.2	50.4	1.5	16.2	94.3
San Diego horned lizard					
Observed onsite	Yes	Yes	Yes	No	Yes
Estimated acres of suitable habitat	2,375.7	1,185.6	497.0	82.5	4,950.3
Western spadefoot toad					
Observed onsite	Yes	No	Yes	No	Yes
Estimated acres of suitable habitat[4]	1,649.0	1,073.6	193.8	41.8	2,958.2

Notes

1 Occurrence is based on sightings of Target Species in Plan Area surveys unless otherwise noted. Estimated acres of suitable habitat are the acres of the species' habitat in each Plan Area component, based on the primary habitat association identified for each species in Table 4-2 and the acres of that habitat in each Plan Area component as indicated in Table 4-1.

2 Estimated acres of suitable habitat for the coastal rosy boa and northern red diamond rattlesnake are overstated; species are associated with rocky outcrops in non-native grassland and Riversidian sage scrub habitat.

3 Estimated acres of suitable habitat for the San Bernardino ringneck snake are understated; species also is likely to use upland habitats adjacent to mule fat scrub and southern willow scrub.

4 Estimated acres of suitable habitat for the western spadefoot toad are overstated; species is associated with a broad range of habitats but was found in the Plan Area only in two rocky areas near water.

Table 4-5
Occurrence of and Acres of Habitat for Observed Target Bird Species in the Plan Area[1]

Target Bird Species	Multiple Species Reserve		Operations Areas	Plan Area Projects	Total Plan Area
	Existing Reserve	Mitigation Bank			
Bald eagle[2, 3, 4]					
Observed onsite	see note 3	see note 3	see note 3	see note 3	Yes
Estimated acres of suitable habitat					see note 4
Bank swallow[5]					
Observed onsite	No	No	No	No	Yes
Estimated acres of suitable habitat	0	0	0	0	see note 5
Bell's sage sparrow					
Observed onsite	Yes	Yes	Yes	No	Yes
Estimated acres of suitable habitat	727.7	921.5	303.2	40.9	1,993.3
Black-crowned night heron (rookery)					
Observed onsite	Yes	No	No	No	Yes
Estimated acres of suitable habitat	8.1	20.5	0.5	8.9	38.0
Blue grosbeak					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	26.2	50.4	1.5	16.2	94.3
Burrowing owl					
Observed onsite	Yes	No	Yes	No	Yes
Estimated acres of suitable habitat	1,648.0	1,398.0	200.8	53.1	3,290.9
California horned lark					
Observed onsite	Yes	Yes	No	Yes	Yes
Estimated acres of suitable habitat	1,648.0	1,398.0	200.8	53.1	3,290.9
Coastal California gnatcatcher[6]					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	727.7	921.5	303.2	40.9	1,993.3
Cooper's hawk[2]					
Observed onsite	Yes	Yes	No	Yes	Yes
Estimated acres of suitable habitat	753.9	973.8	304.7	57.3	2,089.7
Downy woodpecker					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat	8.1	20.5	0.5	8.9	38.0
Ferruginous hawk[2, 3]					
Observed onsite	see note 3	see note 3	see note 3	see note 3	Yes
Estimated acres of suitable habitat	2,375.7	2,319.5	504.0	94.0	5,293.2
Golden eagle[2]					
Observed onsite	Yes	Yes	No	No	Yes
Estimated acres of suitable habitat	2,375.7	2,319.5	504.0	94.0	5,293.2
Grasshopper sparrow					
Observed onsite	Yes	Yes	No	No	Yes
Estimated acres of suitable habitat	1,648.0	1,073.6	193.8	41.6	2,957.0
Great blue heron					
Observed onsite	No	No	No	No	Yes[7]
Estimated acres of suitable habitat	17.2	23.0	0.5	9.7	58.2
Long-eared owl[2, 3]					
Observed onsite	see note 3	see note 3	see note 3	see note 3	Yes
Estimated acres of suitable habitat	8.1	20.5	0.5	8.9	38.0

Table 4-5 (continued)
Occurrence of and Acres of Habitat for Observed Target Bird Species in the Plan Area[1]

Target Bird Species	Multiple Species Reserve		Operations Areas	Plan Area Projects	Total Plan Area
	Existing Reserve	Mitigation Bank			
Loggerhead shrike					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	2,418.2	2,359.5	504.0	96.4	5,378.1
Northern harrier[2]					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat	2,375.7	2,319.5	504.0	94.0	5,293.2
Red-shouldered hawk[2]					
Observed onsite	No	No	No	Yes	Yes
Estimated acres of suitable habitat	26.2	52.3	1.5	16.4	96.4
Rough-legged hawk[2, 3]					
Observed onsite	see note 3	see note 3	see note 3	see note 3	Yes
Estimated acres of suitable habitat	2,375.7	2,319.5	504.0	94.0	5,293.2
San Diego cactus wren[7]					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat	see note 8	see note 8	see note 8	see note 8	see note 8
Sharp-shinned hawk[2]					
Observed onsite	Yes	No	No	No	Yes
Estimated acres of suitable habitat	2,401.9	2,045.5	498.5	98.7	5,044.6
So. California rufous-crowned sparrow					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	727.7	921.5	303.2	40.9	1,993.3
Swainson's hawk[2, 3]					
Observed onsite	see note 3	see note 3	see note 3	see note 3	Yes
Estimated acres of suitable habitat	2,375.7	2,319.5	504.0	94.0	5,293.2
Tricolored blackbird					
Observed onsite	Yes	Yes	Yes	No	Yes
Estimated acres of suitable habitat	1,657.1	1,094.1	194.3	50.7	2,996.2
White-tailed kite					
Observed onsite	Yes	Yes	No	No	Yes
Estimated acres of suitable habitat	1,674.2	1,124.0	195.3	57.8	3,051.3

Notes

1 Occurrence based on detections in 1992 surveys, unless otherwise noted. Estimated acres of suitable habitat based on the habitat associations identified for each species in Table 4-2 and the acres of that habitat in each Plan Area component as indicated in Table 4-1. Lake not included in calculations.

2 Wintering raptor observed in Plan Area.

3 Species observed outside of time frame of the 1992 surveys; sighted during Audubon Christmas Bird Counts, CDFG annual bald eagle counts, or biological monitoring activities in Plan Area; data on occurrence in Plan Area components not available in GIS database.

4 Bald eagles forage in the lake and, to a lesser extent, in the upland habitats in the Plan Area; potential nesting habitat occurs in the Plan Area, but breeding behavior and nest sites have not been observed to date.

5 Species observed foraging at the lake; no suitable breeding habitat for the species occurs in the Plan Area.

6 Additional information about the distribution of coastal California gnatcatchers and their habitat is provided in Table 4-6.

7 Species heard but not seen in Plan Area; Plan Area currently does not include much suitable breeding habitat for this species; Riversidian sage scrub and adjacent non-native grasslands are foraging habitat for this species.

Table 4-6
Distribution of Coastal California Gnatcatchers in the Plan Area

Coastal California Gnatcatcher Characteristics	Multiple Species Reserve		Operations Areas	Plan Area Projects	Plan Area Total
	Existing Reserve	Mitigation Bank			
Individual birds					
Females	10	9	5	3	27
Males	21	10	9	3	43
Young	2	7	0	0	9
Age/sex not noted	0	1	0	1	2
Total	33	27	14	7	81
Nests					
Nest with pair	5	1	2	1	9
Total	5	1	2	1	9
Pairs					
Male and female only	3	6	2	2	13
Male and female with nest	5	1	2	1	9
Male, female, and young	1	2	0	0	3
Total	9	9	4	3	25
Habitat					
Occupied	689.3	741.9	297.1	40.9	1,791.0
Potential	38.4	102.7	6.1	0.0	202.3
Total	727.7	921.5	303.2	40.9	1,993.3

(*Agelaius tricolor*), and white-tailed kite (*Elanus caeruleus*) that use a mix of upland and riparian habitats; and

- Species such as black-crowned night heron (*Nycticorax nycticorax*), blue grosbeak (*Guiraca caerulea*), downy woodpecker (*Picoides pubescens*), great blue heron (*Ardea herodias*), long-eared owl (*Asio otus*), and red-shouldered hawk (*Buteo lineatus*) that are associated with riparian and/or aquatic habitats.

Potentially Occurring Target Species: In addition to the 25 observed species, 4 additional birds are considered to be potentially occurring Target Species in the Plan Area and are associated with riparian habitats. The species are least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia brewsteri*).

e. Mammals

Eleven sensitive mammal species were observed in the Plan Area and designated as Target Species. Table 4-7 indicates the occurrence of and estimated amount of suitable habitat for each species in the Plan Area. Table 4-8 indicates the distribution of SKR. No potentially occurring mammal species has been identified at this time for inclusion on the Target Species list.

The presence of the federally and state-listed SKR, which is associated with grassland and sage scrub habitats in the Plan Area, imposes ESA restrictions on a significant portion of the Plan Area. In this case, 2,610.4 acres of the 5,993.5 acres in the Plan Area (44%) are occupied by SKR, including 1,269.3 acres in the Mitigation Bank area. Most (61%) of the occupied SKR habitat is non-native grassland, 32% is Riversidian sage scrub, 4% is disturbed habitat, and the remainder (3%) is other types. Based on a Geographic Information System (GIS) overlay of SKR and coastal California gnatcatcher habitat, approximately 740 acres of sage scrub in the Plan Area is occupied by both species.

In addition to its biological significance as part of the proposed Multiple Species Reserve, the occupied SKR habitat in the Mitigation Bank area also is a key factor in the implementation program for the Proposed Project. It is used in mitigation banking and other implementing agreements to differentiate Metropolitan's and the RCHCA's shares of the Mitigation Bank, with the SKR-occupied areas credited to the RCHCA and the areas unoccupied by SKR credited to Metropolitan.

3. Habitat Evaluation

Quantitative surveys were conducted in the Plan Area to collect data for a Habitat Quality Analysis (HQA). HQA is a methodology developed by Metropolitan in consultation with USFWS and CDFG to match habitat values at affected areas and mitigation sites based on five biological variables: the presence of listed and other sensitive species, species richness, species relative density, vegetation structure, and proportion of native plant species. The HQA methodology results in an acre-for-acre mitigation-to-effect ratio when habitat quality is equivalent at both the affected and mitigation sites. This methodology is described in detail in Volume 3 of the Lake Mathews MSHCP/NCCP. It was used as part of the planning process for the Lake Mathews Plan in three ways:

1. To document the type and quality of biological resources in the Plan Area,

2. To describe the interrelation and relative values of the Plan Area resources, and

3. To establish the basis for a habitat quality index for the Mitigation Bank lands that could be used to calculate mitigation credit in the Mitigation Bank.

Detailed results of the HQA are presented in Part 1 of Volume 2 of the Lake Mathews MSHCP/NCCP, together with a comparison of the current and historical distribution of habitat in the Plan Area and a comparison of the Plan Area HQA with HQA results for other sites in southern California.

Table 4-7
Occurrence of and Acres of Habitat for Observed Target Mammal Species in the Plan Area[1]

Target Mammal Species	Multiple Species Reserve		Operations Areas	Plan Area Projects	Total Plan Area
	Existing Reserve	Mitigation Bank			
American badger[2]					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat	2,418.2	2,035.1	492.0	84.9	5,035.2
Big or pocketed free-tail bat[2]					
Observed onsite	Yes	Yes	No	No	Yes
Estimated acres of suitable habitat	2,401.9	2,045.5	498.5	98.7	5,044.6
Cougar[2, 3]					
Observed onsite					Yes
Estimated acres of suitable habitat	see note 3	see note 3	see note 3	see note 3	see note 3
Little brown bat[2, 4]					
Observed onsite	see note 4	see note 4	see note 4	see note 4	Yes
Estimated acres of suitable habitat	27.2	50.4	1.5	16.4	95.5
Northwestern San Diego pocket mouse					
Observed onsite	Yes	Yes	No	Yes	Yes
Estimated acres of suitable habitat	727.7	921.5	303.2	40.9	1,993.3
Pallid bat[2]					
Observed onsite	Yes	Yes	No	Yes	Yes
Estimated acres of suitable habitat	2,375.5	1,995.1	497.0	82.5	4,950.3
San Diego black-tailed jackrabbit					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	2,426.3	2,380.0	504.5	105.3	5,416.1
San Diego desert woodrat					
Observed onsite	No	Yes	No	No	Yes
Estimated acres of suitable habitat	770.2	961.5	303.2	43.3	2,078.2
Stephens' kangaroo rat[5]					
Observed onsite	see note 5	see note 5	see note 5	see note 5	Yes
Estimated acres of occupied habitat	1,052.0	1,269.3	247.9	41.2	2,610.4
Western mastiff bat[2]					
Observed onsite	Yes	Yes	Yes	Yes	Yes
Estimated acres of suitable habitat	2,375.7	1,995.1	497.0	82.5	4,950.3
Western pipistrelle[2, 4]					
Observed onsite	see note 4	Yes	see note 4	see note 4	Yes
Estimated acres of suitable habitat	2,375.7	1,995.1	497.0	82.5	4,950.3

1 Occurrence based on detections in 1992 surveys, unless otherwise noted. Estimated acres of suitable habitat based on the habitat associations identified for each species in Table 4-2 and the acres of that habitat in each Plan Area component as indicated in Table 4-1. Lake not included in calculations.

2 Foraging and sheltering is known to occur in the Plan Area; breeding activity was not observed during the 1992 surveys.

3 This species was observed by CDFG staff outside of the time frame for, and separate from, the surveys conducted in 1992. The entire Plan Area is considered habitat for the cougar; however, no den sites have been observed to date.

4 The little brown bat and western pipistrelle are indistinguishable from one another in flight and in echolocation signals; neither was captured in mist netting but, based on echolocation detections, both are assumed to forage and roost in suitable habitat in the Plan Area.

5 SKR were observed in special studies as well as in 1992 surveys; habitat estimates are based on GIS calculations of occupied habitat per Plan Area component (Table 12 and Figure 13 of Volume 1 of the Lake Mathews MSHCP/NCCP).

Table 4-8
Occupied SKR Habitat in the Plan Area
(acres)

Habitat Type	Multiple Species Reserve		Operations Areas	Plan Area Projects	Plan Area Total
	Existing Reserve	Mitigation Bank			
Non-native grassland	796.1	679.3	104.0	18.7	1,598.1
Riversidian sage scrub	206.6	506.3	116.3	15.4	844.6
Mule fat scrub	2.6	2.8	0.0	0.2	5.6
Juniper woodland	9.2	29.9	0.0	0.9	40.0
Disturbed	36.4	41.6	26.6	5.9	110.5
Agriculture	0.0	8.1	0.4	0.0	8.5
Exotic trees	0.5	0.6	0.0	0.0	1.1
Ruderal	0.6	0.7	0.6	0.1	2.0
TOTAL	**1,052.0**	**1,269.3**	**247.9**	**41.2**	**2,610.4**

C. Land Use and Planning

Land use information for the Plan Area was obtained from the *Riverside County Comprehensive General Plan* (1990a) and *Riverside County Comprehensive General Plan: Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a).

The *Riverside County Comprehensive General Plan* classifies most (3,300 acres) of the Plan Area under the special category of "public official"; the remainder is classified for rural residential uses of varying density (1,948 acres) and open space (746 acres). Lands within a 1-mile radius of the Plan Area are classified for residential and related uses (nearly 12,000 acres) and open space (approximately 3,000 acres). Existing Plan Area designations include official (land designated or planned for public purposes) with zero dwelling units per acre (DU/AC) allowed, rural with 1 DU/AC with a Specific Plan required, rural with one dwelling unit per minimum 2.5-acre lot, and rural hillside with one dwelling unit per minimum 5-acre lot. Existing land uses in the Plan Area are limited to the reservoir and ancillary facilities, water-related facilities on lands leased from Metropolitan, county roadways and internal access roads, agriculture, and conservation.

Generally, residential growth is occurring fastest to the northwest of the Plan Area, along the La Sierra Avenue corridor. Recently built subdivisions are now present within a mile northwest of the Plan Area. Residential growth to the south is also occurring, particularly along Lake Mathews Road south of Lake Mathews. Land use within several miles to the northeast and the east is primarily agricultural.

Agricultural lands in the Plan Area include approximately 250 acres leased to a local farmer for dryland farming. Most of the agricultural lands are marginal (suitable only for dryland, non-irrigated farming purposes), and all have been designated by the *Lake Mathews Community Plan (LMCP) Land Use Policies*

(1992a) for rural residential use. None of this farmland has been specifically designated under the Williamson Act.

D. Air Quality

The following air quality information is derived and summarized from *Environmental Impact Report No. 387* for *County of Riverside Comprehensive General Plan Amendment No. 247* (September 1992).

The project site lies within the South Coast Air Basin (SCAB), which encompasses about 8,630 square miles in southern California. The climate of the basin is classified as Mediterranean, characterized by a pattern of cool, wet winters and warm, dry summers. Typical dry summers are caused by a semipermanent high-pressure cell located over the eastern Pacific Ocean. This system generally blocks storms from moving into the basin.

The Plan Area is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which establishes and enforces regulations for stationary sources as well as maintaining monitoring stations throughout the SCAB. The monitoring stations nearest the Plan Area with published data available are the Perris Monitoring Station, approximately 7 miles to the southeast of the Plan Area, and the Rubidoux Monitoring Station, approximately 12 miles to the north. Levels of ozone (O_3), PM_{10}, and CO periodically exceed state or federal standards in the region.

The Plan Area lies within a region that has been designated as a nonattainment area for the federal and state O_3, PM_{10}, and nitrogen dioxide (NO_2) standards. Emission from wildfires contribute to the high annual pollution levels in the SCAB, but the extent is not known since their contribution is included in background concentrations rather than identified as a single source of emissions.

The Existing Reserve has been characterized by the CDF as an area which experiences fires of high rates of speed and extreme frequency. Wildfires release air pollutants, particularly organic compounds and PM_{10}. They frequently occur during periods when other air pollutants, particularly ozone, are also high, therefore exacerbating their adverse effect on human health.

E. Water

The evaluation of water resources is based on information from the following documents: *Draft Environmental Impact Report for the Central Pool Augmentation and Water Quality Project* (Metropolitan 1994), *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 387* (County of Riverside 1992c), *Initial Study for Western Municipal Water District's Operations Center Improvements* (Western Municipal Water District 1995), and *Drainage Water Quality Management Plan for the Lake Mathews Watershed* (John M. Tettemer & Associates, Ltd. 1992).

The Plan Area is located in the Lake Mathews watershed. Cajalco Creek is an east-west-trending creek that has its headwaters in the relatively flat-lying areas approximately 5 miles upstream of Lake Mathews. The creek is intermittent and

flows only during storm events or when upstream flow is released from agricultural use (e.g., irrigation water). The Lake Mathews watershed is composed largely of open space grasslands with relatively small areas of citrus and avocado orchards and other agricultural uses.

The quality of storm water that flows into Lake Mathews was measured at two stations during two storms in 1991 by Alex Horne & Associates. Mass loading of nutrients was reported to be low and would not produce noticeable eutrophication in Lake Mathews. The nutrients are suspected to come from rural residential areas, open space, and equestrian activities. Mass loadings of trace metals were not considered sufficient to cause water quality problems in the reservoir.

Flooding is not considered to be a hazard in the Plan Area. As documented in *the Riverside County Comprehensive General Plan* (1990a), a portion of Cajalco Creek upstream of Lake Mathews is in the 100-year floodplain. The spillway of the Lake Mathews dam defines the upper elevation of flooding at 1,390 feet mean sea level (msl) for areas surrounding the lake. The Proposed Project does not address any areas below the 1,390-foot contour.

The Cajalco Creek floodplain is composed of varying thicknesses of alluvium overlying bedrock. The alluvium thickness in the Plan Area varies from very thin (a few feet) to more than 100 feet. A shallow water table is present in the alluvium and may be perched on the underlying bedrock.

Three groundwater monitoring wells were installed on the Cajalco Creek Dam and Detention Basin site in December 1991 as part of a geotechnical study. The depth to groundwater was measured in each of these wells. Depth to groundwater at the well sites ranged from 5 to 16 feet.

The vertical and horizontal extent of the shallow groundwater is unknown. Based on knowledge of site geologic conditions, the shallow groundwater is probably on the underlying crystalline bedrock and thus probably extends to the bedrock interface.

Seiches (large waves created by seismic ground shaking in an inland body of water) are not considered to be a potential flood hazard because no known fault zones exist within the project area. The Plan Area is located sufficiently inland to be protected from potential effects from a tsunami (a large sea wave caused by underwater earthquakes or other disturbances).

F. Geological Problems

Soils found in the Plan Area are described in *Soil Survey of Western Riverside Area* (Knecht 1971). Seismic information for the Plan Area is documented in *Geotechnical Assessment for Environmental Impact Report, Lake Mathews Watershed Project (Pacific Soils Engineering, Inc. 1991), Preliminary Geotechnical Investigation for the Proposed Detention Basin, El Sobrante Road and Cajalco Road* (Law/Crandall, Inc. 1992), *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 387* (County of Riverside 1992c), *Initial Study for Western Municipal Water District's Operations*

Center Improvements (Western Municipal Water District 1995), and *Soil Survey of Western Riverside Area* (Knecht 1971).

Most of the Plan Area contains the Monserate-Arlington-Exeter association, which ranges from well-drained, moderately deep sandy loams to loamy soils found on old alluvial terraces and washes. These soils are shallow to deep and often have a calcareous hardpan. The eastern portion of the Plan Area contains the Cajalco-Temescal-Las Posas association, which ranges from moderately deep and shallow loam to clay loam developed on gabbro. This association also has a number of clay soils that support a variety of endemic plant life, including several sensitive species.

Nine soil series are found in the Lake Mathews area: Bosanko clay, Porterville cobbly clay, Cienega rocky sandy loam, Gorgonio loamy sand, Hanford coarse sandy loam, Las Posas stony loam, Monserate sandy loam, Temescal rocky loam, and terrace escarpments. Expansive soils are limited to areas included in the Bosanko clay mapping unit.

Within the Plan Area, no known fault zones exist. The Plan Area is also not located within an Alquist-Priolo Special Study Zone, as delineated in the *Riverside County Comprehensive General Plan* (1990a). There are several active faults within the region that may have some influence on the Plan Area. Faults range in distance and direction from the site as follows: Whittier (24 miles west/northwest), Elsinore (10 miles west/northwest), San Jacinto (1 mile east), San Andreas (22 miles east), and Newport-Inglewood (38 miles west/northwest). The Plan Area is not located within a county fault hazard zone (Riverside County 1990a). The site is underlain by granitic bedrock (hard igneous rock) that is not likely to subside and has no liquefaction potential. There are no known active volcanic areas near Lake Mathews.

There are no known unique geologic features or resources in the Plan Area.

G. Transportation/Circulation

Three existing public roadways border and/or cross the property: La Sierra Avenue to the west, Cajalco Road to the south, and El Sobrante Road to the north and east (see Figure 3-2). Each of these roads is characterized by free-flowing traffic; these roads operate at a Level of Service (LOS) "A." Other highways and roads in and around the Combined Reserve are also characterized by free-flowing traffic.

The present alignment of Cajalco Road is winding. The *Riverside County Comprehensive General Plan* indicates that a new, straighter alignment for Cajalco Road is planned through the southern portion of the Plan Area.

The Plan of Bicycle Routes Map of the *Riverside County Comprehensive General Plan* indicates that the routes of La Sierra Avenue and Cajalco Road east of La Sierra are planned to be Class I: Bike path (bikes only) and that the routes of El Sobrante Road, McAllister Street (north from El Sobrante), and Cajalco Road east of La Sierra are planned to be Class II: Bike lane (delineated lane within the road right-of-way).

H. Population and Housing

The assessment of population and housing is based on information for the Plan Area documented in the *Riverside County Comprehensive General Plan: Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a) and *Riverside County Comprehensive General Plan, Housing Element* (1991).

Western Riverside County encompasses roughly one-third of the county's total acreage and more than 75% of its population, housing, and employment. Its population currently is estimated at 1 million people and is expected to exceed 1.4 million by the year 2010.

All lands within the Plan Area are currently owned by Metropolitan and are used for operation and maintenance of the reservoir or are open space. There is no existing housing within the Plan Area.

I. Recreation

The only recreation permitted within the Plan Area consists of limited nature tours for environmental groups and classes. The *Riverside County Comprehensive Plan, Lake Mathews Community Plan* (1988) designates a number of regional and community trails within the Plan Area. However, these lands are managed by Metropolitan for water quality and as an ecological reserve. Unpermitted public access on these lands is considered trespassing.

J. Historical and Cultural Resources

This assessment of cultural resources for the Plan Area is based upon two cultural resources surveys undertaken for Metropolitan at Lake Mathews by The Chambers Group (Chambers) (1991 and 1992). Chambers surveyed Metropolitan's properties within the Plan Area that had not been previously surveyed and identified 99 prehistoric and historical sites and 5 isolates.

Subsequently, these data were supplemented by an archaeological record search at the Eastern Information Center, University of California, Riverside, in support of the *Lake Mathews Fire Management Plan, Riverside County, California, Volumes I and II* (CDF 1994). This search yielded map locations and site records for seven additional archaeological sites recorded by others, resulting in a total of 106 known sites within the Plan Area. None of the cultural resources sites have been formally evaluated for significance, but at least some of these resources probably would qualify as "important" under the CEQA Guidelines.

The majority of the prehistoric sites are bedrock milling stations, consisting of one or more slicks, probably the most common site type in western Riverside County. Four sites are milling stations combined with other features or artifacts. Other site types include scatters of flaked and/or ground stone artifacts, quarry sites, one rock circle, and one pictograph. Further investigation would be necessary to assess their significance prior to any ground-disturbing activities.

Ten of the 22 historical sites represent activities associated with the Holmes Colony Venture. Beginning in 1917, Lawrence Holmes planted hundreds of

acres of carob trees in the Cajalco Basin. He then sold tracts of land to prospective carob producers and formed a company to process and market the carob (Chambers 1992:11). Many of these sites include foundations and other structural remains. Four of the historical sites appear to be associated with the construction of the Lake Mathews Dam and the Val Verde Tunnel. The eight additional historical sites include three non-diagnostic trash scatters, one building foundation, one probable early twentieth century homestead, one earthen bridge, one cobble lined road segment, and one rock pile.

The assessment of paleontological resources is based on a paleontological resources records search conducted by the San Bernardino County Museum of Natural History Museum for the Lake Mathews MSHCP/NCCP Plan Area. The search was conducted through the Regional Paleontological Locality Inventory (RPLI) in the Earth Sciences Section at the San Bernardino County Museum.

Review of the RPLI indicates that three paleontological resource localities are present in the Multiple Species Reserve. The Lake Mathews Formation, located on the south side of the reservoir and at the east end of the reservoir, consists of sediments representing a unique habitat of Late Miocene age. This is the only Clarendonian Land Mammal Age locality south of the San Andreas Fault in San Bernardino, Riverside, or San Diego Counties. This formation contains fossil camels and the only fossil Miocene oreodont (*Ustatochoerus* sp.) from these counties. The non-renewable fossils and Miocene habitat data are important and unique resources.

K. Energy and Mineral Resources

The Mineral Resources Map of the *Riverside County Comprehensive General Plan* (1992a) indicates that it is likely that substantial deposits of tin occur within the Plan Area. There are no plans or policies within the county's general plan for this area to become a tin-mining region in the foreseeable future. The Lake Mathews MSHCP/NCCP Plan Area is not located in either a state-classified MRZ-2 zone or a state-designated Regionally or Statewide Significant Mineral Resource Area, which would limit the land to mineral production or related/compatible uses.

L. Aesthetics

The three roads circumscribing Lake Mathews (La Sierra Avenue, El Sobrante Road, and Cajalco Road) are listed as "eligible county scenic highways" in the *Riverside County Comprehensive General Plan.* Each affords scenic views of the lake and the surrounding grasslands, riparian corridors, canyons, and mountains. The visual nature of the lake's surroundings is generally semirural with occasional views of residential areas.

M. Hazards

The assessment of hazards is based on information for the Plan Area as documented in the *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 387* (County of Riverside 1992c), *Lake Mathews Fire*

Management Plan, Riverside County (CDF 1994), and the Lake Mathews MSHCP/NCCP. The Plan Area is not located in an area anticipated for use as an evacuation or emergency route for the general public. There are no existing conditions in the Plan Area which pose any health hazard or potential health hazard to the general public.

The area in the vicinity of the Plan Area has experienced some of the greatest annual rates of population growth in the state. This increase in urbanization has not been accompanied by a decrease in the risk of wildfires. To reduce the potential for wildfires in the proposed Multiple Species Reserve, the CDF has already developed a Fire Management Plan. The Management Committee, in cooperation with the CDF, will develop a burn plan for reducing fire hazards, including scheduling controlled burns.

N. Noise

The environment of the Plan Area is typical of a semirural area with few high-decibel noise sources. Land uses determined to be "sensitive" to noise by the state of California include schools, hospitals, rest homes, and long-term care and mental care facilities. There are no such land uses in the vicinity of the Plan Area. Noise receptors in the vicinity of the Plan Area are limited to scattered rural residences.

O. Public Services and Utilities

Adequate public services and utilities are already available within the Plan Area. The Plan Area is currently patrolled by Metropolitan and the local police. Emergency response and fire protection services are provided by the California Department of Forestry and Fire Protection. Police protective services are provided by the Riverside County Sheriff's Department and Metropolitan security patrols. California Department of Fish and Game wardens respond to incidents related to violations of the California Fish and Game Code.

5. Environmental Consequences

A. Methodology and Approach

Environmental consequences of the Proposed Project and No Action alternatives are presented in this section by issue area, in the same order as presented in Section 4, Affected Environment. These issue areas correspond to those of the CEQA Environmental Checklist prepared for this Proposed Project, which is contained in Appendix A of this document.

The project description in Section 3 of this document covers effects associated with multiple projects and activities. This analysis addresses environmental effects and mitigation of the Proposed Project associated with Metropolitan's actions as lead agency under CEQA and USFWS' actions as lead agency under NEPA. Environmental effects associated with RCHCA's actions related to the Lake Mathews MSHCP/NCCP (e.g., use of SKR mitigation credits in the Mitigation Bank and creation of the proposed Lake Mathews-Estelle Mountain SKR Core Reserve under the RCHCA's Habitat Conservation Plan) would be addressed by RCHCA in separate environmental documentation pursuant to CEQA and NEPA.

For purposes of this analysis, the sources of effects associated with the lead agencies' actions are (1) ongoing projects and activities in Operations, (2) future projects and activities in Operations, (3) creation and management of the Multiple Species Reserve, (4) Plan Area Projects, and (5) Outside Projects. With the exception of Outside Projects, incidental take of Target Species and habitat effects associated with these sources are fully mitigated under the Lake Mathews MSHCP/NCCP. Analysis of environmental effects for each of these five sources is carried out according to the methodology described below.

In addition, management for SKR on the lands in public ownership within the Combined Reserve outside of the Plan Area is anticipated to include activities such as installation of fencing, patrols, and monitoring of SKR (focused surveys to detect sign of SKR—e.g., scat, burrows) and vegetation related to SKR habitat. These activities would not involve any significant environmental effects in the issue areas described below for the same reasons given for management of the Multiple Species Reserve. Management plans developed by the Management Committee in the future would be evaluated to determine if additional CEQA and NEPA documentation would be necessary for management activities on the lands RCHCA owns or otherwise controls within the Combined Reserve.

1. Ongoing Projects and Activities in Operations

Because incidental take of Target Species and habitat effects associated with ongoing projects and activities in Operations are fully mitigated under the Lake Mathews MSHCP/NCCP, biological resources effects and the proposed mitigation are evaluated within this document. Ongoing projects and activities in Operations do not otherwise represent a change in existing conditions. This analysis of effects is limited only to habitat effects and effects to the Target Species.

2. Future Projects and Activities in Operations

Complete project descriptions are not available at this time for future projects and activities in Operations. The projects and activities would include, but not be limited to expansion of onsite warehouse facilities, including equipment and parts storage facilities, and construction of new office and meeting spaces. However, a worst-case analysis was conducted in the Lake Mathews MSHCP/NCCP to fully mitigate for incidental take of Target Species and habitat effects related to any and all future projects and activities. Based on this worst-case analysis, effects and mitigation to biological resources and land use are evaluated in this document for future projects and activities in Operations. Environmental effects related to all other issue areas will be evaluated in additional environmental documentation for future projects and activities in Operations as appropriate.

3. Creation and Management of the Multiple Species Reserve

Environmental effects related to creation and management of the Multiple Species Reserve are evaluated in all issue areas. Creation and management of the Multiple Species Reserve includes biological management, property management, maintenance of roads and fences, construction of the Reserve Manager's office and residence, and control of public access and use.

4. Plan Area Projects

Five Plan Area Projects are included in the Lake Mathews MSHCP/NCCP. These are (1) the Cajalco Creek Dam and Detention Basin Project, (2) the Lake Mathews Sediment Basins Project, (3) portions of the Central Pool Augmentation Project, (4) improvements to Western Municipal Water District facilities, and (5) the Lake Mathews Bypass Project. A worst-case analysis was conducted in the Lake Mathews MSHCP/NCCP to fully mitigate for incidental take of Target Species and habitat effects related to the Plan Area Projects. Assumed habitat losses associated with the Plan Area Projects are quantified in Table 4-1. Based on this worst-case analysis, effects and mitigation for biological resources for the Plan Area Projects are evaluated in this document. All other environmental effects have been or will be evaluated in additional environmental documentation:

a. Certified EIR—Cajalco Creek Dam and Detention Basin Project and Lake Mathews Sediment Basins Project

A certified EIR has been completed for the Cajalco Creek Dam and Detention Basin Project and the Lake Mathews Sediment Basins Project (*Final Environmental Impact Report and Responses to Comment for Drainage Water Quality Management Plan, Lake Mathews Watershed* [Riverside County 1992c]).

The Drainage Water Quality Management Plan (DWQMP) for the Lake Mathews watershed is a comprehensive plan designed to protect the quality of water in Lake Mathews by managing the quality of drainage runoff water in the Lake Mathews watershed as the watershed lands undergo development in the future.

Under the DWQMP, drainage water quality will be protected and managed by the implementation throughout the watershed of "Best Management Practices" (BMPs). BMPs include short-term erosion control and sediment transport reduction measures on construction sites, long-term nonstructural BMPs throughout the watershed such as community education and street sweeping, and long-term structural BMPs for treatment of drainage water. These structural BMPs include four water quality wetlands, one first-flush diversion structure and water quality pond, one sediment basin, one dam and detention basin, and five sediment/wetland basins.

All potential effects of the DWQMP project were reduced to a level of insignificance after implementation of the mitigation measures recommended in the EIR. Worst-case estimates of affected areas were 91.5 acres for the Cajalco Creek Dam and Detention Basin Project and 17.9 acres for the Lake Mathews Sediment Basins Project. Proposed modifications to drainage areas were anticipated to result in some losses of various types of riparian and wetlands habitats of value to wildlife. These effects were reduced to a less than significant level by onsite creation of new wetlands areas and riparian habitat associated with construction of some of the long-term structural BMPs. Potential effects on sensitive species in the Plan Area including the Stephens' kangaroo rat, California gnatcatcher, and smooth tarplant would be reduced to a less than significant level by habitat compensation provided by the Lake Mathews MSHCP/NCCP. Effects on wetland habitats associated with the Cajalco Creek Dam and Detention Basin Project are mitigated under a wetland plan developed in coordination with the U.S. Army Corps of Engineers and the USFWS associated with a Section 404 permit. It is anticipated that construction of the sedimentation basins will result in a net increase in wetland habitat.

Some direct effects on existing archaeological sites were mitigated on a site-specific basis and included site relocation activities, measurement and recording of significant site features, and collection of artifacts. In addition, a qualified archaeologist is to be present at pregrading conferences for project facilities. In the event that archaeological resources are uncovered during grading activities, the archaeologist would be immediately contacted to evaluate the significance of the resources and, if necessary, develop and proceed with additional mitigation measures prior to further grading.

A number of temporary air quality effects were identified for the DWQMP project, including generation of fugitive dust from construction activities and exhaust emissions from construction equipment and construction-related automobile traffic. Mitigation measures to reduce these effects to a less than significant level included specific limitations on the numbers and types of construction equipment to be utilized during construction of each of the specific structural BMPs; regular watering and application of soil binders to disturbed areas and construction haul roads to reduce fugitive dust emissions; covering all trucks hauling dirt, sand, or other loose building materials; and providing rideshare and public transit incentives to the construction workforce.

b. Draft EIR—Central Pool Augmentation Project

A draft EIR has been prepared for the Central Pool Augmentation Project (*Draft Environmental Impact Report Central Pool Augmentation and Water Quality Project* [Metropolitan 1994]).

The Central Pool Augmentation (CPA) Project is a proposed system of additional raw water conveyance, water treatment, and treated water delivery facilities to augment Metropolitan's existing facilities that provide drinking water to Metropolitan's Central Pool service area, which serves the major population centers of Los Angeles and Orange Counties, southern Ventura County, and southwestern San Bernardino County. The CPA project consists of a new outlet structure from Lake Mathews to feed raw water to a new regional drinking water plant in Eagle Valley with a capacity for treating up to 400 cubic feet of water per second. In addition, a 12- to 13-foot-diameter, 18-mile-long pipeline and tunnel will be constructed from the new treatment plant to the Orange County section of the Central Pool.

Most of the effects resulting from the CPA project in the Plan Area will be temporary effects associated with construction of the new facilities and will occur within Operations. A worst-case estimate of additional permanently disturbed areas within the Plan Area is 5.7 acres (included in the acreage for Plan Area Projects). After completion of construction and during operations, no significant unmitigable environmental effects will occur from the project.

Potential erosion and water quality effects associated with construction will be avoided through standard design and construction measures. Temporary air quality effects resulting from construction activities would be minimized through the application of dust control measures (watering and application of soil binders) and minimization of exhaust emissions from construction equipment by keeping engines properly tuned and using low-sulfur fuels. Rideshare programs and public transit incentives would be provided for the construction workforce in order to reduce trip generation rates during the construction phase.

The CPA project would compensate for the loss of Stephens' kangaroo rat habitat, California gnatcatcher habitat, and other sensitive species known to occur in coastal sage scrub using available mitigation credits in the mitigation bank provided in the Lake Mathews MSHCP/NCCP. Habitat values used in determining mitigation bank credits would be calculated using the methodology set forth in the Lake Mathews MSHCP/NCCP. Prior to construction and in conjunction with final design of the CPA project, Metropolitan would implement the studies necessary for calculating and exchanging habitat values to reduce the effects to a less than significant level. Preservation of coastal sage scrub habitat within the Multiple Species Reserve would provide in-kind compensation for the loss of similar habitat due to construction of CPA facilities in the Plan Area.

Compensation for effects on the Stephens' kangaroo rat within the Plan Area would be mitigated through the Lake Mathews Plan. Effects on habitat of this species outside the Plan Area would be mitigated by the withdrawal of established credit under the existing RCHCA 10(a) permit or through the SKR mitigation bank established under the Lake Mathews Plan.

c. Negative Declaration—Western Municipal Water District Improvements

A negative declaration has been prepared for Western Municipal Water District's improvements proposed within the existing 14-acre lease boundary (*Notice of Proposed Negative Declaration and Initial Study for Western Municipal Water*

District's Operations Center Improvements [Western Municipal Water District 1995]).

Western Municipal Water District's Operations Center provides a central location for operation, maintenance, and storage functions. Proposed improvements include site grading and paving, a package wastewater treatment plant, utility improvements, a relocated fueling facility, a natural gas refueling facility, a desilting basin, and access improvements on El Sobrante Road and the site perimeter. The proposed improvements are intended to (1) accommodate crews and equipment necessary to meet the increasing need for service and maintenance of Western Municipal Water District facilities, (2) replace an outmoded and undersized subsurface septic system which will be abandoned in place, (3) comply with current environmental regulations for underground fuel storage tanks and control of storm water discharges, and (4) widen El Sobrante Road immediately adjacent to the facility as a safety measure. The project as proposed involves limited environmental effects due to previous disturbances on the site. Measures to reduce environmental effects have been incorporated into the project, including measures to address potential effects related to increased erosion potential, air pollutant emissions, noise, and biological resources.

Implementation of the proposed improvements will require review and approval by several state, local, and federal regulatory agencies. Establishment of the proposed package wastewater treatment plant will require issuance of waste discharge requirements by the Regional Water Quality Control Board. An application has been initiated with the Santa Ana Region office.

Because portions of the project site are known to be occupied by the Stephens' kangaroo rat, compliance with both the state and federal ESAs will be required. Because the project site is located within one of the reserve study areas identified in the RCHCA Habitat Conservation Plan and associated permit, SKR effects under the existing permit will require specific authorization by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Discussions are ongoing with both of these agencies for this project. It is intended that mitigation for effects on Stephens' kangaroo rat would be through RCHCA's existing Section 10(a) permit.

Installation of new fueling facilities will require permits from the Riverside County Department of Environmental Health. Consultation has been initiated with the Riverside County Department of Environmental Health.

Installation of the proposed emergency backup electrical generator will be subject to permitting by the South Coast Air Quality Management District.

In addition to the improvements described above, Western Municipal Water District intends to utilize additional lands adjacent to its existing lease boundary area for future expansion of its Operations Center. This future expansion will be performed in coordination with Metropolitan. A worst-case estimate of the acreage to be disturbed in the future expansion is 23.1 acres. Environmental documentation for the future improvements will be prepared as needed.

d. Western Municipal Water District Tank Site Construction

This project will entail construction of a tank site to accommodate two 8-million-gallon welded steel tanks, plus 800 linear feet of 54-inch waterline from El Sobrante Road to the tank site and 250 linear feet of access road. The access road will connect the tank site to an existing access road.

Tank site construction will consist of 43,000 cubic yards of excavation and 14,000 cubic yards of embankment. Excess excavated material will be removed from the site for disposal. The permanent tank site will be approximately 3.5 acres. An additional 1.7 to 1.8 acres of construction easements will be needed to facilitate material and equipment during construction.

Appropriate environmental documentation would be prepared for this project in the future by Western Municipal Water District.

e. Lake Mathews Bypass Project

No environmental documentation has been prepared for the Lake Mathews Bypass Project at this time. As currently conceptualized, the project would generally consist of a pipeline and tunnel conduit approximately 10 feet in diameter beginning near the eastern terminus of the Colorado River Aqueduct at the eastern end of Lake Mathews and terminating near the Upper/Lower Feeder Control Structure at the western end of Lake Mathews. The eastern tunnel portal would be located near the western limits of Western Municipal Water District's facility, and the western portal would be located approximately 14,000 feet to the northwest near the eastern end of the Lake Mathews dike in Operations. The pipeline would be constructed in Operations. It would begin at the western portal and end approximately 10,000 feet to the west at the Upper/Lower Feeder Control Structure.

A worst-case estimate of the acreage to be permanently disturbed by the tunnel portals is 7.5 acres. One of the portals would be a working portal from which tunnel muck would be removed and hauled away to an offsite disposal location. Pipeline trenching would require a working right of way approximately 250 feet wide for the actual trench and contractor working area. Excess fill material removed from the trench would also be hauled offsite for disposal. Additional truck traffic associated with construction activities would include hauling in the pipe and bedding material (sand or pea gravel) for laying the pipe in the trench.

The Lake Mathews Bypass Project would potentially disturb a number of different types of habitat, including habitats supporting sensitive species such as the Stephens' kangaroo rat and the California gnatcatcher. The majority of this disturbance will be the temporary loss of vegetation during pipeline construction in Operations. The Lake Mathews Plan mitigates for these habitats on a 1:1 basis.

Additional environmental documentation pursuant to CEQA would be required for the Lake Mathews Bypass Project.

5. Outside Projects and Projects in the Multiple Species Reserve

Because the Outside Projects that would draw mitigation credits from the Mitigation Bank are unknown at this time, their environmental effects would be evaluated on a case-by-case basis in subsequent environmental documentation as appropriate. The maximum level of habitat loss associated with Outside Projects under the Lake Mathews Plan is 657.3 acres as quantified in Table 5-1.

Table 5-1
Habitat Components
Metropolitan and RCHCA Mitigation Bank Lands
(acres)

Habitat Type[1, 2, 3]	Metropolitan				RCHCA
	Designated for Operations Areas	Designated for Plan Area Projects	Available for Other Projects	Total	
Non-native grassland	193.8	41.6	158.9	394.3	679.3
Riversidian sage scrub	303.2	40.9	71.1	415.2	506.3
Mule fat scrub	1.0	7.3	18.8	27.1	2.8
Southern willow scrub	0.5	8.9	11.1	20.5	0.0
Juniper woodland	0.0	2.4	7.7	10.1	29.9
Sycamore riparian woodland	0.0	0.2	1.7	1.9	0.0
Agriculture	7.0	11.5	297.8	316.3	8.1
Disturbed	0.0	0.0	84.6	84.6	41.6
Exotic trees	0.0	0.0	1.9	1.9	0.6
Natural barren	0.0	0.0	0.4	0.4	0.0
Ruderal	0.0	0.0	3.1	3.1	0.7
Saltbush stand	0.0	0.0	0.2	0.2	0.0
TOTAL	**505.5**	**112.8**	**657.3**	**1,275.6**	**1,269.3**

Notes

1 Effects on wetland habitats for the Cajalco Creek Dam and Detention Basin Project (freshwater marsh, mule fat scrub, southern willow scrub, sycamore riparian woodland, natural barren, ruderal, and saltbush stand) will be mitigated separately under a separate wetland mitigation plan prepared in association with a certified EIR for that project.

2 Mitigation is not provided for disturbed lands or exotic trees.

3 Effects on occupied SKR habitat for the Cajalco Creek Dam and Detention Basin Project will be mitigated under a separate Section 7 biological opinion and 2081 authorization associated with a certified EIR for the project.

Source: Table 16 of Volume 1 of the Lake Mathews MSHCP/NCCP.

B. Biological Resources

1. Proposed Project

Environmental effects and mitigation related to projects and activities in Operations, Plan Area Projects, Outside Projects, creation and management of the Multiple Species Reserve, and projects and activities in the Multiple Species Reserve are evaluated in this section. In addition, consistent with ESA requirements and NCCP guidelines, potential effects on Target Species and their habitats likely to occur under the Lake Mathews Plan have been quantified and evaluated with respect to the proposed mitigation. The environmental effects discussion in this section addresses all of the topics related to biological resources in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of biological resources in this section is based on directed biological surveys undertaken during preparation of the Lake Mathews MSHCP/NCCP and studies which predate the directed surveys (Bramlet 1993; CDF 1994; Chambers Group 1992 a and b; Gray and Bramlet 1992; Impact Sciences, Inc. 1992; Jones and Stokes 1981, 1982, and 1983; LaPre and Krantz 1985; and Woodward-Clyde Consultants 1992). These sources provide considerable data related to biological resources on Metropolitan's properties at Lake Mathews.

a. Operations and Plan Area Projects

All significant habitat effects, including effects on Target Species or their habitats, from future projects and activities in Operations and Plan Area Projects are being mitigated in advance of their actual occurrence by the precommitment of mitigation credits for habitat in those areas (Table 5-1). This advance commitment of mitigation lands covers all projects and activities that would occur in Operations and Plan Area Projects; no additional commitment of mitigation lands or any other additional mitigation for the Target Species would be required for any individual project or activity in these areas (with the exception of the separate wetlands mitigation being developed for the Cajalco Creek Dam and Detention Basin Project in conjunction with the U.S. Army Corps of Engineers). For purposes of this analysis, a worst-case assumption was made that all habitat in the area designated for Operations and Plan Area Projects would be adversely affected even though only some would be actually modified or removed. In addition, it is assumed that all the other Target Species occurring in Operations and Plan Area Projects would be taken (if and when listed) under the Lake Mathews Plan.

Projects and activities in Operations and Plan Area Projects would comply with the following effect minimization measures:

1. If a listed plant species (or state candidate for listing or species with a proposed federal listing rule) is present, CDFG would be notified at least 10 days prior to any effect occurring and would be given access to the site to salvage the plants and/or collect seeds;

2. To the maximum extent practicable, direct effects on birds which are Target Species and their occupied habitat would be avoided during their breeding seasons;

3. To the maximum extent practicable and to the extent compatible with necessary maintenance of the reservoir, the reservoir's ancillary facilities, and facilities in Plan Area Projects, use of pesticides and rodenticides in a manner that would harm SKR or any other listed species would be avoided and minimized; and

4. Where effects would occur immediately adjacent to the Multiple Species Reserve, boundaries between the Multiple Species Reserve and affected areas would be flagged and construction would be monitored to minimize the possibility that construction activities could extend into the Multiple Species Reserve.

The mitigation and effect minimization provisions in the Lake Mathews Plan would reduce the effects from projects and activities in Operations and Plan Area Projects to a less than significant level. The primary mitigation provided by the Lake Mathews Plan for effects on Target Species or their habitats is the permanent preservation of habitat in the Mitigation Bank and the management of such habitat in the Multiple Species Reserve.

b. Creation and Management of the Multiple Species Reserve

1) Biological Management

For purposes of this analysis, "biological management" means projects and activities undertaken for the purpose of monitoring, studying, maintaining, restoring, or enhancing the biological values of the Multiple Species Reserve. Such projects and activities are subject to approval by the Management Committee and typically would be implemented by the Reserve Manager and biologists authorized to conduct research or projects in the Plan Area.

In general, biological management is expected to be largely non-intrusive and beneficial for Target Species and other species in the Plan Area. Habitat management, restoration, and enhancement also may lead to the occurrence of sensitive species not currently present in the Plan Area, including but not limited to those identified in Chapter 3 of Volume 1 of the Lake Mathews MSHCP/NCCP as Group 3 species. Some active manipulation of habitat would likely occur as part of reserve management, and some take of listed species potentially might result from such habitat manipulation. Some studies and research projects also would likely entail habitat modification, collection of sensitive species, and potential take of listed species. In addition, the restoration or enhancement of habitat used by one set of Target Species may result in the reduction or modification of habitat used by other Target Species.

Although some adverse effects on individual Target Species and the habitats in the Multiple Species Reserve would likely result from biological management, three factors limit the possible magnitude of such effects:

1. The persons conducting activities that involve listed species must be permitted under federal and state laws as persons authorized to survey for and/or handle listed species,

2. Take in connection with studies or research performed by parties other than Metropolitan or RCHCA in the Multiple Species Reserve would be subject to advance approval by the Management Committee, and

3. The reserve management process established under the Lake Mathews MSHCP/NCCP provides for the review and coordination of all activities in the Multiple Species Reserve.

Although the total amount of acreage affected by biological management is not known at this time, the net effect of biological management on listed and other Target Species is expected to be beneficial. Mitigation for adverse effects is provided by the monitoring measures that are part of the reserve management process.

2) Property Management

Property management activities in the Multiple Species Reserve include maintenance of roads and fences, installation of additional fencing, construction of the Reserve Manager's office and residence, implementation of the Fire Management Plan and a prescribed burn plan, and control of public access and uses of the property.

Maintenance of roads and fencing and installation of new fencing may have limited, temporary effects on adjacent vegetation, Target Species which utilize that vegetation as forage and cover, and Target Species that utilize roads and fences (e.g., raptors that use fence posts as hunting perches). Existing roads and fences currently comprise approximately 265 acres of Metropolitan's Lake Mathews properties. This acreage is primarily disturbed land but also includes approximately 80 acres of vegetation within 20 feet of the roads and fences. No significant adverse effects on Target Species or their habitats is expected to occur as a result of maintenance of roads and fencing and installation of new fencing because the effects would be spread out over time, would occur only in limited areas where maintenance is required, and would be subject to the avoidance and minimization measures that are part of the conservation and mitigation program in the Lake Mathews MSHCP/NCCP.

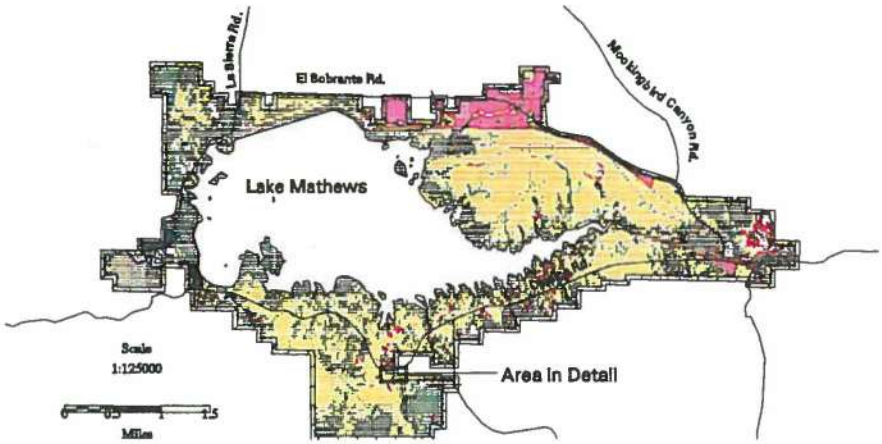
Construction of the Reserve Manager's office and residence would disturb 1.2 acres of non-native grassland and 0.4 acre of disturbed habitat for Option A and 1.3 acres of Riversidian sage scrub and 0.3 acre of disturbed habitat for Option B (Figures 5-1 and 5-2). The Option B area is occupied SKR habitat. No other listed species occur in the affected areas of either option. Adverse effects for either option would be mitigated to a less than significant level by subtracting the acreage affected from the Mitigation Bank on a 1:1 basis and mitigating any occupied SKR habitat on a 1:1 basis using the proposed SKR mitigation bank established under the Lake Mathews Plan.

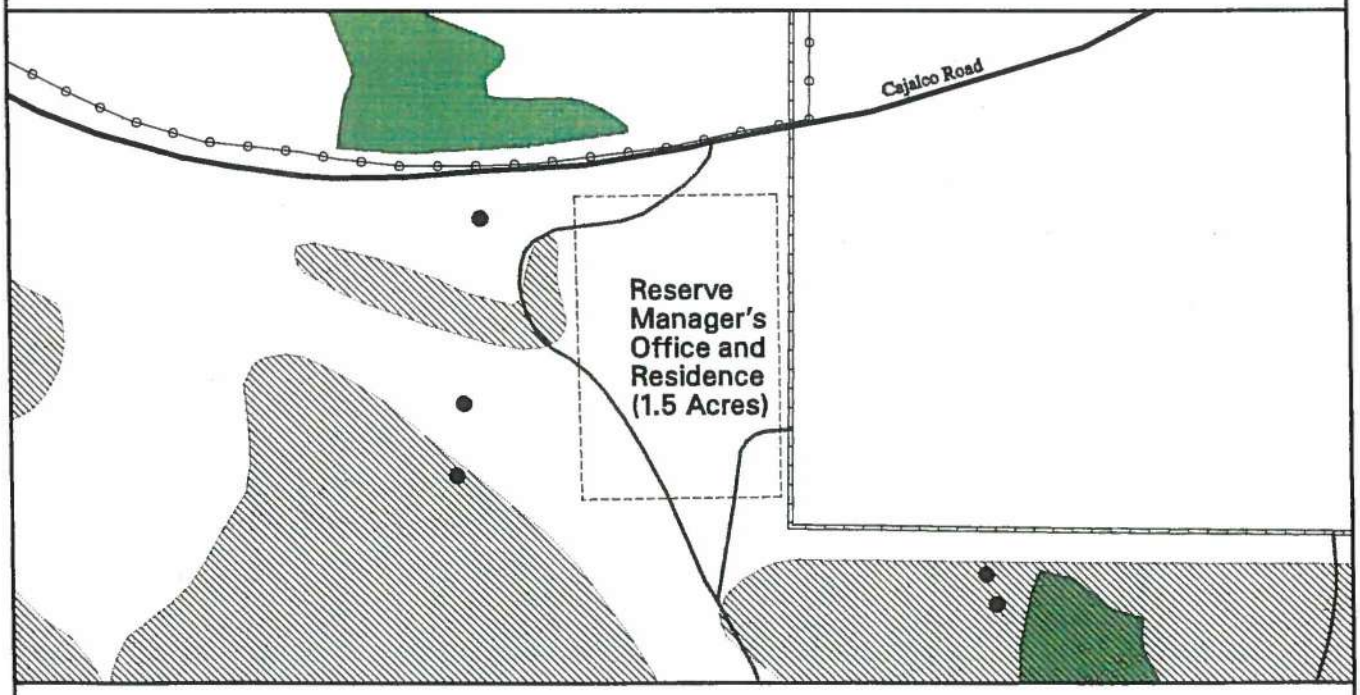
The net effect of the Fire Management Plan and the prescribed burn plan for the Target Species and their habitat will be less than significant and for some species may prove to be beneficial. Recent studies indicate that prescribed burns in SKR habitat result in increases in SKR populations (O'Farrell 1994).

Proposed Location for Reserve Manager's Office/Residence Option A

Figure 5-1

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

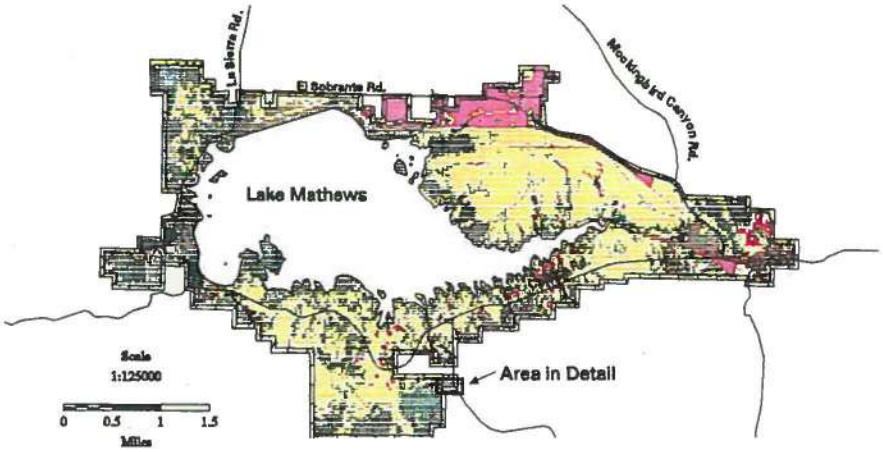


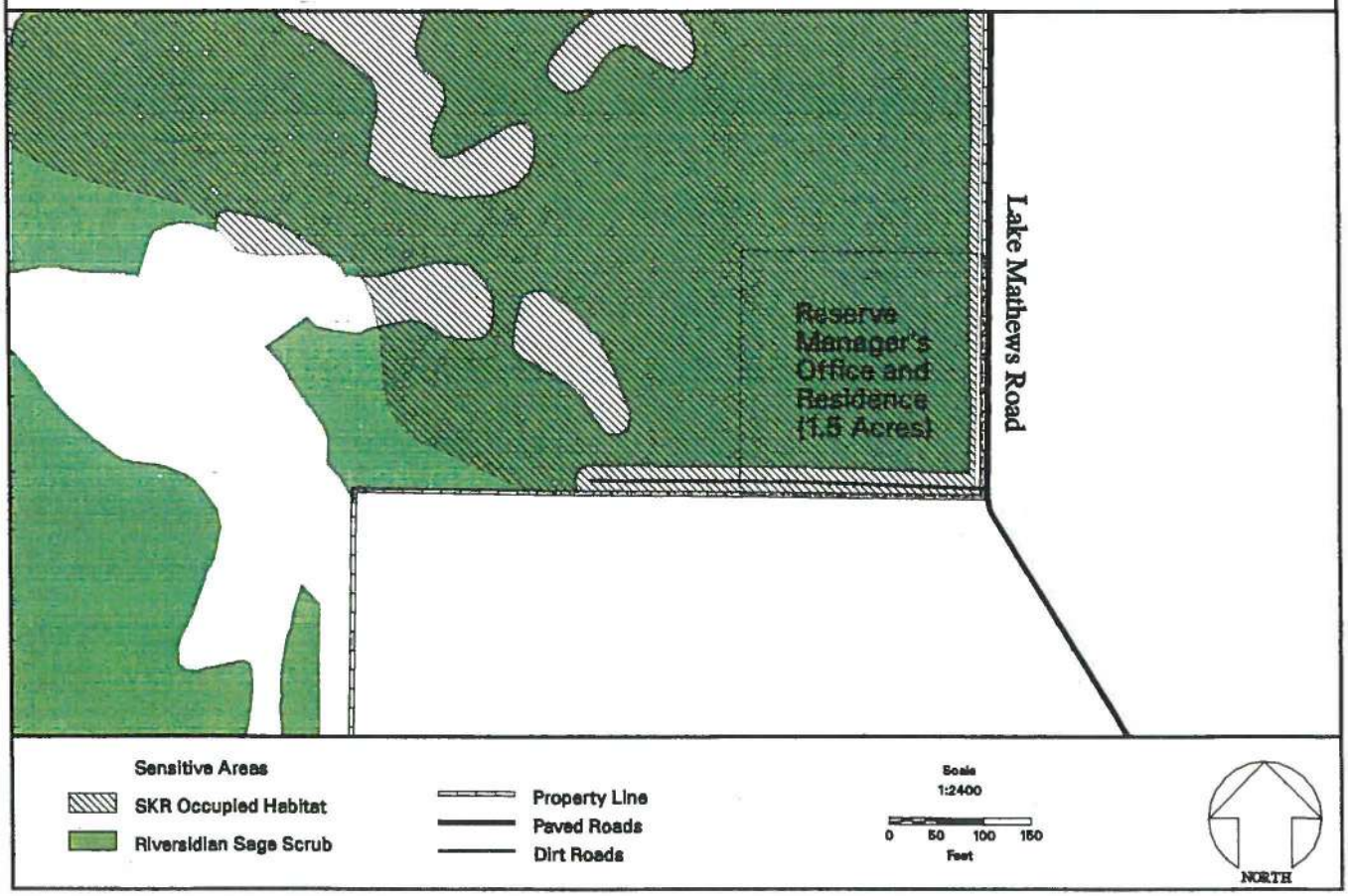


Proposed Location for Reserve Manager's Office/Residence Option B

Figure 5-2

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA





c. Outside Projects

Metropolitan Mitigation Bank lands not designated for Operations and Plan Area Projects would be available for use as mitigation for the effects of Outside Projects to habitats and/or Target Species. The maximum level of habitat loss associated with Outside Projects under the Lake Mathews Plan is 657.3 acres as quantified in Table 5-1. Habitat values in effect areas would be matched to the Mitigation Bank credits using HQA or another methodology collectively acceptable to USFWS, CDFG, and Metropolitan. No further multipliers that increase the mitigation-to-effect ratio would be necessary. The required exchange is a 1:1 (acre-for-acre) mitigation-to-effect ratio expressed in the HQA formula. Other methodologies would not require greater than an acre-for-acre mitigation-to-effect ratio. Mitigation for effects on federally listed species, however, would be determined on a case-by-case basis.

d. Projects in the Multiple Species Reserve

It is not Metropolitan's intent at this time to directly affect habitat in the Multiple Species Reserve. In the unlikely event that projects and activities other than those already existing are necessary in these areas, effect avoidance and minimization measures identified in the Lake Mathews Plan would be implemented. Mitigation could involve provision of replacement habitat acceptable to the Management Committee. The required exchange is a 1:1 (acre-for-acre) mitigation-to-effect ratio expressed in the HQA formula. Other methodologies would not require greater than an acre-for-acre mitigation-to-effect ratio. Mitigation for effects on federally listed species, however, would be determined on a case-by-case basis.

Projects and activities in the Multiple Species Reserve would avoid or minimize effects on Target Species to the maximum extent practicable:

1. Direct harm to any endangered, threatened, or rare species or their habitat would be avoided to the maximum extent practicable.

2. Where feasible and if considered appropriate by the Management Committee, plants which are endangered, threatened, or rare species would be translocated to other suitable habitat in the reserve and/or seeds would be collected for later use.

3. To the maximum extent practicable, effects on birds which are Target Species would be scheduled to avoid their breeding seasons.

4. To the maximum extent practicable, use of pesticides or rodenticides that potentially would take SKR or any other listed species would be avoided or minimized.

5. Lighting at new facilities would be selectively placed, shielded, and directed away from sensitive areas in the Multiple Species Reserve.

6. Staging areas and construction sites would be kept as free as possible from trash, refuse, and other waste that might attract small scavengers that prey on the Target Species.

7. Native, noninvasive plant species would be used in any newly landscaped areas.

Because no projects are currently anticipated in the Multiple Species Reserve, habitat losses cannot be quantified at this time. However, mitigation for effects in the Multiple Species Reserve would be as follows:

1. Temporary, reversible disturbances of habitat would be mitigated either through revegetation or by natural restoration of the site.

2. Permanent loss or modification of habitat would be mitigated through use of available Mitigation Bank credits, habitat restoration or enhancement within the Multiple Species Reserve, or acquisition of replacement habitat acceptable to the Management Committee. Sites for restoration, enhancement, or substitute acquisitions must be approved by the Management Committee. If acquisition of replacement habitat is proposed, priority would be given to locations that would expand the Multiple Species Reserve or the proposed SKR Core Reserve lands outside the Plan Area.

e. Assessment of Habitat Effects and Take

Implementation of the Lake Mathews MSHCP/NCCP would not result in effects on locally designated species such as heritage oak trees. There are no heritage oak trees or other locally designated species within the Plan Area.

There are four state-designated sensitive habitats that occur within the Plan Area: Riversidian sage scrub, southern willow scrub, juniper woodland, and sycamore riparian woodland. Incorporation of the effect minimization and mitigation measures described in Section 3(A)(3)(c)(1) of this document is sufficient to reduce potentially significant effects on locally designated natural communities to less than significant.

The Lake Mathews MSHCP/NCCP assumes that all wetland habitat in Operations and Plan Area Projects would be affected (Table 5-1). Given this assumption, 1.5 acres of wetlands would be affected in Operations (mule fat scrub and southern willow scrub). In Plan Area Projects, a total of 17.8 acres of wetland habitat (mule fat scrub, southern willow scrub, sycamore riparian woodland, freshwater marsh, and saltbush stand) would be affected. Of these 17.8 acres of wetlands in Plan Area Projects, effects on 13.8 acres of wetlands associated with the Cajalco Creek Dam and Detention Basin Project (freshwater marsh, mule fat scrub, southern willow scrub, and sycamore riparian woodland) are mitigated separately under a separate wetland mitigation plan associated with a Section 404 permit pursuant to the Clean Water Act. Wetland effects of this project involve nearly half of the mule fat scrub (3.4 acres), all of the southern willow scrub (8.9 acres), all of the sycamore riparian woodland (0.2 acre), half of the freshwater marsh (0.1 acre), and all of the saltbush stand (1.2 acres) in the Plan Area. Consequently, 4.0 acres of wetlands in Plan Area Projects (3.9 acres of mule fat scrub and 0.1 acre of freshwater marsh) would be mitigated under the Lake Mathews MSHCP/NCCP. Incorporation of the effect minimization and mitigation measures described in Section 3(A)(3)(c)(1) is sufficient to reduce potentially significant effects on wetlands to less than significant. Effects on jurisdictional wetlands would require a separate 404 permit pursuant to the

Clean Water Act as appropriate and additional. A separate agreement pursuant to Section 1600 of the California Fish and Game Code would also be required.

Implementation of the Lake Mathews MSHCP/NCCP would not result in effects on wildlife dispersal or migration corridors. Establishment and management of the Multiple Species Reserve would support and enhance regionally important wildlife dispersal and migration corridors in western Riverside County.

For purposes of meeting federal ESA requirements regarding authorization for take, the foreseeable effects on individual Target Species have been evaluated and, where possible, quantified. Effects are expressed in terms of acres of habitat lost or modified for these species. In this analysis, only Metropolitan projects and activities and only Group 1 and Group 2 species (e.g., Target Species known to occur in the Plan Area) are considered. RCHCA projects and activities were not included in the analysis because:

1. The RCHCA's use of its Mitigation Bank lands as replacement SKR habitat under the Short-term SKR HCP is covered by the certified environmental documentation for the RCHCA's existing 10(a) permit and 2081 agreement and

2. The RCHCA's use of the multiple species credits assigned to its Mitigation Bank lands, including any take authorized based on those credits, would be addressed in the multiple species plan that the RCHCA intends to prepare for its proposed Core Reserve lands.

Group 3 species were not included because assumptions regarding their future occurrence would be too speculative to provide a reasonable basis for assessing likely effects. However, individual HCPs for these species are also included in Part 2 of Volume 2 of the Lake Mathews MSHCP/NCCP.

Table 5-2 indicates the estimated habitat effects on Group 1 species in Operations areas and Plan Area Projects and from Outside Projects, together with the amount of habitat for each Target Species that is being conserved on Metropolitan Mitigation Bank lands and in the Multiple Species Reserve as a whole. Table 5-3 provides the same information for Group 2 species.

Details regarding the calculation of habitat effects are provided in Chapter 4 of Volume 1 of the Lake Mathews MSHCP/NCCP.

A brief discussion of the habitat effects and estimated levels of take of Group 1 and Group 2 species is provided below; additional analysis is provided in Part 2 of Volume 2 of the Lake Mathews MSHCP/NCCP, which contains the individual HCPs for Target Species.

1) Group 1 Species

As discussed in Chapter 4 of Volume 1 of the Lake Mathews MSHCP/NCCP, the Lake Mathews Plan assumes that all habitat in Operations and Plan Area Projects would be adversely affected by the identified projects and activities even though only some habitat would actually be modified or removed. Consistent with this assumption, it also is assumed that the projects and activities would result in the take of all 29 Group 1 species even though only 16 of 29 were actually observed in these areas.

Table 5-2
Estimated Habitat of Group 1 Species in the Plan Area (acres)

Group 1 Species	In Operations & Plan Area Projects	Total in Metropolitan Mitigation Bank Lands	Total in Multiple Species Reserve
Plants[1]			
Clay bindweed (Potential Habitat)[2]	0.0 (29.5)	0.5 (237.6)	0.9 (528.8)
Great valley phacelia (Potential Habitat)	0.0 (29.4)	2.5 (107.3)	5.4 (309.1)
Knotweed spineflower (Potential Habitat)	0.2 (29.5)	0.4 (237.6)	1.9 (528.8)
Large-leaved filaree (Potential Habitat)	0.0 (29.4)	0.1 (107.3)	0.2 (309.1)
Palmer's grappling hook (Potential Habitat)	0.0 (0.1)	0.3 (74.4)	0.5 (274.3)
Parry's spineflower	0.0	0.0	0.1
Small-flowered microseris (Potential Habitat)	0.0 (29.5)	29.5	32.9 (528.8)
Amphibians & Reptiles			
Coastal rosy boa[3]	579.5	809.5	4,370.8
Coastal western whiptail	581.9	819.6	4,453.3
Northern red diamond rattlesnake[3]	579.5	809.5	4,370.8
Orange-throated whiptail	581.9	819.6	4,453.3
San Bernardino ringneck snake[4]	17.7	47.6	76.6
San Diego horned lizard	579.5	809.5	4,370.8
Western spadefoot toad[3]	235.6	394.3	2,722.6
Birds			
Bell's sage sparrow	344.1	415.2	1,649.2
Blue grosbeak	17.7	47.6	76.6
Burrowing owl	253.9	710.3	3,046.0
California horned lark	253.9	710.3	3,046.0
Coastal California gnatcatcher (# of pairs)	344.1 (7)	415.2 (8)	1,649.2 (18)
Downy woodpecker	9.4	20.5	28.6
Grasshopper sparrow	235.4	394.3	2,712.6
Loggerhead shrike	600.4	1,135.9	4,777.7
Southern California rufous-crowned sparrow	344.1	415.2	1,649.5
Tricolored blackbird	245.0	414.8	2,751.2
White-tailed kite	253.1	441.9	2,790.2
Mammals			
Northwestern San Diego pocket mouse	344.1	415.2	1,649.2
San Diego black-tailed jackrabbit	609.8	1,156.4	4,806.3
San Diego desert woodrat	346.5	425.3	1,731.7
Stephens' kangaroo rat[5]	289.1	see note 5	2,321.3

Notes

1 Except for Parry's spineflower, effects on other plants which are Target Species are estimated in terms of potential as well as occupied habitat.

2 Indicates extent of clay soil grassland

3 Estimated acreages are overstated; species occurs in rock outcrop areas in each habitat type.

4 Estimated acreages are understated; species also occurs in adjacent habitat in ecotones.

5 By definition, Metropolitan's Mitigation Bank lands are not occupied by SKR but, consistent with the SKR HCP, qualify as "replacement" habitat. In addition, the agricultural lands that are part of Metropolitan's Mitigation Bank lands are potential SKR habitat.

Table 5-3
Estimated Habitat of
Group 2 Species in the Plan Area
(acres)

Group 2 Species	In Operations & Plan Area Projects	Total in Metropolitan Mitigation Bank Lands	Total in Multiple Species Reserve
Birds			
Bald eagle[1]	see note 1		
Bank swallow[2]	see note 2		
Black-crowned night heron	9.4	20.5	28.6
Cooper's hawk	362.0	464.7	1,709.7
Ferruginous hawk	598.0	1,125.8	4,695.2
Golden eagle	598.0	1,125.8	4,695.2
Great blue heron	10.2	22.4	40.2
Long-eared owl	9.4	20.5	28.6
Northern harrier	598.0	1,125.8	4,695.2
Red-shouldered hawk	17.9	49.5	78.5
Rough-legged hawk	598.0	1,125.8	4,695.2
San Diego cactus wren[3]	see note 3		
Sharp-shinned hawk	597.2	857.1	4,447.4
Swainson's hawk	598.0	1,125.8	4,695.2
Mammals			
American badger	581.9	819.6	4,453.3
Big or pocketed free-tail bat	597.2	857.1	4,447.4
Cougar[4]	see note 4		
Little brown bat	17.9	49.5	78.5
Pallid bat	579.5	809.5	4,370.5
Western mastiff bat	579.5	809.5	4,370.5
Western pipistrelle	579.5	809.5	4,370.5

Notes

1 The bald eagle winters in the Plan Area, foraging primarily in the lake and roosting in trees. Potential nesting habitat is available in the Multiple Species Reserve, but no nesting behavior or nests have been observed to date. Operations, Plan Area Projects, and Metropolitan's Mitigation Bank lands include areas where the bird might perch or roost and terrestrial foraging habitat.

2 Bank swallows have been observed foraging at the lake; no suitable breeding habitat occurs in the Plan Area.

3 Cactus wrens occur in cactus patches and thickets within Riversidian sage scrub habitat; little habitat currently occurs in the Plan Area.

4 The entire Plan Area is considered cougar habitat; no den sites are known to occur in the Plan Area.

(A) Plants

None of the seven Group 1 plants were observed in Operations and Plan Area Projects, but potential habitat for each species occurs in the areas. Estimated effects on potential habitat range from the assumed loss of 0.1 acre of Palmer's grappling hook to the assumed loss of nearly 30 acres for the other five clay soil species. The potential for the occurrence of Parry's spineflower in Operations and Plan Area Projects is low, and no actual effects on or take of this species is expected. Metropolitan's Mitigation Bank lands include a considerable amount of clay soil grassland, and consequently it is likely that mitigation credits in excess of the existing occupied habitat for Group 1 plants could be available for Outside Projects.

Except for Parry's spineflower, all of the other plant Target Species are known to occur on Metropolitan's Mitigation Bank lands. For all seven species, the total amount of occupied habitat conserved in both the Mitigation Bank lands and Multiple Species Reserve exceeds that assumed affected (Table 5-2).

(B) Amphibians and Reptiles

Based on the presence of habitat, it is assumed that take of all seven amphibian and reptile species which are Target Species would occur in Operations and Plan Area Projects. However, coastal rosy boas and San Bernardino ringneck snakes were not actually observed in Operations, and coastal rosy boas, San Bernardino ringneck snakes, western spadefoot toads, and San Diego horned lizards were not seen in Plan Area Projects.

All of the Group 1 amphibians and reptiles are known to occur in the Multiple Species Reserve and were seen on Metropolitan's Mitigation Bank lands. As discussed in Chapter 2 of Volume 1 of the Lake Mathews MSHCP/NCCP, San Diego horned lizards were observed less frequently in several areas of otherwise suitable habitat in the Mitigation Bank and are expected to recur in greater numbers when access controls and deterrents to poaching are implemented as part of reserve management. As also discussed in Chapter 2 of Volume 1 of the Lake Mathews MSHCP/NCCP, the western spadefoot toad was observed in only two locations in the Plan Area during the 1992 surveys but has been subsequently seen in Metropolitan's Mitigation Bank lands. Habitat for the western spadefoot toad occurs on Metropolitan Mitigation Bank lands, including grasslands typically used by the western spadefoot toads during wet seasons.

All the amphibian and reptile species in Group 1 are known to occur on Metropolitan's Mitigation Bank lands. For all seven species, the total amount of occupied habitat conserved in both the Mitigation Bank lands and Multiple Species Reserve exceeds that assumed affected (Table 5-2).

(C) Birds

All 11 Group 1 bird species are assumed taken in Operations and Plan Area Projects, even though 5 were not observed in Operations (blue grosbeak, California horned lark, downy woodpecker, grasshopper sparrow, and white-tailed kite) and only 4 were observed in Plan Area Projects (California horned lark, coastal California gnatcatcher, loggerhead shrike, and southern California rufous-crowned sparrow). Assumed levels of take range from under 10 acres of habitat for the downy woodpecker to 600 acres for the loggerhead shrike (Table

5-2). The assumed effects on Riversidian sage scrub species are estimated at 344.1 acres, including habitat occupied by seven coastal California gnatcatcher pairs. The assumed effects on primarily non-native grassland species range from approximately 235 to 250 acres, depending on the other habitat types also used by the species.

All of the Group 1 birds are known to occur in the Multiple Species Reserve, and all but two (blue grosbeak and burrowing owl) were observed on Metropolitan's Mitigation Bank land. For both the blue grosbeak and the burrowing owl, the amount of suitable habitat on Metropolitan Mitigation Bank lands is more than twice the amount assumed affected in Operations and Plan Area Projects. The amount of habitat conserved for the coastal California gnatcatcher includes 415.2 acres occupied by 8 pairs on Metropolitan Mitigation Bank lands and a total of 1649.2 acres occupied by 18 pairs in the reserve as a whole.

(D) Mammals

All four Group 1 mammals are known to occur and are assumed taken in Operations and Plan Area Projects, including the federally and state-listed SKR (Table 5-2). Assumed habitat effects include approximately 345 acres of habitat for the northwestern San Diego pocket mouse and San Diego desert woodrat, approximately 600 acres of habitat for the San Diego black-tailed jackrabbit, and 289 acres of occupied SKR habitat. SKR habitat in the Operations area is 250 acres and 39.1 acres in Plan Area Projects.

As stated previously, most of the habitat in the Operations area would not be affected at all or would only be temporarily affected. Most of these effects would occur in areas which are currently disturbed and do not contain SKR habitat or are directly adjacent to existing facilities. Further, much of the occupied SKR habitat in Plan Area Projects is being mitigated separately. The Cajalco Creek Dam and Detention Basin Project contains 20.2 acres of occupied SKR habitat (of the 39.1 acres for Plan Area Projects total), and effects on this habitat will be mitigated through a separate Section 7 biological opinion and 2081 authorization. Additional effects related to Western MWD facility improvements are also being mitigated separately in coordination with USFWS and CDFG. Less than 18 acres that may be permanently affected by Plan Area Projects would be mitigated through the habitat precommitted for Operations and Plan Area Projects under the Lake Mathews Plan.

All of the Group 1 mammals are known to occur in the reserve and, except for SKR, on Metropolitan Mitigation Bank lands. Except for SKR, for the other three species, the total amount of occupied habitat conserved in both the Mitigation Bank lands and Multiple Species Reserve exceeds that assumed affected (Table 5-2). As discussed in Chapter 3 of Volume 1 of the Lake Mathews MSHCP/NCCP, Metropolitan's share of the Mitigation Bank is by definition not occupied by SKR. However, the lands also fit the definition of replacement habitat under the RCHCA's SKR HCP. As defined in the implementing agreements for the HCP, replacement habitat includes:

> . . . lands which are occupied by SKR, as well as lands that are not occupied by SKR but would benefit SKR if included in a reserve operated and maintained to preserve SKR and its habitat, including but not limited to potential SKR habitat, wildlife corridors, areas connecting patches of

occupied SKR habitat, and areas buffering SKR-occupied habitat from adjacent uses.

Viewed in this context, all of Metropolitan's Mitigation Bank lands (1,275.6 acres) could meet the definition of replacement habitat. The distribution of SKR is known to change readily within the Plan Area, and SKR use adjacent areas to move among occupied patches.

In addition, it is expected that the management of the Mitigation Bank lands would enhance the abundance and distribution of SKR in the future. Metropolitan and CDF have developed a Fire Management Plan, and the Management Committee would prepare a prescribed burn plan associated with the Fire Management Plan. Previous research funded by Metropolitan at Lake Mathews demonstrates that SKR abundance is increased through prescribed burns. Implementation of the prescribed burn plan should result in overall increased abundance of SKR in the Mitigation Bank lands.

2) Group 2 Species

Similar to the assumptions regarding Group 1 species, the Lake Mathews MSHCP/NCCP assumes that Metropolitan's projects and activities would adversely affect habitat used by Group 2 species in Operations and Plan Area Projects. Some take of Group 2 species is assumed to result, but the conservation and mitigation program for these species includes measures to avoid and minimize the potential for direct harm to the maximum extent practicable. Several of the Group 2 species were observed incidentally in the Plan Area outside the time frame and scope of the 1992 surveys, and consequently their occurrence within Plan Area components is not documented with the same level of detail as Group 1 species. As in the analysis for Group 1 species, it is assumed that all Group 2 species are present in the habitat types primarily associated with the species.

(A) Birds

Habitat effects on Group 2 birds in Operations and Plan Area Projects have been estimated for 11 of the 14 species and range from an assumed loss of approximately 10 acres of habitat for black-crowned night herons, great blue herons, and long-eared owls to approximately 600 acres of habitat for the ferruginous hawk, golden eagle, northern harrier, sharp-shinned hawk, and Swainson's hawk (Table 5-3). The three species for which habitat effects have been assumed but not quantified include the bald eagle, bank swallow, and San Diego cactus wren (see explanation Table 5-3).

The Multiple Species Reserve and Metropolitan Mitigation Bank lands are known to include foraging or sheltering habitat for all Group 2 birds. The amount of habitat on Metropolitan Mitigation Bank lands ranges from approximately 20 acres for the riparian species to 1,125 acres for the raptors that use multiple habitats. In all cases, the total amount of occupied habitat conserved in Metropolitan's Mitigation Bank lands exceeds that assumed affected. The reserve as a whole includes approximately 40 acres of habitat for the riparian species and nearly 4,700 acres for the raptors that use multiple habitats.

(B) Mammals

Habitat effects on Group 2 mammals in Operations and Plan Area Projects have been estimated for six of the seven species and range from the assumed loss of approximately 18 acres of foraging habitat for little brown bats to nearly 600 acres of habitat for the American badger and four bat species (Table 5-3). The habitat of cougars also is assumed to be affected in the areas.

The amount of habitat for Group 2 species on Metropolitan Mitigation Bank lands ranges from approximately 50 acres for little brown bats to over 800 acres for the other species. In all cases, the total amount of occupied habitat conserved in Metropolitan's Mitigation Bank lands exceeds that assumed affected. The Multiple Species Reserve as a whole contains nearly 80 acres for the little brown bat and approximately 4,400 acres for the other species.

f. Assessment of Cumulative Effects

Implementation of the Proposed Project would not result in significant cumulative effects to the Target Species due to the establishment of the Multiple Species Reserve and management of the Combined Reserve. Cumulative effects associated with Outside Projects cannot be assessed at this time, but would be addressed in additional environmental documentation for those projects as appropriate. Some of the anticipated biological impacts to the Target Species in Operations and Plan Area Projects could result in adverse cumulative impacts, however the extensive effect minimization and mitigation program provided in the Lake Mathews Plan would offset these effects and result in a regionally important reserve for sensitive species of plants and animals in western Riverside County.

In summary, implementation of the Lake Mathews MSHCP/NCCP is expected to have an overall beneficial effect on the biological resources of the Plan Area.

2. No Action Alternative

No significant adverse or beneficial effects on biological resources would result from implementation of the No Action alternative. Conservation of habitat for listed and unlisted species would occur in connection with project-by-project mitigation plans. Effects on Target Species associated with Operations, Plan Area Projects and Outside Projects are expected to be similar under the No Action alternative, however, the mitigation, permitting and approval processes would all occur on a project-by-project basis. Mitigation measures would also be developed on a project-by-project basis. This approach would not be as effective or efficient a mitigation program as would the Proposed Project. It would not benefit Target Species to the same degree as the Proposed Project because it would not provide a consolidated management approach for lands in public ownership in the vicinity of Lake Mathews. Under the No Action Alternative, the Management Committee as proposed under the Proposed Project would probably not be established for the Multiple Species Reserve and a full-time Reserve Manager would likely not be hired. As a result, no Reserve Manager's office/residence would be constructed. The No Action alternative would maintain the single-species conservation management strategy. It would not facilitate the creation and management of a multi-jurisdictional reserve.

C. Land Use

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve and future projects and activities in Operations are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to land use in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of land use and planning is based on information for the Plan Area documented in *Riverside County Comprehensive General Plan* (1990a), *Riverside County Comprehensive General Plan: Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a), and the Lake Mathews MSHCP/NCCP.

Implementation of the Lake Mathews MSHCP/NCCP would not result in a conflict with, or any changes to, the current general plan designations for the Plan Area.

The Lake Mathews MSHCP/NCCP would not conflict with applicable plans or policies adopted by the Riverside County Board of Supervisors, the California Department of Fish and Game, or the U.S. Fish and Wildlife Service. The Lake Mathews MSHCP/NCCP is consistent with the environmental plans and policies agreed upon by agencies with jurisdiction over the project. It would not conflict with other applicable land use plans or policies adopted by CDFG, USFWS, or the Riverside County Board of Supervisors.

The Proposed Project is compatible with existing land uses in the area. The Lake Mathews MSHCP/NCCP would promote conservation of open space consistent with the goals and objectives of the *Riverside County Comprehensive General Plan: Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a).

The Lake Mathews MSHCP/NCCP would not have a significant effect on agricultural resources. Agriculture on Metropolitan properties is limited to 254 acres leased to a local farmer for dryland farming. Most of the agricultural lands are marginal (suitable only for dryland, non-irrigated farming), and all have been designated by the *Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a) for rural residential use. Upon implementation of the Lake Mathews MSHCP/NCCP, an agricultural lease Metropolitan is holding with a local farmer would be terminated. This action would result in the type conversion of 254 acres from dryland farming to natural vegetation. Although removed from agricultural production, conversion to natural habitat would not alter the suitability of the farmland for agricultural production. Because none of the farmland has been designated as prime, unique, or local pursuant to the Williamson Act, the Proposed Project would not conflict with the Williamson Act. Therefore, the Lake Mathews MSHCP/NCCP would have no adverse effect on agricultural land uses.

The Proposed Project would not divide or disrupt the physical arrangement of any established community. The Plan Area is located east of the city of Corona sphere of influence and south of the city of Riverside.

In summary, implementation of the Lake Mathews MSHCP/NCCP would have no significant adverse land use effects, and no mitigation measures are necessary or recommended.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to land use. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. No significant adverse effects on land use would result from implementation of the No Action alternative.

D. Air Quality

1. Proposed Project

Environmental effects associated with creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to air quality in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of air quality is based upon the assumption that a project will have a significant effect on air quality if it exceeds any current air quality standard, substantially increases an existing or projected exceedance, or exposes sensitive receptors to substantial pollutant concentrations. There are no sensitive receptors (e.g., schools, hospitals) in the vicinity of the Plan Area.

Creation and management of the Multiple Species Reserve would have a less than significant effect on air quality. Air quality related to maintenance of roads would not change from present conditions since Metropolitan currently engages in those activities.

To reduce the potential for wildfires to originate on the property and to prevent wildfires originating outside the property from spreading to the property and causing major damage, Metropolitan and the California Department of Forestry and Fire Prevention (CDF) in coordination with USFWS have prepared a specific Fire Management Plan for the Plan Area. The Multiple Species Reserve has been divided into five zones which are further divided into 27 fire management units, each with its own site-specific information for pre-suppression, suppression, and post-suppression activities. A key component of the overall management plan is to reintroduce the naturally occurring fire regime to the fire-dependent ecosystem on Metropolitan's properties in order to reduce buildup of fuels which could lead to unnaturally high fire intensity, rate of spread, and occurrences. The Fire Management Plan provides for the creation of fuel breaks along the boundaries of the Plan Area to eliminate the movement of fire from or onto Metropolitan's properties. An estimated 65 acres in the Plan Area, including about 27 acres of non-native grassland would be regularly mowed. Selective incorporation of cacti and other fire-resistant native species is also included in the Fire Management Plan.

In addition to the Fire Management Plan, a prescribed burn plan would be developed by the Management Committee in conjunction with CDF for fire management and habitat enhancement purposes. This prescribed burn plan would meet standard conditions for smoke management required by SCAQMD. Since such a prescribed burn plan has not yet been prepared, for purposes of this analysis a maximum number of acres that would be burned per year through prescribed burning activities was estimated. Under this scenario, the entire 5,110.4 acres within the Multiple Species Reserve would be burned in prescribed burns over a 20-year period. This would average approximately 250 - 500 acres per year.

The prescribed burn plan would result in reduced air pollutant emissions on an annual basis as compared to the air pollutant emissions associated with uncontrolled wildfires. This would be a beneficial effect. Using California Air Resources Board emission factors, prescribed burn emissions for 250 acres would be approximately 50,500 pounds of carbon monoxide (CO), 9,500 pounds of total organic compounds (TOC), and 8,000 pounds of total suspended particulates (TSP) on an annual basis. Emissions for 500 acres would be double this amount. Emissions from a wildfire that involve the entire Plan Area would be approximately 518,130 pounds of CO, 97,470 pounds of TOC, and 82,080 pounds of TSP and would occur at one time, rather than spread out over time as would be the case for the prescribed burns.

In addition, there would be minor effects on PM_{10} air quality during construction of the Reserve Manager's residence and office. Riverside County is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The county is a nonattainment area for state and national ozone and PM_{10} standards. The SCAQMD has determined that construction emissions above the thresholds in Table 5-4 constitute a significant air quality effect.

Table 5-4
SCAQMD Construction Thresholds of Significance

Pollutant				
Carbon Monoxide (CO)	**Nitrogen Oxides (NOx)**	**Reactive Organic Compounds (ROC)**	**Sulfur Oxides (SOx)**	**PM_{10}**
24.75 tons/quarter or 550 pounds on individual day	2.5 tons/quarter or 100 pounds on individual day	2.5 tons/quarter or 75 pounds on individual day	6.75 tons/quarter or 150 pounds on individual day	6.75 tons/quarter or 150 pounds on individual day

Construction of the Reserve Manager's residence, office, and access roads would require grading of approximately 1.5 acres. The U.S. EPA estimates that each acre graded or exposed will release 26.4 pounds per day of PM_{10}. Tota daily PM_{10} emissions would equal 42.2 pounds.

Equipment usage would require a grader, water truck, and some miscellaneous equipment, which are used on different days for varying amounts of time. Assuming six pieces of heavy equipment are required for the entire project and assuming a worst-case condition of all equipment being in use simultaneously, emissions of all pollutants would be below SCAQMD thresholds. Nitrogen oxide emissions would be highest (approximately 64 pounds/day), but these emissions would be reduced by at least half under actual operating conditions. Up to 10 construction workers could be required for construction of buildings and roads, although not all would be working on the same day. Assuming under worst-case conditions that all 10 construction workers were onsite on a peak construction day in 1995 and using SCAQMD emission factors and trip distances for Riverside County, maximum emissions would be 5 pounds/day for carbon monoxide. Emissions of all other pollutants would be less than 1 pound/day.

Localized air quality effects are expected to affect only receptors in the immediate vicinity of the construction area, up to 100 to 200 feet from the construction area depending on pollutant and wind conditions. Receptors in the vicinity of the potential locations for the Reserve Manager's residence are limited to existing rural residential housing. No mitigation measures are required because construction emissions would be less than significant onsite and substantially lower at the nearest receptor, a residence, which is over 200 feet from the proposed pad for the Reserve Manager's residence in both Options A and B.

There would be no significant increase in other emissions from creation and management of the Multiple Species Reserve. Patrol of the Multiple Species Reserve would not involve significant emissions from vehicles. Creation and management of the Multiple Species Reserve would not adversely affect air quality by exposing sensitive receptors to pollutants, altering air movement or climate, or creating objectionable odors.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on air quality in the area.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to air quality. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. The Reserve Manager's office and residence would not be constructed since a full-time Reserve Manager would likely not be hired. No significant adverse effects on air quality would result from implementation of the No Action alternative.

E. Water

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects

discussion in this section addresses all of the topics related to water in the CEQA Environmental Checklist included as Appendix A of this document.

The environmental evaluation of water resources is based on information for the Plan Area as documented in *Draft Environmental Impact Report for the Central Pool Augmentation and Water Quality Project* (Metropolitan 1994), *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 387* (County of Riverside 1992c), *Initial Study for Western Municipal Water District's Operations Center Improvements* (Western Municipal Water District 1995), and *Drainage Water Quality Management Plan for the Lake Mathews Watershed* (John M. Tettemer & Associates, Ltd. 1992).

The creation and management of the Multiple Species Reserve will include development of a prescribed burn plan for the Multiple Species Reserve that is consistent with the Fire Management Plan for the Plan Area. The prescribed burn plan will be developed in cooperation with the California Department of Forestry. Incorporation of standard erosion protection measures will ensure that effects from implementation of the prescribed burn plan will not result in significant changes in absorption rates, drainage patterns, or the rate and amount of surface runoff. Evaluation of standard techniques to limit effects on water quality is a required element of the California Department of Forestry and Fire Protection Prescribed Burn Plan (1990). Such elements include timing of burn, appropriateness of reseeding for native herbaceous plants, size and distribution of burn areas, maintenance of buffer strips including herbaceous vegetation, avoidance of perennial water courses, limitations on heavy equipment, and incorporation of erosion control measures. The creation and management of the Multiple Species Reserve would include grading of approximately 1.6 acres necessary to accommodate the prefabricated mobile home for the Reserve Manager. Such grading would result in less than significant effects on absorption rates, drainage patterns, or the rate and amount of surface runoff.

The Proposed Project would not result in exposure of people or property to water-related hazards such as flooding. As documented in the *Riverside County Comprehensive General Plan* (1990a), a portion of Cajalco Creek upstream of Lake Mathews is in the 100-year floodplain. The spillway of the Lake Mathews dam defines the upper elevation of flooding at 1390 feet above mean sea level for areas surrounding the lake. The Plan Area does not include any areas below the 1390-foot contour within the reservoir.

Creation and management of the Multiple Species Reserve would not result in discharge into surface waters or other alteration of surface water quality (e.g., temperature, dissolved oxygen, or turbidity). The management of lands surrounding Lake Mathews as a mitigation bank promotes conservation of natural habitats and the associated benefits for protection of water quality. The Lake Mathews MSHCP/NCCP is consistent with the new and enhanced wildlife element of the *Drainage Water Quality Management Plan for the Lake Mathews Watershed* (John M. Tettemer & Associate Ltd. 1992) and the goals and objectives of the *Lake Mathews Community Plan Land Use Policies* (Riverside County 1992a).

Creation and management of the Multiple Species Reserve would not result in changes in the amount of surface water in any water body or changes in

currents or the course of direction of water movements. Activities involved in management of the Multiple Species Reserve are designed to conserve natural habitats and would not cause surface water changes in any water body, including Lake Mathews.

The Proposed Project would not result in a change in the quantity of groundwaters, either through direct additions or withdrawals, through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability. According to the results of geotechnical investigations undertaken by Law/Crandall (1992), the Cajalco Creek floodplain is comprised of alluvium varying in thickness from several feet up to a hundred feet. The alluvium overlies granitic bedrock and contains a perched water table. Grading and site preparation necessary to install the prefabricated mobile home for the Reserve Manager is limited to approximately 1 acre and is not expected to have an effect on groundwater resources (including altered direction or rate of flow of groundwater, groundwater quality, or substantial reduction in the amount of groundwater otherwise available for public water supplies).

The Proposed Project would not result in any significant adverse effects on groundwater quality. The intent of the Lake Mathews MSHCP/NCCP is to conserve natural habitats; management activities would have no effect on groundwater quality. Installation of the prefabricated mobile home that would serve as the Reserve Manager's office and residence would comply with applicable construction practices and building codes to ensure that drainage, septic systems, etc., would not adversely affect groundwater quality. Control of public access and use could serve to protect groundwater quality since unauthorized access by trespassers and poachers could result in illegal dumping. It is expected that additional fencing and increased patrolling would reduce unauthorized access within the Multiple Species Reserve.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on water resources or surface or groundwater quality.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to water issues. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. The Reserve Manager's office and residence would not be constructed since a full-time Reserve Manager would likely not be hired. No significant adverse effects on surface water or groundwater would result from implementation of the No Action alternative.

F. Geological Problems

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to geological

problems in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of potential geological problems associated with particular soils and seismic activity is based on information for the Plan Area as documented in *Geotechnical Assessment for Environmental Impact Report, Lake Mathews Watershed Project* (Pacific Soils Engineering, Inc. 1991), *Preliminary Geotechnical Investigation for the Proposed Detention Basin, El Sobrante Road and Cajalco Road* (Law/Crandall, Inc. 1992), *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 387* (County of Riverside 1992c), *Initial Study for Western Municipal Water District's Operations Center Improvements* (Western Municipal Water District 1995), and *Soil Survey of Western Riverside Area* (Knecht 1971).

The Proposed Project would not result in or expose people to fault rupture or severe seismic ground shaking. There are no fault zones within the Lake Mathews Plan Area, and it is not located within an Alquist-Priolo Special Study Zone (as delineated in the *Riverside County Comprehensive General Plan* 1990a). To protect the Reserve Manager's office and residence from seismic shaking, installation of the prefabricated mobile home for the Reserve Manager would be carried out in conformance with the Uniform Building Code and standard engineering practice.

Implementation of the Lake Mathews MSHCP/NCCP would not result in or expose people to potential effects involving seiche, tsunami, or volcanic hazard. Seiches (large waves created by seismic ground shaking on an inland body of water) are not considered to be a potential hazard because no known fault zones exist within the Plan Area. Similarly, the Plan Area is located sufficiently inland to be protected from potential effects from a tsunami (a large sea wave caused by underwater earthquakes or other disturbances). There are no known active volcanic areas near Lake Mathews.

Creation and management of the Multiple Species Reserve would not result in or expose people to potential effects involving landslides or mudflows. According to previously completed geotechnical investigations (Pacific Soils Engineering, Inc. 1991 and Law/Crandall, Inc. 1992), the land areas surrounding Lake Mathews are not subject to landslides.

The Proposed Project would not result in or expose people to potential effects involving erosion, changes in topography, or unstable soil conditions from excavation, grading, or fill. The site is characterized by soils consisting of deep alluvial fills that extend into upland areas or derived from granitic materials occurring in alluvial areas and terraces (Knecht 1971). Construction activities such as grading for the installation of the Reserve Manager's office/residence could minimally increase the potential for soils erosion. Watering disturbed areas would reduce wind erosion to a less than significant level.

Creation and management of the Multiple Species Reserve would not result in or expose people to effects involving expansive soils. According to *Soil Survey of Western Riverside Area* (Knecht 1971), the site is characterized by sandy loam soils (ranging from fine to rocky). In addition, the Plan Area includes areas of loamy sand, rockland, and rocky loam. Expansive soils area are limited to areas included in the Bosanko clay mapping unit. The habitats on these soils would be

protected for their ecological values and would not be disturbed by the activities involved in creation and management of the Multiple Species Reserve.

There are no unique geologic or physical features within the Combined Reserve.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects related to soils or seismic events.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to geological problems. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. The Reserve Manager's office and residence would not be constructed since a full-time Reserve Manager would likely not be hired. No significant adverse effects on geology would result from implementation of the No Action alternative.

G. Transportation/Circulation

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to transportation and circulation in the CEQA Environmental Checklist included as Appendix A of this document.

Implementation of the Lake Mathews MSHCP/NCCP would not result in effects such as significantly increased vehicle trips or traffic congestion. These areas would be dedicated as open space and as such would not generate new trips or traffic congestion. Management of the Multiple Species Reserve would involve increased security patrols along the boundary of the Plan Area. Such patrols are largely confined to existing dirt roadways, particularly within the Plan Area, and would not cause traffic congestion or otherwise affect existing paved roadways. Installation of the Reserve Manager's residence would require miscellaneous equipment for grading, transportation for several construction workers, and delivery of materials. This work is expected to last approximately 2 weeks. This activity would not lead to traffic congestion on the roads which provide access to the Reserve Manager's office/residence site.

Creation and management of the Multiple Species Reserve would not result in hazards to safety from design features of the Lake Mathews MSHCP/NCCP because these actions are intended to dedicate and manage lands to conserve natural habitat. Activities related to biological management, property management, construction of the Reserve Manager's office/residence, fire management and control of public access would not involve construction of new roads or the addition of vehicle activity that is incompatible with existing land uses.

The Proposed Project would not result in inadequate emergency access or access to nearby uses. Emergency access and operation for the CDF are described in *Lake Mathews Fire Management Plan, Riverside County California.*

The Proposed Project would have no significant effect on parking capacity onsite or offsite. Management of the Multiple Species Reserve would not result in more than four new vehicles which would be parked at the Reserve Manager's office/ residence. Parking for these vehicles at Metropolitan's facilities in the Plan Area can be accommodated by existing parking areas within Operations.

Implementation of the Lake Mathews MSHCP/NCCP would not result in hazards for pedestrians or bicyclists because only limited access for escorted group tours would be provided within the Multiple Species Reserve. The Lake Mathews MSHCP/NCCP does not include alteration of existing public roadways. Therefore, there are no expected conflicts with the Plan of Bicycle Routes Map.

The Proposed Project would not result in any effects on rail, waterborne, or air traffic because these areas would be dedicated and managed for the protection of natural habitats. No change in any existing rail, waterborne, or air traffic would occur as a result of the project.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects related to transportation issues.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to transportation and circulation. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would likely not be hired, so there would be a negligible decrease in patrolling activity under the No Action alternative. No significant adverse effects on transportation and circulation would result from implementation of the No Action alternative.

H. Population and Housing

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to population and housing in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of population and housing is based on information for the Plan Area documented in the *Riverside County Comprehensive General Plan: Lake Mathews Community Plan (LMCP) Land Use Policies* (1992a), and *Riverside County Comprehensive General Plan, Housing Element* (1991).

The Proposed Project would not cause any increase in regional or local population that would cumulatively exceed official regional or local population projections. The Lake Mathews MSHCP/NCCP provides for the installation of two trailers on Metropolitan's properties that would serve as the residence and office for the Reserve Manager. Creation and management of the Multiple Species Reserve would not affect land uses on adjacent properties, so the Lake Mathews MSHCP/NCCP would not affect population trends in the region.

Creation and management of the Multiple Species Reserve would not displace any existing housing. All lands within the Plan Area are currently owned by Metropolitan and are used for operation and maintenance of the reservoir or are open space.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse socioeconomic effects on population and housing.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to population and housing issues. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would not likely be hired so construction of a Reserve Manager's office and residence would occur.. No significant adverse effects on population and housing would result from implementation of the No Action alternative.

I. Recreation

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to recreation in the CEQA Environmental Checklist included as Appendix A of this document.

The evaluation of potential effects on recreational facilities and opportunities is based on a review of local and regional maps of recreation facilities and the *Riverside County Comprehensive Plan, Lake Mathews Community Plan* (1988).

Creation and management of the Multiple Species Reserve would not increase the demand for neighborhood or regional parks or other recreational facilities. These activities would not add any new households to the area that would lead to an increased demand for recreational facilities.

The Proposed Project would not affect existing recreational opportunities. The lands included within the Multiple Species Reserve are all owned by Metropolitan. No recreation or unpermitted public access is currently allowed. It should be noted that the *Riverside County Comprehensive Plan, Lake Mathews Community Plan* (1988) designates a number of regional and community trails

within the Plan Area. However, these lands are owned by Metropolitan and are managed for water quality and as an ecological reserve. Unpermitted public access on these lands is considered trespassing. Creation and management of the Multiple Species Reserve would not affect the alignment of any trails located on public easements.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on recreational facilities or opportunities in the area.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to recreation issues. The limited tours of the natural habitats surrounding Lake Mathews currently conducted would continue. No increased demand for recreation would result from the No Action alternative. No significant adverse effects on recreation would result from implementation of the No Action alternative.

J. Historical and Cultural Resources

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to cultural resources in the CEQA Environmental Checklist included as Appendix A of this document.

The Lake Mathews MSHCP/NCCP may have a potentially significant effect upon archaeological resources if avoidance measures or mitigation measures are not undertaken. Sufficient avoidance and mitigation measures have been addressed in the Lake Mathews Fire Management Plan for fire-related effects (CDF 1994). Ground-disturbing activities associated with maintenance of the Multiple Species Reserve would be mitigated through avoidance of known significant archaeological site locations. Further investigation may be necessary to assess significance of archaeological site locations prior to ground-disturbing activities. Fire-induced alteration of stone artifacts would not be a significant effect for the known prehistoric sites in the Plan Area. All researchers conducting work at Lake Mathews are required to complete the Lake Mathews Access Form. Upon implementation of the Lake Mathews MSHCP/NCCP, the Lake Mathews Access Form would be amended to include a notification to researchers to avoid affecting archaeological resources.

The Lake Mathews MSHCP/NCCP may have potentially significant effects on historical resources unless avoidance measures or mitigation is undertaken. Fire damage associated with a prescribed burn plan is a potentially significant effect for most of the known historical sites. Avoidance of known significant historical site locations during activities related to habitat enhancement would mitigate potentially significant effects on historical resources to a less than significant level. Further investigation may be necessary to assess significance of historical site locations prior to ground-disturbing activities. All researchers conducting

work at Lake Mathews are required to complete the Lake Mathews Access Form. Upon implementation of the Lake Mathews MSHCP/NCCP, the Lake Mathews Access Form would be amended to include a notification to researchers to avoid affecting archaeological resources.

The Plan Area is within the ethnographic territory of the Camilla. Creation and management of the Multiple Species Reserve would not restrict any existing religious or sacred uses within the area or affect any unique ethnic cultural values. No known Native American sacred or religious sites are located within the proposed Multiple Species Reserve.

Management of the Multiple Species Reserve could involve some ground-disturbing activities related to habitat enhancement activities conducted by the Management Committee. These activities would be designed to avoid significant adverse effect on known significant paleontological resources. Further investigation may be necessary to assess significance of paleontological site locations prior to ground-disturbing activities.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on historical, cultural, or paleontological resources in the Plan Area provided that the avoidance measures recommended above are adopted and implemented as part of the plan.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to cultural resource issues. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. Habitat enhancement that would have the potential to affect cultural resources would only be conducted if it were part of the mitigation developed for each project, and appropriate avoidance and mitigation would be required to protect cultural resources for such activities. No significant adverse effects on cultural resources would be anticipated from implementation of the No Action alternative.

K. Energy and Mineral Resources

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to energy and mineral resources in the CEQA Environmental Checklist included as Appendix A of this document.

The Proposed Project would not conflict with adopted energy plans. The activities involved would not require significant energy resources. The Reserve Manager's residence would be equipped with energy conservation devices as required by the Uniform Building Code.

Creation and management of the Multiple Species Reserve would not lead to the use of nonrenewable resources in a wasteful or inefficient manner. The activities involved would not require significant mineral resources. A negligible use of nonrenewable resources would be limited to that required in support of the Reserve Manager's transportation and housing.

The Proposed Project would not result in the loss of availability of known mineral resources that would be of future value to the region and the residents of the state. No disturbance of mineral resources, including tin resources indicated in the Mineral Resources Map of the *Riverside County Comprehensive General Plan* (1992a), would occur in the Plan Area. The Lake Mathews Plan Area is not located in either a state-classified MRZ-2 zone or a state-designated Regionally or Statewide Significant Mineral Resource Area, which would limit the land to mineral production or related/compatible uses.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on energy or mineral resources.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to energy and mineral resources. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would not likely be hired, so no Reserve Manager's office and residence would be constructed. No significant adverse effects on energy and mineral resources would result from implementation of the No Action alternative.

L. Aesthetics

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to aesthetics in the CEQA Environmental Checklist included as Appendix A of this document.

The Proposed Project would not have any effects on scenic vistas or highways. The three roads circumscribing Lake Mathews—La Sierra Avenue, El Sobrante Road, and Cajalco Road—are listed as "eligible county scenic highways" in the *Riverside County Comprehensive General Plan*. The Lake Mathews MSHCP/NCCP would preserve open space areas, and their aesthetic characteristics, on Metropolitan-owned lands adjacent to these roadways.

Creation and management of the Multiple Species Reserve would not create light or glare. Construction and use of the Reserve Manager's residence may include some additional necessary lighting; low-glare lighting would be used and would be similar to that found in association with other rural residential and single-family dwellings in the area.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on aesthetic values.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to aesthetics. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would not likely not be hired, so no Reserve Manager's office and residence would be constructed. No significant adverse effects on aesthetics would result from implementation of the No Action alternative.

M. Hazards

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to hazards to people in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of hazard potentials is based on information for the Plan Area as documented in the *Drainage Water Quality Management Plan, Lake Mathews Watershed Comprehensive General Plan Amendment No. 247, Environmental Impact Report No. 347* (County of Riverside 1992), *Lake Mathews Fire Management Plan, Riverside County* (CDF 1994), and the Lake Mathews MSHCP/NCCP.

The Proposed Project would not result in or expose people to a risk of accidental explosion or release of hazardous substances. No structural improvements are proposed for the Plan Area that would include aboveground or underground storage tanks of hazardous substances (including petroleum products) or facilities designed for the use, generation, or storage of hazardous materials of any kind (including explosives, hazardous chemicals, pesticides, or radioactive materials). The installation of the prefabricated mobile home for the Reserve Manager would be implemented in conformance with the Uniform Building Code and standard engineering practice. Utilities would be provided for the Reserve Manager's office/residence in conformance with local, state, and federal regulations.

The Lake Mathews MSHCP/NCCP would not interfere with an emergency response plan or emergency evacuation plan. The Plan Area is not located in an area anticipated for use as an evacuation or emergency route for the general public.

Creation and management of the Multiple Species Reserve would not result in the exposure of people to existing sources of potential health hazards or creation of any new health hazards. Access to the Multiple Species Reserve would be restricted to escorted tours and researchers.

The Proposed Project would not involve a significant increase in fire hazard. The Lake Mathews MSHCP/NCCP is consistent with the *Lake Mathews Fire Management Plan* on Metropolitan's properties, which reduces potential effects related to fire hazard.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects related to health hazards.

2. No Action Alternative

The No Action alternative would not differ from the Proposed Project with respect to hazards. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. No hazards as discussed above would be created by the implementation of separate mitigation plans for individual projects. No significant adverse effects on hazards would result from implementation of the No Action alternative.

N. Noise

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to noise in the CEQA Environmental Checklist included as Appendix A of this document.

The assessment of noise is made in accordance with Appendix G of the CEQA Guidelines which defines a significant noise effect as one that substantially increases ambient noise levels. State Noise Guidelines indicate that Community Noise Equivalent Levels (CNEL) (which are a measurement of individual sounds averaged over a given period within a defined location) of 65 dBA or lower are acceptable. Management of the reserve would not involve construction equipment that averages over 75 dBA at 50 feet. Without any additional reduction that occurs because of terrain, wind direction, or natural or man-made barriers, sound will decrease by 6 dBA with each doubling of distance. Land uses determined to be "sensitive" to noise by the state of California include schools, hospitals, rest homes, and long-term care and mental care facilities. There are no sensitive receptors in the Plan Area or in the immediate vicinity.

The Proposed Project would not result in increases in existing noise levels. Construction and operation of the Reserve Manager's residence and other habitat management measures would be located at least 200 feet from the nearest receptor, a rural residence. At that distance, noise levels from construction of the housing, office, and roads would be below the state-recommended guidelines of 65 dBA. Other management activities would either not involve additional noise or would only produce minor, short-term noise (e.g., installation of fencing within the Multiple Species Reserve).

Creation and management of the Multiple Species Reserve would not expose people to severe noise levels. Management activities would either not involve

additional noise or would only produce minor, short-term noise (e.g., installation of fencing within the Multiple Species Reserve).

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse noise effects.

2. No Action Alternative

The No Action alternative would not substantially differ from the Proposed Project with respect to noise issues. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would likely not be hired so construction of the Reserve Manager's office and residence would not occur. No significant adverse effects on noise would result from implementation of the No Action alternative.

O. Public Services and Utilities

1. Proposed Project

Environmental effects associated with the creation and management of the Multiple Species Reserve are evaluated in this section. The environmental effects discussion in this section addresses all of the topics related to public services and utilities in the CEQA Environmental Checklist included as Appendix A of this document.

The Proposed Project would not have any significant effects on government services regarding fire protection. Presuppression, suppression, and postsuppression fire management activities are addressed in the existing *Lake Mathews Fire Management Plan* prepared in coordination with CDF. The Reserve Manager's residence is located in an existing rural residential community that is provided fire protection services by Station No. 4 on Cajalco Road.

Creation and management of the Multiple Species Reserve would not have a significant effect upon the need for new or altered government services regarding police protection. Portions of the Plan Area would be fenced as needed to control access. Metropolitan and the Reserve Manager would patrol the Plan Area.

The Proposed Project would not have an effect upon, or result in the need for, new or altered government services regarding schools, maintenance of public facilities or roads, or any other government services.

The Lake Mathews MSHCP/NCCP would not result in the need for new systems or supplies or alterations to power or natural gas utilities, communications systems, local or regional water treatment or distribution facilities, sewers or septic tanks, storm water drainage facilities, solid waste disposal facilities, or local or regional water supplies. These activities would not involve new development that would require such new systems and supplies or alterations.

In summary, implementation of the Lake Mathews MSHCP/NCCP would not result in any significant adverse effects on public services and utilities.

2. No Action Alternative

The No Action alternative would not differ from the Proposed Project with respect to issues related to public services and utilities. Instead, unlike the Proposed Project, the No Action alternative would result in the development and application of mitigation measures on a project-by-project basis. A full-time Reserve Manager would likely not be hired so construction of the Reserve Manager's office and residence would not occur. No significant adverse effects on public services and utilities would result from implementation of the No Action alternative.

P. Mandatory Findings of Significance

Incorporation of the minimization and mitigation measures described in the Lake Mathews MSHCP/NCCP and the additional cultural resources mitigation measures described in this environmental evaluation are sufficient to avoid degrading the quality of the environment, substantially reducing the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reducing the number or restricting the range of a rare or endangered plant or animal, or eliminating important examples of the major periods of California history or prehistory.

The Lake Mathews MSHCP/NCCP would not have the potential to achieve short-term to the disadvantage of long-term environmental goals. The Lake Mathews MSHCP/NCCP is consistent with long-term objectives for resource conservation in western Riverside County as defined by the RCHCA, CDFG, and the USFWS.

The Lake Mathews MSHCP/NCCP balances the potentially significant adverse effects of take of up to 65 Target Species (if and when listed) with the beneficial effects of conserving and managing sensitive biological resources in the Multiple Species Reserve. The Lake Mathews MSHCP/NCCP would not result in significant cumulative effects on the Target Species or their habitats. The creation and management of the Multiple Species Reserve would offset the potential take of the Target Species and their habitats. Further, the coordinated management of the Multiple Species Reserve with management of RCHCA's holdings and other public lands within the Combined Reserve would result in a cumulative net positive benefit for conservation of Target Species in western Riverside County.

Implementation of the Lake Mathews MSHCP/NCCP is not expected to result in any environmental effects which would cause substantial adverse (direct or indirect) effects on human beings. The purpose of the Lake Mathews MSHCP/NCCP is to establish a Multiple Species Reserve and manage a Combined Reserve to the benefit of Target Species and their habitats.

6. Comparison of Effects of Alternatives

Table 6-1 is a matrix that presents the environmental effects of the No Action and Proposed Project alternatives, in comparative form. In this way, the key issues surrounding each of the alternatives are presented, providing a clear basis for choice among options by the decision maker and the public.

The matrix begins with a description of the extent to which the stated purpose and need of the Proposed Project is met by each alternative. The matrix then summarizes any potentially significant adverse effects and associated mitigation measures of the Proposed Project and the No Action alternative for the issue areas.

The Proposed Project, implementation of the Lake Mathews MSHCP/NCCP, is the preferred alternative of Metropolitan, as the lead agency under CEQA and of the USFWS as the lead agency under NEPA. The Proposed Project is also the environmentally superior alternative.

Table 6-1
Alternatives Comparison Matrix

Decision-Making Criteria	Proposed Project (Lake Mathews MSHCP/NCCP)	No Action
Extent to which purpose and need would be satisfied	Satisfies all stated objectives; provides a comprehensive conservation and management program for multiple wildlife species; facilitates coordination of stewardship activities of multiple public agencies; establishes a Mitigation Bank which provides a mechanism for ensuring mitigation of effects to Target Species in advance of the effects.	Does not establish a multiple species conservation and management program for effects on Target Species; habitat conservation would continue on a species-specific, project-specific basis; does not facilitate coordination of conservation and land stewardship activities among public agencies within a Combined Reserve. Does not establish an efficient mechanism for authorization of take of multiple listed species and as a consequence would lead to delays to projects proposed at Lake Mathews.
Biological Resources ***A. Operations***	Mitigation provided on an acre-for-acre basis by habitat type for the habitat losses summarized below. Mitigation involves conservation and management of a 5110.4-acre Multiple Species Reserve consisting of a 2,544.9-acre Mitigation Bank adjacent to an Existing 2,565.5-acre State Ecological Reserve. Management is provided for SKR on the publicly owned lands in the more than 12,000-acre Combined Reserve. Habitat effects mitigated under the Lake Mathews Plan are summarized below: A worst-case assumption is made of a total of 505.5 acres of habitat losses in Operations, although it is likely that not all of this habitat would actually be affected: 193.8 acres of non-native grassland, 303.2 acres of Riversidian sage scrub, 1 acre of mule fat scrub, 0.5 acres of southern willow scrub, and 7 acres of agricultural lands.	Would not establish a comprehensive mitigation and management program as described for the Proposed Project. Habitat losses associated with projects and activities in Operations, Plan Area Projects, and Outside Projects would occur on a project-by-project basis and potentially would be similar to the losses described for the Proposed Project; mitigation would likely occur acre-for-acre on a habitat basis. Effects on Target

Table 6-1
Alternatives Comparison Matrix

Decision-Making Criteria	Proposed Project (Lake Mathews MSHCP/NCCP)	No Action
Biological Resources, cont.		Species associated with Operations, Plan Area Projects and Outside Projects are expected to be similar under the No Action alternative to the Proposed Project, however, the mitigation, permitting and approval processes would all occur on a project-by-project basis. Mitigation may not necessarily be provided at Lake Mathews. Would not provide as effective or efficient a mitigation program because it would not provide a consolidated management approach for lands in public ownership in the vicinity of Lake Mathews. A Management Committee as proposed under the Proposed Project would probably not be established, and a full-time Reserve Manager would likely not be hired.
B. Plan Area Projects	A worst-case assumption is made of a total of 112.8 acres of habitat losses in Plan Area Projects: 41.6 acres of non-native grassland, 40.9 acres of Riversidian sage scrub, 7.3 acres of mule fat scrub, 8.9 acres of southern willow scrub, 2.4 acres of juniper woodland, 0.2 acres of sycamore riparian woodland, and 11.5 acres of agricultural lands.	
C. Outside Projects	Habitat available in the Mitigation Bank for Outside Projects consists of: 158.9 acres of non-native grassland, 71.1 acres of Riversidian sage scrub, 18.8 acres of mule fat scrub, 11.1 acres of southern willow scrub, 7.7 acres of juniper woodland, 1.7 acres of sycamore riparian woodland, and 297.8 acres of agricultural lands. 254 acres of the agricultural lands would be converted to SKR habitat that would be used as a mitigation bank for SKR effects under the Proposed Project.	
D. Reserve Management	Biological management is expected to be largely non-intrusive and beneficial for Target Species and other species in the Plan Area. Property management activities in the Multiple Species Reserve include maintenance of roads and fences, installation of additional fencing, construction of the Reserve Manager's office and residence, implementation of the Fire Management Plan and a burn plan, and control of public access and uses of the property. Approximately 1.6 acres of habitat will be permanently affected by construction of the Reserve Manager's office/residence; occupied-SKR habitat will be mitigated by withdrawing credits for occupied SKR habitat in the Mitigation Bank.	
E. Federally Listed Species		
1) Stephens' kangaroo rat	A worst-case assumption is made that a total of 289.1 acres of occupied SKR habitat would be adversely affected in Operations and Plan Area Projects, even though only some would be affected. Mitigation involves habitat manage-	

Table 6-1
Alternatives Comparison Matrix

Decision-Making Criteria	Proposed Project (Lake Mathews MSHCP/NCCP)	No Action
E. Federally Listed Species, cont.	ment of the Multiple Species Reserve to enhance for the SKR. In addition, 254 acres of agricultural land in the Mitigation Bank will be converted to SKR habitat.	
2) Coastal California gnatcatcher	A worst-case assumption is made that a total of 344.1 acres of habitat would be adversely affected and 7 pairs would be taken in Operations and Plan Area Projects, even though it is likely that not all of this habitat would actually be affected. Mitigation consists of conserving 344.1 acres of Riversidian sage scrub onsite in the Mitigation Bank. At least 8 pairs of gnatcatchers are known to occupy Metropolitan's Mitigation Bank lands.	
3) Bald eagle	Bald eagles overwinter at Lake Mathews and currently do not nest onsite. No take of occupied nest sites during the breeding season is covered.	
F. Cumulative Effects	Implementation of the Proposed Project would not result in significant cumulative effects to the Target Species due to the establishment of the Multiple Species Reserve and management of the Combined Reserve. Cumulative effects associated with Outside Projects cannot be assessed at this time, but would be addressed in additional environmental documentation for those projects as appropriate. Some of the anticipated biological impacts to the Target Species in Operations and Plan Area Projects could result in adverse cumulative impacts, however the extensive effect minimization and mitigation program provided in the Lake Mathews Plan would offset these effects and result in a regionally important reserve for sensitive species of plants and animals in western Riverside County.	

Table 6-1
Alternatives Comparison Matrix

Decision-Making Criteria	Proposed Project (Lake Mathews MSHCP/NCCP)	No Action
Land Use and Planning **Air Quality** **Water** **Geological Problems** **Transportation/Circulation** **Population and Housing** **Recreation** **Cultural Resources** **Energy and Minerals** **Aesthetics** **Hazards** **Noise** **Public Services and Utilities**	No significant adverse effects in these issue areas. Mitigation necessary only for cultural resources during habitat enhancement activities that are ground-disturbing. Mitigation measures by the Management Committee consist of avoidance of any known significant historic or cultural resources during ground-disturbing activities associated with habitat enhancement.	No significant adverse effects in these issue areas. Mitigation would be evaluated on a project-by-project basis and would be covered under individual environmental documents for those projects.

7. CEQA Determination

On the basis of this initial evaluation:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION has been prepared.

_X_ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect of this case because the mitigation measures described in the discussion of environmental issues have been added to the project. A MITIGATED NEGATIVE DECLARATION has been prepared.

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

___ I find that the proposed project MAY have a significant effect on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.

Laura J. Simonek — August 3, 1995

Laura Simonek — Date

Acting Manager, Environmental Affairs

8. Persons and Agencies Consulted

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