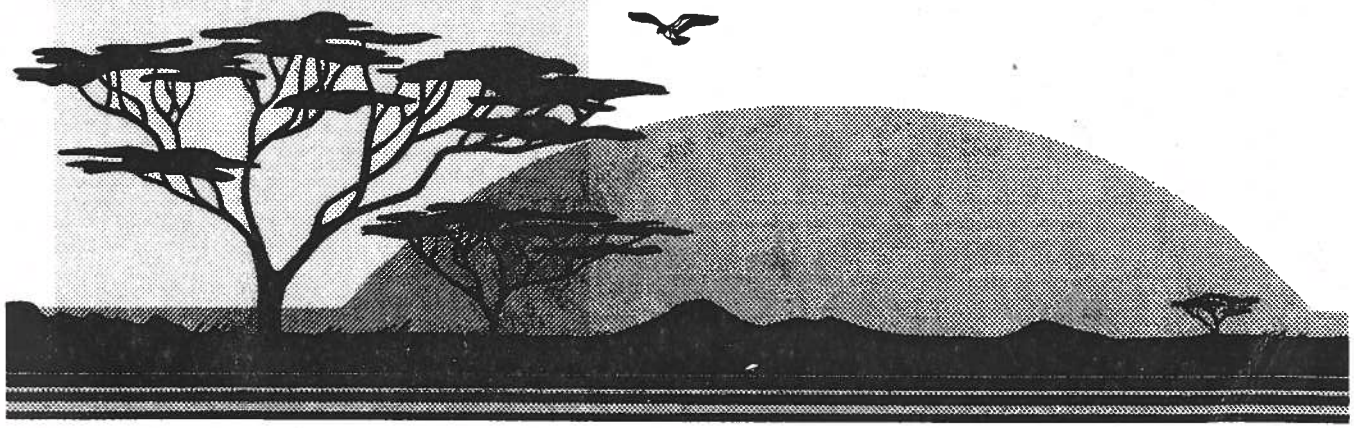
RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY

March 1996

Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County California



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Summary

On behalf of its members[1], the Riverside County Habitat Conservation Agency (RCHCA) is seeking a permit from the U.S. Fish and Wildlife Service (USPWS) and an agreement with the California Department of Fish and Game (CDFG) which would authorize incidental and management take, respectively, of the Stephens' kangaroo rat (SKR), a species protected under both the California and federal Endangered Species Acts (ESA). Toward this objective, the RCHCA has prepared a Habitat Conservation Plan (HCP) which describes the conservation, mitigation, and monitoring measures which will be implemented if the permit and agreement are approved by the USFWS and CDFG.

This summary briefly describes the:

- Reasons for which the RCHCA is seeking the permit and agreement;
- General terms and conditions proposed in the HCP regarding incidental take of SKR;
- Specific measures proposed in the HCP to minimize, mitigate, and monitor the impacts of incidental take on SKR, and;
- Institutional and funding arrangements for implementation of the plan.

A. Reasons for Seeking the Permit and Agreement

The RCHCA is seeking the permit and agreement in order to establish a regional mechanism through which otherwise lawful activities resulting in incidental take of SKR may meet ESA requirements without having to secure individual permits and agreements with USFWS and CDFG. Additionally, this HCP will help achieve specific conservation goals in RCHCA jurisdictions by preserving the biological diversity and natural open space which distinguish western Riverside County from other parts of southern California.

The incidental take authorizations provided by the USFWS permit and CDFG agreement are necessary for activities which affect SKR since the California and federal ESA prohibit actions which directly or indirectly harm a species listed as threatened or endangered. RCHCA member agencies include the County of Riverside and the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula.

This HCP is intended to replace a SKR Short-Term HCP which the RCHCA and its member agencies have been implementing since 1990. Under that plan the USFWS and CDFG authorized a limited amount of incidental take subject to conservation and mitigation actions designed to:

1. Provide for interim protection of Study Areas in order to allow for their evaluation as potential SKR reserves;
2. Ensure full mitigation for all SKR occupied habitat incidentally taken through acquisition of replacement habitat in Study Area locations approved by the USFWS;
3. Allow time for the RCHCA to conduct biological research necessary to document the species' characteristics and identify factors essential to its continued existence in the HCP area;
4. Design a regional reserve system adequate to ensure long-term SKR persistence in the plan area, and;
5. Establish reliable funding sources sufficient to implement all provisions of the HCP for which the RCHCA assumed financial responsibility.

The biological research and planning process for establishing the SKR reserves is now complete, and the RCHCA is seeking to:

1. Replace its existing authorizations for incidental take of SKR with a 30-year permit and agreement;
2. Replace the conservation, mitigation, and monitoring measures established under the Short-Term plan with those described in this HCP, and;
3. Implement a conservation program for the SKR which will also provide the basis for a subsequent ecosystem based plan covering all sensitive habitat types and species in RCHCA jurisdictions.

B. General Terms and Conditions Proposed by the RCHCA

The new permit and agreement would be valid for 30 years and would authorize incidental take of SKR on RCHCA member agency lands within the plan area mapped in the HCP (Figure S-1). The HCP area covers 533,954 acres within RCHCA member jurisdictions, including approximately 30,000 acres of occupied SKR habitat (Table S-1).

Salient terms and conditions proposed for this HCP by the RCHCA include the following:

1. The RCHCA will establish a regional system of seven core reserves for conservation of SKR and the ecosystem upon which it depends. The core reserves encompass 41,221 acres, including 12,460 acres of SKR occupied habitat. The

vast majority of land included in these reserves is presently in public ownership; some privately held properties remain in the Lake Mathews-Estelle Mountain, Lake Skinner-Domenigoni Valley, and San Jacinto-Lake Perris reserves;

2. The RCHCA will complete the core reserve system through:
   a. execution of an agreement with Western Waste Industries, USFWS, CDFG, and the County of Riverside concerning mitigation for SKR impacts resulting from the proposed expansion of the El Sobrante Landfill in the Lake Mathews core reserve;
   b. acquisition of fee simple interest or conservation easements on remaining privately held lands within core reserves, or;
   c. acceptance of land dedications from, or negotiation of voluntary conservation agreements with, property owners in such areas;

3. In order to provide additional assurances of SKR persistence in the HCP area, the core reserves will be expanded through the use of federal lands managed by the U.S. Bureau of Land Management (BLM). Consistent with the provisions of an Assembled Land Exchange Agreement recently executed by BLM and the RCHCA, federal lands available for trade will be used to expand the amount of SKR occupied habitat conserved within core reserves to approximately 15,000 acres;

4. The RCHCA will ensure ongoing and appropriate management of conserved SKR habitat in the core reserves through:

   a. Execution of agreements with responsible land management entities, including the BLM, State of California, University of California at Riverside, Riverside County Regional Park and Open Space District, and others;

   b. Establishment of a Reserve Managers Coordinating Committee to provide a forum through which the RCHCA, individual reserve managers, USFWS, and CDFG may monitor regional changes in SKR population and habitat, confer regarding SKR habitat management techniques, and implement appropriate management programs, and;

   c. Establishment of non-wasting endowments to provide ongoing funding for SKR monitoring, habitat management, and necessary biological research in the Lake Mathews-Estelle Mountain, Lake Skinner-Domenigoni Valley, Motte Rimrock, and Sycamore Canyon Park core reserves;

5. During the period prior to completion of the core reserves, incidental take of SKR occupied habitat will be subject to authorization by RCHCA member agencies. In the case of entities exempt from member agency permits, the RCHCA will authorize incidental take directly. Upon completion of the core reserves, specific authorization will not be required for incidental take occurring outside of core reserves;

   Table S-2-Summary Characteristics of Acreage in the SKR Core Reserves

6. Within core reserves, incidental take of SKR will be subject to approval by USPWS and CDFG. However, such approval will not be required for incidental take occurring as a result of activities necessary to ensure the health, safety, and welfare of the general public. This includes emergency response activities, clearance of flammable vegetation for fire prevention purposes, and activities necessary to operate and maintain public facilities;

7. Bona fide agricultural activities will not be required to perform SKR biological surveys. With the exception of the construction of agricultural structures requiring building permits, agricultural activities in the plan area will not be subject to SKR mitigation requirements established under this HCP;

8. Actions taken by public agencies to respond to emergency conditions or operate and maintain public facilities will not be subject to the submission of SKR biological surveys or approval by USFWS and CDFG. Consistent with the provisions of a Cooperative Agreement executed between the USFWS and RCHCA member agencies, this HCP provides that clearance of flammable vegetation by private property owners for fire prevention purposes will not require submission of SKR biological surveys or be subject to approval by USFWS and CDFG;

9. Individual land owners outside the HCP area may receive incidental take authorizations from the RCHCA if such owners acquire and dedicate to the RCHCA replacement SKR occupied habitat in an amount at least equal to that to be incidentally taken. All such replacement habitat will be subject to specific approval by USFWS and CDFG;

10. Recognizing the limitations of single species HCP's, following approval of the SKR plan the RCHCA intends to amend it into an ecosystem-based HCP designed to provide for conservation of all sensitive habitat types and species in RCHCA member jurisdictions. In concert with commitments received from the U.S. Department of Interior, the RCHCA will seek appropriate conservation credit from USFWS and CDFG for all natural resource values present on lands dedicated to habitat conservation pursuant to this plan, its predecessor Short-Term HCP, and other independent conservation actions which have occurred in the plan area.

Subject to the above terms and conditions, incidental take of SKR will be permitted anywhere in the HCP area.

C. Conservation, Mitigation, and Monitoring Measures

To meet the requirements specified in the California and federal ESA's for the incidental and management take authorizations it seeks, the RCHCA has prepared this HCP which identifies how the impacts of SKR incidental take will be minimized, mitigated, and monitored, and the degree to which the species' persistence in the plan area will be ensured.

1. Establishment, Completion, Expansion, and Management of the Core Reserves

The establishment, completion, expansion, and management of the core reserves defined in Chapter 5. SKR Conservation and Mitigation Measures will be the primary means of mitigating the impacts of incidental take to SKR in the plan area. These conservation and management activities also will be the primary means of assuring that SKR will persist within the plan area.

Through its implementation of the Short-Term SKR plan the RCHCA has ensured the conservation of the vast majority of land contained within the core reserves defined in this HCP. In order of decreasing size, the seven core reserves established by this HCP are:

(a.) Lake Skinner-Domenigoni Valley (13,158 acres);
(b.) Lake Mathews-Estelle Mountain (11,243 acres);
(c.) San Jacinto-Lake Perris (10,932 acres);
(d.) Sycamore Canyon-March Air Force Base (2,502 acres);
(e.) Steele Peak (1,753 acres);
(f.) Potrero ACEC (995 acres)
(g.) Motte Rimrock (638 acres)

In the aggregate these core reserves encompass 41,221 acres, including 12,460 acres of SKR occupied habitat.

Lands within the Lake Skinner-Domenigoni Valley core reserve will be managed and administered pursuant to the terms of the Southwestern Riverside County Multi-Species HCP prepared by the Metropolitan Water District (MWD) and RCHCA, and approved by USFWS and CDFG. Lands within the Lake Mathews core reserve will be managed pursuant to the Lake Mathews Multi-Species HCP prepared by MWD and RCHCA and approved by USFWS and CDFG in December 1995.

To date, the RCHCA has expended more than $24 million to acquire land for the SKR core reserves. That investment has been combined with interagency agreements to ensure the establishment of a regional reserve system for the SKR.

In order to complete the reserves designated herein, the RCHCA will acquire or otherwise assure the conservation of private properties remaining in the reserves.

The core reserves will be expanded through a program involving trade of federal lands managed by BLM. The land trade program will be conducted pursuant to the provisions of the RCHCA/BLM Assembled Land Exchange Agreement included in Appendix A.

This HCP establishes new agreements and coordinates existing arrangements among the agencies responsible for management of public lands in the proposed core reserves. The plan provides a framework and funding for:

(a.) Coordinating the management of conserved SKR habitat; S-9
(b.) Increasing the amount and quality of SKR habitat in the reserve system through additional land acquisitions and adaptive management activities including habitat enhancement and restoration, and;
(c.) Monitoring the status of the SKR populations in the plan area.

Habitat management for the benefit of SKR will be implemented on core reserve lands in public ownership upon approval of this HCP by USFWS and CDFG. Ongoing management programs for SKR will be extended to encompass all lands acquired or otherwise conserved by the RCHCA within the context of this HCP. Management programs are expected to include habitat enhancement and restoration, access controls, fire management activities, grazing where appropriate, and managed recreational activities.

Over the 30-year term of the permit and agreement, RCHCA will establish non-wasting endowments for habitat management, monitoring, and biological research in the core reserves in the amount of $3.9 million.

In order to coordinate habitat management and biological monitoring activities among the individual core reserves, the RCHCA will establish a Reserve Managers Coordinating Committee (RMCC). Members of the RMCC will include one representative each from those agencies responsible for land management in the core reserves, as well as representatives of the RCHCA, CDFG, USFWS, and the University of California Cooperative Extension. Managers of public lands within the core reserves include:

- CDFG (San Jacinto Wildlife Area and Lake Mathews Ecological Reserve);
- California Department of Parks and Recreation (Lake Perris State Recreation Area);
- MWD (lands within the Lake Skinner Domenigoni Valley, and Lake Mathews core reserves);

- The Nature Conservancy (March Air Force Base SKR Management Area);
- City of Riverside Park and Recreation Department (Sycamore Canyon Park);
- University of California at Riverside (Motte Rimrock Reserve);
- Riverside County Regional Park and Open Space District (County lands within the Lake Skinner reserve), and;
- BLM (manager of federal lands in the Lake Mathews, Lake Skinner, Motte Rimrock, Potrero ACEC, and Steele Peak reserves)

Additionally, the California Department of Forestry and Fire Protection will be asked to participate as a technical advisor on fire management issues.

The RCHCA will work with each of the core reserve managers to develop and implement SKR management plans. These plans will provide guidelines and set priorities for habitat management and biological monitoring activities. They will supplement, and not supplant, existing conservation plans and programs in core reserves with the intent of optimizing benefits to SKR within the funding constraints of the RCHCA's program.

2. RCHCA Funding Commitments

In addition to the $30 million expended to date by the RCHCA to implement the Short-Term HCP and develop this conservation plan, the agency will provide an additional $11.7 million toward land acquisition, core reserve management, and administration activities necessary to implement this HCP. The implementation budget for this HCP is presented in Chapter 5. SKR Conservation and Mitigation Measures.

3. Monitoring of Compliance and Plan Effectiveness

The RCHCA will maintain responsibility for monitoring compliance with the terms and conditions of the permit and agreement. Additionally, with the assistance of the RMCC, the RCHCA will evaluate the effectiveness of HCP conservation and mitigation measures, and submit annual reports concerning same to USFWS and CDFG.

Annual reports will be reviewed by USFWS and CDFG to assess the effectiveness of the HCP in ensuring SKR persistence in the plan area. If necessary, modifications to the HCP will be made to address problems identified in the annual reports.

D. Plan Implementation

All of the institutional arrangements necessary for plan implementation are presently in place or will be established through interagency and cooperative agreements. The RCHCA Joint Powers Agreement already vests sufficient authority in the agency to perform all tasks necessary to fulfill its commitments for HCP implementation.

Implementation of this HCP will be governed by legal agreements executed among the RCHCA, its member agencies, USFWS, CDFG, BLM, U.S. Department of Interior, and the State of California Resources Agency. The purpose of such agreements is to specify the terms and conditions under which the HCP will be implemented, and define the roles and responsibilities of all parties. The RCHCA and its member agencies will execute a combined Implementation Agreement/California Endangered Species Permit agreement with the aforementioned federal and State agencies.

1. Roles and Responsibilities
The RCHCA and its member agencies will be responsible for implementation of the HCP, with recipients of incidental take authorizations sharing responsibility for compliance with HCP terms and conditions.

The core reserve managers will be responsible for habitat and species management within core reserves, and their role in plan implementation will be an extension of that function. In their regulatory capacity USFWS and CDPG will maintain responsibility for approval of RCHCA core reserve expansion land acquisitions, approval of incidental take within core reserves as specified in this HCP, approval of RCHCA requests for amendments to this HCP, and provision of technical assistance in the development and evaluation of SKR management, monitoring, and biological research activities.

2. HCP Financing
Through the combination of revenue sources including RCHCA contributions, federal cash and in-kind financial assistance, in-kind assistance from the State of California, and other sources, the RCHCA will ensure that sufficient funding exists to implement all aspects of this HCP.

Projected budget for implementation of this HCP

As of January 1995 the RCHCA had expended approximately $30 million to implement the SKR Short-Term HCP and develop this plan. Thus, the combined expenditures for SKR habitat conservation under both HCP's is projected to exceed $45 million. Of this total, over $41.7 million in local funding will be provided to conserve the SKR in RCHCA member jurisdictions. The RCHCA is not aware of any single species conservation program in the United States which equals this commitment of local financial resources.

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1. Purpose, Scope, and Planning Context

This chapter identifies the purpose and scope of this Habitat Conservation Plan (HCP), the process by which the plan has been prepared, the federal and State laws on which it is based, and its relationship to other conservation plans and programs.

A. Purpose

The primary purposes of this HCP can be defined in terms of its legal functions as a document, its relationship to the Short-Term Stephens' Kangaroo Rat (SKR) HCP currently being implemented by the Riverside County Habitat Conservation Agency (RCHCA), and its goals as a conservation program for SKR (Figure 1).

- As a document, the primary purpose of this HCP is to provide the information required for issuance of a federal permit from the U.S. Fish and Wildlife Service (USFWS) for "incidental take" of SKR and equivalent authorization from the California Department of Fish and Game (CDFG) through an endangered species permit. The definition of "take" and the information requirements for the federal permit and State agreement are presented under "D. Regulatory and Planning Context" below and in Appendix B.

- In relation to the Short-Term HCP, the purpose of this document is to replace the RCHCA's existing SKR conservation program and its federal and state incidental take authorizations with the program and authorizations described herein. The Short-Term HCP is described under "E. Other Plans and Programs" below.

- As a conservation program, this HCP intends to provide for the establishment, expansion, and ongoing management of permanent reserves in a manner which will ensure the continued existence of SKR in the HCP area of western Riverside County while also providing opportunities to benefit other species of concern. The permanent reserves and the management, mitigation, and monitoring measures to be implemented by the RCHCA are described in Chapter 5. SKR Conservation and Mitigation Measures.

B. Scope

The scope of this HCP can be defined in terms of the area, species, activities, and authorizations covered by the plan.

- The area covered by the plan includes 533,954 acres within the jurisdictions of RCHCA member agencies in western Riverside County. Boundaries and characteristics of the plan area are described in Chapter 2. Plan Area Profile. Only lands within the jurisdiction of the RCHCA members as mapped in this HCP are covered by the plan and incidental take permits sought by the RCHCA.

- The SKR is not the only federal or state listed species in the plan area, but it is the only species for which the RCHCA is presently seeking authorization for incidental take from USFWS and CDFG. Therefore, this plan is focused on the habitat and other biological requirements of the SKR. Those requirements are described in Chapter 3. Summary Profile of the SKR, together with information about the ecosystem on which the SKR depends. Additional scientific information on the biological requirements of SKR is included in Volume II of this plan.

- The activities covered by the plan fall into three categories:

  1. Actions by private land owners, local and regional public agencies, public and private utilities, and farmers that are otherwise lawful but constitute incidental take of SKR as defined by the federal and State Endangered Species Acts (ESA);

  2. Establishment and management of permanent SKR reserves by the RCHCA in cooperation with other public agencies and individual landowners, and;

  3. Implementation by the RCHCA and its member agencies of the conservation, mitigation, and monitoring measures specified in this plan.

  The type and level of incidental take expected in the plan area, establishment and management of the reserves, and implementation of the plan are discussed in Chapter 5. SKR Conservation and Mitigation Measures.

- The authorizations sought by the RCHCA are a 30-year permit from USFWS for incidental take of SKR pursuant to Section 10(a)(1)(B) of the federal ESA, and a 30-year California Endangered Species Permit with CDFG regarding management take of the same species, pursuant to Section 2081 of the California Fish and Game Code. Only authorization for incidental take of SKR is being sought at this time. However, the plan is structured to allow for future amendments that could broaden the conservation program to include other species and habitat types. The authorizations being sought and the provisions for amending the plan over time are discussed in Chapter 5. SKR Conservation and Mitigation Measures.

C. Planning Process

This HCP was prepared under the direction of the RCHCA Board of Directors, in consultation with USFWS and CDFG, and with the assistance of the RCHCA Advisory Committee and a team of biologists, planners, and legal counsel retained by the RCHCA. The planning process began in 1990 with biological studies conducted as part of the implementation of the Short-Term HCP and culminated with a 20-month public scoping and hearing process that concluded in November 1994.

1. RCHCA Board of Directors

The RCHCA is a Joint Exercise of Powers agency established pursuant to Section 6500 et seq of the Government Code of the State of California. The RCHCA was formed in June 1990 by the County of Riverside and the Cities of Hemet, Lake Elsinore, Moreno Valley, Perris, and Riverside; subsequently, the Cities of Corona, Murrieta, and Temecula joined the agency. As stated in its Joint Powers Agreement, the purpose of the RCHCA is 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."

The agency is governed by a Board of Directors consisting of one representative designated by the governing body of each member agency. The Board holds regular meetings which are called, noticed, located, and conducted in accordance with applicable provisions of the California Government Code. The RCHCA is staffed by an Executive Director and a Senior Administrative Analyst, who are responsible for overseeing implementation of the Short-Term SKR HCP, development and ultimate implementation of this HCP, and management of all administrative and financial affairs of the agency.

2. Advisory Committee and Working Groups

The RCHCA Advisory Committee was appointed by the RCHCA Board of Directors in 1990 and includes representatives of the Metropolitan Water District, Southern California Edison, Riverside County Farm Bureau, Building Industry Association, Sierra Club, Audubon Society, Riverside County Property Owners Association, Endangered Habitats League, Riverside County Transportation and Land Management Agency, Riverside County Waste Resources Management District, and individual farmers, biologists, property owners, land development companies, and others.

The RCHCA Advisory Committee holds regular meetings open to the public and is responsible for making recommendations to the RCHCA Board of Directors concerning policy and financial matters, development and implementation of the SKR HCP, and other issues of concern to the agency.

3. Consultant Team

The consultant team which participated in the development of this document includes legal counsel, field and research biologists, and parties with expertise in HCP's, federal and State incidental take permits, and public policy issues. Biological studies commissioned by the RCHCA are summarized in Chapter 3. Summary Profile of the SKR, with detailed reports included in their entirety in Volume II. Other studies conducted as part of the planning process are summarized in Chapter 4. Alternatives Considered.

4. Resource Agency Cooperation

In connection with the implementation of the Short-Term HCP, and consistent with their policies regarding interagency cooperation, representatives of USFWS, and CDFG have participated in the planning process for this HCP since its inception. Specifically, USFWS and CDFG have provided technical expertise regarding the biological requirements of SKR and reserve design, attended RCHCA Board of Directors and Advisory Committee meetings, and participated in the discussions of the ad hoc biological working group. Both USFWS and CDFG have been supportive of the RCHCA's joint efforts with federal and State agencies to acquire and conserve lands for their habitat values. In addition, USFWS has made its Geographic Information Systems (GIS) computer capabilities and data base available for conservation planning purposes.

The RCHCA also received significant support from BLM in the development of this HCP. Details of the role of federal lands in supplementing SKR conservation were determined through cooperative efforts between staff members of the RCHCA and BLM. Additionally, most of the information presented in this document concerning federal lands either intended for inclusion in core reserves or as exchange properties for acquisition of SKR habitat was provided by BLM staff. Details concerning the land exchange program are presented in an Assembled Land Exchange Agreement executed between BLM and RCHCA; that document is included in Appendix A.

5. Public Scoping Process

The implementation of the Short-Term HCP raised a number of significant issues which prompted the RCHCA Board of Directors to consider a wide range of alternatives regarding the plan intended to replace it. In general, those issues focused on the political and economic realities facing the Board regarding the regulation of land use on, and potential acquisition of, privately held properties for purposes of implementing the federal and State ESA's. Public concern over these issues, together with the legal requirements regarding the HCP and its environmental documentation, led to the development of the options discussed in Chapter 4. Alternatives Considered.

As part of the overall scoping process and in anticipation of the National Environmental Policy Act (NEPA) environmental documentation for USFWS' action on the HCP, five public workshops and more than 40 public meetings and hearings of

the RCHCA Board of Directors and Advisory Committee were held (see Table 1); over 300 issues were raised in written comments submitted to the RCHCA. This process culminated in the RCHCA Board of Directors' decision on August 19, 1993 to direct staff and consultants to prepare a draft SKR HCP intended to accomplish the following:

(a.) Finite boundaries for core reserves would be set based on: a) SKR biological studies performed by the RCHCA, and; b) compliance with the federal and State ESA standards. Such boundaries would include public lands as well as those private properties which can be acquired with available RCHCA funds and are deemed biologically necessary for reserves. These core reserves would form the nucleus of future multi-species habitat conservation efforts;

(b.) The SKR Study Areas established under the Short-Term HCP would be eliminated;

(c.) In anticipation of future multi-species efforts to be undertaken by the RCHCA, the SKR HCP would include a provision through which 1:1 conservation credit would be received from USFWS and CDFG for all other habitats and species present on lands acquired as part of the SKR program;

(d.) Performance standards for reserve land acquisitions would be established, and the HCP would illustrate how additional land could be added to reserves should the RCHCA choose to do so for multi-species purposes. General guidelines would be established regarding the suitability of land the RCHCA would consider purchasing for reserves;

(e.) A management committee would be created to adopt procedures for monitoring and evaluating biological viability of the permanent reserve areas. This committee would be responsible for recommending appropriate adjustments or alterations to the HCP to ensure the long-term viability of the species;

(f.) The HCP would include a financing plan sufficient to ensure implementation of the SKR conservation program. Local interest groups should be coalesced into a political action committee to jointly and aggressively pursue federal and state funding to supplement SKR mitigation fees and other funding sources.

6. Public Review Process for the November 4, 1993 Draft HCP

Following the August 19, 1993 RCHCA Board of Directors meeting the RCHCA circulated a Draft HCP dated November 4, 1993. That document was the subject of a series of meetings to receive comment from the public concerning its contents. Table 1 presents a list of those meetings.

The RCHCA received a total of 81 letters commenting on the November 4, 1993 draft of the SKR HCP. In addition, many hours of public testimony were received by the RCHCA Board of Directors. After reviewing all public comment letters and oral testimony the RCHCA Board of Directors instructed staff to make the following modifications to the November 4, 1993 draft of the SKR HCP:

(a.) All references in the draft HCP to a 1/2 mile buffer area proposed around SKR core reserves would be eliminated. This would include the deletion of provisions concerning review of proposed General Plan amendments and zoning changes, as well as the proposed requirement for completion of biological assessments for all projects in the buffer area;

(b.) The HCP would include a commitment by the RCHCA to expand the SKR core reserves by an additional 2,500 acres of value to the SKR core reserve system. When that standard has been reached RCHCA land acquisition activities for the SKR would terminate, and the SKR mitigation fee would be reduced to that amount required to finance core reserve management activities over the balance of the 30-year permit period;

(c.) RCHCA legal counsel would draft model California Environmental Quality Act (CEQA) findings concerning projects outside of core reserves which will result in impacts to SKR. Such model findings would be available for use as appropriate by RCHCA member agencies;

(d.) The HCP would reference a procedure for addition of new jurisdictions to the RCHCA. In recognition of the fact that the City of Murrieta has collected SKR mitigation fees since its incorporation, the City could, if it so chooses, become a member of the RCHCA by transferring all mitigation fees collected to the RCHCA and agreeing to implement the SKR HCP. (In fact, the City of Murrieta subsequently joined the RCHCA in 1995) For land within other non-member jurisdictions, coverage under the RCHCA's HCP should be accomplished through participation of the particular city in the RCHCA. If such cities decline to join the RCHCA, the HCP would allow individual land owners to receive incidental take from the RCHCA if they acquire replacement SKR occupied habitat on a 1:1 basis for all SKR occupied acres incidentally taken. Replacement habitat must be acceptable to the RCHCA, USFWS, and CDFG;

(e.) SKR mitigation fees would be applied in uniform fashion by all RCHCA member agencies, and would be assessed over the entirety of parcels for which development permits are approved. The HCP would specify that land disturbance for agricultural purposes is exempted from the SKR mitigation fee; agricultural structures would be assessed fees based upon the footprint of disturbance created for the structure;

(f.) Until the RCHCA has expanded the core reserves by 2,500 acres of value to the core reserve system, SKR biological surveys would be required in the same fashion as that employed for the Short-Term HCP, with the

exception of the following activities for which no surveys will be necessary unless required by NEPA or CEQA: a) agricultural activities other than erection of structures; b) permitted activities which result in no land disturbance, e.g., lot splits; c) activities necessary to respond to emergency conditions, and; d) activities necessary to operate and maintain public facilities and improvements. Until the RCHCA has reached the 2,500 acre goal, SKR surveys required for the construction of one single-family home would be eligible for 50% cost reimbursement by the RCHCA. When the RCHCA has reached the 2,500 acre goal SKR biological surveys would not be required under the HCP. However, this provision would not supersede CEQA or NEPA requirements for conduct of biological surveys;

(g.) The County of Riverside, California Department of Forestry, and the University of California Riverside (UCR) Cooperative Extension would be added to the Reserve Managers Coordinating Committee;

(h.) The HCP would include financial projections of the costs and revenues associated with implementation of the plan. This would include projected RCHCA revenues, land acquisition costs to complete the core reserves and achieve the 2,500 acre core reserve expansion standard, and projected habitat management expenses;

(i.) The HCP would encourage RCHCA member agencies to adopt and implement density compensation and transfer programs for privately owned land in SKR core reserves;

(j.) References in the draft HCP to CPI indexing of SKR mitigation fees would be eliminated;

(k.) The HCP would provide that within core reserves activities necessary to respond to emergencies threatening public health and safety would require no pre-approval from the USFWS or CDFG even if they may result in incidental take of SKR. Any necessary mitigation would be determined in consultation with the USFWS and CDFG after emergency conditions have ended;

(l.) The HCP would permit RCHCA member agencies to conduct necessary maintenance activities on roads, flood control channels, landfills, and other public facilities within core reserves. Regional SKR conservation actions to be undertaken by the RCHCA would provide mitigation for incidental take resulting from these activities;

(m.) Existing and planned public agency operational, recreational, and project areas around the existing Lake Mathews, Lake Perris, and Lake Skinner reservoirs and the future Domenigoni reservoir would be excluded from designated SKR core reserves. The HCP would specify that provisions of existing Metropolitan Water District agreements with the USFWS and CDFG concerning the Domenigoni Reservoir, Mills Filtration Plant, Inland Feeder Pipeline, San Diego Pipeline, and other projects would determine procedures for SKR incidental take and mitigation on affected lands.

7. Public Review Process for the July 1994 Draft HCP

In July 1994 the RCHCA issued a second draft HCP incorporating all of the above changes adopted by the RCHCA Board of Directors. The July 1994 draft was circulated for public review and also was the subject of five additional public hearings.

During the public review period the RCHCA received more than 40 letters presenting written comments concerning the draft HCP. Most of these letters requested some type of modification to the document; requested changes reflected a broad spectrum of opinion, from those seeking to immediately abandon all SKR conservation activities to those urging the RCHCA to provide a much greater commitment to conservation of this species. Of particular importance were comments from RCHCA member agencies requesting that the HCP precisely define an end point to the agency's land acquisition commitment.

Following extensive public testimony the RCHCA Board of Directors endorsed the following modifications to the July 1994 draft HCP:

(a.) The RCHCA commitment to additional land acquisition will terminate upon completion of the core reserves defined in the July 1994 draft. Expansion of those reserves was endorsed, but responsibility for additional land acquisition will belong to the federal government. Toward that end, the federal land identified by BLM in their South Coast Resource Management Plan (RMP) as available for use in support of the RCHCA's SKR conservation efforts (detailed in Appendix A) will be used to acquire the additional 2,400 acres of SKR occupied habitat deemed necessary by USFWS and CDFG;

(b.) The SKR conservation commitments made by BLM in their Record of Decision on the RMP should be included in the HCP as the method by which the core reserves will be expanded following their initial completion by the RCHCA, and;

(c.) The HCP will include a discussion of the status of the planned realignment of March Air Force Base (MAFB). This will include a review of the options currently under consideration in the draft MAFB Reuse Plan developed by the March Joint Powers Authority for those areas of the base now designated as Open Space and SKR Management Areas.

8. Public Review Process for the February 1995 Draft HCP

In February 1995 the RCHCA completed its third draft of the HCP containing the modifications described above. That document was submitted to USFWS and CDFG for review, and its provisions provided the basis for the Proposed Project

subsequently evaluated in a Draft Joint Environmental Impact Statement/ Environmental Impact Report (EIS/EIR).

The February 1995 Draft HCP was circulated to interested members of the public in the ensuing months and was discussed on numerous occasions during public meetings of the RCHCA Board of Directors and the RCHCA Advisory Committee.

As the Proposed Project in the EIS/EIR, the February 1995 HCP was subject to an extensive review process required under CEQA and NEPA. That review process is detailed in the Final Joint EIS/EIR included as Volume III of this HCP.

D. Regulatory and Planning Context

The regulatory and planning context of the HCP consists primarily of the federal and State laws governing authorizations for SKR incidental take that the RCHCA is seeking. These laws include the federal ESA, NEPA, California Fish and Game Code (including the State ESA), and CEQA. Salient provisions of those laws are discussed below and summarized in Table 2. Additional information concerning federal and State wildlife regulations is presented in Appendix B.

1. Federal ESA

Three sections of the federal ESA are relevant to the RCHCA's preparation of this plan and USFWS' action on the permit application: 13

- Section 9, which prohibits the taking of species listed as endangered or threatened;
- Section 10(a), which authorizes the issuance of incidental take permits and establishes standards for the content of HCP's, and;
- Section 7, which requires USFWS review of federal actions (including its own) that would affect a species listed as endangered or threatened, or would adversely modify critical habitat designated under the ESA for such species.

Detailed discussions of these and other relevant sections of the ESA are presented in Appendix B. Also presented in that Appendix are summaries of relevant sections of the California ESA and other State statutes.

2. NEPA

In addition to conducting an internal Section 7 consultation and making the HCP available for public review, USFWS must prepare appropriate environmental documentation prior to acting on the permit. This step is triggered by NEPA, which requires that the potential effects of actions taken by federal agencies be identified and analyzed in a written document. The document must be made available for public review and so noticed in the Federal Register. The practice of USFWS has been to publish a joint notice regarding the receipt of the permit application and the availability of the environmental documentation, thereby providing for a concurrent review of the HCP submitted by the applicant and the environmental documentation for USFWS' proposed action on it.

Volume III of this plan contains the NEPA documentation for USFWS' action. The documentation has been prepared jointly by USFWS and the RCHCA in the form of a combined EIS/EIR. USFWS is the lead agency for the NEPA component of the joint documentation.

3. California Fish and Game Code

The California Fish and Game Code includes the State ESA. Key provisions pertaining to this plan and CDFG's action include:

- Section 2080, which prohibits the taking of species which are either listed as endangered or threatened or are candidates for such listing;
- Section 2081, which authorizes CDFG to enter into agreements regarding take of candidate and listed species occurring for scientific, educational, or management purposes, and;
- Sections 2090-2097, which cover the State process for reviewing projects with potential impacts to State listed species and for species like the SKR that are also federally listed. Specific information concerning the above CEQA sections is presented in Appendix B.

4. CEQA

Similar to NEPA, CEQA requires lead agencies empowered to make discretionary decisions to evaluate the environmental effects of a proposed project before rendering a decision. The evaluation begins with an Initial Study to determine if the potential impacts of the proposed project would be potentially adverse and significant. If one or more significant impacts are identified, an EIR or Mitigated Negative Declaration must be prepared. If no significant impacts are determined a Negative

Declaration is prepared. If a project affects a listed species, CEQA mandates that a Negative Declaration or draft EIR be prepared and that the lead agency for the project must submit the Negative Declaration or EIR to the State Clearinghouse for review by CDFG.

Volume III of this HCP includes the CEQA documentation for the RCHCA's action on the plan, which is to implement the conservation program upon approval of the plan by USFWS and CDFG. The documentation also will be used by CDPG in their evaluation of the HCP. As previously noted, the documentation has been prepared cooperatively by the RCHCA and USFWS in the form of a joint EIS/EIR (see Volume III). The RCHCA is the lead agency for the CEQA component of the joint document; the role of CDFG is that of a "responsible agency" as defined in CEQA.

E. Other Plans and Programs

Other plans and programs relevant to this HCP include:

1. The existing Short-Term SKR HCP being implemented by the RCHCA;
2. The adopted General Plans of RCHCA member agencies;
3. The Southwestern Riverside County Multiple Species Habitat Conservation Plan (MSHCP), prepared by the RCHCA and MWD and approved by USFWS and CDFG in October 1992;
4. The draft Lake Mathews Multiple Species Habitat Conservation Plan (Lake Mathews MSHCP), prepared by the RCHCA and MWD and approved by USFWS and CDFG in December 1995;
5. The draft Multiple Species Habitat Conservation Strategy (MSHCS) for Riverside County;
6. The U.S. Bureau of Land Management (BLM) South Coast Resource Management Plan, and;
7. The State of California's Natural Communities Conservation Planning (NCCP) program.

Original HCP Fee Area and Stephens' Kangaroo Rat Study Area

Current HCP Fee Area and Stephens' Kangaroo Rat Study Area

1. Short-Term SKR HCP

The Short-Term SKR HCP currently being implemented by the RCHCA was part of a Section 10(a) permit application and 2081 agreement submitted to USFWS and CDFG in 1989 and finally approved by both agencies in October 1990. In general, the Short-Term HCP: a) identified the boundaries of the area covered by the permit and agreement; b) established ten Study Areas to be evaluated as potential SKR reserves; c) specified a process by which reserves would be identified and the boundaries of Study Areas could be modified, and; d) defined limitations on the amount, location, and duration of SKR incidental take.

a. Original Plan Area and Reserve Study Areas

The plan area for the Short-Term HCP was configured to encompass the estimated historic range of SKR habitat in western Riverside County, covering approximately 565,000 acres. As originally defined, the ten Study Areas encompassed approximately 85,000 acres or 15% of the total plan area, with individual Study Areas ranging in size from under 2,000 to over 20,000 acres (see Figure 2). Based on the best information available at that time, it was estimated that: 1) approximately 22,000 acres, or 4.2% of the plan area, were occupied by SKR, and; 2) over 16,000 acres or 73% of SKR occupied habitat occurred inside of Study Areas. These estimates were based primarily on maps prepared for CDFG in late 1988 and early 1989 by Dr. Michael O'Farrell and Curt Uptain.

b. Reserve Design and Boundary Modification Process

Since the approval of the Short-Term HCP, lands within the Study Areas have been evaluated by the RCHCA for their potential as permanent SKR reserves. This evaluation has occurred primarily through two mechanisms: 1) biological research, studies, and SKR surveys funded by the RCHCA, and; 2) HCP boundary modifications requested by individual land owners.

Research and studies conducted to date have focused on: 1) SKR distribution and the biological suitability of the habitat within each Study Area; 2) existing and proposed land uses within and adjacent to each area; 3) the economic feasibility of land acquisition, and; 4) identification of potential constraints on the area's long-term viability as a SKR reserve (see Chapter 3. Summary Profile of the SKR and Volume II for information on studies and research).

The HCP boundary modification process has been governed by the terms and conditions established in the 1990 agreements with USFWS and CDFG. Those agreements provide that changes to the boundaries of Study Areas and overall plan area may be proposed by individual applicants, who must submit their requests in writing to the RCHCA together with a SKR biological survey, assessor's parcel map of the property, and relevant land use and economic data. The RCHCA then reviews the proposed changes in terms of the biological suitability of the land as part of a

potential reserve (including its biological value as a buffer or movement corridor), the relative compatibility of land uses in the area, the financial feasibility of its acquisition, and potential effects of the boundary change on the feasibility of establishing a final set of SKR reserves.

Following this review, the RCHCA Board of Directors determines which modifications to submit to USFWS and CDFG for approval. The 1990 agreements further stipulate that the modifications must be submitted as a set and may be submitted no more frequently than once every six months. THE USFWS and CDPG may choose to approve or deny any or all of the modifications forwarded by the RCHCA.

Since October 1990, two sets of HCP boundary modifications were approved through this process:

- The first set involved both additions of land to and deletions from Study Areas, as well as proposed additions to the HCP area. The USFWS approved 16 modifications of the 21 requested by the RCHCA, resulting in the addition of approximately 1,600 total acres and 475 SKR occupied acres to the HCP area. Approved changes also resulted in the elimination of the Alessandro Heights Study Area pursuant to an agreement cited in the Short-Term HCP, addition of approximately 1,500 acres (including 1,000 acres of SKR habitat) to the Lake Skinner Study Area, and removal of approximately 2,000 acres (including 250 acres of SKR habitat) from twelve locations.

- In the second set of boundary modifications USPWS and CDPG approved 23 modifications which reduced the total size of Study Areas by 3,865 acres, including 337 acres of SKR occupied habitat. Seven of the nine Study Areas were modified, with the greatest number of changes occurring in Kabian Park and Steele Peak, the two Study Areas containing the highest proportion of privately owned properties. No additions to the HCP area were proposed.

  Subsequent to the second set, all Study Area and HCP area modification requests submitted or reactivated by property owners have been addressed by the RCHCA through the preparation of this HCP and are incorporated in the recommended conservation program (see Chapter 4. Alternatives Considered). Current boundaries of the Short-Term HCP area and Study Areas are shown in Figure 3.

  The HCP boundary modification process played a prominent role in the shaping of SKR reserves in western Riverside County. By providing a forum for the evaluation of biological, economic, and land use factors, the process served as a valuable laboratory in which the complexities of habitat conservation decision making in a rapidly urbanizing environment could be resolved. However, from the perspective of the local citizenry it also proved to be one of the most controversial aspects of the Short-Term HCP.

  The Short-Term HCP prohibition against take of SKR inside of Study Areas led many property owners with even minor development plans to petition for removal of land from Study Areas. The protracted time required to receive final decisions (no less than 18 months), along with attendant expense and uncertainty, proved extremely difficult for property owners to accept. As a result, the RCHCA and USFWS received a tremendous amount of criticism from local land owners who became disaffected with the entire SKR conservation program. This feeling of dissatisfaction also was shared by environmental groups who opposed removal of land from Study Areas during the Short-Term HCP on the basis that such decisions should not be made until permanent SKR reserves are defined. Environmental groups ultimately filed three lawsuits against the RCHCA based upon the boundary modification process; this proved costly not only to the RCHCA's finances but also to its relations with conservation interests whose support is important to successful HCP implementation.

c. Terms and Conditions in the Short-Term HCP Regarding Incidental Take of SKR

The original terms and conditions imposed on incidental take of SKR under the RCHCA's existing 10(a) permit and 2081 agreement are described below:

i. Within the HCP area incidental take of SKR can occur only on land located outside of the boundaries of Study Areas. Incidental take within Study Areas was authorized only for essential public utility projects, and only with the specific approval of USFWS and CDFG;

ii. Incidental take could not exceed 4,400 acres or 20% (whichever is less) of the total amount of occupied SKR habitat in the HCP area;

iii. For every one acre of incidental take occurring outside of Study Areas, one acre of SKR occupied habitat located within the Study Areas must be acquired by the RCHCA, placed in public ownership, and permanently conserved for the benefit of the species. All RCHCA replacement land acquisitions must be approved by USFWS and CDFG;

iv. RCHCA replacement acquisition acreage must be no less than 10% below actual incidental take acreage, as measured every six months;

v. When reviewing projects proposed within a Study Area, RCHCA members must:

   (a.) Require that a SKR biological report on the project be prepared by a biologist permitted by USFWS to trap the species;

(b.) Consider the effects of the project on reserve design and require preparation of an EIR if the potential effects are significant;

(c.) Provide USFWS and CDFG with an early opportunity to comment, and;

(d.) For the project to be approved, make a finding of "no significant environmental effect" on the future establishment of a SKR reserve in the Study Area.

vi. RCHCA members were required to collect a SKR mitigation fee as a condition precedent to issuance of grading, building, surface mining, and other land disturbance and permits in the HCP area. Mitigation fee revenues were expended by the RCHCA for implementation of the Short-Term HCP, including habitat acquisition, biological research, and preserve system planning. A minimum of 10% of SKR mitigation fees must be dedicated to habitat management;

vii. Boundaries of the HCP area and Study Areas could be modified only with the approval of USFWS and CDFG. The RCHCA could petition for such changes once every six months, with all proposed changes accompanied by SKR biological surveys and appropriate CEQA and NEPA environmental documentation, and;

viii. The authorization for incidental take of SKR was valid for an initial period of two years.

In response to formal requests from the RCHCA, USFWS and CDFG approved the following amendments to the permit and agreement:

i. The habitat replacement requirement was modified to allow for mitigation credit to be given by USFWS and CDFG on a case-by-case basis for the acquisition of non-SKR occupied habitat deemed important to preserve as buffers or corridors;

ii. The term of the existing permit and agreement was extended until June 30, 1996;

iii. A provision was added to allow authorized incidental take to occur any time within 15 years of the expiration of the permit and agreement, provided that the applicable SKR mitigation fees have been paid, replacement habitat has been acquired, and all other terms and conditions of the permit and agreement have been met;

iv. Projects involving essential public utilities within Study Areas were more specifically defined as those for "water, electricity, gas, and the like, in which no reasonable alternative location or route is available, taking into account comparable environmental consequences and costs of installation, and subject to approval of appropriate mitigation" by USFWS and CDFG.

d. Status Report

As of March 1, 1996, more than five years after the Short-Term HCP was approved by USFWS and CDFG:

i A total of 1,975 acres, or 45% of the 4,400-acre USFWS and CDFG authorization, have been incidentally taken under authority of the HCP;

ii Over 8,800 acres, including 4,184 acres of approved SKR replacement habitat, have been acquired by the RCHCA;

iii Approximately 700 acres have been dedicated to the RCHCA via Section 7 consultations;

iv Approximately $29.9 million in SKR mitigation fee revenue has been collected by RCHCA member agencies, and $10.2 million has been secured by the RCHCA from other sources;

v Approximately §24 million has been expended by the RCHCA to acquire habitat under the HCP, with an additional $2.5 million spent by other parties, e.g. ..State of California Wildlife Conservation Board;

vi A 9,000 acre multiple species reserve in the Lake Skinner/Domenigoni Valley area encompassing almost 1,200 acres of SKR occupied habitat has been established through cooperative action by the RCHCA and MWD, and;

vii A multiple species reserve in the Lake Mathews area encompassing approximately 9,000 acres of public lands, including 3,341 acres of SKR habitat, has been established through a second cooperative effort with MWD. 22

2. Local General Plans

Section 65350 et seq of the California Government Code requires each city and county in California to prepare and adopt "a comprehensive, long-term general plan for the physical development of the city or county." The plan must contain seven elements (land use, circulation, housing, conservation, open space, noise, and public safety) and may contain other

elements important to the physical development of the community (e.g., parks and recreation, public services and facilities, scenic highways, and historic preservation).

Habitat conservation is cited in the Government Code in connection with three of the mandatory General Plan elements:

- As part of the conservation element, which provides for "the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soil, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources";
- As part of the open space element, which provides for "the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecological and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lake shore, banks of rivers and streams, and watershed lands" and;
- Indirectly, as part of the land use element, which must designate "the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land."

The General Plans of RCHCA members are consistent with the provisions of the Government Code; they address habitat conservation primarily under one or more of the mandatory elements or in a combination of elements. In the aggregate the elements address a broad spectrum of HCP-related policies, including:

- sensitive species protection;
- habitat inventory/mapping;
- habitat acquisition;
- development review/control;
- site specific biological assessment;
- wildlife buffers/corridors;
- mitigation/monitoring, and;
- multi-species planning.

All nine General Plans of RCHCA member agencies address the issue of sensitive species protection through the planning process, which provides the basic framework for habitat conservation. As a means of ensuring wildlife protection, five plans also specify the creation of buffer zones around sensitive habitats and the preservation of wildlife movement corridors. Since planning is intended to produce orderly and appropriate development, the majority of the plans also focus on policies related to the development process. Eight of the nine member agency General Plans specifically require further site specific biological assessments when warranted by proposed development impacts or an inadequate habitat data base, and the plan that does not specify such provisions (i.e .. City of Corona) applies to less than one percent of the HCP area. Six of the plans also include specific policies regarding mitigation and monitoring measures. Habitat acquisition is addressed in four plans, and habitat inventory/mapping and multi-species included in three.

This HCP is consistent with General Plan policies and programs of RCHCA member agencies. The general scope of existing conservation-related policies in the General Plans of the RCHCA members is summarized in Table 3; specific policies are detailed in Appendix C.

3. Southwestern Riverside County Multi-Species Habitat Conservation Plan

The Southwestern Riverside County Multi-Species Habitat Conservation Plan (MSHCP) was prepared and submitted cooperatively by the RCHCA and MWD and approved by USFWS and CDFG in October 1992; this document and its accompanying agreements are incorporated by reference into this HCP. The MSHCP covers a 20,000 acre area includes approximately 9,000 acres of conserved habitat, 8,600 acres dedicated to two reservoirs and water related facilities, and 2,400 acres dedicated to recreation facilities at the planned Domenigoni and existing Lake Skinner reservoirs. The MSHCP anticipates the future listing of individual species, mitigates the impacts of the Domenigoni Reservoir, and provides for the ongoing management of the reserve through a Cooperative Agreement with USFWS and CDFG.

a. Plan Area Components

The area covered by the MSHCP includes three primary components:

- Land around Lake Skinner under MWD ownership;
- The Roy E. Shipley Reserve, which was established by MWD, RCHCA, and County of Riverside in 1991, and;

- Land adjacent to the project area for the new reservoir in Domenigoni Valley.

The first two of these components also are encompassed by the Lake Skinner Study Area identified in the Short-Term SKR HCP. These components also are part of the core reserves identified in this plan.

b. Goals and Objectives

The primary goal of the MSHCP is to contribute to the continued survival and recovery of sensitive species known to occur in the plan area, including but not limited to:

- The federally and State listed SKR;
- The federally listed California gnatcatcher;
- Seven sensitive and candidate plant species (Smooth tarplant, Payson's jewelflower. Parry's spineflower, San Jacinto Valley saitbush, Munz's onion, Engelmann oak, and Palmer's grapplinghook);
- Five sensitive reptile species (Orange-throated whiptail, San Diego homed lizard, Northern red-diamond rattlesnake. Coastal western whiptail, and Southwestern pond turtle);
- Eleven sensitive bird species (Bell's sage sparrow. Southern California rufous-crowned sparrow. Great blue heron. Black-shouldered kite. Bald eagle. Cooper's hawk. Ferruginous hawk. Golden eagle. Loggerhead shrike, Burrowing owl, and California horned lark), and;
- Six sensitive mammal species (Mountain lion, American badger, Los Angeles pocket mouse, San Diego desert woodrat, San Diego black-tailed jackrabbit, and Northwestern San Diego pocket mouse).

To this end, the plan provides for:

- Dedication and preservation of conserved habitat in the plan area components;
- Mitigation for sensitive species;
- Cooperative management of the conserved habitat by MWD, RCHCA, Riverside County Park and Open Space District, USFWS, and CDFG;
- Initial funding ($13,886,000) by MWD for a research program and management of the reserve, plus $1.2 million in SKR management funds from MWD and RCHCA, and;
- Long-term funding for reserve management through revenues from recreation facilities at the new reservoir. The plan also provides for authorization of incidental take in the plan area, including "pre-listing" assurances to MWD regarding species that currently are not but could become federally or state listed prior to completion of the new reservoir. The assurances largely reflect the fact that the plan treats the species as if they were already listed and provides for their needs through an adaptive management strategy. The MSHCP acknowledges that major impacts of the reservoir project will occur long before the possible listing of any of its covered species other than SKR and California gnatcatcher.

Additional information concerning the Southwestern Riverside County MSHCP, including the planned incorporation and management of RCHCA lands, is presented in Chapter 5. SKR Conservation and Mitigation Measures.

4. Lake Mathews Multi-Species Habitat Conservation Plan

Concurrent with the completion of the Southwestern Riverside County MSHCP, MWD and RCHCA initiated a similar planning effort for MWD and RCHCA properties in the Lake Mathews and Estelle Mountain areas. Preparation of the Lake Mathews plan began in March 1992 with extensive surveys of MWD Lake Mathews property to document habitat and species values. Following completion of the surveys in mid-1993, preparation of the plan itself began in consultation with USFWS and CDFG. The Lake Mathews MSHCP was approved by USFWS and CDFG in December 1995; that document and its accompanying agreements are incorporated by reference in this HCP.

a. Plan Area Components

The MSHCP establishes a 12,094 acre multiple species reserve in northwestern Riverside County consisting of four components:

- An existing State Ecological Reserve consisting of 2,565 acres around and below Lake Mathews;
- Approximately 2,545 acres owned by MWD which will be added to the Ecological Reserve and used as a mitigation bank by MWD and RCHCA;
- Approximately 4,600 acres currently owned by the RCHCA; and
- Approximately 683 acres which the RCHCA proposes to include in the Lake Mathews SKR core reserve by means of this HCP. All four components are within the Lake Mathews core reserve designated in this HCP.

b. Goals and Objectives

Similar to the Southwestern Riverside County MSHCP, the Lake Mathews MSHCP is intended to contribute to the continued survival and recovery of sensitive species known to occur in the plan area. In this case, 46 sensitive species have been identified, including:

- The federally and State listed SKR;
- The federally listed California gnatcatcher;
- Seven sensitive plant species (Clay bindweed. Great valley phacelia, Knotweed spineflower. Large-leaf filaree. Palmer's grapplinghook. Parry's spineflower, and Small flowered microseris);
- Seven sensitive amphibian and reptile species (Coastal rosy boa. Coastal western whiptail. Northern red diamond rattlesnake. Orange-throated whiptail, San Bernardino ringneck snake, San Diego horned lizard, and Western spadefoot toad);
- Twenty-three sensitive bird species (California horned lark, Caspian tern. Cooper's hawk. Downy woodpecker. Golden eagle. Grasshopper sparrow. Great blue heron, Loggerhead shrike. Northern harrier. Red-shouldered hawk. Southern California rufous-crowned sparrow, Tricolored blackbird. Western grebe, Yellow-breasted chat, and Yellow warbler), and;
- Seven sensitive mammal species (American badger. Big or pocketed free-tail bat, Northwestern San Diego pocket mouse. Pallid bat, San Diego black-tailed jackrabbit, San Diego desert woodrat, and Western mastiff bat). 27

To provide for these species in a way that fulfills the requirements and intent of the federal and State ESA's, the MSHCP provides for:

- Expansion of the existing Ecological Reserve to include an additional 2,546 acres;
- Ongoing management of the expanded Ecological Reserve and the SKR core reserve established under this HCP through interagency agreements and establishment of a permanent endowment for reserve management;
- Establishment of a mitigation bank for use by MWD and the RCHCA based on the conservation value of lands being added to the Ecological Reserve, and;
- Authorization for incidental take of species in the plan area, including "pre-listing" assurances regarding species covered by the plan. Additional information concerning the Lake Mathews MSHCP is presented in Chapter 5. SKR Conservation and Mitigation Measures.

5. Draft Multi-Species Habitat Conservation Strategy for Riverside County

Concurrent with the implementation of the Short-Term SKR HCP and two years prior to the California NCCP Act, Riverside County initiated preparation of a strategic plan for county-wide habitat conservation now identified as the draft Multi-Species Habitat Conservation Strategy (MSHCS). The draft MSHCS was intended to serve as a conceptual plan for protecting sensitive biological resources and integrating that protection into appropriate elements of the County of Riverside General Plan. The document was completed in January 1991.

The draft MSHCS presents existing data concerning wildlife and habitats throughout the county, includes a gap analysis to identify sensitive resource areas appropriate for conservation, recommends measures to ensure the conservation of specific species and ecosystems, and proposes a 10-year acquisition and implementation program. Species that are listed or are likely to be listed by USFWS or CDFG are afforded special attention, and priority is given to multi-agency

partnerships for acquisition of habitats threatened by imminent development. The draft MSHCS has not been considered or adopted by the Riverside County Board of Supervisors and does not include the level of detail required to secure a federal Section 10(a) Permit or 2081 agreement. However, it provides the framework for regional habitat conservation planning efforts by the County and potentially, other local agencies.

6. BLM South Coast Resource Management Plan

The BLM South Coast Resource Management Plan (RMP) and Record of Decision issued in June 1994 covers 296,000 acres, including 129,000 acres of public lands managed by BLM and an additional 167,000 acres of federal mineral estate with private surface ownership. These lands are located in five counties, with the majority in the western portions of San Diego County (139,000 acres) and Riverside County (65,000 acres). BLM holdings in western Riverside County consist of scattered parcels ranging in size from under 10 to over 900 acres, with most parcels under 200 acres.

In its RMP the BLM proposes to designate two Areas of Critical Environmental Concern (ACEC): Potrero and the Santa Ana River Wash. Portions of the Santa Margarita River are proposed for designation as an ACEC/Research Natural Area; other segments of the Santa Margarita River are identified as eligible for possible inclusion in the national Wild and Scenic Rivers Systems. In addition, sensitive species habitat would be managed on lands at Oak Mountain, Valle Vista, and in the Badlands area. The RMP proposes the acquisition of 14,192 acres within these areas for habitat conservation purposes. The RMP is of particular importance to this HCP due to the BLM's establishment of a Potrero ACEC specifically for the protection of SKR. The RMP contains the following provisions concerning the Potrero ACEC:

(a.) The ACEC designation initially would cover 995 acres currently in BLM ownership;

(b.) BLM would acquire 11,952 acres of private property to expand the ACEC to a total of 12,982 acres. This would encompass all of the approximately 2,000 acres of SKR occupied habitat in the Potrero Valley;

(c.) BLM would make available for exchange 4,957 acres under its ownership for the sole purpose of acquiring land within the Potrero reserve;

(d.) The ACEC would be unavailable for mineral material sales, and grazing would be permitted only if it is found to be compatible with habitat management.

Accomplishment of the proposed land exchange would result in significant benefits to SKR conservation in western Riverside County. Accordingly, the RCHCA has worked cooperatively with BLM and the Lockheed Corporation (principal land owner in the Potrero area) to explore potential land exchange options.

The RMP notes that the acquisition areas identified by BLM (e.g., Potrero) are considered to be of high priority, but are not restricted solely to those areas. Other opportunities which arise and meet the RMP's SKR conservation objectives will be considered. Accordingly, should a land trade with the Lockheed Corporation not occur, BLM will maintain sufficient flexibility to consider land trades for acquisition of SKR habitat elsewhere.

BLM has indicated that under its RMP a total of 12,974 acres of federal land is available for some type of disposal from federal management. This includes 6,169 acres available for exchange or sale, 2,043 acres for exchange only, 2,498 acres intended for exchange for the sole purpose of acquiring SKR habitat, and 2,264 acres which are committed to the SKR core reserve system (see Appendix A). Pursuant to the Assembled Land Exchange Agreement included in Appendix A, a total of 8,156 acres will be made available to the RCHCA to support SKR habitat conservation consistent with the provisions of this HCP.

The conservation program in this HCP advocates and seeks to facilitate the use of BLM and other federal lands in support of habitat conservation in western Riverside County. In that regard, this HCP assumes that BLM will make available the 8,156 acres to supplement the conservation of SKR habitat proposed in this HCP.

7. Natural Communities Conservation Planning Program

The NCCP program was initiated in 1991 following approval of legislation that added Sections 2800-2840 to the California Fish and Game Code. In general, these sections authorize the preparation and. approval of conservation plans for communities of plants and wildlife. Currently, the NCCP program is focused on the coastal sage scrub community in southern California, which includes a broad range of sensitive plant and wildlife species, including the SKR. The primary purpose of the program is to preserve local and regional biological diversity, reconcile urban development and wildlife needs, and meet the objectives of the State and federal ESA's by conserving habitat before species are on the brink of extinction. Additional information about the program and its conservation planning guidelines is included in Appendix B.

This HCP, which was initiated one year prior to the NCCP legislation and nearly three years prior to the NCCP Scientific Review Panel's recommended strategy, is generally consistent with the goals of the NCCP Act but has not been prepared as part of the NCCP program.

2. Plan Area Profile

This chapter describes the setting and boundaries of the overall plan area, population and land use trends within it, and its biological resources and existing wildlife preserves. Information concerning SKR as a species and SKR habitat is presented in Chapter 3. Summary Profile of the SKR.

A. Plan Area Setting and Boundaries

One of the most challenging aspects of preparing this HCP has been to design a strategy that conserves a resource scattered in many relatively small patches across an urbanizing area covering over 834 square miles. This section provides a context for understanding how the location, size, and characteristics of the HCP area affect the conservation planning process and conservation options available to the RCHCA.

1. State and Regional Context

Riverside County is located in southern California, east of the Los Angeles metropolitan area and, at its most westerly point, approximately fifty miles from the Pacific Ocean. It is bordered on the north by San Bernardino County, on the east by the Colorado River and the Arizona state line, on the south by San Diego and Imperial Counties, and on the west by Orange County (Figure 4). Riverside County covers over 4.7 million acres (7,310 square miles), making it California's fourth largest county and roughly equal in size to the State of Connecticut.

The HCP plan area is located in western Riverside County, generally defined as territory west of the San Jacinto Mountains. It extends south from the San Bernardino County line to the border with San Diego County (Figure 5). The Cleveland National Forest flanks much of the plan area's western boundary, and the San Bernardino National Forest roughly defines most of the eastern boundary of the HCP area.

2. Plan Area Size and Jurisdictional Boundaries

The boundaries of this HCP area encompass more than 533,954 acres, which is 11% of Riverside County's land mass and larger than the entirety of Orange County. The HCP boundaries generally correspond to the historic range of SKR in western Riverside County but currently include only those lands within the jurisdictions of RCHCA members (Figure 5). Lands within the Cities of Beaumont, Canyon Lake, Norco, and San Jacinto are not included within the plan area and are not covered by the permit and agreement the RCHCA is seeking.
Approximately 70% of the plan area is within the jurisdiction of the County of Riverside (Table 4 and Figure 6). Incorporated lands account for the remainder, with acreage per city ranging from nearly 50,000 in the City of Riverside to under 2,000 in Corona.

State and Regional Context of Riverside County

Jurisdictional Boundaries of RCHCA Member Cities and County Unincorporated Land within the HCP Fee Area

B. Population Trends

January 1993 estimates from the California Department of Finance places Riverside County's total population at 1,328,320. Of this total, approximately 75% (nearly 1 million) reside in western Riverside County. A precise estimate of the population within the plan area is not available but, based on the proportion of city and county lands encompassed by plan area boundaries and the amount of residential development, it is approximated at 750,000 persons.

The following discussion of past and forecasted population trends is based on data for the RCHCA member cities, other cities in western Riverside County, and unincorporated territories. Emphasis is placed on the cities of western Riverside County due to the fact that population in the plan area is and will continue to be concentrated within incorporated areas. In addition, annexation of lands into existing cities is likely to occur over the period of the permit and agreement sought by the RCHCA. Such changes already have occurred in the HCP area subsequent to the approval of the Short-Term HCP, and this trend is likely to continue in the future.

1. RCHCA Member Cities

The eight member cities of the RCHCA had a total population of 631,766 as of January 1993 (Table 5). Current population in the cities reflects individual increases of 24% to 323% since 1980 or dates of incorporation; average annual growth rates over those periods ranged from 3% to 25%. The Cities of Perris and Lake Elsinore showed the highest overall percentage increase and average annual rate of change. The City of Riverside grew at the slowest rate annually and over the period, but added more people (178,083) than currently reside in any other city in Riverside County. By 1985, the combined population of the RCHCA member cities exceeded that in the entire unincorporated area, and as of 1993, their combined population exceeded the unincorporated area by more than 200,000 people (Figure 7).

Forecasted population growth for RCHCA member cities is included in the projections for incorporated and unincorporated lands in western Riverside County.

2. Other Western Riverside Cities

In 1993 the five non-RCHCA member cities in western Riverside County (i.e., Beaumont, Banning, Canyon Lake, Norco, and San Jacinto) had a combined population of 90,953 (Table 5), approximately 85% less than that found in the RCHCA cities (Figure 8).

The five non-member cities generally fall into two categories: those with under 11,000 residents and those with more than 20,000. Between 1980 and 1993 population in the four cities incorporated prior to that period increased by 23% to 214%; annual growth rates were in the range of 4% to 16% (see Table 5). The City of San Jacinto recorded the highest total, percentage, and annual growth rates over the period. Excluding the newly incorporated Cities of Canyon Lake and Murrieta, the other four cities combined added only 33,000 people over the period of 1980-1993.

In 1990 the total population of the five non-RCHCA member cities was less than 72,000; by 1993 it increased by 27%, due largely to the incorporation of the City of Canyon Lake. In 1993 population in the five non-member cities was approximately one-third as great as that in unincorporated areas (Figure 9). Forecasted population growth for non-RCHCA member cities is included in the projections for incorporated and unincorporated lands under 5. Western Riverside Growth Forecast.

3. Unincorporated Lands

The total population of County unincorporated lands in 1993 was 351,760. Despite the incorporation of four new cities since 1980, population in unincorporated areas increased by 36% over that thirteen-year period. Forecasted population growth for County territories is included in the projections for incorporated and unincorporated lands in 5. Western Riverside Growth Forecast.

4. Riverside County

Since 1980 Riverside County has doubled its population, with two-thirds of the growth occurring in western Riverside County cities. The average annual rate of change over the period of 1980-1990 was 8%; this is an exceptional rate of regional growth reflecting Riverside's status as the fastest growing large County in the state, and among the fastest in the nation. Since 1990 however, worsening local economic conditions have caused annual growth rates to decline significantly. Based on 1993 population estimates RCHCA member cities contain 48% of the County population, other western Riverside cities account for 7%, east county cities comprise 17%, and unincorporated lands account for 28%.

5. Western Riverside Growth Forecast

Based on subregional forecasts prepared by the Southern California Association of Governments (SCAG), total population in western Riverside County is expected to approach 2 million by 2010 (Table 6 and Figure 10). This forecast has a base year of 1990 and covers six Regional Statistical Areas (RSA's 45-50) in western Riverside County (Figure 11). The SCAG forecast also predicts that households in the same RSA's will exceed 657,000 by 2010, a 115% increase over 1990 totals. Employment is projected to increase by more than 123% over that 20-year period.

This SCAG forecast is of special interest to this HCP in its projection of significant subregiona! differences in population, housing, and employment trends within and adjacent to the HCP area. On a regional scale it also is notable for its anticipation of tremendous population increases and significantly expanded economic opportunities over the next 16 years. However, SCAG forecasts were prepared prior to the occurrence of job losses throughout the region due to military base closures and "downsizings," drastic reduction in construction activity, and other factors. Additionally, the forecasts do not acknowledge constraints on development due to the presence of threatened and endangered species in western Riverside County.

Although the existing economic conditions in the HCP area may be temporary, the magnitude of changes in employment and housing may require SCAG to revisit the assumptions on which its forecast is based. Changes in southern California's primary employment centers (Los Angeles, Orange, and San Diego Counties) will affect the influx of households drawn to western Riverside County due to its comparatively lower price of housing. However, regardless of changes in the influx of home buyers, western Riverside County's population would still be expected to grow due to natural increases.

C. Land Use Trends

Data derived from the SCAG 1995 land use inventory for western Riverside County indicate that vacant lands cover nearly 300,000 acres of the HCP area, and agricultural and urban uses together account for another 250,000 acres (Table 7). Overall, the plan area is comprised of the following uses (Figure 12):

- 52% is undisturbed vacant land, open water, or recreation areas;
- 22% is in agricultural use;
- 26% is urban development and related uses.

1. Existing Uses and Development Potential

For purposes of describing land use patterns the HCP area can be divided into northern, central, and southern subareas. Descriptions of major existing uses and the development potential of each subarea follow. In general, urban land uses predominate the northern subarea, whereas a combination of rural, agricultural, and urbanizing areas characterizes the central and southern subareas.

a. Northern Subarea

The northern subarea consists primarily of lands within the Cities of Riverside and Moreno Valley, adjacent unincorporated communities, and March Air Force Base. This subarea includes the most urbanized portions of the County and is expected to continue to develop due to its existing employment base and proximity to those in Los Angeles, Orange, and San Bernardino Counties. The northern subarea has good rail and freeway access for commercial and industrial development and available industrial land along the Interstate 215 corridor. Its existing infrastructure and housing inventory also increase its development potential, together with relatively low land, labor, and infrastructure costs. Land use constraints include seismic faults that traverse the northeastern portion of the area, airport related land use restrictions around March Air Force Base, peak-period freeway traffic congestion, and air quality regulations.

b. Central Subarea

The central subarea includes lands around and below Lake Mathews and Lake Perris, and territory within the Cities of Hemet and Perris. With the exception of the developed portions of Hemet and Perris, this area is primarily rural in character and includes the largest public land holdings in western Riverside County.

Lands immediately around Lake Mathews are owned by MWD and managed for water resource protection and conservation of wildlife habitat values. As discussed in Chapter , these same lands also are the focus of a multi-species HCP developed by MWD and the RCHCA. Within the past decade lands to the southeast and southwest of MWD's ownership exhibited a transition from agriculture and mining to residential and commercial uses.

The development potential of adjacent lands reflects their proximity to existing urban areas of the Cities of Corona, Norco, and Riverside, and freeway access to Interstate 15. Significant amounts of additional residential development are anticipated in the County's Lake Mathews Community Plan and City of Corona General Plan. However, the potential of this area to accommodate planned development is limited by a lack of available infrastructure, steep slopes and rocky terrain, and the relatively extensive distribution of protected species (e.g., California gnatcatcher) and sensitive habitat types (e.g., sage scrub).

The area immediately surrounding Lake Perris is State owned and consists of the 8,200-acre Lake Perris State Recreation Area and the 4,669-acre San Jacinto Wildlife Area. The area below the lake is primarily unincorporated land characterized by larger lot residential development, agriculture, and open space uses. The City of Perris is the only municipality in the area, and its land uses are in transition from agriculture and open space to urban development.

The area has made a substantial commitment to agricultural uses, as evidenced by large dairies along Gilman Hot Springs Road, Ramona Expressway, and Highway 79. The development potential of the central subarea area is enhanced by the upgrading of industrial zoned land along Interstate 215. Land use constraints in this subarea include limitations on the availability and extension of sewers, circulation network deficiencies, and limitations imposed by the presence of the San Jacinto River floodplain.

The area below the San Jacinto River includes a combination of urban and rural uses. The urban portion of the area is characterized by single-family homes, some multi-family units, numerous mobile home parks, and expanding commercial development along Highway 74. The land use potential of this subarea favors continued urbanization due to the availability of developable land, lower land and housing costs, and proximity to recreation areas.

c. Southern Subarea

The southern subarea area includes urbanized lands along Interstate 15, rapidly urbanizing areas in Menifee, Murrieta, and Temecula, and predominantly rural lands surrounding Lake Skinner.

Urban and urbanizing areas include the municipalities of Lake Elsinore, Murrieta, and Temecula, together with unincorporated land in the Menifee and French Valleys. Each of those areas has experienced significant growth since 1980. Lands immediately around Lake Skinner are owned by MWD and, together with lands in the Roy E. Shipley Wildlife Reserve and conserved habitat around the planned Domenigoni Reservoir, comprise the multiple species reserve established by MWD and the RCHCA in 1992. Lands outside the existing reserve include RCHCA holdings, agricultural operations, and rural residential development.

In 1989 the Riverside County Board of Supervisors adopted the Southwest Area Community Plan (SWAP) covering 210,700 acres in the southwestern portion of the HCP area. The SWAP includes a growth management concept which defines urban, rural, and resource protection areas. Urban areas include the Cities of Murrieta and Temecula, lands along the 1-15 and 1-215 freeways and State Route 79; SWAP concentrates future development in these locations. Resource protection areas are defined on the Santa Rosa Plateau and lands surrounding Vail Lake; these locations are identified as having significant biological value, and development standards are established to conserve sensitive resources and protect sensitive species. All other land not defined as urban or resource protection is classified as rural

or outlying areas; in such locations SWAP prohibits approval of development requiring an urban level of services. Rural residential development involving minimum lot sizes of 0.5 to 5 acres is anticipated in these areas.

The land use potential of this area is influenced primarily by recent improvements to Interstates 15 and 215, improvements to the community water system in the Temecula area, proximity to employment bases in San Diego County, and relatively lower housing costs and lower priced industrial land. Development constraints include SWAP resource protection policies, slopes in excess of 25%, lack of potable water, seismic and flooding hazards, limited fire protection services, and the presence of sensitive resources and protected species. Despite the existence of these constraints, significant future growth in the area is expected due to the proposal of numerous large Specific Plan developments.

2. Development Trends

Two important indicators of future development trends in the HCP area are the pattern of building permits issued and added value of new construction over the period of 1983-1993. Over that ten year period these indicators reflected the dynamic changes experienced in the western Riverside County economy. Building activity throughout the HCP area increased dramatically between 1983 and 1989. However, in 1990 this trend reversed itself as activity declined precipitously; that economic slowdown generally continues today.

Between 1983 and 1993, the combined number of building permits issued by RCHCA member cities ranged from a low of 2,763 in 1983 to a high of 11,633 in 1988 (Table 8 and Figure 13). Over the same period, the number of building permits for all unincorporated areas ranged from a low of 6,179 in 1983 to a high of 19,021 in 1988. Following the peak of the construction boom in 1988, the number of building permits issued experienced a sharp decline from 1989-1993.

The total value of new construction (in 1990 dollars) exhibited a similar pattern of a relatively low level of activity during the recession of the early 1980's, a dramatic increase in activity beginning in 1983 and peaking in 1988-89, and a sharp drop in activity beginning in 1990 (Table 9 and Figure 14). The total value of new construction in the RCHCA cities ranged from a low of $303.2 million in 1983 to a high of $1.7 billion in 1989.

Since 1990 the number of permits issued and the value of new construction in western Riverside County has continued to decline. For example, the Riverside County Building and Safety Department reports that in 1991, the number of building permits issued for unincorporated lands decreased by 42% and the value of new construction dropped by 68% from the previous year. The Department further reports that in 1992, the number of issued permits dropped another 30%; the value of new construction also declined but not as dramatically, dropping by 4% from the previous year. Despite the current downturn, it is safe to assume that at some time in the near future the cycle will repeat itself and building activity will resume.

D. Biological Resources

Based on vegetation mapping prepared by Pacific Southwest Biological Services (PSBS), in 1994 western Riverside County contains approximately 903,192 acres of lands in their natural condition (Table 10 and Figure 15). Of this total, approximately 268,163 acres (30%) occur within the plan area, including most of the habitats most likely to support listed and sensitive species of concern.

1. Vegetation Types

The vegetation mapping prepared by PSBS identifies covers approximately 1.3 million acres in western Riverside County. Thirty-three vegetation cover types were mapped and categorized using 1993 aerial photography and spot satellite image processing. The data were entered into a geographic information system (GIS) data base. Additionally, detailed vegetation mapping of MWD lands at Lake Mathews and Lake Skinner/Shipley Reserve has been completed and will be integrated into the SKR HCP data base upon its receipt from MWD. It should be noted that the PSBS calculations and configurations do not reflect the temporary modification of vegetation types which occurred as a result of the October 1993 California Fire which burned significant portions of the Domenigoni Valley and the Lake Skinner Study Area. Based on GIS calculations using the PSBS data, three major vegetation categories cover over 781,405 acres or 87% of the 903,192 acres of natural lands in western Riverside County: chaparral; sage scrub, and; grassland (see Table 10). Within the HCP area the same three categories account for more than 252,202 acres or 94% of the vegetated lands. Sage scrub covers the largest area, followed by grassland and chaparral (Figure 16).

2. Species of Concern

SKR is known to occur in European annual grassland, mixed European annual grassland/coastal sage scrub habitats, and sparse coastal sage scrub. The species also is found in areas where such habitats have been disturbed but not completely removed, and in areas where suitable habitat conditions have been created by agricultural activities. Currently the SKR is known to occupy about 34,450 acres in Riverside County, including approximately 30,000 acres in the HCP area (see Chapters. Summary Profile of the SKR). In addition to the SKR, 122 other species of concern are associated with the habitats in the plan area, primarily coastal sage scrub, chamise chaparral, European grassland, and mixed European grassland/coastal sage scrub (Attachment E-1). These 51 plants, 3 invertebrates, 20 amphibians and reptiles, 34 birds, and 14 mammals include:

(a.) Species already listed as threatened or endangered under the State and federal ESA's;

(b.) Candidates for federal or State listing, including species that USFWS either is currently proposing to list or evaluating for potential listing;

E. Existing Reserves and Other Protected Lands

As of 1996 eight wildlife reserves had been established in the HCP area which together encompass over 48,000 acres. All of these reserves are part of the SKR Study Areas established under the Short-Term SKR HCP, and with one exception, are part of the SKR core reserve system recommended in this HCP. In addition to the existing wildlife reserves, approximately 16,000 acres in the plan area are in public ownership and have varying levels of habitat protection in place. These lands include County parklands. State parks, BLM's holdings, and properties acquired by the RCHCA and California Wildlife Conservation Board (WCB) over the past three years. As with the existing reserves, these lands were encompassed by the original SKR Study Areas; most but not all of the lands also are included in the core reserves recommended in this HCP.

1. Existing Reserves

In decreasing order of size, the seven existing wildlife reserves in the HCP area include:

The Southwestern Riverside County Multiple Species Reserve

This reserve, established in 1992 by MWD and the RCHCA, encompasses 20,000 acres of public lands and approximately 9,000 acres of sensitive habitats on properties owned by MWD, RCHCA, and the County of Riverside in the Lake Skinner and Domenigoni Valley area. SKR habitat in the reserve is specifically managed for conservation through endowments provided by the RCHCA and MWD. Management of SKR is conducted in accordance with management plans developed by the existing Multi-Species Management Committee.

The Lake Mathews Multiple Species Reserve

This area was established in December 1995 with the approval of the Lake Mathews Multiple Species HCP jointly prepared by MWD and RCHCA. The Reserve covers over 11,000 acres, and its boundaries are the same as those established for the Lake Mathews-Estelle Mountain SKR core reserve. Management for SKR and approximately 40 other wildlife species will be directed by a Management Committee comprised of MWD, RCHCA, BLM, USFWS, and CDFG. SKR management activities will be performed by BLM on RCHCA properties, and by the Center for Natural Lands Management on reserve lands in MWD ownership.

The Santa Rosa Plateau

This reserve began as a smaller area owned and managed by The Nature Conservancy. In 1991 the reserve was expanded to approximately 7,000 acres through joint acquisition efforts by Riverside County, MWD, and the State of California. The Plateau is managed for multi-species values including vernal pools, Engelmann oak and other woodlands, and native grasslands. An existing interagency committee oversees habitat management in cooperation with The Nature Conservancy.

The San Jacinto Wildlife Area

This wildlife reserve containing approximately 5,000 acres is managed by CDFG. The area is managed for multiple values including SKR, wetland habitat, and some game species. The San Jacinto Wildlife Area is located adjacent to the 8,000-acre Lake Perris State Recreation Area.

The State Ecological Reserve at Lake Mathews

This wildlife reserve covers approximately 2,565 acres on MWD properties around Lake Mathews. As previously noted, MWD and the RCHCA have proposed to expand this Reserve through implementation of the Lake Mathews MSHCP.

Sycamore Canyon Park

Sycamore Canyon Park covers approximately 1,500 acres owned and managed by the City of Riverside Park and Recreation Department. The City has executed a formal agreement through which it commits to operate and maintain the Park in a fashion which ".shall enhance the likelihood of the continued existence of the SKR in the wild."

March Air Force SKR Management Area

Pursuant to a 1991 Section 7 Biological Opinion issued by the USFWS, a 1,000 acre SKR Management Area has been established on March Air Force Base. This area is currently being managed by The Nature Conservancy, and a detailed SKR management plan is currently under preparation.

Motte Rimrock Reserve

This reserve of approximately 500 acres is owned and managed by the University of California at Riverside. Management practices seek to conserve multiple habitat values found on site, but SKR biological research has played a particularly important role in the expanding the RCHCA's understanding of SKR characteristics. An updated SKR management plan for the Motte Reserve is now being prepared by the University.

2. Other Protected Lands

The other public lands with some level of habitat protection in place include:

Lake Perris State Recreation Area

This 8,200 acre Recreation Area is managed and operated by the California Department of Parks and Recreation. Although the area is managed to facilitate water-based recreation, it also encompasses significant blocks of SKR occupied habitat. Since SKR is a species listed as threatened under the California ESA, the Department of Parks and Recreation conducts management activities designed to ensure its conservation. Thus, SKR habitat conservation is among the elements of the Recreation Area management plan.

RCHCA Properties

As previously noted, as of March 1, 1996 the RCHCA owned fee title or conservation easements over 8,804 acres of land in the HCP area. All of this acreage is specifically dedicated to the conservation of SKR and other resident species and habitats of concern. Management of RCHCA properties will be guided by provisions of this HCP and the SKR management plans developed for each of the core reserves.

BLM Lands

Section 2(c) of the ESA directs all federal agencies to seek to conserve endangered and threatened species, and to utilize their authorities in furtherance of the purposes of the ESA. Accordingly, BLM policies contained in their adopted South Coast Resource Management Plan support the exchange of BLM lands in western Riverside County to expand a SKR Area of Critical Environmental Concern (ACEC) in the Potrero Valley. Pursuant to the terms of the Implementation Agreement underlying this HCP, BLM will manage its holdings in core reserves, as well as all lands it receives from the RCHCA under the Assembled Land Exchange Agreement, ".to conserve, protect, restore, and enhance the SKR and its habitat."

County Parks

Approximately 900 acres of County park land in western Riverside County are owned and managed by the Riverside County Regional Park and Open Space District in accordance with the natural resource objectives of the County's Regional Park and Open Space Plan. These lands include significant amounts of SKR occupied habitat in Harford Springs and Lake Skinner County Parks. County properties northeast of Lake Skinner have been covered by SKR conservation easements as part of the establishment of the Roy E. Shipley Reserve.

Wildlife Conservation Board

At the request of the RCHCA the State Wildlife Conservation Board (WCB) has acquired approximately 200 acres in the vicinity of Estelle Mountain. The WCB purchased this land for the purpose of establishing the Estelle Mountain Ecological Area. It is anticipated that WCB land will be managed by CDFG under procedures established by the Lake Mathews MSHCP.

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3. Summary Profile of the SKR

This chapter summarizes information regarding the biology, life history, habitat requirements, and distribution of the SKR based on a literature review and research reports included in Volume II. It is intended to provide a brief, non-technical overview of key information concerning the species and studies conducted in support of this HCP. Readers seeking detailed technical information concerning characteristics of the SKR and its habitat should refer to the reports in Volume II.

A. Information Sources

As discussed in Chapter , presentation of biological data concerning the status and distribution of SKR is a required component of the RCHCA's application for a federal incidental take permit and a California Endangered Species Permit. The format and level of detail for biological data are not specified in federal or State law but the intended use is clear; these data are the basis for weighing the value of the resources to be conserved by a HCP against the resources to be lost. Data collection and analysis conducted for this HCP are focused primarily on issues specifically related to the design and management of permanent reserves for the SKR in western Riverside County. This focus is significant since planning reserves in the context of ongoing urban development obviously differs from planning for the management of resources in wilderness areas. However, regardless of the setting, conservation planning begins with identifying the characteristics of the species in question. The biological data on which this HCP is based are derived from SKR field studies, research, and site-specific surveys conducted in the plan area, supplemented by existing literature concerning the SKR. Studies commissioned by the RCHCA during the Short-Term HCP implementation process, and related studies sponsored by MWD, are summarized in Table 11. Detailed reports concerning SKR biological research projects sponsored by the RCHCA are presented in Volume II.

B. SKR Biology and Life History

As noted. Volume II presents detailed biological information concerning SKR characteristics. Following are discussions of specific aspects of SKR, including:

1. Physical characteristics;
2. Genetics;
3. Burrows and dust bathing;
4. Food sources and habits;
5. Home range and dispersal distances;
6. Reproduction and survivorship, and;
7. Population dynamics and viability.

1. Physical Characteristics

The SKR is a small nocturnal mammal related to the squirrel family of rodents; it is one of several species of burrowing, grain-eating kangaroo rats found in arid regions of North America. The SKR has a large head, external cheek pouches, elongated rear legs, relatively small front legs, and a crested tail with a lateral white band (Figure 17). Its overfur is a dusky cinnamon-buff color, with pure white underneath. The average adult weighs 2.3 ounces and, including a tail approximately 1.5 times longer than its body, is approximately 12 inches in length. The species' common name of "kangaroo" rat reflects the fact that it moves about by hopping on its elongated rear legs.

In size and appearance, the SKR is nearly identical to the Pacific kangaroo rat (PKR) which lives in the same general area, competes with the SKR for food, but is not a federally or State listed species. The habitat requirements of the two species are different albeit overlapping, and the two are genetically different and therefore do not interbreed. In areas suitable for both species it is difficult to specifically differentiate habitat occupied by SKR and PKR and determine relative densities of each species.

Additionally, their similarity in appearance makes specific identification of these species problematical for all but experienced field and research biologists. These problems prompted the RCHCA to commission Drs. Price, Kelly, and Goldingay of the University of California at Riverside to develop an easily followed protocol for distinguishing the two species (see Report No. 7 in Volume II).

2. Genetics

In terms of genetic characteristics, SKR in western Riverside County show a high degree of similarity and low degree of variability. This finding is derived from the genetic variability study conducted by McClenaghan and Truesdale of San Diego State University, in which blood samples taken from SKR at nine locations within seven SKR Study Areas were analyzed (see Report No. 10 in Volume II). Results of the analysis have several implications for reserve design and management. To a large extent, the high degree of genetic similarity obviates the need to design a preserve network which ensures the protection of unique gene pools. This also suggests that SKR could move or be moved to a new location without posing genetic risks to the resident SKR population in that area.

3. Burrows and Dust Bathing

Typical of this family of species, SKR construct burrows which may contain a number of underground chambers and food caches. In areas with loose sandy soil a SKR will excavate its burrow entirely on its own, creating a space 9 to 17 inches deep and well over 6 feet long. In areas with firm soils, SKR are known to convert pocket gopher and ground squirrel burrows into their own. In either locations, food caches often are established around as well as within the burrow. In part, these burrowing needs and habits dictate where the species will be found. As documented by several studies, SKR typically inhabit well drained gravelly soils and avoid areas high in clay content and difficult to excavate (see Reports No. 1 and 3 in Volume II). The burrows also reflect the species' nocturnal and essentially solitary nature, serving as sleeping quarters and nesting sites where SKR spend most of their time. Burrowing is not the only use or need that SKR have for specific types of soils. This species also requires patches of fine-grained soil for dust bathing. Such bathing is necessary to keep its fur clean, and also leaves characteristic tracks and markings around its habitat (see Report No. 1 in Volume II).

4. Food Sources and Habits

SKR forage for a few hours at night, collecting primarily seeds and sometimes fresh vegetation or insects, which they stuff in their cheek pouches and bring back to their burrows. They collect their food primarily by using their forelimbs to sift through soil intermixed with seeds and are extremely adept at detecting and harvesting such areas. As with most species of kangaroo rats, they are able to metabolize water from seeds and so do not require a water source. Most foraging occurs in open areas within a given radius of the burrow (see 5. Home Range and Dispersal Distances below).
The seasonal nature of the SKR's food source and its foraging technique reveal several key points about this species' needs. For example, since seed availability varies with the season, SKR either must be able to find food in different areas within a limited radius of their burrows or relocate to a new area when vegetation cycles shift. In addition, the ability of SKR to forage depends in part on the combined occurrence of the plants that produce seeds, enough space for the seeds to collect in the soil and for SKR to have access to them, and soils suitable for SKR burrows. The fact that their food sources and habits associate SKR with habitat having large patches of bare ground and few shrubs also makes SKR relatively easy prey for other species.

5. Home Range and Dispersal Distance

Consistent with its food sources and habitats, SKR home ranges (i.e., the area used by a SKR within the radius of its burrow) vary by season. As with many mammals, the ranges also vary by sex. Studies conducted in the HCP area by Ors. Kelly and Price for example, indicate that male SKR maintain an average home range of approximately 1,830 square yards; average female SKR home ranges were about 1,200 square yards or smaller, depending on whether the SKR was nursing a litter (see Report No. 4 in Volume II). Drs. Price and Kelly also studied average SKR dispersal distances (i.e., the distances moved by individuals over a lifetime) and found adult SKR to be highly sedentary, maintaining an average home range center within approximately 33 yards of the location where they were first observed (see Report No. 5 in Volume II). Even the dispersal of juveniles from nest sites appeared to be relatively restricted, with the majority shifting less than 55 yards away from their natal burrow. Maximum dispersal distances for individuals ranged from 186 to 383 yards, with most dispersals under 200 yards. Of course significant exceptions were observed, with some SKR dispersing over 435 yards and one moving over 1,100 yards. Although infrequent, such long-distance movements are significant for conservation since they facilitate flow among subpopulations and allow re-establishment of extinct subpopulations. The average dispersal distances also are significant in their suggestion that habitat patches separated by approximately 100 yards are likely to be connected on a regular basis by dispersing SKR, and patches separated by 500 yards or more are likely to remain isolated.

6. Reproduction and Survivorship

Among species like SKR, the ability of a population to reproduce and sustain itself is largely a function of food availability (see Reports No. 1, 3, and 11 in Volume II). In the case of this species, reproductive success appears to be highly correlated with the timing and abundance of winter rainfall. Breeding typically occurs from January to September and may extend into November if environmental conditions are particularly good. Conversely, under poor conditions SKR may forgo reproduction altogether. In general, however, reproduction begins in late spring and peaks in April and May.

The age of sexual maturity for SKR is not known, but in some years female SKR born early in the season may mature quickly enough to produce their first litter by the end of the summer. Female SKR can remain capable of reproducing as long as food sources are adequate and can produce multiple litters (potentially as many as five) under especially good conditions. Average life expectancy for SKR ranges between 4.5 and 6.6 months, with some individuals persisting for as long as 19 months. Survivorship tends to be high once animals have reached adulthood and established residency. These aspects of the species are significant to conservation planning since they indicate the degree to which the size and management of reserves must anticipate and accommodate fluctuations in the size, extent, and densities of the resident SKR population.

7. Population Dynamics and Viability

In order to better understand SKR population dynamics (i.e., changes in density, reproduction, recruitment, and survival) in the HCP area and to employ that knowledge in reserve design, three research projects were sponsored by the RCHCA. These include two studies in the field and one involving the development of a state-of-the-art computer model.

For the purpose of collecting SKR population dynamics data and determining whether those dynamics vary geographically, McClenaghan and Taylor monitored SKR populations at three locations in the Short-Term HCP Study Areas: Lake Mathews, Motte Rimrock Reserve, and the San Jacinto Wildlife Area. Live-trapping began in the fall of 1989 and was conducted monthly through February 1991. Over that 18 month period 308 SKR were captured, marked, and released;

these included 125 at Lake Mathews, 96 at Motte, and 87 at San Jacinto (see Report No. 11 in Volume II).

Two major findings emerged from the study. The first is that SKR display a suite of traits similar to other species in the same family. These include flexible reproductive seasons, high adult survival, small litter size, and slow growth and development of the young. These characteristics make the SKR well-suited to its arid and semi-arid environment, where fluctuations in physical factors and food resources are typically unpredictable. The second point is that differences in population dynamics observed in the three different geographic locations were very small. The primary difference was that the population observed at Lake Mathews displayed the greatest density. Otherwise, the three SKR Study Area populations showed similar patterns in population density, initiation and cessation of breeding, recruitment of new individuals into the population, and seasonal survival rates.

These results were confirmed and extended by a second study conducted by Drs. Price and Kelly, who collected basic SKR demographic information over the period of March 1990 to August 1991. Live trapping was conducted at two permanent study plots in Motte Rimrock Reserve and San Jacinto Wildlife Area (see Report No. 3 in Volume II). Data collected during the study revealed that a critical source of variation in SKR population dynamics is the timing of rainfall, which appears to determine the length of the breeding season. Temporal variations in habitat carrying capacities were thought to parallel changes in rainfall patterns.

Both the McClenaghan/Taylor and Price/Kelly reports emphasize the preliminary nature of their findings, staling that two years of information is not adequate to demonstrate how changes in environmental conditions, SKR population densities, and SKR vital statistics are linked. Long-term research of the type contemplated by Drs. Price and Kelly is deemed important by the RCHCA and will be sponsored within the core reserves as needed during implementation of this HCP.

The third SKR population dynamics project was undertaken by Dr. Michael Gilpin of the University of California at San Diego, who developed a computer model employing SKR research data to project whether SKR populations in a given area would persist over time. In order to create this model RECON provided Dr. Gilpin with the GIS data base for SKR habitat distribution in the Study Areas identified in the Short-Term HCP. Areas of SKR occupied habitat were identified within each Study Area, and those were divided into 300 x 300 meter cells. Only lands with occupied SKR habitat were translated into cells; no assumptions were made about the occurrence or availability of suitable but unoccupied habitat. Each cell was assigned a SKR carrying capacity based on current information concerning SKR population densities in that area. Dr. Gilpin then designed the model to simulate two types of fluctuations: 1) changes in SKR populations based on population change rates for other kangaroo rat and small rodent species, and; 2) changes in environmental conditions based on a formula derived from yearly rainfall patterns in western Riverside County over the past 60 years (see Report No. 12 in Volume II). Variables and the habitat data base used in the model were adjusted following initial runs based upon comments received from the SKR Ad Hoc HCP Biological Working Group. Subsequent to the completion of these adjustments the USFWS made its computer capabilities available to run the revised model (see Report No. 13 in Volume II and relevant material in Chapter 5. SKR Conservation and Mitigation Measures).

The Gilpin model predicts the long-term viability of SKR populations in user defined areas by simulating conditions over a 200 year period, applying the variables to each cell, and calculating annual changes in SKR densities in each cell. If the carrying capacity of habitat in a cell is exceeded in a year, a portion of the SKR population is dispersed to adjoining cells. Habitat separated by more than one empty cell is assumed to be beyond dispersal distances unless a bridging corridor can be established. Conversely, if the population drops too low, SKR in the cell are extirpated. At the end of the 200 year run, or at any point in the run, the model estimates the amount and density of SKR occupied habitat in the defined areas, together with a population index which facilitates comparison of population persistence in different areas. Numerous runs of the model are completed, and mean persistence times and population indices are then calculated.

Results of the initial model runs as applied to the Short-Term HCP Study Areas predicted wide variations in SKR population persistence over time even if all occupied habitat in the Study Areas is preserved. Subsequent runs of the adjusted Gilpin model exhibited generally consistent results, suggesting that SKR conservation may depend as much on the implementation of an adaptive habitat management strategy as upon the size and configuration of permanent reserves (see Chapter 5. SKR Conservation and Mitigation Measures).

C. Habitat Characteristics

Perhaps the most obvious components of reserve design are the characteristics and distribution of the habitat used by SKR. Key considerations include vegetation, soils, topography, and elevation (see Reports No. 1, 2, 6, and 8 in Volume II). These factors are reviewed below.

1. Vegetation and Soils

The vegetation most commonly associated with SKR includes two native shrubs (coastal sagebrush and California buckwheat) and the non-native herb filaree. The two shrubs usually are indicator species of coastal sage scrub habitat, such as that used by the PKR and California gnatcatcher; they also are characteristic of areas where transitions from one plant type to another are occurring.

Within the HCP area SKR are typically found in such transition areas, including grasslands that border coastal sage scrub, transition areas where sage scrub and grasslands are intermixed, areas of sparse sage scrub, and areas where native habitat has been removed or disturbed by agriculture and other uses. What each of these areas has in common is sparse, perennial vegetation covering less than 50% of the ground.

Another common feature is the suitability of soils for SKR burrows and food sources. SKR have been found on 36 types of well-drained soils, and over 125 soils are thought to be potentially suitable for the species. Potentially suitable soils include those types capable of supporting annual grasses mixed with forbs and shrub species. Additionally, soils must exhibit compaction characteristics suitable for the establishment of burrows.

Soils not considered suitable for SKR include: heavily alkaline or clay soils, generally in floodplains; highly rocky soils; shallow soils less than 50 centimeters deep; soils in areas exceeding 25% slope, and; soils above approximately 3,000 feet in elevation.

2. Topography and Elevation

As the list of unsuitable soil types suggests, SKR inhabit land forms that are relatively level or gently sloping. This species has been observed on slopes of 0 to 50% but seem to prefer areas of 7 to 10% slope. On steeper slopes and in shrublands, SKR typically is replaced by PKR.

In terms of elevation, most SKR are found below 600 meters. However, some have been observed in areas as high as 1,100 meters.

D. Rangewide and Local Distribution

The geographic range of SKR includes the Anza, Perris, and San Jacinto Valleys and other areas of western Riverside and northwestern San Diego Counties. The current estimated range of the SKR is depicted in Figure 18. This geographic range is estimated to encompass approximately 287,000 hectares (708,641 acres), which is unusually small for rodents in genera! and kangaroo rats in particular. For example, Merriam's kangaroo rat, which is the smallest kangaroo rat in the United States, has a range covering portions of six states. The vast majority of the SKR's range occurs in western Riverside County, with the only other significant populations found at Camp Pendleton, the adjacent Fallbrook Naval Weapons Station, and sites around Lake Henshaw in northern San Diego County.

Newly discovered SKR populations in the Anza Valley and the Corona/Norco area demonstrate that the precise distribution of this species is not presently known. Since those territories lie outside of this HCP area, comprehensive surveys for SKR have not been conducted. Outside of the HCP area the only SKR distribution data available at present are derived from site-specific surveys of individual properties generally conducted in conjunction with proposed development projects.

1. Rangewide Occurrence

Concurrent with the 1988 federal listing of SKR as an endangered species, O'Farrell and Uptain conducted a study to provide an overview of SKR distribution throughout its estimated range in western Riverside County. At the time of the study 79 populations of SKR had been identified, and the amount of habitat occupied by these populations was estimated at less than 40,000 acres.

Based on estimates prepared for this HCP, and in consultation with USFWS and CDFG, the current amount of occupied SKR habitat in the species' range is estimated at 48,550 acres. This includes approximately 34,450 acres in Riverside County and 14,100 in San Diego County (Table 12 and Figure 19). In San Bernardino County the species is now assumed to be extirpated.

With respect to these SKR distribution estimates it must be emphasized that implementation of the Short-Term HCP has greatly increased the total amount and level of detail of the information available concerning SKR occupied habitat in western Riverside County. Although the entire plan area has not been re-mapped specifically for SKR since the O'Farrell and Uptain effort, RCHCA funded studies and site specific surveys have provided updated information on all major areas of SKR occupied habitat in the HCP region. In San Diego County and elsewhere in Riverside County, site specific studies have been completed but studies and mapping comparable to the RCHCA's regional effort has not occurred.

2. Occurrence in the Plan Area

Within the plan area known patches of SKR occupied habitat generally are concentrated in the core reserves proposed for establishment in Chapter 5. SKR Conservation and Mitigation Measures. The largest blocks of habitat occur south of Lake Mathews, within Sycamore Canyon Park, in the Lake Perris State Recreation Area, and in the Shipley Reserve portion of the Lake Skinner-Domenigoni Valley core reserve.

Within the plan area approximately 23,650 acres or approximately 79% of existing SKR occupied habitat occurs on unincorporated lands within the HCP area (Table 13). The City of Riverside contains the next largest amount, with approximately 3,400 acres; the other seven RCHCA cities combined contain about 2,950 acres.

With the exception of the Santa Rosa Plateau, all existing wildlife preserves in the HCP area contain areas of SKR occupied habitat. The SKR core reserves proposed in this HCP encompass approximately 12,460 acres or 42% of the SKR occupied habitat in the HCP area. Upon expansion of the reserves through federal land exchanges, approximately 15,000 acres or 50% of SKR occupied habitat in the HCP area will be conserved within the core reserves.

Distribution of SKR habitat within the core reserves defined in this HCP is discussed in Chapter 5. SKR Conservation and Mitigation Measures, together with an analysis of the long-term viability of SKR habitat in the plan area.

E. Decline Factors

The principal SKR populations remaining within the species' current range are patchily distributed and largely isolated from one another. This circumstance is one of the primary factors cited by USFWS in its listing of the species as endangered in 1988, and also was apparent in 1971 when SKR was listed as threatened under the California ESA.

1. Habitat Loss and Fragmentation

Although SKR occupied habitat is patchily distributed by nature, the current isolation of populations is largely the result of urban development which has produced irreversible changes to the pattern of natural habitat within the species' range. Recreation and agricultural land uses also have contributed to the habitat loss and fragmentation but generally do not produce the same types of permanent impacts as those caused by urban development.

2. Predation

Predators of SKR are similar to those of other rodents; these include owls, snakes, fox, coyotes, and cats, both feral and domestic. Barn owls and long-eared owls, for example, are both known to include SKR in their diets. Studies of desert rodents further suggest that predator avoidance may be an important component in SKR selection of foraging habitat and the size of its home range. Here too, however, urban development magnifies the potential effects of predation on SKR populations in a way that changes it from part of the natural ecosystem to a factor contributing to the species' decline. This results from the fact that urban development simultaneously increases: 1) the presence of known SKR predators, especially domestic cats; 2) ambient noise levels which may impair the SKR's ability to avoid predators, and; 3) nighttime illumination that potentially makes SKR an even easier prey.

3. Other Factors

Other factors that reduce habitat suitability or increase SKR vulnerability include grazing practices that either compact the soil or replace native vegetation with grasses not suitable for SKR, off-road vehicle activities that destroy foraging habitat, crush burrows, and compact soil, and rodent control programs that poison SKR.

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4. Alternatives Considered

This chapter describes the process by which the RCHCA developed and considered alternate conservation strategies for this HCP through its implementation of the SKR Short-Term HCP. The identification process for permanent SKR reserves also is described, as are alternatives to taking of SKR which were considered by the RCHCA during the HCP development process. The establishment, expansion, and management of the core reserve system is addressed in Chapter 5. SKR Conservation and Mitigation Measures. Environmental documentation presented in Volume III contains additional information concerning the formulation of conservation alternatives and an evaluation of the core reserve system as mitigation for the impacts of SKR incidental take.

A. Formulation of Alternatives

The formulation of alternate SKR conservation strategies for this plan was shaped by the experiences gained by the RCHCA through five years of Short-Term HCP implementation. Seven factors influenced the development and consideration of alternative conservation approaches for this HCP:

1. Evaluation of SKR Study Areas for their potential suitability as permanent reserves based upon biological, land use, and economic factors;
2. Difficulties encountered in administering USFWS and CDFG permit conditions which prohibited incidental take in Study Areas and imposed additional requirements on land use approvals in those locations;
3. Conflicts between incidental take restrictions and the need for public agencies to conduct emergency response and ongoing public facility operation and maintenance activities;
4. Conflicts between incidental take restrictions and the performance of fire prevention activities required under State and local law;
5. Accommodation of the special needs of agricultural operations in the SKR habitat conservation process;
6. Limitations of available funding sources, and;
7. Comments received from the public through regular meetings of the RCHCA Board of Directors, scoping sessions, and numerous public hearings conducted during the development of this HCP and the Joint EIS/EIR presented in Volume

1. Evaluation of Reserve Study Areas

The creation of permanent reserves for the SKR was a stated goal of the Short-Term HCP approved in 1990. Since neither adequate biological knowledge nor sufficient funding was available at that time to establish permanent reserves, the Short-Term HCP defined ten Study Areas as candidate reserve sites. The Study Areas included the largest known concentrations of SKR occupied habitat in the HCP area and excluded lesser and isolated patches considered to be too small or fragmented to have significant conservation value. The original Study Area boundaries were based upon: 1) existing data concerning the species and its distribution in the HCP area; 2) personal knowledge of biologists serving on a Technical Advisory Committee (TAC) established to advise the HCP development process, and; 3) results of the O'Farrell and Uptain study performed for CDFG.

Based on the best information available at the time, it was estimated that the ten Study Areas contained approximately 80% of the SKR occupied habitat remaining in the plan area. Due to the incidental take prohibition and land use restrictions discussed in the next section, the Study Areas were deemed adequate to minimize risk to SKR while the final reserve system was being designed. The Short-Term HCP explicitly recognized that the final configuration of permanent reserves would be a subset of the Study Areas due to the fact that conservation of all SKR habitat in the Study Areas would be economically infeasible.

The Short-Term HCP was intended to produce a systematic evaluation of the permanent reserve potential of each Study Area based on biological, land use, and economic considerations. The RCHCA conducted this evaluation using the following sources of information: 1) data produced by SKR biological research projects sponsored by the RCHCA (detailed in Volume II) combined with site-specific SKR surveys; 2) data concerning existing and planned land uses obtained from RCHCA member agencies, and; 3) financial data including funding available from the RCHCA and other sources, and projected costs of land acquisition in each of the Study Areas. The Study Area evaluation process was expected to conclude in 1992, two years after the final approval of RCHCA's existing permit and agreement and more than three years after the planning process for the Short-Term HCP was initiated. However, a combination of circumstances prolonged the process of defining SKR reserves (See "B. Reserve Design Process" and Chapter 5. SKR Conservation and Mitigation Measures for results of the review process).

The Study Area evaluation process was generally successful as a vehicle for identifying a permanent SKR reserve system. The most notable problem was the HCP boundary modification process, which forced the RCHCA, USFWS, and CDFG to decide upon individual requests to remove property from Study Areas outside of the context of overall reserve planning. This was especially problematical in the first round of boundary modifications, when large tracts were proposed for removal from Study Areas before the RCHCA had an opportunity to assimilate the results of biological research projects. This put the RCHCA in a position of selecting between two undesirable options: 1) deny requests to remove property from Study Areas and potentially face inverse condemnation law suits from affected land owners, or; 2) recommend that USFWS and

CDFG approve such requests without the benefit of all information possibly needed to make these decisions.

Property owner patience with the Study Area evaluation process steadily declined over the course of the Short-Term HCP. Although the process was useful in defining appropriate permanent reserves, it was clear that the public wished to see it concluded as soon as possible. During the development of this HCP, the RCHCA was repeatedly urged to designate permanent reserves immediately in order to eliminate the cloud of uncertainty affecting owners of property within the Study Areas.

The difficulties posed by a prolonged Study Area evaluation process led the RCHCA to the conclusion that this HCP must define a permanent reserve system for the SKR. Accordingly, this HCP proposes to establish, manage, and provide for the expansion of permanent SKR reserves. More specifically, this HCP:

a. Designates seven core SKR reserves encompassing 12,460 acres of SKR occupied habitat within a total area of approximately 41,221 acres;
b. Includes provisions for expanding the amount of SKR occupied habitat in those core reserves to 15,000 acres through trades involving federal lands pursuant to an Assembled Land Exchange Agreement between BLM and the RCHCA (included in Appendix A)',

c. Coordinates the management and expansion of SKR habitat in the reserve system through cooperative efforts with other public agencies having land management responsibilities.

2. Conditions Imposed on the Short-Term HCP Permit and Agreement

The RCHCA's existing permit and agreement were approved by USFWS and CDFG on the condition that specific constraints be placed on the location and amount of SKR occupied habitat subject to incidental take. These constraints took the form of the following conditions placed upon the RCHCA's permit and agreement:

a. Incidental take was prohibited within the Study Areas except for the "installation and maintenance of essential public utility pipelines and transmission lines, and ancillary improvements" subject to the concurrence of USFWS and CDFG;
b. For all development projects (e.g., land divisions and permits for building, grading, conditional uses, mobile home installation, and surface mining) proposed within Study Areas RCHCA member jurisdictions must:
    i. Require the submission of a SKR biological survey prepared by an individual having a USFWS permit to trap the species;
    ii. Make an initial determination whether the project may lead to significant impacts to potential habitat necessary for species persistence, or buffer/corridor lands, or would increase the difficulty of reserve management. If significant impacts may occur, an EIR must be prepared, and;
    iii. As a prerequisite of project approval, make a finding by the local governing body of "no significant environmental effect" on the establishment of a SKR reserve in a Study Area. If such a finding cannot be made the project must be denied;
c. The maximum amount of incidental take authorized was limited to 4,400 acres or 20% of the SKR occupied habitat within the HCP area, whichever is less.

An additional condition placed on the permit and agreement concerned the modification of Study Area and HCP area boundaries. All proposed changes to these areas were subject to a processing procedure involving the following steps:

a. Requests for boundary modifications must be submitted in writing to the RCHCA and must be accompanied by a SKR biological survey of the property in question;

b. The RCHCA must prepare appropriate NEPA and CEQA environmental documentation for the boundary modification requests. Such documentation must include a detailed evaluation of pertinent biological, land use, and economic factors associated with the proposed modifications, and;

c. The RCHCA Board of Directors must consider boundary modification requests, and those receiving Board endorsement are recommended to USFWS and CDFG for their approval.

The above conditions were imposed on the RCHCA's permit and agreement for the purpose of minimizing impacts to SKR and to ensure that lands essential to the species' survival would not be eliminated or fragmented before permanent reserves could be established. In retrospect it is fair to state that while these conditions did indeed provide interim conservation benefits to SKR, at times they also posed problems for property owners, most specifically those desiring to develop land within Study Areas. In regard to the cap on incidental take, the intended benefit to SKR conservation was a strong assurance that sufficient numbers of the species would continue to exist even if RCHCA member agencies fully

exhausted their take allocations. In actuality this assurance was rendered somewhat moot due to the dramatic slowdown of the western Riverside County economy during the Short-Term HCP period. As discussed in Chapter 2. Plan Area Profile, the striking reversal of the previously inflated HCP area real estate market and related decline in construction activity served to greatly suppress the demand for incidental take. As of March 1, 1996, during the Short-Term HCP period only 1,975 acres of SKR occupied habitat were incidentally taken, less than 45% of the total amount authorized by the permit and agreement. That situation certainly would not have occurred if the permit and agreement had been received in 1988, when Riverside was among the fastest growing counties in the nation.

Of far greater benefit to SKR conservation during the Short-Term HCP was the incidental take prohibition imposed on properties within the Study Areas. The principal benefit to SKR was the fact that the largest and most viable blocks of occupied habitat were not destroyed by urbanization. Although some acreage was removed from Study Areas through the boundary modification process, no SKR occupied habitat or buffer/corridor areas deemed essential for permanent reserves were lost. Thus, the Study Areas did achieve their primary biological purpose of ensuring that the best candidates for permanent reserves would not be compromised by incidental take authorized under the RCHCA's permit and agreement. However, while these Short-Term HCP constraints benefitted SKR they also proved highly problematical to the RCHCA conservation planning effort due to their unpopularity with local property owners. Opinions expressed by this group are extremely important to the RCHCA, since over 47% of all land within the Study Areas is privately owned. Over the .past five years the RCHCA has heard continual expressions of dissatisfaction from property owners in Study Areas. The most commonly stated objections are summarized below:

a. Virtually all people offering comment felt the designation of Study Areas unfairly placed thousands of privately owned properties under a cloud of uncertainty. Since the HCP required land within the Study Areas to be evaluated for potential inclusion in permanent SKR reserves, affected owners were placed in the anxious position of not knowing when or if their land would be acquired or its use restricted;

b. Some land owners testified that properties in Study Areas could not be sold at prevailing market prices since buyers (other than the RCHCA) were very reluctant to purchase property subject to special land use restrictions and potential RCHCA acquisition. As a result, these land owners felt their property value was depressed by the existence of the Study Areas. The RCHCA also was viewed by many as the sole potential buyer for Study Area property, thus placing owners in an inferior negotiating position;

c. The prohibition against incidental take, combined with SKR survey requirements and additional environmental review, were perceived by Study Area land owners as unfair and unduly restrictive. In fact, the RCHCA received public testimony on a regular basis from those who claimed to have been inversely condemned by regulations placed on Study Area properties;

d. Despite its intention to provide a mechanism for those seeking removal from Study Areas, the boundary modification process was the subject of heated criticism from property owners. This resulted from the protracted time period (an average of 18 months) required to complete the mandated process. Although the RCHCA received ample criticism over this situation, USFWS and CDFG were the targets of the most vehement objections due to their failure to meet decision deadlines specified in agreements with the RCHCA. As delays with both the first and second set of boundary modifications mounted, the RCHCA, USFWS, and CDFG experienced an erosion of public confidence which undermined support for both the SKR HCP and the ESA. 81

In the context of weighing alternatives for this HCP, both the positive and negative aspects of the Study Areas and cap on incidental take prompted consideration of other ways to minimize impacts and the risk of foreclosing conservation options. Alternatives considered by the RCHCA included the following:

a. Increasing or eliminating the cap on incidental take or conversely, if conservation and mitigation measures are not working, decreasing or suspending it;

b. Replacing the cap with a quantified habitat conservation goal, either in the form of a habitat replacement ratio and/or standards for conserved habitat in a permanent reserve system, and;

c. Eliminating the Study Area boundary modification process, either by eliminating the Study Areas altogether, defining final boundaries for permanent reserves, and/or changing temporary restrictions into permanent ones. Public reaction to Short-Term HCP Study Area restrictions significantly influenced the development of a conservation strategy for this HCP. It is quite evident that public opposition precludes the pursuit of any strategy based upon a continuation of Study Areas or similar interim habitat protection controls on private property. Additionally, the RCHCA must be mindful of its exposure to inverse condemnation claims. Continuation of Study Areas as part of this HCP certainly would increase that exposure, placing the RCHCA in a precarious position likely to compromise its ability to implement this HCP. In light of the preceding discussion, this HCP proposes a conservation strategy based upon the designation and expansion of permanent SKR reserves.

Specifically, the plan:

a. Identifies the boundaries of seven permanent SKR core reserves and provides for their conservation, management and expansion;

b. Replaces a numeric cap on incidental take with a 1:1 habitat replacement requirement until land acquisitions or other conservation actions necessary to complete the core reserves have been accomplished;

c. Provides for a SKR monitoring program tied to an adaptive management strategy to gauge the effectiveness of the conservation program, and;

d. Includes provisions to suspend authorizations of incidental take if the habitat replacement requirement is not met.

3. Emergency Response and Ongoing Public Facility Operation and Maintenance Activities

During the course of the Short-Term HCP restrictions imposed within Study Areas created problems for public agencies and utility companies responsible for responding to emergency situations. Over this five year period western Riverside County experienced several emergencies due to fires, flooding, and earthquakes. When such conditions occurred, police and fire departments, flood control districts, other public agencies, and utility companies responded quickly and were obligated to take whatever actions were deemed necessary to protect lives and property. However, when emergencies affected lands within Study Areas these entities found themselves in a position of potentially violating the RCHCA's incidental take permits. To the extent that land disturbance was necessary to respond to emergencies in Study Areas (e.g., use of heavy equipment for fire suppression), public agencies and utility companies were potentially liable for violating the prohibition against incidental take of SKR.

A similar situation occurred in connection with activities necessary to operate and maintain public facilities located within Study Areas. Of particular concern was road maintenance, which necessarily involves regular grading of road shoulders and resurfacing, paving, and occasional reconstruction of streets and highways. In the performance of such necessary activities within Study Areas, local road departments were occasionally impeded by the incidental take prohibition. This was especially true in rural areas where dirt roadways are known to be used by SKR as movement corridors. Landfill and flood control facility maintenance activities shared this problem due to the large amount of grading and earth movement necessary to properly maintain these facilities.

Utility agencies and companies faced similar challenges in conducting necessary activities within Study Areas. Since the three largest Study Areas were established around reservoirs, the incidental take prohibition became a significant concern to MWD, whose activities required access to operational and project sites in locations suitable for SKR. Southern California Edison, The Gas Company, and the Eastern and Western Municipal Water Districts encountered similar problems in working with their facilities.

It is now clear to the RCHCA that the Short-Term HCP would have functioned more successfully if it had explicitly provided for the performance of these necessary emergency and public facility maintenance activities. In considering alternative conservation strategies for this HCP the RCHCA was urged to ensure that any limitations on the location of incidental take would not apply to actions taken for emergency response or public facility operation and maintenance purposes.

Accordingly, this HCP provides that actions taken inside of core reserves by public agencies for the purposes of responding to emergency conditions or operating and maintaining existing public facilities will be permitted and will not be subject to prior approval by USFWS and CDPG.

4. Resolution of Conflicts Between HCP Incidental Take Restrictions and the Performance of Fire Prevention Activities Required under State and Local Laws

The regulation of incidental take outside of Study Areas and prohibition of incidental take within them imposed under the Short-Term HCP resulted in another significant problem which influenced the conservation program proposed in this HCP. This concerns a serious conflict between the incidental take prohibition and the performance of fire prevention activities required under State and local laws. Due to its relatively arid climate, frequency of Santa Ana winds, and extensive distribution of flammable vegetation, most non-urbanized portions of the HCP area are extremely susceptible to fire.

Section 4291 of the California Public Resources Code establishes standards for firebreaks, vegetation clearance, and structures. Section 4291 (a) requires all owners of property in brush and grass covered lands (encompassing most of the HCP area) to maintain a firebreak of not less than 30 feet around buildings and structures; this is to be achieved through the removal and clearing away of "all flammable vegetation or other combustible growth." Section 4291 (b) requires that a firebreak be maintained by removing all brush, flammable vegetation, or combustible growth which is located from 30 feet to 100 feet of buildings and structures if the local fire department determines that a firebreak of 30 feet is not adequate due to hazardous conditions.

Prior to the implementation of the Short-Term HCP, property owners in the HCP area normally complied with these requirements of State law by discing land to clear flammable vegetation. This is generally deemed the most effective method of vegetation clearance by fire experts since it completely removes flammable materials down to bare mineral soil. However, since it also disturbs land in a manner which can destroy SKR burrows, if conducted in SKR occupied habitat it normally results in the taking of the species.

Since the RCHCA's permit and agreement for the Short-Term HCP prohibited take of SKR in Study Areas and regulated it in SKR occupied habitat, property owners in those locations found themselves unable to disc their land for fire prevention purposes. In an effort to avoid violations of the RCHCA's permit, the Riverside County Fire Department developed an agreement with USFWS to notify Study Area residents and those in areas of known SKR occupied habitat that weed abatement and removal of flammable vegetation should be accomplished by mowing or scraping. Weed abatement notices issued to Study Area property owners within RCHCA member jurisdictions indicated that those portions of the property

requiring abatement should be mowed during daylight hours and that cut weeds should be removed.

Many local property owners objected to the use of mowing for fire protection purposes, feeling that to be ineffective and, for large or rocky properties, completely infeasible. Residents preferred to employ discing for firebreak maintenance. However, such activity was not deemed acceptable in Study Areas due to the incidental take which sometimes resulted.

This situation became a focus of attention on October 26, 1993, when a fire broke out in the Lake Skinner Study Area. Stoked by 70 mph Santa Ana winds, the fire destroyed 29 homes and 77 accessory buildings. Total property losses were estimated at more than $2.6 million. Subsequent investigations by the Riverside County Fire Department revealed that of the 30 homes lost, 23 had no surrounding firebreaks. Lake Skinner Study Area residents reacted to the fire with anger, staling that property losses were exacerbated by their inability to adequately clear brush due to regulations which afforded more protection to SKR than human beings. This story received widespread national television and newspaper coverage as a particularly egregious example of the ESA running amok. The resulting criticism was damaging to the ESA, USFWS, and the RCHCA's SKR conservation effort.

In order to prevent another occurrence of this situation, the RCHCA met with fire department personnel. Lake Skinner Study Area residents, and representatives of the USFWS Carlsbad Field Office in December of 1993. The purpose of the meeting was to determine how necessary tire protection measures could be taken by property owners without violating the ESA.

Fire experts in attendance all agreed that while the standards established in State law are adequate, firebreaks of 100 feet would provide a greater margin of safety. They also agreed that vegetation should be cleared down to bare mineral soil, and the most effective method of accomplishing that is discing. The USFWS representatives indicated that SKR generally are not found in close proximity to buildings; therefore, the creation and maintenance of firebreaks around buildings and structures is unlikely to result in significant amounts of incidental take or destruction of habitat. The USFWS agreed to support a change in policy to permit 100 foot firebreaks down to bare soil around buildings and structures. It was further agreed that SKR biological surveys would not be required for land clearance conducted for fire protection purposes.

In 1994 a Cooperative Agreement was executed among the USFWS and all RCHCA member agencies. This Agreement provided authorization for incidental take of SKR resulting from activities conducted by property to clear land down to bare mineral soil within 100 feet of structures and property lines for fire prevention purposes. As described in Chapter 5. SKR Conservation and Mitigation Measures, this HCP contains provisions for fire prevention activities which are consistent with the terms of the Cooperative Agreement.

5. Agricultural Operations in the HCP Area

Significant portions of the HCP area are still under active agricultural use. Much of this agricultural land is dedicated to dryland farming and other activities requiring ongoing land disturbance. The Short-Term HCP was geared toward those land uses requiring local land use permits. Since most agricultural operations in the plan area do not require such permits, the Short-Term HCP did not adequately address the issue of ongoing agricultural land cultivation.

This situation resulted in problems for a few specific agricultural operations located both inside and outside of Study Areas. Within the HCP Area most farming activities were unaffected by the incidental take issue due to the fact that they were subject to no grading, building, or other permits which require the submission of SKR biological surveys. No knowledge of SKR occupied habitat existed on the majority of these lands and thus, SKR incidental take was not perceived as an issue of concern. However, during the course of the Short-Term HCP it became a more urgent issue when a SKR biological survey performed for a specific farming operation revealed the presence of some SKR occupied habitat. Under the provisions of the HCP incidental take resulting from agricultural land disturbance could not be authorized without a take allocation from a RCHCA member agency. The situation was ultimately resolved through the issuance of such a take allocation, but it resulted in delay and lost income for the farmer. It also raised concern among RCHCA members that the agency's incidental take authorization potentially could be consumed by having to make allocations throughout the HCP area every time a fallow field is disced prior to planting.

An even greater problem for local agriculture potentially existed in the Study Areas due to the incidental take prohibition. During the course of the Short-Term HCP one large agricultural operation located in a Study Area was hindered by the presence of SKR on fallow fields scheduled for re-cultivation. This resulted in significant income losses for the affected individuals.

These experiences, combined with concerns raised by the Riverside County Farm Bureau, have led the RCHCA to ensure that the needs of bona tide agricultural operations are accommodated by the provisions of this HCP. Agriculture is an important component of the western Riverside County economy and its continued existence is supported by the RCHCA. It is clear that the imposition of SKR mitigation fee assessments and SKR biological survey requirements on agricultural land disturbance would adversely affect the economic viability of this industry in the plan area. Therefore, this HCP provides that bona fide agricultural activities will not be subject to SKR mitigation fees or SKR biological surveys.

6. Funding Limitations

Implementation of the Short-Term HCP has been a very expensive proposition for affected portions of western Riverside County. The RCHCA expended approximately $30 million to implement the Short-Term HCP and develop this HCP, and an additional $11.7 million in local contributions will be made pursuant to this HCP (See Chapter 5. SKR Conservation and Mitigation Measures). To date, almost all of the funds required to finance SKR HCP expenses have been raised from local sources. In establishing the SKR mitigation fee RCHCA member agencies created the largest local habitat conservation

funding program of its type in the nation. This is a local funding effort of unprecedented magnitude.

However, although more than $40 million has been raised to date by the RCHCA through the SKR mitigation fee and other revenue sources, the costs of providing an optimal habitat conservation program for this species are beyond the purchasing power of the RCHCA. Despite aggressive pursuit of available funding sources and Congressional lobbying, during the five year period of the Short-Term HCP the RCHCA received no financial assistance from the federal government for implementation of the SKR conservation effort. Greater success was achieved with the State of California, which contributed approximately $2.7 million in grants and land purchases.

In the months prior to the adoption of this HCP by its Board of Directors, the RCHCA received commitments from the U.S. Department of Interior, State of California, and BLM for financial assistance to implement this conservation plan. These commitments are reflected in the HCP implementation budget presented in Chapter 5. SKR Conservation and Mitigation Measures. Unfortunately, these offers of assistance came only after local elected officials expressed their intent to abandon the SKR HCP if the federal and State governments failed to participate in its funding. In the development of this HCP it is impossible to overestimate the importance of the policy debate concerning who properly bears financial responsibility for local conservation efforts undertaken for the sole purpose of complying with the federal and California Endangered Species Acts. During the numerous public hearings held by the RCHCA concerning this HCP and its accompanying EIS/EIR, the majority of those commenting expressed strong objections to their perception that those levels of government whose laws create the need for this HCP were leaving the RCHCA and its constituents to their own devices to find money to pay for it.

This situation is not well received by local citizens playing the role of financier. The funding limitations faced by the RCHCA have been very influential in determining the conservation strategies of this HCP. From the RCHCA's necessarily pragmatic perspective, the level of conservation provided under this HCP reflects the best that can be achieved in western Riverside County for a single species using local funds as the primary funding source. While the RCHCA is committed to ensuring long-term survival of SKR through this HCP, it is the clear desire of its member agencies to redirect its habitat conservation funding toward multi-species purposes. In the context of this HCP, that means defining an appropriate end point to the practice of acquiring land for the benefit of one species, in order to allocate scarce local conservation funds more effectively through a multi-species HCP which will serve to resolve all ESA problems in western Riverside County.

7. Public Comments

As described in Chapter 2. Plan Area Profile, this HCP is the product of an extensive public review process. Including formal scoping meetings, public workshops, hearings, and meetings of the RCHCA Board of Directors, this HCP was subject to comment at more than 50 public meetings. The volume and intensity of public opinion was considerable, and it undeniably shaped the content of this plan. Several of the most important issues raised by the public, and their effect on this HCP, already have been discussed, e.g. opposition to Study Areas. Two additional public concerns were highly significant to the development of conservation strategies for this HCP. These include: 1) comments urging an end to SKR habitat acquisition and mitigation fees at the conclusion of the Short-Term HCP, and; 2) opposition to expansion of this HCP to encompass multi-species habitat conservation activities.

As a vehicle for soliciting comment at public scoping sessions for this HCP, the RCHCA distributed a proposed series of conservation alternatives for public review. During a six-month scoping period in 1993, six preliminary HCP conservation alternatives were presented in concept to the public. Comments received during the scoping process produced six additional alternatives and variations for consideration by the RCHCA Board of Directors. In addition, over 300 issues were raised in written comments, primarily expressing concerns regarding biological and socioeconomic matters (see Volume III).

The scoping process prompted a consideration of alternate methods of implementing the SKR conservation program. Options considered included:

1. Terminating the SKR mitigation fee and the RCHCA's habitat acquisition program at the end of the Short-Term HCP;
2. Establishing a market-based system for establishing reserves and fulfilling project-specific habitat impact mitigation requirements (as described in Appendix D), and;
3. Incorporating the SKR conservation program into a multiple species approach and/or a federal permit application for incidental take of the California gnatcatcher in the plan area.

In terms of the total volume of public comments addressed to the RCHCA, the first HCP conservation alternative listed above received far more support than any other identified. At virtually every public meeting the RCHCA heard public comments from a group of Study Area property owners reflecting their belief that more than enough land had been set aside for the SKR already, and additional efforts were unnecessary and burdensome. Over the course of the RCHCA's numerous public meetings concerning this HCP the cumulative significance of this sentiment was substantial; it became clear that many property owners shared a strong desire for this HCP to include no commitments to acquire additional SKR habitat or provide additional local funding.

This sentiment manifested most clearly in public comments received on the first draft of this HCP dated November 4, 1993. That document called for the RCHCA to continue SKR habitat acquisition until 2,500 acres of SKR occupied habitat had been added to the core reserve system. At that point, the USFWS, RCHCA, and CDFG would reevaluate the 1:1 habitat replacement requirement; the draft HCP did not specify future actions to result from the evaluation. Following its issuance

of the draft HCP the RCHCA received a large volume of public comments recommending that the HCP be modified to specifically define a conclusion to the SKR habitat acquisition process.

The conservation strategy presented in Chapter 5. SKR Conservation and Mitigation Measures acknowledges the desire of the public for a defined conclusion to land acquisition solely for the purpose of conserving SKR. The RCHCA has endeavored to define a configuration for a SKR core reserve system which represents the maximum commitment of local funds deemed acceptable by RCHCA member agencies and the citizens of western Riverside County. Expansion of the reserves beyond the boundaries shown in this HCP will be accomplished through a program of land trades involving BLM properties.

Another commonly expressed sentiment having significant influence on the conservation approach taken by the RCHCA was the opposition to expanding this HCP to encompass multi-species issues. During the scoping and hearing process RCHCA staff had proposed an approach whereby the RCHCA would seek to use the SKR HCP as a platform for a multi-species conservation plan. More specifically, the HCP would have provided for conservation of not only SKR, but other listed and sensitive species as well.

The vast majority of those offering public testimony concerning this conservation alternative expressed opposition. The primary reason was a belief that incorporation of habitat conservation for other species would have delayed the completion of the SKR program. It was felt that by expanding the conservation effort to include other species, the RCHCA would be complicating the SKR HCP and causing it to continue indefinitely. Although none of the public comments offered any substantiation for this sentiment, it was expressed with sufficient fervor to ensure that this HCP will cover only SKR.

Details regarding the conservation program for this HCP are discussed in Chapter 5. SKR Conservation and Mitigation Measures. In addition, a market-based habitat transaction system designed by Olson Policy Consulting is presented in Appendix D.

B. Evaluation of Alternatives to Incidental Take

As required by Section 10(a) approval criteria, alternatives to the incidental take proposed by this HCP have been considered by the RCHCA. These include:

1. Not seeking the permit and agreement and therefore not receiving authorization for the level of take proposed;
2. Implementing a "no incidental take" conservation strategy that would completely avoid take of SKR and therefore not require the permit or agreement;
3. Imposing a "no net loss of habitat" mitigation standard;
4. Requiring the relocation of SKR from all or some sites prior to removal or modification of occupied habitat;
5. Requiring that a portion of existing occupied habitat be conserved on-site for all or some projects in the plan area;
6. Designating areas where incidental take would be absolutely prohibited, and/or;
7. Setting a numeric cap on the total amount of incidental take that may occur under the permit and agreement.

The "no permit" option was eliminated from further consideration by the RCHCA Board of Directors due to its failure to address problems resulting from FESA and CESA prohibitions against take of SKR. The RCHCA acts on behalf of the citizens in western Riverside County, whose health and welfare require that a permit and agreement be secured in order to allow certain activities resulting in incidental take of SKR to proceed. However, the "no permit" option remains a possible choice since the decision to seek the permit and agreement is a voluntary action by the RCHCA. In fact this option is evaluated in the Joint EIS/EIR included as Volume III of this HCP.

The "no incidental take" option was eliminated as infeasible due to the distributional characteristics of the species and the lack of definitive understanding of how impacts of human activity may be completely avoided. Even if direct take of occupied habitat could be completely avoided, incidental take of SKR still would be likely to occur due to the effects of development surrounding occupied habitat. Consequently, this option would not truly avoid incidental take.

The "no net habitat loss" option would require that one acre of new SKR habitat be created for every acre incidentally taken under the permit and agreement. The feasibility of this option is limited by the relative paucity of information concerning actions necessary to establish viable SKR habitat under varying conditions. Additionally, the RCHCA has determined it more effective both biologically and financially to acquire existing SKR habitat than to attempt create it through land manipulation. From a biological perspective, actions taken to create SKR habitat are likely to result in the destruction of habitat suitable for other species. Financially, it is less costly to purchase land already occupied by SKR than to modify habitat, relocate SKR to the site, and conduct active ongoing management programs. As a final note, neither the RCHCA's existing permit and agreement nor SKR mitigation requirements imposed by USFWS and CDFG for other projects have ever mandated this type of mitigation standard. Consequently, although habitat enhancement and restoration is an important part of the RCHCA's habitat management goals, this alternative to incidental take was eliminated.

The "SKR relocation" option would require the live trapping, removal, and relocation of SKR from one site to another as a method of avoiding the destruction of individual animals. Technically, such activities also constitute take under the federal and State ESA, but the impacts of such actions presumably would do less harm to the species than allowing animals to be destroyed. As noted in Chapter 3. Summary Profile of the SKR, several studies are being conducted in the plan area regarding SKR relocation, and the results of these studies will be incorporated into the RCHCA's ongoing conservation program. However,

it must be recognized that relocation is a tool, not a conservation strategy. Moreover, depending on the size of the project, it can be prohibitively expensive. Relocation therefore is not proposed as a practical alternative to incidental take in this HCP.

The "on-site conservation" option potentially could result in more SKR habitat being permanently conserved in the plan area and therefore, fewer acres of habitat removed and presumably fewer SKR directly taken. However, given the movement patterns and habitat needs of the species, habitat conserved in small patches within individual development sites would not sustain SKR over the long term and consequently would delay but not avoid take. Such a strategy also would be disruptive to sound land use planning by hindering efficient and cost-effective site development. As previously noted, on-site conservation on agricultural and public lands outside of core reserves could contribute to the survival of the species and the viability of the reserves. For these reasons, on-site conservation measures are included in this plan but are not proposed as a primary conservation strategy or as a restriction on the location of incidental take.

The "no take zone" option would involve defining and enforcing areas within which constraints would be imposed on specific properties in order to conserve SKR by not allowing the species to be taken. That type of approach was followed in the Short-Term HCP for the explicit purpose of not precluding conservation options while the reserve system was being designed. As discussed in earlier in this Chapter however, the resultant regulation of private property was vigorously opposed by plan area citizens and also exposed the RCHCA to significant risk of inverse condemnation claims. Additionally, as an alternative to the proposed taking this option has many of the same drawbacks as the "no take" and "on-site conservation" strategies in that the conservation it provides is only temporary. For these reasons the RCHCA elected not to pursue a strategy of continuing "no take zones". Instead, this HCP provides controls on incidental take through a requirement for USFWS and CDPG approval of incidental take occurring within core reserves for purposes other than those relating to the maintenance of public health, safety, and welfare.

The "cap on take" option is based on the assumption that incidental take below a certain number of acres will have significantly less of an adverse effect on SKR than take above that number. Within the context of the Short-Term HCP that strategy, combined with additional constraints on the location of incidental take, was justified for the purposes of ensuring that: a) the persistence of the species would be assured pending completion of minimum viable population analyses, and; b) viable permanent preserves could be identified and established. However, as an alternative to incidental taking that would occur over the 30-year period of this HCP, a numeric cap on take would have to be tied to a meaningful biological threshold in order to have conservation value for SKR. This plan proposes a mitigation and acquisition standard that focuses on the conservation value of core reserves rather than a cumulative total of allowable take.

A complete description of the SKR core reserves and other features of the RCHCA's SKR conservation program is presented in Chapter 5. SKR Conservation and Mitigation Measures.

C. Reserve Design Process

The evolution of the SKR Study Areas into the reserves defined in this HCP was the result of a balancing of biological, land use, and economic factors. The RCHCA seeks to design individual reserves and a regional reserve system that:

- Will ensure to a reasonable degree of probability the continued existence of SKR in the HCP area:
- Are in a manageable configuration and land use framework;
- Are feasible to acquire or otherwise conserve within the constraints of available resources;
- Utilize existing publicly owned lands and conservation areas to the fullest extent possible, and;
- Will, within the context of a single species HCP, serve to conserve the broadest range of sensitive species and habitats possible.

These goals necessitated the formulation of a strategy combining general conservation principles, results of specific SKR biological research, land use planning policies, and cost/benefit analyses. Since SKR reserve design has occurred concurrent with implementation of the Short-Term HCP, it has also required consideration of a third round of HCP boundary modification requests submitted by individual property owners.

1. Starting Point and Basic Units

The Study Areas established under the Short-Term HCP, as modified by two sets of approved boundary modifications and by the expansion and establishment of multispecies reserves, were used as the starting point for SKR reserve design. The nine Study Areas defined by the Short-Term HCP cover 79,177 acres including approximately 19,403 acres of SKR occupied habitat. (See Table 14 and Figure 20)

In its baseline comparison of Study Areas, acres of SKR occupied habitat (irrespective of densities) was chosen by the RCHCA as the basic biological design unit. This was selected in recognition of the significant year-to-year variability of SKR distribution in the HCP area. Assessor parcels were used as the basic land use unit in order to accurately delineate property boundaries and identify land ownerships; they also reflect the level at which regulatory and acquisition programs are implemented. See Table 15 for a summary of parcel and land ownership characteristics in the defined Study Areas.

2. General Conservation Principles

Of primary importance to the RCHCA in its development of the SKR reserve system was that boundary delineations be consistent with current biological conservation theory and practice (Thomas et al. 1990, Moss 1991, and Brussard, et al. 1993). The following general conservation principles were used to guide SKR reserve design for this HCP:

a. Reserves that are well distributed across a species' native range will be more successful in preventing extinction than reserves confined to small portions of a species' range;
b. Large blocks of habitat, containing large populations of the target species, are superior to small blocks of habitat containing small populations;
c. Blocks of habitat located in close proximity to each other are superior to blocks far apart;
d. Habitat occurring in contiguous blocks is preferable to habitat which is fragmented;
e. Habitat patches that minimize edge-to-area ratios are superior to those that do not;
f. Interconnected blocks of habitat are superior to isolated blocks, and corridors or linkages function better when the habitat within them includes protected, preferred habitat for the target species, and;
g. Blocks of habitat without roads or other means of human access are superior to those traversed by roads or otherwise accessible.

General conservation principles also guided the following additional goals for the SKR reserve system:

a. Inclusion of the best remaining examples of SKR habitat in the plan area;
b. Protection of the ecosystem on which SKR and other species depend;
c. Inclusion of heterogeneous terrain and vegetation, and;
d. Inclusion of some geographically isolated populations to reduce the potential for catastrophic losses of SKR due to localized diseases, natural disasters, or other effects.

Research studies of SKR presented in Volume II provided field level data essential to the design of SKR reserves. Specific conservation principles developed through that research include the following:

a. Due to the high level of genetic similarity among and low level of variability within SKR populations, the reserve system need not focus on conservation of unique gene pools, and;
b. Limited dispersal distances of this species will make the conservation of corridors connecting habitat patches within the reserves very important to reserve viability.

All of the above conservation principles were employed by the RCHCA to guide the biological component of the reserve design process. That process employed the following evaluation criteria to assess the biological suitability of each Study Area for permanent reserves:

Use by SKR

- Occupied Habitat
- SKR population density
- Landscape unit acreage
- Connectivity between habitat patches
- Buffer characteristics

Potential Habitat

- Vegetation (type and coverage)
- Soil characteristics
- Slope

Relative Importance in Landscape Scale of Design

- Contribution to reserve assembly (e.g., acreage, patch connections)
- Effect on edge ratio

- Projected contribution to SKR population persistence
- Contribution to ecological diversity of reserve system

3. Land Use Planning Policies

Land use planning policies employed in the reserve design process reflect the broad distribution of SKR occupied habitat on public and private lands in the HCP area. In general, these embody the General Plan policies of RCHCA jurisdictions concerning open space, conservation, and environmental impact assessment. Land use planning policies employed in this HCP are summarized below:

a. Conservation of SKR occupied habitat is properly considered an "open space" land use which, pursuant to General Plan requirements, must be planned in the context of all other uses of land;
b. To the degree that conservation of SKR occupied habitat provides a public service to the region as a whole and to individual jurisdictions, it is comparable to other public works important to the environmental and economic quality of life in the HCP area, and;
c. Agriculture is an essential component of the regional open space system which contributes to the economic and environmental quality of life in the region, and is capable of creating and maintaining conditions which sustain SKR. Where compatible with SKR habitat conservation goals, the continuation of agricultural land uses in the plan area should be encouraged by this HCP.

4. Cost/Benefit Considerations

A fundamental component of reserve design is the projection of costs for the acquisition of land necessary to accomplish the biological objectives of this HCP. This includes an analysis of land ownership patterns and development of cost estimates for specific groups of target parcels. Cost estimates for such parcels are then compared to the benefits resulting from their conservation, i.e., their estimated effect on SKR viability and persistence. These cost/benefit characteristics were examined in each of the Study Areas by assessing:

a. The amount and quality of SKR occupied habitat on public lands;
b. The amount and quality of SKR occupied habitat on private lands considered for inclusion in the reserves, and;
c. The projected acquisition cost for private lands (Table 16) based upon land prices actually paid by the RCHCA during the implementation of the Short-Term HCP, and analysis of current local real estate market conditions.

5. Short-Term HCP Third Round Boundary Modification Requests

Due to the receipt of numerous applications, a third round of boundary modification requests from individual property owners was reviewed by the RCHCA during the reserve design process. These included requests from the first two rounds which were withdrawn from consideration at the property owner's request. Proposed boundary modifications submitted to but not approved by USFWS or CDFG in the previous rounds also were reviewed.

In total, the third round modifications (including reactivated requests) would add approximately 934 acres to the HCP Fee Area and remove approximately 6,112 acres from Study Areas (Table 17). The proposed additions to the Fee Area include approximately 145 acres of SKR occupied habitat; the Study Area modifications would reduce the total amount of occupied habitat within those areas by approximately 1,923 acres.

Of the earlier proposals that were reviewed, the one most pertinent to reserve design concerns the Potrero Study Area. As part of the first round of boundary modifications, that Study Area had been proposed for temporary removal from the plan area to allow time to resolve issues regarding the potential inclusion of a larger area of occupied SKR habitat on property owned by the Lockheed Corporation. The RCHCA's request was not approved by USFWS, and subsequently development plans have been approved for the area. Lockheed has received approval from the City of Beaumont for a Specific Plan covering property both within and outside of the Study Area.

As previously discussed, the Potrero area also has been identified by BLM as a preferred site for expansion of a SKR ACEC. With active support and participation by the RCHCA, BLM and Lockheed have worked cooperatively to explore the possibility of a land exchange for that purpose. All of the boundary modification requests have been incorporated into the conservation and mitigation plan proposed in this HCP. Requests for removal of land from Study Areas are accommodated through the exclusion of those properties from the core reserves defined in this HCP. Requests for addition of land to the HCP area are reflected in the boundaries established for this plan.

D. Study Areas Not Selected as Core Reserves

The reserve design process resulted in the elimination of the Kabian Park and Santa Rosa Plateau Study Areas from further consideration as core reserves. The Potrero Study Area also has been eliminated with the recommendation that the RCHCA

continue to facilitate discussions between BLM and Lockheed to accomplish a land trade in the area. Finally, the RCHCA has eliminated from consideration as a core reserve all private property within the Steele Peak Study Area. It must be emphasized that elimination of these Study Areas from reserve consideration does not mean they have no biological value for SKR, or that the areas have no potential role in the SKR reserve system. This means only that the RCHCA does not consider their inclusion either feasible or prudent within the legal, financial, and institutional context of this HCP. The primary reasons for eliminating these Study Areas from reserve consideration are summarized below.

1. Santa Rosa Plateau

The Santa Rosa Plateau was not selected as a SKR core reserve for the simple biological reason that SKR do not occur there. The area has tremendous biological value for other sensitive species and habitats found on site, e.g., vernal pools, native grasslands, and Engelmann oak forest. Those values have prompted its acquisition and management as a 7,000 acre wildlife reserve. Designation of this area as a SKR reserve is felt to be inappropriate due to the potentially deleterious impacts management for SKR may have on the resident sensitive species and habitats intended for conservation. Additionally, designation of this area as a SKR reserve would result in a misallocation of scarce SKR management funds away from reserves of far greater importance to the species.

The elimination of the Santa Rosa Plateau Study Area as a SKR core reserve candidate will have no effect on the status of this area as a wildlife reserve.

2. Kabian Park

The Kabian Park Study Area was eliminated from further consideration as a SKR core reserve due to a combination of biological, land use, and economic factors.

Excluding the Santa Rosa Plateau and Motte Reserve, Kabian Park contains the least amount of SKR occupied habitat (1,153 acres) among the Study Areas. The extent of development in this area has resulted in significant habitat fragmentation, and also precludes the establishment of habitat patch connections deemed necessary to achieve an acceptable degree of viability in an area of such relatively small size. For these reasons, projections of long-term SKR persistence produced by the Gilpin model show Kabian Park to have by far the lowest conservation value and probability of 100-year survival of the Study Areas, even if all remaining occupied habitat is conserved. Additional details concerning the Gilpin model output are presented in Volume II.

The land use characteristics of the Kabian Park area also make it a poor candidate for a SKR reserve. Existing residential development occurs throughout the area, and with recent municipal annexations and planned improvements to Highway 74, prospects for future growth are quite favorable. Additionally, Kabian Park is located in an area subject to the combined effects of development in the Cities of Canyon Lake, Lake Elsinore, and Perris. Although future development in Perris and Lake Elsinore will be consistent with the provisions of this HCP, the same cannot be guaranteed within Canyon Lake due to the fact that it is not a member of the RCHCA. However, development occurring within its borders could have an adverse impact on a SKR reserve if one were to be established in Kabian Park.

From an economic perspective the projected cost of assembling land for a SKR reserve in Kabian Park is prohibitive. Most of the SKR occupied habitat in the existing Study Area occurs on small, privately owned parcels; many of these are developed with single residences. A total of 339 privately owned parcels exist in the Kabian Park Study Area, encompassing 2,888 acres. Due to the small size of this area, the long-term viability of SKR would depend upon the acquisition of almost all of those parcels. At an estimated average cost of $7,000 per acre, the total purchase price for all private parcels would exceed $20.2 million. Such acquisition probably would necessitate condemnation actions, since many parcels are home to full-time residents unlikely to sell their land voluntarily.

In summary, the establishment of a SKR reserve in Kabian Park would: a) cost more than the total amount of RCHCA funds currently available for land acquisition; b) result in severe political problems due to the probable need to acquire land through eminent domain, and; c) produce a reserve having a very poor probability of sustaining the species into the future. In light of these factors the RCHCA has eliminated Kabian Park from consideration as a permanent SKR reserve.

3. Potrero

As previously noted, the exclusion of private lands in the Potrero Study Area as a reserve candidate is accompanied by a RCHCA commitment to work cooperatively with BLM and the Lockheed Corporation to effectuate a land trade for the purpose of expanding a proposed ACEC in the area. This desire results from the high biological value of SKR habitat on the Lockheed property. Given the amount and density of SKR populations on site, absence of surrounding development, and proximity to large blocks of conserved public land, from a biological perspective Potrero may be considered among the very best potential candidates for a permanent SKR reserve. In fact, the Potrero Creek Specific Plan Environmental Impact Report (EIR) notes that the area includes some of the largest blocks of contiguous SKR occupied habitat remaining, and also features the greatest densities of the species known to exist.

However, several factors limit the RCHCA's ability to facilitate the formation of a Potrero reserve. These include:

a. The annexation of the Lockheed Potrero Creek Specific Plan site into the City of Beaumont, a non-RCHCA member agency;

b. Land values for the Lockheed property, estimated by various sources to range between $40 million and $100 million. Purchase prices within this range would preclude any reasonable possibility of timely acquisition by the RCHCA, and;
c. The right of Lockheed to seek its own SKR incidental and management take authorization from USFWS and CDFG for lands within the Specific Plan boundaries. The Potrero Creek Specific Plan EIR states that mitigation for SKR impacts will be accomplished by the project applicant either through Sections 7 or 10(a) of the ESA. No intention to use the RCHCA's SKR incidental take permits is expressed.

The Riverside County Local Agency Formation Commission has approved a request from Lockheed to annex its Potrero Creek property to the City of Beaumont. That action effectively removed the Lockheed property from the RCHCA's Short-Term HCP since the City of Beaumont is not a member of the RCHCA and thus is not covered under the RCHCA's Implementation Agreement, 2081 Agreement, or incidental take permits. Similarly, the RCHCA has no authority to include land within a non-member jurisdiction in this Long-Term HCP.

However, prior to the annexation the RCHCA had examined the Potrero issue in the context of its Study Area evaluation process. In considering the manner in which this HCP should address the Potrero issue the RCHCA examined the possibility of including this territory in the plan area without a permanent reserve designation. Under that approach all SKR occupied habitat in the Potrero Study Area would be subject to incidental take upon satisfaction of applicable mitigation conditions. The RCHCA reviewed this possibility in the context of findings which must be made by the Secretary of Interior prior to approving a HCP. Findings applicable to the Potrero consideration, as set forth in Section 10(a)(2)(B) of the ESA, are as follows:

1. The applicant (RCHCA) will, to the maximum extent practicable, minimize and mitigate the impacts of incidental taking;
2. The applicant will ensure that adequate funding for the plan will be provided, and;
3. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

In the opinion of the RCHCA, inclusion of the Potrero site within an area subject to incidental take would seriously imperil the ability of this HCP area to pass the first "findings test" listed above. The Potrero Creek EIR indicates that 1,709 acres or 88% of SKR occupied habitat would be directly taken by the proposed development; a maximum of 229 occupied acres would remain. However, as stated in the Potrero Creek Specific Plan EIR Appendix E (Biological Assessments), ".even the largest remaining habitat areas (48 acres) would very likely be lost after a long period of time, again due to both stochastic factors intrinsic to small populations and expected deleterious habitat changes." Thus, the EIR contemplates the eventual extirpation of all SKR occupied habitat on site.

Of specific relevance to the RCHCA in meeting the incidental take impact minimization criterion for HCP approval are the conclusions of the EIR concerning impacts resulting from take of the Potrero Creek SKR population:

"The expected large-scale loss of occupied SKR habitat would constitute a significant adverse impact.The Potrero Creek Specific Plan would effectively remove from consideration an SKR preserve study area exhibiting some of the largest and most contiguous tracts of higher-end abundance of the species long-term survival. The positive value of the Potrero SKR Study Area is augmented even further by the fact that it is the only preserve study area not fragmented by internal development or surrounded by development. The site is one of the only preserve study areas exhibiting a relatively contained ecosystem that is and for many years has been largely free of major human impacts other than farming and grazing. Most of the site remains in a relatively undisturbed and natural state, and is surrounded by large tracts of federal lands with native habitats that are managed for their natural resources.A take of SKR of this magnitude as proposed by Lockheed would be the largest in the region since the SKR was classified as endangered by the Federal government in 1989 (sic).'"

If this HCP designates the Potrero Creek site as an area subject to incidental take of SKR, the resulting impacts to the species would be the same as those described by the EIR statements quoted above. The HCP would be in effect facilitating the incidental taking of the largest contiguous populations of SKR known in the plan area. Given that situation, the RCHCA does not believe a HCP authorizing incidental take of the Potrero Creek SKR population would meet the ESA requirement for minimizing species impacts to the maximum extent practicable.

The RCHCA also is mindful of the ESA standard for mitigating the impacts of incidental take to the maximum extent practicable. The conservation program described in this chapter and Chapter 5. SKR Conservation and Mitigation Measures is felt by the RCHCA to constitute a satisfactory level of mitigation for the impacts of incidental take occurring within a HCP area which does not include the Potrero Creek site. However, if the HCP was modified to encompass Potrero and provide for incidental take of all SKR present upon satisfaction of applicable mitigation requirements, impacts of the aggregate level of take could not be considered mitigated to the maximum extent practicable. In the opinion of the RCHCA, in order to meet that standard the amount of SKR conservation provided by this HCP would have to be substantially greater than that proposed. It is financially infeasible for the RCHCA to provide such an increased level of conservation. Funding required to acquire substantial amounts of additional SKR habitat cannot be realistically committed within the context of this HCP.

For the reasons described above the RCHCA has determined that inclusion within the HCP area of privately owned properties in the Potrero Study Area is not appropriate. However, as described in Chapter 5. SKff Conservation and Mitigation Measures, this HCP does designate 995 acres under federal ownership as a core reserve. This territory was recently established as an Area of Critical Environmental Concern (ACEC) by BLM through its Record of Decision on the South Coast RMP.

4. Steele Peak

Non-federal lands included in the Steele Peak Study Area were not selected for inclusion in a core reserve at this time due to the: 1) relatively high cost of land acquisition, and; 2) difficulty of assembling the requisite number of parcels within a reasonable time period.

Steele Peak includes almost twice as many parcels in private ownership as any other Study Area (1,078); almost 80% of all land is privately held. Although a significant amount of SKR occupied habitat in the Study Area is located on BLM property, much is in private ownership. Of the occupied habitat occurring on such lands, the largest and perhaps most viable blocks are located on the site of an approved Specific Plan development.

These facts make the inclusion of private properties in a core reserve highly problematical. Conservation of much of the SKR occupied habitat in the existing Study Area would require the RCHCA to purchase a considerable amount of land having existing development approvals; obviously, acquisition of such properties would be a very expensive endeavor. Despite the currently depressed real estate market conditions it is not unreasonable to expect acquisition costs in many portions of Steele Peak to exceed $8,000 per acre. Even using an average purchase price of $5,000 per acre, acquisition of all privately held property in the Steele Peak Study Area would cost over $44.8 million. At the current rate of development in member jurisdictions the RCHCA may need several decades to amass the funding necessary to purchase these privately owned lands.

Beyond the sheer expense however, lies the very daunting task of negotiating the purchase of so many privately held parcels. If even as few as half of the private parcels in Steele Peak were to be acquired for a core reserve, the RCHCA would be facing the prospect of conducting more than 500 property negotiations before a reserve is finally assembled. That process would require years to complete, and in the absence of Study Area protections there would be no guarantee that essential SKR occupied habitat would not be developed before RCHCA could acquire it.

In light of the tremendous cost and difficulty of land acquisition in the area, the RCHCA has eliminated private lands in Steele Peak from consideration as a permanent reserve candidate. As described in Chapter 5. SKR Conservation and Mitigation Measures, the 1,544 acres under BLM ownership and 209 acres under RCHCA ownership in the Steele Peak Study Area are designated as a core reserve. This area is likely to expand in the future through BLM land trades conducted pursuant to Assembled Land Exchange Agreement included in Appendix A.

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5. SKR Conservation and Mitigation Measures

This chapter describes the specific features of the SKR HCP being proposed by the RCHCA, including:

A. The level of incidental take of SKR for which the RCHCA is seeking authorization from USFWS and CDFG;
B. Proposed terms and conditions governing that incidental take;
C. Potential impacts of and alternatives to the proposed taking;
D. Habitat conservation and impact mitigation measures which will be implemented by the RCHCA as a condition of incidental take authorization, and;
E. Institutional and funding arrangements established by the RCHCA, U.S. Department of Interior, BLM, and the State of California Resources Agency to assure HCP implementation.

A. Summary of SKR Conservation and Mitigation Measures

Through the implementation of this plan and its predecessor Short-Term HCP, more than $45 million will be dedicated to the establishment and management of a system of regional preserves designed to ensure the persistence of SKR in the plan area. This effort is anticipated to result in the permanent conservation of approximately 50% of the SKR occupied habitat remaining in the HCP area. Through direct funding and in-kind contributions provided by the RCHCA, State of California, U.S. Department of Interior, and BLM, SKR habitat in the regional reserve system will be managed to ensure its continuing ability to support the species. Additionally, these entities will finance monitoring and biological research activities necessary to identify changes in SKR distribution over time, and develop management strategies capable of adapting successfully to changing conditions.

Mitigation for incidental take occurring under this HCP will be provided through the completion and expansion of a regional network of seven SKR reserves. In addition to the $30 million already expended by the agency for SKR conservation, the RCHCA will devote an additional $1 1.7 million to implement this HCP.

A detailed description of the SKR conservation and mitigation measures to be provided by the RCHCA under this HCP is presented in this Chapter.

B. Scope of the Permit and Agreement

The RCHCA and its member agencies are seeking to replace their existing permit and agreement for incidental take of SKR with a permit and agreement based on the conservation and mitigation measures proposed in this HCP. While the conservation program provided by this HCP certainly will benefit a number of sensitive species and habitat types, incidental take authorization is sought only for SKR. No other federal or State listed species will be covered by the permit and agreement. Thus, activities resulting in incidental take of other listed species (e.g., California gnatcatcher. Riverside fairy shrimp or Least Bell's vireo) must secure separate authorization for incidental take of those species from USFWS and CDFG as appropriate before proceeding.

The fact that this HCP covers no listed species other than SKR will be quite important to many property owners in the plan area. Since SKR are known to occur in close proximity to other listed species (most commonly the California gnatcatcher), many individual land parcels in the HCP area are occupied by both SKR and other protected species. Owners of such parcels may ti"d themselves in a position of being unable to fully utilize RCHCA member agency SKR incidental take authorizations if such use would result in the taking of another listed species. In those cases separate authorization would have to be secured by project proponents from USPWS and/or CDFG for incidental take of such protected species.

This situation demonstrates the limitations of single species approaches, and provides ample evidence of the need to approach conservation on an ecosystem basis. Accordingly, the RCHCA has entered into a MOU with USFWS, BLM, and CDFG which provides that following federal and state approval of this HCP, the agencies will work cooperatively toward the development of a comprehensive multi-species conservation plan designed to address all sensitive habitat and species issues in RCHCA member jurisdictions.

C. Terms and Conditions

The permit and agreement sought by the RCHCA would allow incidental take of SKR in connection with otherwise lawful activities anywhere in the plan area, subject to the terms and conditions described in this subsection.

1. Establishment and Completion of the Core Reserves

This HCP provides for the establishment of the following seven permanent SKR core reserves (Figure 21):

i. Lake Mathews-Estelle Mountain;
ii. Lake Skinner-Domenigoni Valley; 110
iii. Motte Rimrock Reserve;

iv. San Jacinto-Lake Perris;

v. Sycamore Canyon-March Air Force Base;

vi. Steele Peak, and;

vii. Potrero ACEC

a. Establishment of the Core Reserve System

In total, the seven core reserves encompass 41,221 acres including 12,460 acres of SKR occupied habitat (Table 18). Within the reserves approximately 96% of SKR occupied habitat occurs on lands currently in public ownership; the remaining 4% of occupied habitat is located on private properties that will be conserved by the RCHCA either through direct acquisition of fee interests or under conservation agreements negotiated with the land owners subject to the concurrence of USFWS and CDFG.

The individual core reserves range in size from 13,158 acres in Lake Skinner to 638 acres in the Motte Reserve. Total SKR occupied habitat varies from 4,264 acres in Lake Mathews to 335 acres in Motte (Figure 22). Collectively, the San Jacinto and Lake Mathews reserves contain more than 7,772 acres of SKR occupied habitat already in public ownership. Lake Skinner has the largest amount of SKR occupied habitat on private lands (332 acres); this comprises approximately 16.7% of the SKR occupied habitat in that core reserve.

As of March 1, 1996 approximately 91% of the land in core reserves was in public ownership; that percentage is being regularly increased by the RCHCA's ongoing land acquisition program. Within the core reserves, only Lake Mathews-Estelle Mountain (683 acres). Lake Skinner-Domenigoni Valley (316 acres), and San Jacinto-Lake Perris (154 acres) include privately owned land. The Motte Rimrock, Potrero ACEC, and Steele Peak core reserves are entirely in public ownership.

A brief biogeographical and land use profile of each SKR core reserve is presented in the following section and in Appendix E. An analysis of the overall conservation value and long-term viability of the reserve system follows the summary profiles. More detailed information concerning the core reserves, including maps of habitat types and public ownership is included in Appendix E.

b. Lake Skinner-Domenigoni Valley Core Reserve

Lake Skinner-Domenigoni Valley (LS-DV) is the largest of the core reserves, encompassing 13,158 acres including 1,988 acres of SKR occupied habitat (Figure 23). Most of core reserve is presently included in the Southwestern Riverside County MSHCP approved by USFWS and CDPG in October 1992; as noted on Table 18 the MSHCP area includes lands which MWD is still in the process of acquiring in Domenigoni Valley. LS-DV core reserve lands not presently covered by the MSHCP include property in RCHCA fee ownership and approximately 316 acres in privately held parcels for which acquisition is contemplated by the RCHCA. Upon approval of this HCP, the RCHCA will petition the MSHCP Management Committee to: 1) formally add all property under its ownership in the LS-DV reserve to the Southwestern Riverside County MSHCP, and; 2) manage those lands pursuant to the MSHCP Cooperative Management Agreement.

Within the LS-DV core reserve, MWD is the single largest property owner. This agency operates the existing reservoir at Lake Skinner and is constructing a new reservoir in the Domenigoni Valley which will be the largest in southern California. Almost all of the land within this reserve is undeveloped, but crossed by a number of dirt roads which generally facilitate SKR dispersal. Some portions of the area have been previously used for agricultural activities, particularly grazing.

The RCHCA recently executed an agreement with the USFWS, CDFG, MWD, County of Riverside, and Finisterra Farms, owner of approximately 350 acres adjacent to the MSHCP area within the LS-DV core reserve. Under this agreement Finisterra Farms will develop an extremely low density equestrian community on its property including nine residential lots, equestrian trails and facilities, and a caretakers residence. Finisterra Farms will convey a permanent conservation easement to the RCHCA covering 205 acres of SKR occupied habitat areas within its ownership, and the balance of its property will be excluded from the core reserve. The conservation easement area will be formally added to the Southwestern Riverside County MSHCP, and conserved habitat will be managed by the existing MSHCP Management Committee. In addition, that portion of the Finisterra Farms property not subject to the conservation easement will be covered by incidental take permits and pre-listing agreements issued by USFWS and CDFG for the MSHCP.

Land uses within the immediate vicinity of the LS-DV are characterized by open space, agriculture, and some very low density rural residential development. At this time the reserve is not encroached upon by surrounding incompatible development.

LS-DV was selected as a SKR core reserve due to the fact that most of this area, including land under RCHCA ownership or conservation easement, is currently in public ownership and permanently managed for conservation of SKR and other sensitive species. Although the existing LS-DV reserve SKR distribution is rather patchily distributed, its overall size provides a good measure of protection to the resident animals.

Through the establishment of the Shipley Reserve and Southwestern Riverside County MSHCP, the vast majority of the SKR occupied habitat in the reserve already is under active SKR management. The Management Committee for the multi-species reserve will conduct continuing research into the distribution and abundance of SKR under its

ecological studies program. These research activities are and will continue to be important to the development of adaptive SKR management strategies to be conducted under this HCP.

Although most of the LS-DV reserve contains appropriate soils and topography for SKR, the dominant vegetation of Riversidean sage scrub and chamise chaparral is not suitable for this species. In fact, much of the SKR occupied habitat in the reserve occurs on lands cleared of sage scrub and chamise chaparral by agriculture. SKR also are found in areas where native vegetation has been replaced by mixed European annual grassland/coastal sage scrub due to grazing and fires.

This set of circumstances had a significant influence on the proposed configuration of the LS-DV reserve. Since underlying natural conditions are not as favorable to SKR as those in other areas, reserve design gave priority to strengthening connections between SKR populations within the existing reserve over the addition of significantly more conserved habitat to the reserve periphery. Specifically, attention was focused on connecting major populations of SKR in the southern portion of the reserve around Lake Skinner to those to the north in the Shipley area. This was accomplished through RCHCA acquisition of property in locations deemed important for the establishment of corridor connections.

In regard to the suitability of vegetation for SKR, it is important to note that the recent California Fire burned much of the land in the existing Lake Skinner/Shipley/Domenigoni Valley wildlife reserves. Preliminary investigations by Dr. Michael O'Farrell indicate that SKR generally survived the fire quite well. in fact, burning of vegetation actually created a significant amount of new habitat suitable for SKR occupation. As part of its ecological studies program on the reserve, the MSHCP Management Committee will contract with a SKR biologist to document changes in distribution and abundance of SKR following the fire. This research will lead to improved management techniques for ensuring the viability of SKR populations in the reserve.

As previously noted, much of the LS-DV core reserve is covered by the Southwestern Riverside County MSHCP. That approved document designated operational and recreational areas around the Lake Skinner and Domenigoni reservoirs which are specifically excluded from the MSHCP reserve. Figure 23 depicts these operational and recreational areas, which encompass a total of approximately 5,400 acres. Within these areas MWD and the County of Riverside are authorized to conduct activities necessary to:

i. Meet water service obligations and responsibilities, including metering of water inflow into reservoirs, maintenance of water quality, and assurance of necessary public safety and security;

ii. Operate and maintain recreational facilities in the existing Lake Skinner County Park, including fishing and boating activities, camping, and trail maintenance;

iii. Operate and maintain recreational facilities at the planned Domenigoni reservoir;

iv. Maintain, repair, replace, and use existing roads, water facilities, and ancillary improvements, and subject to approval by USPWS and CDFG, to designate, construct, and use rights of way for roads, trails, flood control structures, utility corridors, sewers, water facilities, and utility lines across the reserve;

v. Construct unpaved service roads around the perimeter of the Domenigoni reservoir to ensure access for water quality measurements and treatments;

vi. Construct and operate a visitor center north of the dam embankment for the reservoir;
vii. Maintain an operations buffer around the two reservoirs, and;

viii. Construct and operate three permanent dam-keeper residences. This HCP is intended to be completely consistent with the provisions of the approved Southwestern Riverside County MSHCP concerning operational and recreational areas in the LS-DV reserve. Such areas will be not be part of the designated SKR core reserve, and the public facility operation and maintenance activities permitted under the MSHCP also will be authorized under this HCP.

c. Lake Mathews-Estelle Mountain Core Reserve

The Lake Mathews-Estelle Mountain (LM-EM) core reserve is the westernmost in the system and includes the greatest amount of SKR occupied habitat (4,264 acres). In terms of total area LM-EM is the second largest core reserve, encompassing 11,243 acres (Figure 24). The reserve is bisected in an east-west direction by Dawson Canyon, which serves to divide the area into the northern Lake M athews and southern Estelle Mountain components.

MWD is the largest landowner in the LM-EM core reserve, controlling approximately 5,113 acres. The RCHCA currently owns 4,598 acres in the reserve and, in the context of a multiple species HCP prepared cooperatively with MWD for their properties at Lake Mathews, will purchase conservation easements over an additional 1,269 acres of SKR occupied habitat on MWD properties. In addition, the RCHCA is currently negotiating with several landowners regarding dedications and acquisitions in this area. Consequently, upon its completion LM-EM will contain more RCHCA-owned lands than any of the other core reserves. As of March 1996 a total of 683 acres in private ownership remained to be either acquired or conserved through property owner agreements by the RCHCA in order to complete the LM-EM reserve.

In the northern portion of the reserve, existing land uses include the Lake Mathews reservoir facilities, MWD operations areas, large tracts of undeveloped open space, and limited unpaved internal roadways. Within MWD's holdings a 2,565 acre State Ecological Reserve was previously established through agreements between CDFG and MWD; as discussed below, this was recently expanded via the multi-species plan prepared by MWD and the RCHCA.

The Estelle Mountain portion of the reserve is an undeveloped area characterized by steep terrain and limited access via a few narrow dirt roads. The existing El Sobrante landfill site lies adjacent to the western boundary. A large-scale expansion of the landfill is planned, and this project has been the subject of lengthy discussions among Western Waste Industries (the project proponent), the County of Riverside, Riverside County Waste Resources Management District, RCHCA, USFWS, and CDFG. Since the proposed landfill expansion would result in significant impacts to SKR, California gnatcatcher, and several sensitive animal and plant species, a mitigation plan has been developed by WWI in consultation with USFWS and CDFG. That mitigation plan has been incorporated in a Final EIR which will be submitted to the Riverside County Board of Supervisors for approval in the next few months.

Principal components of the El Sobrante Landfill Expansion Mitigation Plan affecting the RCHCA include the following:

i. Upon the receipt by Western Waste Industries (WWI) of all applicable permits for operation of the landfill expansion, approximately 292 acres in the eastern potion of the project property shall be conveyed to the RCHCA as part of a permanent multi-species reserve;

ii. WWI shall pay to the County of Riverside §1.00 per ton of out-of-County waste accepted at El Sobrante for multi-species habitat acquisition and management;

iii. Upon receipt of all applicable permits for operation of the landfill expansion, WWI shall make an advance payment of $500,000 of the $1 per ton of out-ofCounty waste accepted at El Sobrante, for multi-species habitat acquisition and management;

iv. Of the $500,000 advance payment, $100,000 shall be paid by WWI upon execution of a Memorandum of Agreement with the USFWS, CDFG, RCHCA, County of Riverside, and the Riverside County Waste Resources Management District regarding multi-species habitat acquisition and management;

v. Upon receipt of all applicable permits for operation of the landfill expansion, WWI shall set aside 180 acres of the site through a non-disturbance agreement. In the event WWI or its successor of interest decide to sell the 180 acre non-disturbance area, the RCHCA shall be provided a right of first refusal to purchase the 180 acres;

vi. When the landfill expansion is complete (i.e., after closure of all phases and at the end of the post-closure monitoring and maintenance period [currently a minimum of 30 years]), including the restoration of Riversidean sage scrub in accordance with the performance standards of the Restoration Plan, the area of onsite disturbance (approximately 645 acres) shall be conveyed by a conservation easement to the RCHCA for permanent management as part of a multi-species core preserve, and the non-disturbance agreement on the 180 acres shall be eliminated.

The boundary of the LM-EM core reserve proposed in this HCP will be consistent with the above provisions of the El Sobrante Landfill expansion Final EIR. Accordingly, the boundary of the core reserve affecting lands in WWI ownership will be set pursuant to the terms of the mitigation measures contained in the Final EIR certified by the Riverside County Board of Supervisors and the terms of the above referenced Memorandum of Agreement between the RCHCA, WWI, County of Riverside, Riverside County Waste Resources Management District, USFWS, and CDFG.

It is anticipated that pursuant to the mitigation measures detailed above, 292 acres now in WWI ownership will be conveyed to RCHCA for inclusion in the core reserve, and additional lands will be added to the reserve in the future upon conveyance of conservation easements by WWI following closure of the landfill.

Within the immediate vicinity of the LM-EM reserve, land at the northern edge and northeastern edge is used primarily for agriculture and low density residential development purposes. Land to the south is generally in open space, as is much of the territory to the east of the reserve. To the west, land uses include open space, the existing El Sobrante Landfill site, rural residential development in Dawson Canyon, and existing mining operations. The Dawson Canyon area is specifically excluded from the reserve in order to preserve the rural lifestyle of existing residences.

In December of 1995 the USFWS and CDFG approved a multi-species HCP jointly prepared by MWD and RCHCA covering over 11,000 acres owned by the two agencies. This conservation plan, which fulfills the requirements of Section 10(a) of the ESA and the NCCP:

i. Creates a 5,110 acre multi-species reserve by adding 2,545 acres to the existing State Ecological Reserve around Lake Mathews;

ii. Establishes a mitigation bank for use by MWD and RCHCA based upon the conservation value of the 2,545 acres to be added to the existing reserve;

iii. Provides for the ongoing management of MWD reserve lands and RCHCA properties proposed for inclusion in the LM-EM SKR core reserve, and;

iv. Identifies approximately 40 target species for conservation and mitigation planning purposes, including providing pre-listing assurances for incidental take.

Under the Lake Mathews MSHCP reserve management will be guided by a Management Committee comprised of CDFG, USFWS, MWD, and RCHCA. Funding for management activities on MWD properties will be provided through revenues derived from RCHCA's purchase of conservation easements from MWD; the MSHCP will establish a $2.5 million non-wasting management endowment for that purpose. Pursuant to the BLM/RCHCA Assembled Land Exchange Agreement included in Appendix A, lands in the LM-EM reserve now owned by RCHCA will be traded to the BLM. Following that action BLM will assume responsibility for managing those lands pursuant to the terms of the MSHCP. BLM responsibility for SKR management in the LM-EM reserve is described in the Implementation Agreement underlying this HCP.

It is the intention of MWD to use 1,675 acres of the mitigation bank for habitat impacts occurring within its operations and project areas. The RCHCA will receive credit from USFWS and CDFG for the 1,269 acres of SKR occupied habitat as replacement habitat for take allocated under the Short-Term HCP and this HCP. In addition, the RCHCA's portion of the mitigation bank will be credited toward the conservation goals or mitigation requirements established under any multi-species HCP the RCHCA may adopt in the future.

The Lake Mathews MSHCP establishes a 729 acre Operations Area for the MWD reservoir; these properties are excluded from the habitat conserved in the MSHCP. Within the Operations Area MWD will continue to perform activities necessary to ensure water quality and the proper operation and maintenance of Lake Mathews as a water supply facility. Such activities include; control of water quality, water levels, and vegetation; water quality monitoring; operation of water storage, conveyance, and associated facilities; security measures to protect water supply integrity, and; construction and maintenance of physical structures associated with the reservoir.

Also established under the MSHCP is a 155 acre area reserved for planned capital projects. The following five projects are anticipated:

i. Construction, operation, and maintenance by MWD of a sediment basin, detention dam and basin, and saddle dam in Cajaico Creek;

ii. Construction, operation, and maintenance by MWD of a water outlet structure, tunnel, and access road as part of the Central Pool Augmentation Project;

iii. Construction, operation, and maintenance by the Western Municipal Water District (WMWD) of two water storage tanks, a pipeline extension, and improvements to an existing administrative office;

iv. Subject to further planning, construction of a tunnel and portals for a bypass system to convey water from the Colorado River Aqueduct to MWD distribution facilities, and;

v. Construction, operation, and maintenance of a series of sediment basins on the south side of Lake Mathews.

This HOP is intended to be completely consistent with the provisions of the Lake Mathews MSHCP. Accordingly, the MWD Operations Area and MWD/WMWD Project Area are excluded from the LM-EM core reserve. All activities authorized under the MSHCP aiso will be authorized under this HCP.

Lake Mathews was selected as a core reserve primarily due to the large amount of SKR occupied habitat in public ownership covered by existing or anticipated conservation arrangements. The area also has tremendous biological value for multi-species purposes; conserved public lands encompass habitat for the bald eagle, California gnatcatcher, and a large number of sensitive species and habitat types. Additionally, this reserve offers valuable opportunities for the RCHCA to conduct cooperative habitat conservation and management activities with other public agencies.

The most important SKR management issue within the Lake Mathews reserve is the need to strengthen corridor connections across Dawson Canyon. The core reserve includes land necessary for such a corridor, but its effectiveness will require regular monitoring. It is anticipated that the core reserve may need to be expanded in the future through BLM land trades to provide a wider corridor less vulnerable to edge effects. The need for such expansion will be evaluated on a regular basis by the Management Committee, and it is anticipated that adaptive management techniques will be of particular importance in ensuring the effectiveness of corridor connections.

d. San Jacinto Lake Perris Core Reserve

The San Jacinto (SJ-LP) core reserve is located southeast of the City of Moreno Valley and north of the Ramona Expressway. Encompassing a total of 10,932 acres, this is the third largest of the core reserves. However, with 3,640 acres of SKR occupied habitat SJ-LP includes the second largest amount of conserved occupied habitat for this species. Figure 25 illustrates the core reserve. All but 515 acres in the core reserve are part of either the Lake Perris State Recreation Area or the San Jacinto Wildlife Area owned by the State of California. Approximately 361 acres are owned by other public agencies, including the RCHCA.

Within the SJ-LP core reserve defined in this HCP, the 154 acres remaining in private ownership is under exclusive option to the RCHCA. The first three phases of that option agreement, involving the purchase of approximately 232 acres, have been completed by the RCHCA. This and all other property subject to the option agreement will be conveyed to CDFG by the RCHCA for purposes of expanding the San Jacinto Wildlife Area. That conveyance will be subject to appropriate conservation easements to ensure the continuation of land uses compatible with SKR.

As noted, the State of California is the primary property owner in the SJ-LP core reserve and also has responsibility for managing the majority of land through the State Department of Parks and Recreation and CDFG. The State Department of Water Resources (DWR) operates the existing reservoir at Lake Perris. MWD has limited land ownership in the SJ-LP core reserve for their Lake Perris water extraction facilities. These facilities include the Lake Perris Bypass Pipeline, Perris Power Plant, Perris Control Facility, Lakeview Pipeline, Colorado Aqueduct system, and Bernasconi Tunnels No. 1 and No. 2.

The core reserve area generally consists of undeveloped lands in the Lake Perris State Recreation Area and San Jacinto Wildlife Area, and previously farmed lands to the east. The area features some rocky and steep terrain including Mt. Russell to the north and the Bernasconi Hills to the south.

Lands containing facilities operated by MWD and State agencies for water, recreation, or other public purposes are excluded from the SJ-LP core reserve. Lands and facilities specifically excluded from this core reserve include the following:

i. Facilities operated and maintained by the California Department of Parks and Recreation for the Lake Perris State Recreation Area, including paved access roads, developed campgrounds covering approximately 742 acres near the lake, water tanks in the hills surrounding the campgrounds, and small areas west of the Lake Perris dam which are used for support and maintenance facilities and fairgrounds;

ii. The Lake Perris reservoir and ancillary facilities operated by the California Department of Water Resources;

iii. Lands and facilities associated with MWD's Lake Perris Bypass Pipeline, Perris Power Plant, Perris Control Facility, Lakeview Pipeline, Colorado Aqueduct system, Bernasconi Tunnels No. 1 and No. 2, and Inland Feeder Pipeline, and;

iv. Land and facilities associated with The Gas Company's 6900 Pipeline Project.

Land within the vicinity of the reserve is primarily in agriculture to the east, northeast, and south, with the Recreation Area to the west and residential development to the northwest. Much of the land surrounding the SJ-LP core reserve is potentially subject to future development. This situation is illustrated by the approval of the Moreno Highlands Specific Plan, a proposed 3,038 acre development including over 7,700 residential units, commercial land uses, and a golf course. Although Moreno Highlands has announced its abandonment of the project, it is evident that substantial development interest in the property will emerge in the future when local economic conditions improve.

The total size of the SJ-LP core reserve is slightly smaller than the current Study Area. Its configuration reflects the elimination of private lands with little or no SKR habitat, as well as the addition of the 386 acre Anderson acquisition adjacent to the San Jacinto Wildlife Area.

SJ-LP is the only core reserve not presently subject to a formally adopted or proposed SKR management plan. CDFG and the California Department of Parks and Recreation will develop habitat management procedures which will conserve SKR in a manner compatible with the activities of Lake Perris State Recreation Area and the San Jacinto Wildlife Area. Major issues to be addressed include: 1) management of SKR within a multi-species context, e.g., sage scrub and wetlands habitats; 2) development of procedures to ensure the ability of public agencies to conduct recreational, operational, maintenance, and water quality activities, and; 3) planning to anticipate and minimize potential habitat impacts resulting from future development in areas surrounding the reserve.

As overseer of CDFG and the Department of Parks and Recreation, the State of California Resources Agency has expressed its commitment to ensure that these two agencies will manage lands in the SJ-LP reserve consistent with the goals of this HCP.

Another potentially significant management issue is the future of Davis Road, which runs in a north-south direction through the entire reserve. This facility, presently dirt for most of its length, is planned for paving and widening under the County of Riverside's General Plan. CDFG has expressed concern over potential project impacts and has met with the County to seek abandonment of improvement plans. In light of wildlife concerns the County has informally expressed its willingness to comply with CDFG's request if a suitable alternate transportation corridor can be established. This will require appropriate transportation studies for which no funding has been identified to date.

SJ-LP was selected as a core reserve due to its extensive distribution of SKR occupied habitat which will remain in public ownership in perpetuity. With the RCHCA's completion of the Anderson acquisition, the reserve will extend east of Gilman Springs Road to the Badlands. This offers excellent potential for establishment of a regionally significant wildlife corridor for SKR and other species. Additionally, SJ-LP provides an opportunity to work cooperatively with CDFG and the State Parks and Recreation Department to manage public lands for the benefit of a species listed as threatened under the California ESA.

The anticipated long-term conservation value of the SJ-LP core reserve is high. Some of the largest contiguous blocks of SKR occupied habitat exist here, and these are well protected by natural features. With the establishment of an

active habitat management program and a corridor connection to SKR populations in the Badlands, prospects for long-term SKR persistence in the SJ-LP core reserve are quite good.

As a final note, both the MWD Inland Feeder Pipeline and The Gas Company 6900 Pipeline Projects are covered by agreements approved by USFWS and CDFG. Under the Inland Feeder Pipeline Agreement MWD will acquire and convey to CDFG 75.3 acres of land in the core reserve. Additionally, MWD will pay to the RCHCA $196,500 for the purpose of assisting the RCHCA in acquiring 154 acres of land in the core reserve under Phase 4 of the Anderson property option agreement. The 6900 Pipeline Project agreement provides for The Gas Company to pay $100,000 to CDFG for mitigation of SKR impacts. CDFG will use these funds to: 1) acquire lands contiguous to the San Jacinto Wildlife Area that contain suitable habitat for SKR, or; 2) carry out projects to enhance SKR habitat within the SJ-LP core reserve.

e. Sycamore Canyon-March Air Force Base Core Reserve

The Sycamore Canyon March Air Force Base (SC-MAFB) core reserve encompasses existing SKR reserves owned by the City of Riverside and March Air Force Base (MAFB). It is the northernmost of the seven core reserves and is located in the closest proximity to urban land uses. The SC-MAFB reserve covers 2,502 acres, with approximately 1,400 acres located within Sycamore Canyon Park in the City of Riverside and 1,000 acres contained within the SKR Management Area on March Air Force Base. The amount of SKR occupied habitat in the core reserve is fairly evenly distributed among the two components, with over 600 acres in Sycamore Canyon Park and over 700 on March Air Force Base (Figure 26). Excluded from the reserve is MWD owned land along the Box Springs Feeder, which contains facilities operated and maintained by MWD to provide necessary water services.

Virtually the entire SC-MAFB reserve is currently in public ownership. The Department of Defense owns the 1,000 acre MAFB SKR Management Area, while the City of Riverside owns and manages the Sycamore Canyon Park portion of the reserve. A very small number of privately owned acres currently exist in the reserve; it is anticipated that these will be acquired by Caltrans under the terms of a Section 7 Biological Opinion from the USFWS.

Land within the reserve is essentially undeveloped, but is crossed by underground water and gas lines and a number of dirt roads and trails. Sycamore Canyon Park is designated by the City of Riverside as a wilderness area to be protected and preserved. The City has entered into a Memorandum of Understanding with RCHCA member agencies under which it agrees to operate and maintain Sycamore Canyon Park ".in a fashion which shall not jeopardize SKR populations within its boundaries and shall enhance the likelihood of the continued existence of SKR in the wild." The RCHCA is now working with the City to develop a SKR management element for inclusion in the Sycamore Canyon Park Development Plan.

The southern portion of the SC-MAFB core reserve on March Air Force Base was established as a SKR Management Area by means of a December 4, 1991 Section 7 Biological Opinion (1-6-91-F-33). This area is currently managed by The Nature Conservancy using a $1.5 million non-wasting management endowment established under the Section 7 consultation. Details of the Biological Opinion are presented in later in this chapter.

A significant habitat management issue for the SC-MAFB reserve results from its bisection by Alessandro Boulevard, a major arterial. Under another Section 7 Biological Opinion issued for an Interstate 215 improvement project, Caltrans was required to construct culverts under Alessandro Boulevard in order to maintain a biological connection between the northern and southern portions of the reserve. Preliminary design plans for the culverts were completed, but the USFWS is no longer requiring their construction due to the cost involved. Although a reasonable decision in economic terms, the abandonment of this project is certainly problematical to the reserve due to the elimination of a direct connection between the Sycamore Canyon and MAFB SKR populations.

The other principal management issue is the extent of development surrounding the reserve. The Sycamore Canyon Park portion is presently surrounded to the north, and will be surrounded to the east, by industrial development. Immediately to the west lies the MWD Mills Treatment Plant and housing tracts. The MAFB reserve area is bordered to the west and south by residential development; land to the east is largely vacant but eventually may be developed if surplus properties are released for sale or transfer as a result of the planned realignment of MAFB. The close proximity of this development will necessitate active monitoring of the reserve to minimize predation by domestic animals and destruction of habitat by visitors. Such activities are anticipated by the City, and are intended for inclusion in the SKR management element of the Sycamore Canyon Development plan.

In conclusion, SC-MAFB was selected as a core reserve in recognition of its: 1) significant amount of SKR occupied habitat protected in Sycamore Canyon Park and the MAFB SKR Management Area; 2) existing SKR management arrangements, and; 3) public land ownership.

March Air Force Base Realignment

The future of the SC-MAFB reserve may be significantly affected by activities related to a 1993 federal decision to realign MAFB. The realignment converted MAFB from active duty status to a reserve facility effective April 1, 1996. With that action the U.S. Air Force will retain approximately 2,100 acres on the base for continuing military operations. All or most of the remaining 4,400 acres ultimately may be released for civilian use through conveyance, sale, or other methods.

A reuse plan for MAFB has been prepared by the March Joint Powers Authority, an organization recently formed by the County of Riverside and the cities of Moreno Valley, Perris, and Riverside. The Joint Powers Authority is governed by an eight member Commission consisting of two representatives of the governing bodies of each member

jurisdiction. The March Joint Powers Commission (JPC) has adopted a series of goals and strategies to guide the development of a reuse plan for MAFB. These emphasize the establishment of land uses which facilitate the creation of a wide range of employment types and opportunities on those lands released for civilian use. Among the most important goals adopted by the March JPC for the reuse plan is to replace jobs lost in the MAFB realignment with new and expanded employment opportunities.

Consistent with this fundamental purpose, the March JPC has endorsed a strategy whereby MAFB lands now defined as SKR Management and Open Space Areas would be sold to traded with private parties to secure SKR habitat in other locations which support the core reserves designated in this HCP. Due to the fact that land values on MAFB are significantly higher than those in other SKR core reserve areas, trading of the 2,200 acres in the SKR Management and Open Space Areas has the potential of securing a far greater amount of SKR habitat in the vicinity of reserves such as Lake Mathews, Lake Skinner, or the Potrero ACEC. This strategy offers a "win-win" scenario in which lands presently constrained are released for job creating uses, while a much greater amount of SKR habitat is secured to expand core reserves in areas free from the incompatible land uses which surround MAFB habitat. Recognizing the potential to significantly expand the amount of land dedicated to SKR conservation in the HCP area, the RCHCA Board of Directors has endorsed the land trade strategy and requested its consideration by the USFWS and U.S. Air Force.

In February 1995 the MAFB reuse planning process produced a Draft Land Use Plan and Alternatives. The draft plan includes the following four land use alternatives for those portions of MAFB to be made available for civilian use:

i. The "Preferred" plan, under which the 2,200 acres presently designated as the SKR Management and Open Space Areas would be made available for development in conjunction with a federal land trade program;

ii. An "Alternative" land use pattern, which also assumes the availability of the SKR Management and Open Space Areas for development;

iii. The "SKR Partially Constrained" plan based upon an assumption that the 1,000 acre SKR Management Area will remain dedicated to SKR while the 1,200 acre Open Space Area is made available for development, and;

iv. A "SKR Fully Constrained" option which assumes that the entire 2,200 acres presently dedicated as the SKR Management and Open Space Areas will remain in their present uses and therefore will be unavailable for development.

The MAFB realignment is the subject of an Environmental Impact Statement (EIS) which includes an alternative involving land trades through which the SKR Management Area and/or the Open Space Areas will be released for development. In conjunction with the EIS, the U.S. Air Force will request a Section 7 Consultation with the USFWS concerning potential impacts to listed species. Through the EIS and Section 7 Biological Opinion, these federal agencies will determine whether any of the MAFB lands designated as SKR Management and Open Space Areas will be made available for development.

At this time the eventual outcome of this process is unknown, and therefore this HCP includes the existing MAFB SKR Management Area as part of the SC-MAFB core reserve. Should the EIS and Section 7 Biological Opinion result in a release of those lands for private development, responsibility for mitigation of impacts to SKR will belong to the federal government and not the RCHCA. In the event that the SKR Management Area is made available for development or otherwise cease to be dedicated to this species, the RCHCA will amend this HCP to incorporate mitigation provisions defined in the USFWS Biological Opinion.

f. Steele Peak Core Reserve

In terms of total land area, Steele Peak is the fifth largest of the SKR core reserves, covering 1,753 acres of land in several individual tracts of publicly owned land. Approximately 860 acres or 49% of the reserve is currently occupied by SKR. The Steele Peak core reserve is located in the central portion of the plan area, lying east of Interstate 215 and north of State Highway 74 (Figure 27).

All land in the Steele Peak core reserve is presently in public ownership. A total of 1,544 acres or 88% of reserve lands are owned by the federal government and managed by BLM; the remaining 209 acres are owned by the RCHCA.

Since the Steele Peak core reserve consists of five individual blocks of land separated by intervening private properties, the most important issue in this area is the need to connect these tracts through BLM land trades. Such a connection will be necessary to ensure long-term viability of SKR populations currently living on reserve lands. Through the implementation of this HCP the RCHCA and BLM will work cooperatively to complete land trades necessary to reconfigure the core reserve into a contiguous block of public ownership.

Land uses surrounding much of the reserve include limited agricultural operations, open space, and rural residential development. To the south of the reserve, land lying within a recently annexed portion of the City of Lake Elsinore is the site of the North Peak Specific Plan, an area planned for rather extensive residential development.

g. Potrero Area of Critical Environmental Concern Core Reserve

The Potrero Area of Critical Environmental Concern (ACEC) is located south of State Highway 60 and east of Gilman Springs Road in the Badlands area of unincorporated Riverside County. (Figure 28). This area consists of steep hills and valleys covered largely by sage scrub and chaparral vegetation.

As described in Chapter , under its South Coast Resource Management Plan BLM designated 995 acres of federal land located in the Badlands area as the Potrero ACEC. The RMP calls for BLM to expand the ACEC to a total of 12,982 acres through the acquisition of 11,952 acres of land now in private ownership. Toward that end the RMP designates almost 5,000 acres currently in federal ownership as available for exchange for the sole purpose of expanding the ACEC.

In light of the fact that the Potrero ACEC has been established for the specific purpose of conserving SKR in western Riverside County, the existing 995 acre site is proposed as a core reserve in this HCP. However, since only 18 of the 995 acres are presently occupied by SKR, the ultimate value of this area to SKR conservation will depend entirely upon the results of the BLM land exchange program necessary to expand the ACEC as called for in the RMP.

Lands surrounding the Potrero ACEC are presently in open space, with some agricultural uses. The Lockheed Corporation owns over 10,000 acres in the vicinity of the reserve which is the site of the Potrero Creek Specific Plan recently annexed by the City of Beaumont. Over 11,000 housing units are contemplated in this Specific Plan development. Obviously, this scale of development poses the key issue for the future expansion and management of the Potrero ACEC.

h. Motte Rimrock Core Reserve

The Motte (MRR) core reserve is located two miles northwest of Perris roughly midway between the northeastern tip of Lake Mathews and the southwestern edge of San Jacinto. It is by far the smallest of the five reserves, encompassing approximately 638 acres including 335 acres of SKR occupied SKR habitat (Figure 29). MRR also is the most isolated of the SKR core reserves in that it is not part of a large contiguous block of conserved habitat and is largely surrounded by urbanizing land use patterns.

The entirety of the MRR reserve is presently in public ownership, with 397 acres owned and managed by the University of California at Riverside (UCR); this is the existing Motte Rimrock Reserve, an area dedicated to habitat conservation and biological research. Approximately 80 acres of land are under BLM ownership, and the balance of property in the reserve has been acquired by the RCHCA. Upon approval of this HCP all RCHCA lands within the MRR reserve will be conveyed to the UCR Natural Reserve System.

Lands within the reserve are essentially undeveloped, with natural vegetation covering approximately 96% of the total area. Within the immediate vicinity of the reserve land uses include residential development, open space, and a small amount of agriculture.

MRR was selected as a core reserve primarily for its biological values and existing pattern of public land ownership. It has also played a very important role in SKR biological research; in fact, several of the reports presented in Volume II are based upon SKR field research conducted on the UCR Motte Rimrock Reserve. Motte is anticipated to continue its leadership role in furthering SKR research due to its ability to function as a laboratory for UCR field biologists and students. Although its small size greatly reduces its individual viability as a SKR reserve, it still has significant value in the context of the overall reserve design. Inclusion of the MRR reserve reflects a RCHCA design objective of including small SKR populations as well as large ones in the reserve system.

However, due to its small size and presence of adjacent development it is anticipated that MRR will require more active and extensive management than the other SKR core reserves. This is acknowledged by UCR and will be reflected in the Motte management plan currently being prepared.

i. Completion of the Core Reserve System

As noted, the vast majority of lands contained within the core reserve system identified above are already in public ownership and dedicated to habitat conservation. The RCHCA will ensure the completion of the core reserve system through the following two actions:

i. Subject to project approval by the Riverside County Board of Supervisors, the RCHCA will execute agreements with Western Waste Industries, the County of Riverside, Riverside County Waste Resources Management District, USFWS, and CDPG concerning land dedication and other mitigation measures for the proposed expansion of the El Sobrante Landfill adjacent to the Lake Mathews core reserve, and;

ii. For the privately owned property remaining in the core reserves, the RCHCA will either: a) purchase fee simple or conservation easement interests, or; b) enter into agreements with land owners to ensure ongoing maintenance of SKR habitat.

j. Expansion of the Core Reserves

To provide additional assurances that the configuration of individual reserves and the reserve system as a whole are adequate to conserve resident SKR populations, the reserves defined in this HCP will be expanded through the use of

lands owned by the federal government. The primary assets involved in this effort will be those lands identified in the BLM South Coast Resource Management Plan as available for sale or trade. As noted previously, 12,974 acres were designated in that document as available for sale or trade. Of that total, 4,818 acres will be retained by BLM, with 1,815 of those acres included in the Motte Rimrock, Steele Peak and Potrero ACEC core reserves. Both the RCHCA/BLM Assembled Land Exchange Agreement and a list of all BLM trade properties are included in Appendix A.

A total of 8,156 acres of federal land under BLM management will be available for trade for the purpose of expanding SKR core reserves. The BLM District Manager and Area Manager have pledged to devote the entirety of that acreage to SKR core reserve expansion. This will involve the trading of BLM lands with owners of private property located within the HCP area. Such trades will be conducted by BLM pursuant to the terms of the Assembled Land Exchange Agreement and provisions of applicable federal laws, regulations, and policies.
In addition to these BLM trade lands, it is anticipated that the core reserves could be expanded as a result of the realignment of MAFB. If the EIS and USFWS Section 7 Biological Opinion result in land trades involving all or a portion of the existing 1,000 acre SKR Management and 1,200 acre Open Space Areas, it is expected that lands obtained in trade will serve to expand both the total acreage and SKR occupied habitat included within the SKR core reserves.

The objective of these core reserve expansion activities will be to increase the amount of SKR occupied habitat in the reserve system to a total of approximately 15,000 acres. This level of SKR occupied habitat conservation has been deemed sufficient by USFWS and CDFG to meet federal and State HCP approval criteria given the level of incidental take contemplated in this plan. It is the opinion of the RCHCA that with the establishment, expansion, and ongoing management of the SKR core reserves as provided herein, incidental take of SKR populations outside of those reserves will not appreciably reduce the likelihood of the species' survival within the plan area.

k. Ongoing Management of Conserved SKR Habitat in the Core Reserve System

The RCHCA will ensure ongoing management of SKR habitat in the core reserve system by: 1) coordinating existing and proposed institutional arrangements for land management in the reserves, and; 2) establishing non-wasting endowments for SKR habitat management, species monitoring, and biological research activities within specific core reserves. The RCHCA, U.S. Department of Interior, BLM, State of California, CDFG, and California Department of Parks and Recreation will ensure that adequate funding for these activities will be provided through funds and in-kind contributions provided by these entities. The proposed habitat management program is described later in this Chapter in C. Conservation, Mitigation, and Monitoring Measures.

Additional information concerning management of conserved SKR habitat in the core reserve system is presented in D. Plan Implementation.

l. Habitat Replacement Requirement Prior to Completion of the Core Reserve System

Until the RCHCA has acquired or otherwise assured the conservation of the 1,153 acres of private property remaining in the core reserve system defined in this HCP, the 1:1 SKR habitat replacement requirement established under the Short-Term HCP will be continued. More specifically, until the RCHCA has completed that core reserve conservation commitment, for every acre of SKR occupied habitat incidentally taken under authority of this HCP, the RCHCA will acquire and conserve an acre of suitable habitat in a core reserve location approved by USFWS. Consistent with the provisions of the RCHCA's existing permit and agreement, "suitable habitat" is defined as follows:

"...lands which are occupied by SKR, as well as lands that are not occupied by SKR but which 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 land uses."

During the period prior to completion of the core reserve acquisitions, the RCHCA will ensure that the amount of SKR occupied habitat incidentally taken under authority of the HCP at no time exceeds the amount of replacement suitable habitat acquired. For purposes of this calculation all incidental take and all replacement acreage approved for credit by USFWS and CDFG under both the Short-Term and Long-Term HCP will be included.

After the RCHCA has completed the core reserve system the 1:1 habitat replacement requirement will terminate.

m. RCHCA Funding

Pursuant to the provisions of the HCP implementation budget presented later in this Chapter, the RCHCA will provide $11.7 million to finance HCP implementation activities. Included in this total are existing RCHCA cash assets and sums to be provided by the RCHCA and its member agencies pursuant to the terms of the HCP Implementation Agreement.

n. SKR Incidental Take Records

During the period prior to the completion of the core reserves, the RCHCA and its member agencies will maintain records concerning all incidental take of SKR occurring under authority of this HCP. Those records will be forwarded to the RCHCA by its member agencies on a regular basis and will be reported annually to USFWS and CDFG by the RCHCA. After core reserves have been completed, incidental take will be recorded and reported only for lands within the core reserves.

o. SKR Biological Surveys

In order to document incidental take of SKR occupied habitat in core reserves, the RCHCA and its member agencies will, with the exceptions noted below, require SKR biological surveys prior to issuing permits for activities involving land disturbance in core reserves. Additionally, until the RCHCA has completed the core reserves land disturbance activities occurring in the HCP area but outside of core reserves will be subject to SKR surveys if the most current SKR distribution mapping shows the project location to be within known SKR occupied habitat. Under the provisions of this HCP SKR biological surveys will not be required for the following activities:

i. Actions taken by public agencies in response to emergency conditions will be allowed to proceed without the prior completion of SKR biological surveys, regardless of their location in the HCP area;

ii. Permitted activities which are not subject to CEQA and NEPA and do not authorize land disturbance;

iii. Permitted activities for secondary structures, e.g., garages, "granny units", and swimming pools;

iv. Land disturbance for agricultural purposes, other than the construction of agricultural structures requiring building permits;

v. As detailed below in r. Fire Prevention Activities, clearance of flammable vegetation for fire prevention purposes, and;

vi. Actions taken by public agencies to operate and/or maintain existing public facilities including, but not limited to, roads and transportation facilities, drainage and flood control facilities, public buildings, landfills and appurtenant facilities, water storage, treatment, and transmission facilities, sewerage transmission and treatment facilities, reclaimed water storage and transmission facilities, public parks, and utility pipelines and transmission lines.

After the RCHCA has completed the core reserves as provided herein, SKR biological surveys will not be required under this HCP for activities occurring on lands outside of core reserves. Within the core reserves SKR surveys will be required by RCHCA member agencies for land disturbance activities other than those described above which require permits.

The above exemptions for SKR biological surveys shall not override or in any way alter the requirements of NEPA and CEQA for performance of biological surveys.

p. Issuance of Incidental Take Authorizations

Subject to the exceptions described above, during the period prior to the completion of the core reserve system incidental take will be subject to authorization by RCHCA member agencies. Incidental take authorizations will be issued pursuant to the same procedures currently employed under the Short-Term HCP. Applicants normally are given take authorizations in conjunction with land disturbance permits, e.g., those involving grading, building, surface mining, and mobile home installation.

In cases where an entity exempt from RCHCA member agency permits requests an incidental take authorization under this HCP, the RCHCA will issue such authorizations directly to the requesting entity. This would most commonly arise when water or school districts propose activities resulting in incidental take of SKR. In such cases the RCHCA will have the ability to issue incidental take authorizations directly to the requesting agency.

q. Emergency Response Activities

During the three-year period of the Short-Term HCP RCHCA members experienced severe earthquakes, wildfires, and flooding which resulted in extensive property losses. Since such emergencies likely will continue to occur during the next thirty years, protection of public health, safety, and welfare requires that activities necessary to respond to these conditions must proceed without delay. Accordingly, any incidental take of SKR which may occur as a result of these emergency response activities will be permitted under the terms of this HCP. Such incidental take is authorized by the ESA pursuant to CFR Section 17.21(c)(2).

RCHCA member agencies shall not be prohibited from repairing public facilities damaged or destroyed as a result of any natural or manmade disaster, or be required to provide mitigation for impacts to SKR which may have occurred during any such event.

r. Fire Prevention Activities

As another measure essential to the protection of lives and property, this HCP will provide authorization for property owners to take actions necessary to clear flammable vegetation in order to reduce the risk of fire. All owners of property within the HCP area, including those within core reserves, will be permitted to perform the following flammable vegetation clearance activities deemed essential for protection of lives and property against the threat of fire:

Improved Property

Property owners or their lessees and RCHCA member agencies will be permitted to clear all flammable vegetation up to 100 feet around all improvements using methods, including discing, which expose bare mineral soil. Where the distance from the improvement to the property line of the parcel on which the improvement is located is less than the distance required to be cleared, the adjacent owner, lessee, or RCHCA member agency will be permitted to clear an area on his/her property sufficient to establish the required fire break.

Vacant Unimproved Property

For vacant unimproved property, owners or their lessees and RCHCA member agencies will be permitted to clear all flammable vegetation down to bare mineral soil using methods, including discing, to establish a fire break at the property line of up to 100 feet. Property owners or their lessees and RCHCA member agencies will be permitted to exceed this 100-foot width if such a fire break is deemed necessary by the local fire department to protect public safety and welfare.

Property owners or their lessees and the member agencies will not be required to perform SKR surveys or pay SKR mitigation fees as a condition precedent to performance of these fire protection activities. It is understood that the conservation provisions of this HCP will provide mitigation for incidental take of SKR resulting from these fire prevention activities.

In order to minimize potential impacts to SKR, any weed abatement notice or hazard reduction notice issued for property within an area known or believed to be occupied by SKR will recommend use of shallow discing (i.e., depths of five inches or less) when possible. The above fire prevention activities are more fully described in a separate Cooperative Agreement recently executed among the USFWS, CDFG, and all eight member agencies of the RCHCA.

s. Public Facility Improvements

In order to carry out their responsibility to ensure the health, safety, and welfare of the general public, public agencies in the HCP area must maintain their ability to construct public facilities identified in General Plans, Transportation Improvement Plans, Capital Improvement Plans, and other adopted documents. Accordingly, under the terms of this HCP public agencies will be permitted to construct public facilities including, but not limited to, the following:

i. Construction of public roadways to their ultimate width as identified in adopted General Plans;

ii. Construction of improvements identified in adopted local Transportation Improvement Programs;

iii. Construction of cooperative projects undertaken between public agencies in the HCP area and other cities, counties, water districts, Caltrans, the U.S. Army Corps of Engineers, and any other federal and State agencies, and;

iv. Construction of other public facilities and projects identified in adopted local General Plans or Capital Improvement Programs.

Construction of the above public facilities will be permitted in core reserves provided that the sponsoring agenc(y)(ies) mitigate on a 1:1 basis for all SKR occupied habitat disturbed as a result of the project. Specifically, for each acre of SKR occupied habitat disturbed in a core reserve, the sponsoring agency will acquire and permanently dedicate to SKR conservation a replacement acre of SKR occupied habitat. The location of such replacement acreage will be subject to approval by USFWS and CDFG.

For purposes of this section, public facilities shall include all public improvements, public services, and community amenities.

t. Public Facility Operations and Maintenance Activities

As a final category of public safety and welfare measures, this HCP is intended to allow RCHCA member agencies, MWD and other water agencies, flood control districts, utility companies, and other public entities to conduct those activities necessary to operate and maintain public facilities located throughout the plan area. Such facilities include, but are not limited to: publicly maintained roads and their rightsof-way; flood control facilities; landfills and related operations; public buildings; schools; water storage, treatment, and transmission facilities; sewerage transmission and treatment facilities; reclaimed water storage and transmission facilities; public parks, and; utility pipelines and transmission lines.

This provision includes only public facilities located within the HCP area, and is intended to cover those activities necessary for their operation and maintenance. Such activities include, but are not limited to: grading and paving of public roadway surfaces and road shoulders; regular covering of landfills and appurtenant earth movement; clearance of flood control channels and operation of flood control facilities; regular upkeep of buildings and grounds; monitoring and repair of water storage, treatment, and transmission facilities, sewerage transmission and treatment facilities, reclaimed water storage and transmission facilities, gas and electric distribution lines and operations buildings.

Operation and maintenance of MWD facilities in the Lake Mathews and Lake Skinner core reserves are addressed in detail in the MWD/RCHCA Southwestern Riverside County MSHCP and Lake Mathews MSHCP. Within MWD lands contained in the core reserves, the terms and conditions of those MSHCP's will not be superseded by this HCP.

More detailed information concerning public facility operations and maintenance activities authorized under this HCP is presented in Appendix F.

u. Agricultural Operations

In general, dryland farming occurring in the HCP area has been shown not to be incompatible with SKR. The species is known to coexist with ongoing agricultural operations in several portions of the HCP area. Given that situation and the tremendous importance of agriculture to the economy of western Riverside County, this HCP intends to facilitate the continuation of farming in the plan area. Bona tide agricultural operations located in the HCP area will not be required to perform SKR biological surveys. Additionally, take of SKR occurring incidental to agricultural operations will be permitted under this HCP.

For the purposes of this HCP determinations of bona fide agricultural operations will be made by the Riverside County Agricultural Commissioner.

v. HCP Participation by Land Owners Outside of Plan Area

During the process of developing this HCP the RCHCA was requested to develop a procedure under which individuals in Riverside County who own land outside its boundaries could participate in this HCP. More specifically, it was requested that the HCP include provisions for such individuals to gain access to SKR incidental take permits.

The terms and conditions of this HCP are intended to meet all FESA and CESA criteria by assuring SKR persistence in the plan area and minimizing and mitigating incidental take. The level of conservation provided is considered adequate to meet these criteria within the plan area; it is not designed to assure SKR survival outside the HCP boundaries, or mitigate any incidental take occurring in those areas. Thus, when contemplating a mechanism for facilitating outside participation in the HCP the RCHCA determined that any requests from outside the plan area for incidental take authorizations under this plan must provide full mitigation.

It is the intent of this HCP to allow individual land owners outside the plan area to receive incidental take authorizations from the RCHCA if, and only if, such owners acquire replacement SKR habitat on a 1:1 basis for all SKR occupied acres incidentally taken and convey such acreage to the RCHCA for inclusion in the SKR core reserve system. In such cases the land owner would submit a current SKR biological survey to the RCHCA as the basis for determining the amount of incidental take to be allocated. In order to receive an incidental take allocation the land owner would acquire and convey to the RCHCA, at the land owner's expense, replacement SKR occupied habitat in at least the same amount and quality as that to be incidentally taken. All replacement habitat would be subject to specific approval by the RCHCA, USFWS, and CDFG. Upon receipt of approval from those agencies and execution of a suitable land conveyance agreement, the RCHCA would issue the appropriate incidental take authorization.

w. Credit for Conservation of Biological Resource Values on Lands Acquired Under the Short-Term and Long-Term HCP

As previously noted, following USFWS and CDFG approval of this HCP it is the intention of the RCHCA to expand this document into a habitat and ecosystem based plan that will provide for conservation of many other species. The core reserves designated in this HCP are intended to provide the basis for a regional multiple species reserve system. Accordingly, the RCHCA will seek appropriate conservation credit from the USFWS and CDFG for all natural resource values present on lands acquired pursuant to this HCP and its predecessor Short-Term HCP.

In the Implementation Agreement for this HCP, the RCHCA, USFWS, BLM, U.S. Department of Interior, State of California Resources Agency, and CDFG agree to the following items concerning a RCHCA multi-species/multi-habitat conservation plan (MSHCP):

i. The SKR core reserves established under this HCP shall be credited toward any minimization or mitigation requirement of the MSHCP;

ii. All other lands currently conserved and managed for conservation of species in western Riverside County which are located within MSHCP area shall be credited toward any minimization and mitigation requirement and be accepted as a component of the MSHCP;

iii. No less than 30,000 acres of federal lands currently administered by BLM shall be made available for either conservation or sale and exchange in support of the MSHCP; 148

iv. Technical staff from the BLM, LJSFWS, and CDFG will be readily available to assist in the development of the MSHCP;

v. The RCHCA, U.S. Department of Interior, USFWS, BLM, State of California Resources Agency, and CDFG shall commence immediate discussions and negotiations necessary to prepare and draft the MSHCP for

submission to the USFWS and CDFG, and;

vi. The above parties will expedite any environmental review of the MSHCP and alternatives thereto as may be required under CEQA and NEPA.

It is anticipated that details of the biological resource credits to be applied to a multihabitat/multi-species habitat conservation plan will be defined in agreements among the RCHCA, USFWS, BLM, and CDFG following approval of this HCP.

2. Conservation Value of the SKR Reserve System

Presented in this section is an evaluation of the conservation value of the core reserve system described above. This evaluation includes an assessment of the conformance of reserves to general conservation principles and SKR population viability assessments performed to date.

a. Conformance with General Conservation Principles

As an initial step in the review, the general principles of conservation biology were phrased as questions and applied to individual reserves and the reserve systems a whole. The questions and initial responses are as follows:

Q: Are the reserves well distributed across the species' native range?

The proposed core reserve system includes SKR populations from all portions of its remaining range within the HCP area; this includes seven individual reserve units.

Q: Do the reserves include large blocks of habitat with large populations of the target species?

Two of the proposed core reserves (San Jacinto-Lake Perris and Lake Mathews-Estelle Mountain) each contain more than 3,600 acres of SKR occupied habitat, and two others (Lake Skinner-Domenigoni Valley and Sycamore Canyon-March AFB) encompass more than 1,200 acres of such land. With the exception of Potrero ACEC, all of the other reserves also contain substantial blocks of habitat.

Q: Are the blocks of habitat close together?

Within each of the reserves blocks of SKR occupied habitat generally occur within the known dispersal limits of this species; thus, they may be considered functionally interconnected. As previously mentioned, concerns exist over habitat block connections in the Sycamore Canyon-March Air Force Base and Lake Mathews-Estelle Mountain reserves.

Q: Does the conserved habitat occur in contiguous blocks rather than fragments?

The characteristics of SKR distribution in the HCP area generally reflect some degree of fragmentation; this is not considered an unnatural condition or indicative of habitat inadequacies. Within these constraints, the proposed core reserve system incorporates the largest remaining interconnected blocks of habitat for the SKR known to occur in the plan area.

Q: Do the habitat patches in the reserve have minimal edge-to-area ratios?

Within the constraints of existing land uses and distribution characteristics of SKR occupied habitat, the proposed core reserves are intended to minimize edge-to-area ratios. However, this goal is quite difficult to achieve in certain areas due to the cost of acquiring enough privately held land to absolutely ensure edge ratio minimization. In areas where edge effects may be problematical, core reserve management activities will focus on critical edge areas.

Q: Are there interconnected blocks of habitat, and do the corridors or linkages between such blocks include protected, preferred habitat for the target species?

SKR occupied habitat within each of the reserves is found within a mosaic of native habitats which provides for migration and mixing of animals. A number of desirable habitat connections between SKR core reserves have been identified by the RCHCA and will be pursued within the context of a multi-species HCP.

Q: Are the blocks of conserved habitat essentially roadless or otherwise inaccessible to humans?

Due to the urbanized nature of western Riverside County, no completely roadless areas exist on lands suitable for SKR. For the most part, lands included within the core reserve system encompass areas with the least amount of potential human access in this part of the county.

b. Connectivity to Other Natural Open Space

Empirical data collected during the research studies presented in Volume II indicate that SKR generally are relatively sedentary and genetically homogeneous. No data presently available provide compelling evidence that connections between core reserves are essential to long-term SKR persistence in the HCP area. Accordingly, the reserve design proposed in this HCP places highest priority on establishing individual reserves of sufficient number and size. Given

existing development patterns and the RCHCA's financial resource limitations, this HCP cannot guarantee the establishment of specific connections between individual reserves or from reserves to other public lands. However, the core reserves established for this HCP certainly create a foundation for a multiple species reserve system such as that described in the draft MSHCS (see Chapter 1. Purpose, Scope, and Planning Context).

With the exception of Motte Rimrock, each of the SKR core reserves designated in this HCP offers potential connections to other public lands. The Lake Skinner-Domenigoni Valley reserve is part of a largely contiguous block of potential SKR habitat which extends east to the San Bernardino National Forest, and southeast through the Vail Lake area to the Cleveland National Forest. Habitats found in these areas are predominantly chamise chaparral but also include European annual grassland, coast live oak forest, riparian forest, and desert chaparral. All land within these potential corridors is presently unincorporated, and is under much less development pressure than areas to the north (Hemet), west (State Highway 79/French Valley), and south (Temecula). If adequate funding is available under a future multi-species HCP, significant connections between the Lake Skinner reserve and nearby blocks of relatively undisturbed habitat could be acquired at a comparatively modest cost.

The northeast portion of the San Jacinto-Lake Perris reserve near Mystic Lake extends just east of Oilman Springs Road and abuts the Badlands. The Badlands include numerous patches of SKR occupied habitat, generally in areas of lesser slope. This area also contains relatively large blocks of Riversidean sage scrub, mixed European annual grassland/sage scrub, and chamise chaparral habitats which extend into the San Bernardino National Forest. As previously mentioned, the RCHCA has initiated acquisition of property intended to facilitate conservation of a wildlife corridor between the San Jacinto core reserve and the Badlands.

The Lake Mathews-Estelle Mountain core reserve is part of a contiguous area of mixed European annual grassland/Riversidean sage scrub, Riversidean sage scrub, chamise chaparral, and European annual grassland habitats which extend along the east side of Interstate 15 between State Highway 91 and Interstate 215. Much of this area features relatively steep slopes not subject to development. Accordingly, opportunities exist to acquire land connecting the Lake Mathews reserve with natural open space areas to the southeast and east. The southern portion of this reserve also may be linked to the Cleveland National Forest through the Temescal Wash. The Wash extends to the southwest, crosses under Temescal Canyon Road, an abandoned railroad line, and Interstate 15, and continues into the Cleveland National Forest. Finally, an existing wash adjacent to Indian Truck Trail which flows into Temescal Wash offers another potential connection to the Lake Mathews-Estelle Mountain core reserve. The RCHCA has participated in discussions with USFWS, CDFG, RCROSPD, and the U.S. Forest Service to jointly identify potential wildlife corridor connections between the Lake Mathews-Estelle Mountain core reserve and the Cleveland National Forest.

The Sycamore Canyon-March Air Force Base reserve is part of a continuous stretch of disturbed mixed European annual grassland habitat extending to the northeast across State Highway 60 into the Box Springs Mountains. A potential corridor connection exists between the core reserve and Box Springs Mountain Park. However, actual establishment of the corridor would be quite difficult due to high land acquisition costs and the close proximity of urban development.

As previously noted, Motte Rimrock is the most isolated of the SKR core reserves. Its habitat is not part of a large contiguous block, and is largely surrounded by urbanization. Due to the existing development patterns, extensive parcelization, and relatively high land values, the establishment of a corridor connection between Motte and blocks of open space in the Steele Peak area is deemed infeasible.

c. Potential for Edge Effects

The extensive urbanization of the HCP area makes the establishment of large, isolated SKR reserves virtually impossible. Thus, the outer boundaries of reserve areas potentially are subject to impacts resulting from activities occurring on land located just outside of reserves. This phenomenon, generally referred to as edge effects, is an important consideration in reserve design. To the extent practicable within the HCP area, the RCHCA has designed SKR core reserves in a fashion which attempts to minimize the potential for adverse impacts resulting from edge effects.

As previously noted, SKR occupied habitat in the Lake Skinner-Domenigoni Valley reserve is distributed in patchy fashion with relatively few large contiguous blocks. This tends to increase the potential for edge effects, since larger proportions of each total patch area are exposed to impacts from adjacent lands. The area of this reserve deemed most vulnerable to edge effects is located along the southern border of the reserve south and southeast of the lake. Additionally, the westernmost portion of the reserve is subject to some degree of edge effects from rural residential development; however, given the very low density character of development this is not considered a significant threat.

Most of the SKR occupied habitat in the San Jacinto-Lake Perris reserve occurs west of Davis Road and northeast of the Lake Perris reservoir in the State Recreation Area. The steep and rugged hills along the northwest boundary of the reserve act as a buffer to protect the occupied habitat from development in Moreno Valley. Additional buffering is provided by the Bernasconi Hills to the south, which separates patches of SKR occupied habitat from the Ramona Expressway. Overall, patches of SKR occupied habitat in this reserve are fairly well protected by topographic features or large expanses of land. However, small patches of SKR occupied habitat located along Davis Road are potentially vulnerable to the effects of the roadway and adjacent land uses.

SKR occupied habitat in the southern portion of Lake Mathews-Estelle Mountain reserve is not highly vulnerable to edge effects from adjacent land uses due to paucity of development and steep terrain found in that portion of the reserve. Greater potential exposure exists in the northern portion of the reserve where some areas lie adjacent to low

density rural residential development. The areas most susceptible to edge effects are: 1) the northeastern portion of the reserve where MWD land abuts rural residential development; 2) land within the immediate vicinity of Dawson Canyon rural residences, and; 3) occupied habitat patches within the vicinity of Cajaico Road, a principal thoroughfare in the area.

In its present configuration, Steele Peak embodies a relatively high degree of edge effect potential due to the absence of connections among the five blocks of land which comprise the reserve. Although the intervening properties are in open space, each of these core reserve land blocks would be vulnerable to edge effects if development occurs in these areas. The greatest potential for such development occurs in the southerly portion of the reserve, where two BLM land holdings are surrounded by the North Peak Specific Plan site. However, edge effect potential is somewhat ameliorated by steep terrain which provides significant protection for SKR habitat patches located in flatter valley areas.

Patches of SKR occupied habitat in the Sycamore Canyon-March Air Force Base reserve are among the most vulnerable to edge effects in the core reserves. This is due to the absence of natural (i.e., topographic) protective features and the nearby presence of residential and industrial development. While habitat patches in the central portion of Sycamore Canyon Park are relatively sheltered, those located near the boundaries of the reserve are vulnerable to impacts from surrounding development.

Of all the SKR core reserves Motte Rimrock is probably the most vulnerable to edge effects due to its small size, relatively flat topography, and proximity of development. As noted previously, this situation necessitates a more active management approach to minimize adverse impacts on resident SKR populations. Additional analysis of the potential for edge effects in SKR core reserves is presented in the Joint Environmental Impact Statement/ Environmental Impact Report included as Volume III to this HCP.

d. Minimum Viable Population Assessments

The last major issue to be addressed in the reserve design process involves a determination of the minimum number of individual animals that must be included in the reserve system in order to ensure species survival. This requires an identification of the size of minimum viable populations or set of populations (metapopulation) of the species within the planning area.

The prediction of population persistence for any species outside of controlled laboratory conditions is a difficult undertaking. Since the early stages of the Short-Term HCP planning process several assessments of the minimum viable population necessary to ensure conservation of the SKR have been developed, including the PVA model developed by Dr. Michael Gilpin for the RCHCA. These assessments have been developed with increasing levels of data and sophistication of methodologies.

Technical Advisory Committee Assessment

At the outset of the Short-Term HCP planning process, a Technical Advisory Committee (TAC) comprised of biologists with SKR expertise made some preliminary estimates of the conservation needs of this species in western Riverside County. Based on the limited scientific data available at the time, the TAC contemplated the need for a system consisting of six reserves each encompassing approximately five square miles (3,200 acres). It was assumed that 25% of the total acreage within the reserves would be occupied by SKR. Overall, this reserve system would encompass 19,200 acres, of which 4,800 acres would be occupied by SKR. The TAC assessment of minimum viable SKR population, based more on field experience and intuition than on scientific data, was intended only as an initial point of departure for more scientifically rigorous approaches.

The core reserve system proposed in this HCP consists of seven reserves encompassing 41,221 acres, including 12,460 acres of SKR occupied habitat. Accordingly, it far exceeds the initial TAC criteria in terms of total acreage and the a99"egate amount of SKR occupied habitat. In both categories, the proposed reserve system includes more than twice as many acres as called for in the TAC assessment. In fact, two of the reserves (Lake Mathews-Estelle Mountain and San Jacinto-Lake Perris) each includes almost as many acres of SKR occupied habitat as were thought to be needed in the entire reserve system.

Price and Endo Assessment

In a paper focused on the management implications of the distribution and abundance data available for the SKR, Price and Endo (1989) made several suggestions relevant to ultimate reserve configurations. These scientists approached the question from the perspective of minimum population densities necessary to maintain viable populations. Assuming the need to maintain populations of 100 or more individuals, and that minimum densities should not be lower than three SKR per hectare, they concluded that the minimum conserved area would have to encompass at least 33 hectares of occupied habitat. Taking into account errors inherent in measurement and estimation of climate fluctuation. Price and Endo determined that this area should be increased by a factor of 2 or 3 in order to ensure a conservative approach. That would result in a minimum reserve size of approximately 1 km^2 or 330 acres. They further suggested that several large reserves distributed throughout the range rather than many small reserves would be more effective in conserving of the species.

The proposed SKR core system also far exceeds these criteria proposed by Price and Endo (1989), both in total size and SKR occupied habitat.

Burke et al. Assessment

A more formal assessment of minimum viable population for the SKR was published by Burke et al. (1991) as the result of a class project under the direction of Dr. Michael Soule. This assessment employed a non-spatially explicit metapopulation model. The modeling incorporated currently available mathematical tools and included consideration of environmental, but not demographic, stochasticity. Using an assumption of uniform distribution of SKR at densities of 10 individuals per hectare (based on O'Farrell and Uptain 1989), Burke et al. proposed that a minimum reserve size of approximately 3,300 acres would be necessary to meet a goal of 95% probability of persistence for 100 years. They furthermore suggested that at least three reserves meeting this standard should be established, with one or more located at relatively high elevation. The Burke assessment also suggested that one of these populations should be located in San Diego County i" the vicinity of Lake Henshaw.

The core reserve system proposed in this HCP meets the standards identified by Burke et al. for the western Riverside County portion of the SKR range. Specifically, three of the reserves are larger than 3,300 acres and several more substantial units are established as well. The Burke criterion for inclusion of higher elevation populations is met in the Estelle Mountain portion of the Lake Mathews reserve, and also in portions of the Steele Peak reserve. Within the total known range of the species the only other location where a minimum of 3,300 acres could be feasibly assembled and managed for SKR would be in the Lake Henshaw area of San Diego County, a location well outside of this HCP area.

It should be noted that the actual distribution of SKR in the HCP area is far from uniform as assumed in the Burke et al assessment. This situation would seem to imply a need for larger reserves which include corridor connections between patches of SKR occupied habitat. However, any estimation of the specific changes produced in the Burke MVP assessment by assumptions of non-uniform SKR distribution would be speculative.

Gilpin Assessment

For the purposes of applying the best available tools to the task of optimizing the SKR reserve design process. Dr. Michael Gilpin developed a spatially explicit metapopulation model to be used interactively with other biological and non-biological data (see Report No. 12 in Volume II). As compared with other models available for MVP assessment, the Gilpin approach is more refined in that it:

i. Incorporates environmental and demographic stochasticity;

ii. Assumes densities of SKR actually observed in the field;

iii. Results in persistence probabilities dependent upon both area and configuration of occupied habitat, and;

iv. Allows relative comparisons between alternate habitat configurations.

Salient assumptions incorporated into the Gilpin PVA model include the following: (see Report 12 in Volume II for details)

i. Habitat distribution will remain the same into the future;

ii. Edge effects are minimal;

iii. Other input parameters have inconsequential effects on order, and;

iv. Predicted persistence times are not subject to validation. The fundamental value of the Gilpin model in the reserve design process is that it appears to be biologically intuitive and robust when used in comparative analyses. The model converts basic biological assumptions into a simple set of logical relationships in order to permit their simultaneous consideration throughout the modeled area. As a result, it provides a vehicle for meaningful cost/benefit analysis by assigning biological values to parcels which can be compared to projected acquisition costs and relevant land use considerations.

Notwithstanding the power and value of the Gilpin model, there are several missing biological features which must be recognized when interpreting its results. Specifically, the Gilpin model does not incorporate the following three factors:

i. The potential effects of epidemic diseases on SKR distribution;

ii. Successional characteristics of vegetation, and;

iii. Natural catastrophic events, e.g., floods.

As a result of these omissions the model assumes relative immunity of SKR from the type of catastrophic events which may occasionally occur in the HCP area. It also assumes static vegetation characteristics and therefore does not account for changes in SKR distribution due to modifications in plant cover which could be expected to occur over time. In general, these limitations result in an assumption that habitat distribution or carrying capacity for SKR will remain the same into the future. This was a simplifying assumption employed in the modeling process to allow for

computational ease. What this implies, however, is that monitoring and management activities conducted under this HCP will need to focus on maintaining at least the initial acreage and configurations of SKR occupied habitat within core reserves.

As with other MVP assessments, persistence predictions are not easily subject to validation; each is sensitive to initial assumptions and conditions. The general conclusion reached by repeated runs of the Gilpin model using a lambda value of 1.15 (i.e., assuming an average annual population increase of 15%) is that a system of five of the reserves as configured herein (i.e .. Lake Mathews-Estelle Mountain, Lake Skinner-Domenigoni Valley, Motte Rimrock, San Jacinto-Lake Perris, and Sycamore Canyon-March AFB) has an 80% probability of persistence for 100 years. When run with a less conservative lambda value of 1.2, SKR in two of the core reserves (Lake Mathews-Estelle Mountain and San Jacinto-Lake Perris) and in the reserve system as a whole are predicted to persist for 100 years more than 95% of the time.

Since the addition of the BLM managed Steele Peak and Potrero ACEC reserves occurred only recently, the RCHCA has not had an opportunity to run the Gilpin model using the full seven core reserves. However, common sense would dictate that the addition of two reserves not surrounded by development would serve to increase the probability of SKR persistence in the plan area.

Minimum Viable Populations Assessment Conclusion

The prediction of minimum viable population for SKR is fairly characterized as an inexact science. Empirical data concerning this species has not been collected over an area sufficiently broad, or over a time period of sufficient length, to lend a large measure of confidence to SKR persistence predictions. However, since reserve design decisions cannot await the collection and analysis of such data, the RCHCA must employ the best scientific techniques available at this time. This has been done, and the reserve system SKR persistence probabilities discussed herein must be interpreted as nothing more than the best educated guesses we can make at this time. In reality, the only real test of SKR persistence is time.

The RCHCA has endeavored to develop a proposed core reserve system using the most current conservation theory and predictive tools. If expanded to include 15,000 acres of conserved SKR occupied habitat, the proposed core reserve system achieves a 95% probability of persistence for 100 years, and meets general reserve design objectives and specific MVP objectives. Conservation of 15,000 acres of SKR occupied habitat has been determined by the USFWS and CDFG to constitute an adequate probability of persistence for this species in the plan area.

For the following reasons, this HCP provides additional assurances that this incidental take authorized pursuant to this HCP will not diminish the likelihood of persistence of SKR within the plan area:

i. Not all remaining SKR habitat outside of the core reserves is likely to be incidentally taken;

ii. The probability of persistence will increase due to the BLM's commitment to expand suitable SKR habitat within the reserve system through land trades involving 10,700 acres of federal land;

iii. Monitoring of SKR populations in the reserves will facilitate early identification of problems, and adaptive management practices will be implemented to assure the survival of the SKR in the reserves, and;

iv. The core reserve system encompasses large areas of natural landscape in addition to the SKR occupied habitat, thus providing for conservation of the ecosystem upon which the SKR depends.

3. Permit Period and Plan Area

The permit and agreement sought by the RCHCA would be valid for thirty years and would authorize incidental take of SKR on lands within the HCP area. The HCP area encompasses 533,954 acres within the jurisdictions of the County of Riverside and Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula. The HCP area encompasses approximately 30,000 acres of SKR occupied habitat (Figure 29 and Table 20). Other lands within the jurisdictions of RCHCA members, and lands within the Cities of Banning, Beaumont, Canyon Lake, Noreo, and San Jacinto will not be covered by the permit and agreement. However, this HCP provides for potential modifications to the plan area and the addition of new RCHCA members, through amendments to the document (see D. Plan Implementation).

The plan area defined in this HCP differs from that covered by the Short-Term HCP due to the inclusion of properties whose owners have requested coverage under the HCP through the existing Short-Term HCP boundary modification process. This HCP area also excludes properties owned by the Lockheed Corporation in and adjacent to the Potrero Study Area pursuant to the factors discussed under Chapter 4. Alternatives Considered.

The HCP area also differs significantly from that of the Short-Term HCP in that it defines no Study Areas or other territories where the authorization for incidental take of SKR would not apply. However, as previously noted, incidental take in core reserves will be restricted to ensure conservation of SKR occupied habitat.

a. Estimated Level of Incidental Take

The total amount of SKR occupied habitat that will be incidentally taken under the permit and agreement will depend on three interrelated factors:

i. Natural changes in the distribution, density, and amount of SKR occupied habitat in the plan area;

ii. The level of economic activity in the plan area, including new construction, the amount of land in agricultural use, and the specific uses to which agricultural land is devoted, and;

iii. The type and amount of habitat incidentally conserved in the plan area for reasons other than those related to this SKR HCP.

Natural changes can increase or decrease the annual and cumulative amount of SKR occupied habitat potentially subject to incidental take due to rainfall patterns, the effects of existing habitat fragmentation, and random natural events such fires or floods. As noted in Chapter 3. Summary Profile of the SKR, the best information available to the RCHCA indicates that species distribution in the plan area has changed significantly since its listing. Even if no incidental take of SKR had occurred in the HCP area, the amount and distribution of SKR occupied habitat would have experienced notable changes due to significant variations in local rainfall patterns. As described in the reports in Volume II, such variations play a very influential role in determining SKR distribution due to their impact on food source availability. Rainfall patterns will continue to vary significantly over the effective period of this HCP, and therefore SKR populations may be expected to expand, contract, and relocate in response to natural conditions.

Natural disasters known to occur in the plan area, most specifically wildfires and floods, have and will continue to produce changes in SKR distribution and thus the potential for incidental take. To the extent that fire is either prevented or quickly suppressed when it occurs, SKR habitat in some areas will tend to develop a density of vegetative cover which does not favor the species. Of course this would tend to depress SKR population levels and thus reduce the potential for incidental take of the species. Conversely, if the region experiences an above average incidence of wildfires in rural areas, SKR distribution is likely to increase, and with it the potential for greater amounts of incidental take.

The level of development activity in the plan area will affect the cumulative amount of SKR habitat conserved as well as the amount incidentally taken. If economic development activity increases in the plan area, the likelihood of SKR habitat removal will grow, as will the indirect adverse effects of urban land uses on patches of SKR occupied habitat.

Agricultural uses may affect SKR incidental take due to the rotation of crops, tilling of fallow fields, or changes in grazing patterns. Based upon experience gained during implementation of the Short-Term HCP, such patterns of agricultural use generally result in only temporary changes to SKR distribution. However, when agricultural lands change to urban development uses, temporary impacts to SKR become permanent.

The temporal nature of SKR incidental take also would be expected to change if lands devoted to dryland farming are converted to crops requiring irrigation.

Conservation of SKR occurring for reasons unrelated to this HCP also is likely to limit cumulative incidental take of SKR habitat. Habitat conserved for other listed species and candidate species (e.g., California gnatcatcher) is likely to include, and thus protect, SKR occupied habitat (see discussion in Chapter 3. Summary Profile of the SKR). Establishment or expansion of regional parks and new dedications of permanent open space also may increase the amount of SKR habitat not at risk of being permanently taken. SKR occupied habitat located in areas constrained from development due to steep slopes, e.g., populations in Estelle Mountain and the Badlands, likely will be conserved even if they are not acquired for a core reserve. In such areas development is extremely unlikely due to land use regulations and the poor profit potential for such investments. It is anticipated that a significant portion of the SKR population in the Badlands will benefit from this type of ancillary conservation.

Such conservation of course does not guarantee protection of SKR habitat in the same way as inclusion in managed reserves, but it does provide benefits to the species in the plan area.

Unfortunately, none of the above factors influencing incidental take of SKR in the HCP area can be readily predicted within the 30 year scope of this plan. Thus, in estimating the amount of incidental take likely to occur it is necessary to adopt conservative assumptions. Accordingly, this HCP assumes that: 1) the 15,000 acres of SKR occupied habitat to be protected in the core reserves will continue to exist over the HCP period, and; 2) the 15,000 acres of SKR occupied habitat existing outside of the reserve system may be incidentally taken.

The RCHCA views this as an inherently conservative assumption, since it is highly unlikely that all 15,000 acres of SKR occupied habitat located outside of core reserves will be incidentally taken over the 30-year permit period. The following factors greatly reduce the possibility that 15,000 acres of SKR occupied habitat will be incidentally taken within the HCP area:

i. SKR occupied habitat located on: a) public lands outside of core reserves which are not subject to development; b) undevelopable lands (e.g., those with slopes exceeding 25%), and; c) lands occupied by other listed species, is not likely to be incidentally taken;

ii. At least a portion of SKR occupied habitat located on lands used for dryland farming is likely to remain in the plan area, and;

iii. Over the 30-year period, cooperative efforts by the RCHCA with other public agencies, ongoing acquisitions by the RCHCA in the context of a future multispecies HCP, and/or mitigation required as a result of Section 7 Consultations will conserve additional SKR occupied habitat.

For these reasons, it is very likely that less than 15,000 acres of SKR occupied habitat will be incidentally taken in the HCP area over the 30-year period of this plan. However, since none of the above factors can be guaranteed to result in conservation of SKR, this HCP assumes that all 15,000 acres of SKR occupied habitat located outside of reserves in the plan area may be incidentally taken under this HCP.

Although the RCHCA is estimating that up to 15,000 acres of SKR occupied habitat may be subject to incidental take under this HCP, due to the unpredictable nature of natural forces and uncertainty of future development activity that figure may not prove accurate over the 30-year duration of the permit. It is the intention of this HCP to establish core reserves of sufficient size and character to ensure, within a reasonable degree of probability, the long-term persistence of SKR in the plan area. Accordingly, the RCHCA is seeking a permit and agreement which would allow incidental take of SKR to occur in unlimited amounts outside of core reserves; within core reserves, such take would be limited by the terms and conditions presented in this HCP.

D. Potential Impacts of Incidental Take

In addition to identifying the area, duration, and level of take, ESA approval criteria for the permit and agreement require that the impacts of the proposed taking be examined. The primary impacts of concern regarding the proposed incidental taking of SKR include:

1. The likelihood of instances of direct harm to SKR;
2. The effects of direct and indirect harm and habitat removal on the long-term viability of the SKR populations in the plan area and elsewhere in the range of this species; and
3. The effects of habitat removal and further fragmentation on the ecosystem upon which the SKR depends.

Outside of the core reserves (as expanded through BLM land trades), this HCP anticipates that incidental take of SKR may occur throughout the plan area. Accordingly, the following types of impacts are considered most likely to result from such incidental take:

1. Potential loss of some existing blocks of SKR occupied habitat of significant size. Of particular note is the potential loss of SKR populations located on privately owned lands in the Steele Peak and Kabian Park Study Areas designated under the Short-Term HCP. Within the Steele Peak area privately held lands encompass approximately 1,390 acres of SKR occupied habitat; of that total, 454 acres are under a single ownership and would be subject to incidental take at one time if the property is mass graded in preparation for development pursuant to its approved Specific Plan. Within Kabian Park, approximately 590 acres of SKR occupied habitat are located on private lands; in this location however, the habitat is spread across a large number of parcels owned by a multitude of entities. Thus, potential development of Kabian Park lands would be expected to occur over a longer period of time, providing greater possibilities for dispersal of resident SKR populations;
2. Some existing SKR dispersal corridors connecting habitat patches may be lost as a result of incidental take occurring outside of core reserves. Empirical evidence defining such corridors in the plan area is extremely limited however, and therefore both the nature and potential importance of such impacts are largely conjectural.

The conservation and mitigation measures proposed in this HCP seek to avoid, minimize, mitigate, and monitor these potential impacts to SKR. In accordance with NEPA and CEQA guidelines, impacts which may potentially result from incidental take and implementation of this HCP are analyzed in detail in the EIS/EIR presented as Volume III of this HCP.

E. Conservation, Mitigation, Monitoring, and Impact Avoidance Measures

To avoid, minimize, mitigate, and monitor the impacts of incidental take of SKR, the RCHCA will implement a conservation program having four primary components:

1. Establishment and ongoing adaptive management of the core reserve system;
2. Expansion of the reserves through conservation of additional SKR occupied habitat;
3. Measures to avoid and minimize incidental take, and;
4. Monitoring of mitigation compliance and plan effectiveness.

1. Establishment and Adaptive Management of the Core Reserves

The establishment and management of the core reserve system described in this chapter is the primary mitigation provided by the HCP for the impacts of incidental take on SKR. This is also the primary means for assuring that the species will persist within the plan area during the period covered by the permit and agreement.

This HCP builds upon existing agreements and arrangements among the agencies responsible for managing public lands in the core reserves, and provides the framework and funding for:

a. Coordinating the management of SKR habitat among individual core reserves;

b. Increasing the amount and quality of SKR habitat in the reserve system through additional core reserve acquisitions and the enhancement and restoration of SKR habitat within those reserves;

c. Regular monitoring of the status of the SKR populations and SKR habitat in the plan area;

d. Sponsoring appropriate biological research where appropriate to guide future SKR habitat management activities;

e. Ongoing performance of adaptive management practices to address changing conditions over the 30 year permit period, and;

f. Helping to sustain the viability of SKR in the reserve system by preserving and enhancing habitat linkages within the reserves, and pursuing the establishment of wildlife corridors connecting the reserves to other natural open space areas.

Upon final approval of this HCP, habitat management for the benefit of SKR would begin on public lands within the core reserve system. Such management will be extended to cover lands added to the reserve system over time via the BLM land exchange program and through land conveyances made to the RCHCA.

a. Habitat Management Goals and Objectives

The primary goals of core reserve management will be to:

i. Maintain viable populations of SKR within the reserve system and each of the core reserves sufficient to ensure the long-term persistence of the species in the HCP area;

ii. Promote the maintenance and enhancement of the ecosystem upon which the SKR depends;

iii. Develop and continually refine management practices which identify and adapt to changing conditions both within the reserves and on lands adjacent to them;

iv. Establish a core wildlife reserve system that is managed to enhance the conservation of biological diversity in western Riverside County;

v. Assist in determining future priorities to add lands that have definable conservation and/or management value to the reserve system, and;

vi. Consistent with the primary goal of ensuring SKR persistence, establish programs which permit human access for activities deemed compatible with SKR habitat conservation by USFWS and CDFG.

Policies and procedures guiding management of the reserve system will be based on the conservation principles discussed earlier in this chapter. In order of relative priority, these include:

i. Maintaining existing habitat values for SKR;

ii. Enhancing habitat values for SKR where not in conflict with other important biological resources;

iii. Maintaining or enhancing values for other species where not in conflict with SKR management goals;

iv. Minimizing the need for active management by allowing natural processes to occur where not in conflict with other management goals, and;

v. Managing the reserve system adaptively by: a) integrating existing knowledge with the results of ongoing experimental management, and; b) refining management techniques in response to changing conditions.

b. Individual Core Reserve Management Programs

Responsibility for and control over SKR habitat management and species monitoring will be maintained by different entities for each core reserve, as described below:

Lake Mathews-Estelle Mountain

As noted previously, the RCHCA and MWD have jointly developed a multi-species HCP encompassing lands owned by both agencies within the Lake Mathews-Estelle Mountain core reserve. Pursuant to the provisions of that plan, overall responsibility for management of conserved habitat in Lake Mathews will be vested in a Management Committee comprised of USFWS, CDFG, MWD, BLM, RCHCA, and the Center for Natural Lands Management. Fire prevention and suppression activities will be provided by the California Department of Forestry and Fire Prevention pursuant to the provisions of the Lake Mathews Fire Management Plan.

Habitat management activities on MWD lands in the Lake Mathews-Estelle Mountain reserve will be funded through $2.5 million paid by the RCHCA for the purchase of conservation easements over SKR occupied habitat on MWD properties. Upon receipt of those funds MWD will establish a non-wasting endowment intended to finance the management of conserved habitat on its properties in the reserve.

Pursuant to the Assembled Land Exchange Agreement included in Appendix A, the RCHCA will trade its property holdings in the Lake Mathews-Estelle Mountain core reserve to BLM. Upon receipt of those lands BLM will assume ongoing responsibility for their management, monitoring, and patrol. Pursuant to the terms of the Implementation Agreement for this HCP, BLM will ensure ongoing management for the benefit of SKR for its portion of the Lake Mathews-Estelle Mountain core reserve. As a member of the Management Committee established under the MWD/RCHCA Lake Mathews MSHCP, BLM will manage its lands for the benefit of SKR and other species pursuant to the terms of the MSHCP.

Specific SKR management and monitoring activities in the core reserve will be conducted pursuant to annual work plans adopted by the Management Committee. Overall responsibility for the conduct of habitat management activities on MWD properties will be assumed by the Center for Natural Lands Management (CNLM), which will operate in consultation with the Management Committee. In developing work plans the Committee will be guided by the following goals:

i. Protect suitable habitat for the MSHCP target species, including SKR;

ii. Enhance or restore suitable habitat for target species through improvement of degraded resources, and;

iii. Ensure that the operation and maintenance of Lake Mathews as a water supply facility and as a significant ecological area are not impaired.

The member agencies of the Management Committee will assume the following responsibilities in the ongoing management of the reserve:

MWD

- Participate in reserve management activities;
- Undertake habitat enhancement and restoration activities;
- Coordinate management of MWD properties with the Management Committee;
- Maintain access roads, fencing, and fire breaks in designated areas

RCHCA

- Provide a $2.5 million payment to MWD for purchase of conservation easements which MWD will dedicate to the establishment of a permanent non-wasting endowment for reserve management on its properties in the Lake Mathews-Estelle Mountain core reserve;
- Expand the reserve through land acquisitions and dedications;
- Coordinate implementation of the Lake Mathews MSHCP with the SKR HCP and alt multi-species HCP's adopted by the agency

BLM

- Pursuant to provisions of the Assembled Land Exchange Agreement with the RCHCA, maintain financial and operational responsibility for management of federal lands in the core reserve.
- Provide biological management, monitoring, and enhancement of SKR and other wildlife habitat on lands under BLM jurisdiction.
- Provide law enforcement services and maintain access roads, fencing, and fire breaks on lands under BLM management.
- In cooperation with the RCHCA, expand the reserve through acquisitions accomplished through the Assembled Land Exchange Agreement.
- Coordinate management of BLM properties with the Management Committee;

- Provide scientific and technical assistance to reserve management activities, with special emphasis on SKR and other federally listed and candidate species

USFWS

- Provide scientific and technical assistance to reserve management activities, with special emphasis on State listed and candidate species

CDFG

- Assume responsibility of "daily management of conserved habitat on MWD lands in consultation with the Management Committee"

CNLM

- Conduct biological monitoring activities on MWD lands under the direction of the Management Committee
- Prepare reports presenting and evaluating management activities

Lake Skinner-Domenigoni Valley

Upon approval of this HCP the RCHCA will add all land under its ownership in the Lake Skinner area to the multi-species reserve established by the Southwestern Riverside County MSHCP. Through this action, conserved habitat on RCHCA lands will be managed by the existing Reserve Management Committee (RMC) consisting of representatives of MWD, USFWS, CDFG, RCHCA, and the Riverside County Regional Parks and Open Space District (RCRPOSD). The RMC establishes policies, procedures, and regulations governing the management of conserved habitat within the reserve. Responsibility for day-to-day operation of the reserve is shared by RCRPOSD and MWD.

Management of SKR habitat in the Lake Skinner-Domenigoni Valley reserve will be guided by the RMC pursuant to the provisions of the MSHCP. On lands dedicated to SKR in the Shipley Reserve, and on suitable habitat contained within RCHCA properties added to the existing multi-species reserve, management will be directed toward maintenance and expansion of SKR populations. In all other areas, land will be managed for biodiversity pursuant to criteria established in the MSHCP and through adaptive techniques approved by the Management Committee.

The RMC has assumed responsibility for an ongoing habitat and wildlife monitoring program within the reserve. Research activities for SKR are being conducted under the direction of Dr. Michael O'Farrell, using funding provided by RCHCA and the RMC.

The multi-species reserve also is the focus of an active and ongoing scientific research program designed and managed by the RMC. To date, research projects have focused on species such as SKR and California gnatcatcher, and habitats such as sage scrub. As a result of the recent burning of approximately 70% of the reserve in the California Fire, a great deal of research is now being conducted concerning fire ecology and re-vegetation of sage scrub habitat.

As part of the MSHCP MWD established a management and research budget of $13.8 million. The RCHCA previously provided $500,000 for management of SKR habitat on the Shipley Reserve, and will supplement those funds with an additional $500,000 to support SKR management plans adopted by the RMC.

Motte Rimrock

Management of conserved SKR habitat in the Motte Rimrock core reserve will be provided by the UCR Natural Reserve System (NRS). Management of biological resources on the reserve is guided by the following goals:

i. Protect and defend contained ecosystems and the associated natural processes that drive those ecosystems and promote their natural biodiversity, and;

ii. Develop and enhance research and educational opportunities by developing comprehensive inventories of biological resources, and by monitoring environmental and ecological processes.

The existing Motte Rimrock Reserve management plan acknowledges the role of this area in the SKR HCP and therefore emphasizes protection of suitable habitat to maintain viable populations of SKR. Regular monitoring of SKR. populations also is deemed an important activity in reserve management.

Representatives of UCR have expressed their intent to prepare a revised SKR management plan for the reserve. Although the specific elements of that plan are still under development at this time, it is anticipated that the following activities will be included:

i. In order to prevent habitat destruction caused by chronic trespassing, it is anticipated that fencing will be erected in the southern portion of the reserve, and surveillance and patrolling activities will be increased;

ii. Regular monitoring of SKR populations will be conducted;

iii. Management programs will be enhanced to ensure the continued availability of sufficient habitat to maintain viable populations of SKR in the reserve, and;

iv. Appropriate biological research will be performed to develop empirical data useful to the design of future management activities.

The RCHCA will provide $300,600 to establish a non-wasting endowment intended to assist UCR in financing ongoing management activities in the core reserve. This endowment will be administered by the RCHCA and funding allocations will be approved by the RCHCA Board of Directors pursuant to work plans developed by UCR.

San Jacinto-Lake Perris

As previously noted, the vast majority of all land within this reserve is owned by the State of California. Responsibility for land management in the Lake Perris State Recreation Area is vested in the Department of Parks and Recreation (DPR), while CDFG manages properties within the San Jacinto Wildlife Area. Existing wildlife and land management plans in these areas currently focus on multi-species habitat protection. However, since the SKR is listed as a threatened species under CESA, both CDFG and the Department of Parks and Recreation have agreed to manage State lands under their control in a manner consistent with the goals of this HCP.

Habitat management plans for lands in the core reserve will be developed by DPR and CDFG. Funding for management activities will be derived from State budget appropriations.

CDFG and DPR representatives will be members of the Reserve Managers Coordinating Committee and will assist in addressing issues of concern to core reserve system.

Sycamore Canyon-March Air Force Base

Land within Sycamore Canyon Park is managed by the City of Riverside Park and Recreation Department. Through an agreement executed during the Short-Term HCP, the City operates and maintains the Park pursuant to a goal of ensuring the continued existence of SKR. As part of the 1988 Sycamore Canyon Park Development Plan, a SKR habitat suitability model was developed to identify the potential limits of suitable habitat within the Park. The Plan recommends appropriate management of those areas to ensure the viability of habitat for this species. Additionally, the Plan calls for regular monitoring of SKR populations.

The RCHCA allocated $100,000 in FY 96 to the Park and Recreation Department to fund the preparation of a SKR management element to be included in an update of the Sycamore Canyon Development Plan. The Development Plan takes into consideration recreational and educational objectives within the Park including the development of trails, an Interpretive Center, and support facilities. The SKR management element of the Development Plan will provide for the retention of consulting biologists to conduct SKR monitoring and habitat management programs. Recommendations for habitat modification activities will be made as appropriate to ensure the continued availability of sufficient habitat to support resident SKR populations. Pursuant to the provisions of this HCP the RCHCA will provide an additional §500,000 to establish a non-wasting endowment intended to assist the City Park and Recreation Department in conducting SKR management activities.

Management of SKR habitat on March Air Force Base (MAFB) is subject to the terms and conditions of two Biological Opinions issued by the USFWS, as well as a Cooperative Agreement executed among MAFB, USFWS, and The Nature Conservancy. Salient features of these three items are summarized below:

USFWS-Federal Highway Administration Biological Opinion

Biological Opinion 1-6-90-P-29 dated June 4, 1990 was issued by the USFWS in conjunction with the improvement of Interstate Highway 215, a portion of which passes through MAFB. As mitigation for the incidental take of SKR occupied habitat the following actions were implemented:

i. The California Department of Transportation (Caltrans) provided a $1.5 million non-wasting endowment to establish a perpetual fund for the management of SKR on MAFB;

ii. As the designated management entity. The Nature Conservancy assumed responsibility for management and enhancement of SKR occupied habitat on MAFB;

iii. In support of the Short-Term HCP, Caltrans provided $507,000 to the RCHCA for land acquisition in the corridor connecting MAFB with Sycamore Canyon Park, and;

iv. Caltrans was to "provide for a crossing for SKR under Alessandro Boulevard to connect the Sycamore Canyon Study Area to habitat on MAFB."

Subsequent to the issuance of the 1990 Biological Opinion, Caltrans performed preliminary engineering studies for the proposed Alessandro Boulevard SKR undercrossing, and the results of those studies were reviewed with USFWS. In a January 1994 letter the USFWS concluded that due to the presence of underground utility pipelines the "construction of the necessary linkage under Alessandro Boulevard would be extremely expensive and of uncertain biological value." Accordingly, USFWS recommended that in place of the undercrossing, Caltrans perform the following tasks:

i. Two privately held parcels of land south of Alessandro would be acquired and conserved as SKR habitat. An amount equal to ten percent of the purchase price would be set aside to finance a "periodic, managed translocation of SKR between suitable SKR habitat areas in Sycamore Canyon Park and March Air Force Base and monitoring of such translocation efforts.", and;

ii. Funding would be provided for a two-year monitoring study of SKR movement between MAFB and Sycamore Canyon Park.

Cooperative Agreement

In November of 1990 the USFWS, MAFB, and The Nature Conservancy executed a Cooperative Agreement providing for the management and restoration of SKR habitat on MAFB. This was intended to implement the terms and conditions of the 1990 Biological Opinion described above.

Under the Cooperative Agreement The Nature Conservancy received $1.5 million from Caltrans and established a non-wasting endowment for the management and enhancement of habitat for SKR. Interest earnings from the endowment are used to finance the activities specified in the Biological Opinion, including: 1) enhancement of a minimum of 108 acres of SKR occupied habitat on MAFB; 2) determining the suitability of all undeveloped lands on MAFB for habitat management and enhancement for SKR, and; 3) developing and implementing a research program designed to determine the ecological requirements of SKR.

The Cooperative Agreement was scheduled to be reviewed by the signatories in November of 1995. At that time the terms and conditions and the performance of all parties were to be evaluated. It should be noted that at any time The Nature Conservancy may, at its sole discretion, withdraw from the agreement. Should that occur, the $1.5 million endowment will be transferred to a party approved by the USFWS and MAPB.

USFWS-MAFB Biological Opinion

On December 4, 1991 the USFWS issued Biological Opinion 1-6-91-F-33 concerning potential impacts to SKR resulting from activities proposed on MAFB. Such activities included mission realignment projects, construction of base housing, an expansion of Air Force Village West, a golf course addition, and a proposal to convey land to a private developer in exchange for construction of, or addition to, buildings located east of 1-215. Those projects were expected to impact approximately 1,200 acres "of potential and sparsely occupied SKR habitat" on MAFB.

The Biological Opinion sets forth the following measures to offset incidental take of SKR:

i. The Air Force shall establish a 1,000 acre SKR Management Area on West March, i.e., west of 1-215;

ii. In coordination with the USFWS and The Nature Conservancy (TNC), MAFB shall develop a long range management plan to protect, manage, and enhance SKR habitat within the Management Area as well as ensure compatible land development within "Open Space" lands (see #4 below);

iii. MAFB shall preclude development and surface disturbance activities incompatible with SKR and its habitat within the 1,000 acre Management Area;

iv. Approximately 1,200 acres of "Open Space" lands on MAFB shall be "protected and managed actively for high wildlife values with a special emphasis on SKR and with ongoing participation by the USFWS through informal consultation." Open Space lands include several blocks of land both east and west of 1-215;

v. MAFB shall provide coordination efforts to ensure that a viable habitat connection is available to the base boundary to support a wildlife corridor between the base and the Sycamore Canyon Study Area.

This HCP includes only the 1,000 acre SKR Management Area within the Sycamore Canyon-MAFB core reserve. Habitat within that site will continue to be managed pursuant to the terms of the Biological Opinions. Unless changes are made when the Cooperative Agreement is evaluated, TNC will have primary responsibility for managing the SKR area on MAFB. The role of the RCHCA will be to coordinate with TNC, MAFB, and USFWS to ensure that SKR management supports the objectives of this plan.

Steele Peak and Potrero ACEC

The Steele Peak and Potrero ACEC core reserves consist almost entirely of federal lands managed by the BLM. Pursuant to the terms of the South Coast Resource Management Plan and the Implementation Agreement for this HCP, BLM will maintain responsibility for management of SKR habitat within these reserves. With assistance from the

USFWS, BLM will conduct annual biological surveys to document the distribution of SKR and its habitat. Appropriate actions will be taken to ensure the continued survival of SKR on federal lands.

Funding for BLM SKR management activities will be derived from annual federal budget appropriations.

c. Reserve Managers Coordinating Committee

To coordinate SKR habitat management and biological monitoring activities among the individual core reserves, the RCHCA will establish a Reserve Managers Coordinating Committee (RMCC). The primary missions of the RMCC will be to promote coordination of SKR management throughout the core reserve system, and address regional management issues of importance to species persistence in the HCP area. The RMCC will be concerned only with inter-reserve coordination and issues of regional importance to this HCP; as an entity it will not be directly involved in the management of conserved habitat within individual core reserves.

Membership of the RMCC will consist of one representative from each of the entities having responsibility for management of lands within the SKR core reserves, as well as the RCHCA, County of Riverside, USFWS, and the University of California Cooperative Extension. The existing core reserve land managers currently include:

i. CDFG (San Jacinto Wildlife Area);
ii. State of California Department of Parks and Recreation (Lake Perris State Recreation Area);
iii. MWD (lands within the Southwestern Riverside County MSHCP and Lake Mathews MSHCP);
iv. The Nature Conservancy (March Air Force Base SKR Management Area);
v. City of Riverside Park and Recreation Department (Sycamore Canyon Park);
vi. Riverside County Regional Parks and Open Space District (Lake Skinner core reserve);
vii. University of California at Riverside (Motte Rimrock Reserve); and
viii. BLM (lands in the Lake Mathews, Lake Skinner, Motte Rimrock, Potrero ACEC, and Steele Peak core reserves).

The California Department of Forestry and Fire Protection and Riverside County and City Fire Departments also will be asked to participate as technical advisors concerning fire management issues. The County of Riverside also will sit as a member of the RMCC in its capacity as the jurisdiction having authority over land use in the vast majority of core reserve properties.

As a group, the RMCC"s primary responsibilities will be to:

i. Coordinate SKR habitat management programs by the individual reserve managers to ensure the achievement of overall HCP management objectives;

ii. Develop recommended regional SKR management goals and programs to the RCHCA Board of Directors;

iii. Within the context of overall HCP implementation, evaluate SKR habitat management and biological monitoring plans conducted within the core reserve system; and

iv. Make recommendations to the BLM and RCHCA concerning potential land acquisitions for expanding the core reserve system.

The RMCC will be chaired on a rotating basis by the reserve managers and staffed by the RCHCA. Its recommendations will be based on the consensus of its members.

State law confers upon CDFG trustee responsibility and authority for the public trust resource of wildlife in California. That responsibility will in no way be abdicated, modified, or delegated by CDFG as a result of its participation in the RMCC. Accordingly, in all issues involving CDFG's trustee responsibilities and authorities over California wildlife the RMCC will act as an advisor to that agency.

d. Annual Core Reserve Work Programs

Within each of the core reserves the responsible management entities will develop annual SKR reserve work programs consistent with the overall management goals of this HCP and the specific management plans adopted for each of the reserves. In general, the work programs will provide guidelines and set priorities for habitat management and biological monitoring activities undertaken to implement this HCP. SKR work activities are intended to supplement, and not supplant, existing conservation plans and programs in the core reserves; the intent is to optimize benefits to SKR and other sensitive species within the funding constraints of the RCHCA's program.

To the extent that RCHCA monies are involved, funding allocations for implementation of the core reserve SKR work programs will be subject to approval by the RCHCA Board of Directors.

e. Reserve Management Activities

The types of reserve management activities to be conducted in the SKR core reserves include the following:

Biological Monitoring

Biological monitoring programs will be carried out in each reserve to evaluate the status and trends of resident SKR populations. The RCHCA will work with reserve managers to arrange for annual monitoring of SKR populations using permanent monitoring plots. The amount, distribution, and characteristics of suitable habitat will be evaluated on a regular basis using appropriately scaled color aerial photography and field data. In addition, the reserves will be ground surveyed on a regular basis by SKR biologists to assess the general status of habitats and to identify areas where vegetation changes are occurring. The monitoring program also will include more intensive examination of potential internal barriers within the reserves such as existing roadways.

The results of SKR monitoring in the core reserves will be reviewed by the RMCC in order to evaluate the overall status of the species and conserved habitat in the HCP area. This group will recommend adaptive management strategies as appropriate for application in individual reserves.

Habitat Enhancement and Restoration

Enhancement and restoration activities will be conducted by qualified biologists as needed to expand SKR habitat within the core reserves and address management issues identified by the reserve managers. Each reserve manager will be asked to maintain a list of potential enhancement and restoration sites within their core reserves. These lists will be reviewed on an annual basis by the RMCC, which will then present recommendations to the RCHCA regarding priority sites for habitat restoration or enhancement. Enhancement and restoration for SKR will be balanced with and integrated into management activities for other biological resources. As previously noted, habitat enhancement and restoration also will be employed as a mechanism for mitigating the impacts of direct harm to SKR.

Access Controls

Fencing, barriers, gates, signage, and security patrols will be used as necessary to control the access of people, vehicles, livestock, and domestic pets to areas of conserved habitat. Fencing and patrols will be especially critical in areas where SKR populations are immediately adjacent to land uses with potentially adverse effects on the managed resources, e.g., the Motte Rimrock Reserve. Ranger patrols in the core reserves will be provided by the RCRPOSD, City of Riverside Park and Recreation Department, BLM, and other reserve managers as appropriate.

Fire Management

Responsible reserve management agencies have adopted fire management plans for each of the core reserves. Responsibility for fire prevention and suppression activities is vested in the California Department of Forestry and Fire Protection (CDF), March Air Force Base, and the fire departments of the City of Riverside, City of Perris, and County of Riverside. These adopted fire management plans include recommendations for fuel break management, fire controls, and fire suppression logistics. The fire management plans for Lake Mathews-Estelle Mountain, Lake Skinner-Domenigoni Valley, and March Air Force Base also provide for the use of controlled burns as a habitat management tool. The RCHCA will work with CDF and the Management Committees of the Lake Mathews-Estelle Mountain and Lake Domenigoni Valley reserves to expand existing fire management plans to specifically incorporate RCHCA properties to be added to those reserves. Additionally, RCHCA will work with municipal fire departments to develop and refine management plans for SKR habitat in the Sycamore Canyon Park and Motte Rimrock reserves.

Grazing

Past experience has shown that prescribed grazing often is an appropriate and effective management tool for SKR. Accordingly, use of grazing for management of SKR habitat will be encouraged if conducted pursuant to a scientifically valid methodology. Within the watersheds of reservoirs in core reserves, grazing will be allowed only if MWD determines such activities to be consistent with water quality standards and objectives.

Recreation

Although the SKR core reserves are established for the purpose of conserving the species and its habitat, these lands also represent open spaces of regional importance. Since these areas were acquired with public funds, the RCHCA is committed to providing citizens with an opportunity to access them for recreational and educational purposes which do not adversely affect SKR and other wildlife habitat values. Accordingly, within core reserves recreation activities will be allowed in areas of conserved SKR habitat if they are: 1) deemed compatible with the maintenance of biological resource values by USFWS and CDFG, and; 2) acceptable to the public entities which own the affected lands.

Consistent with the above provisions, passive recreational activities such as hiking and wildlife observation will be encouraged as managed activities. The adopted management plans of core reserves will define appropriate

recreation activities within core reserves and provide guidelines for ensuring the compatibility of uses. For example, the management plan for the reserve established at Lake Skinner-Domenigoni Valley under the MSHCP for Southwestern Riverside County includes monitoring of the effects of existing recreation activities at Lake Skinner on SKR. Results of this monitoring effort will guide the development of recreational policies and programs at other reserves.

2. Habitat Acquisition and Reserve Expansion

In order to complete the core reserve system defined in this HCP, the RCHCA will continue the land acquisition program it began in 1990. The RCHCA will ensure the conservation of the remaining 1,153 acres currently in private ownership in core reserves through purchases, dedications, voluntary conservation agreements with property owners, and other means. Where possible, the RCHCA also will enter into cooperative agreements with other agencies and private landowners to conserve SKR and other habitats through mutually beneficial arrangements. Such arrangements will include, but are not limited to, multiple species conservation plans that provide authorization for incidental take of other species and mitigation banking agreements.

As described previously in this Chapter, the SKR core reserves will be expanded through BLM land exchanges until the amount of SKR occupied habitat contained within those areas reaches approximately 15,000 acres. This will require the exchange program to secure and permanently conserve an additional 2,540 acres of SKR occupied habitat. Toward that goal, the RCHCA and BLM have executed an Assembled Land Exchange Agreement presented in Appendix A. The RCHCA also will consult with BLM, USFWS, and CDFG to identify SKR occupied land parcels to be targeted for land exchanges.

In consultation with BLM, USFWS, CDFG, and the RMCC, the RCHCA will employ the following criteria to identify and evaluate potential land exchange acquisitions based on the goal of enhancing the effectiveness of the SKR core reserve system:

a. SKR occupied parcels located adjacent to core reserves should receive the highest priority for land exchanges;

b. Parcels containing land suitable for SKR corridors which connect, or buffers which enhance protection of, existing core reserves should also be given high priority for acquisition;

c. Very large parcels under single ownership which contain sufficient SKR occupied habitat to offer significant probability of long-term persistence should be considered for acquisition even if they are not located adjacent to existing reserves, and;

d. Parcels containing land suitable for corridor connections between existing SKR reserves and other conserved public lands (e.g., Cleveland National Forest) should be considered for acquisition.

Additionally, the following general principles of conservation biology will be used in evaluating potential habitat acquisitions:

1. Large blocks of habitat, containing large populations of the target species, are superior to small blocks of habitat containing small populations;

2. Blocks of habitat that are close together are superior to blocks far apart;

3. Habitat that occurs in less fragmented, contiguous blocks is preferable to habitat that is fragmented;

4. Habitat patches that minimize edge-to-area ratios are superior to those that do not;

5. Interconnected blocks of habitat are preferable to isolated blocks, and corridors or linkages function better when the habitat within them is represented by protected, preferred habitat for the target species, and;

6. Blocks of habitat not penetrated by roads, and those having access control mechanisms, are better than blocks of habitat having extensive road networks or unlimited access.

In addition to the BLM land exchange program, the RCHCA will seek to enhance SKR habitat conservation through other means. Specifically, the RCHCA will support efforts by its member agencies to amend local General Plans as appropriate to establish density compensation programs for land owners seeking to develop their property. Through such programs lands featuring sensitive biological resources may be dedicated for habitat conservation purposes at no cost, with property owners being given the right to develop the remaining portion of their land at sufficiently higher density to compensate for the loss of density created by the dedication. In situations where this would result in the conservation of habitat deemed capable of sustaining long-term biological viability of core reserves, the RCHCA will actively support the granting of density compensation. The RCHCA will work with the planning departments of its member agencies to evaluate opportunities for such density compensation.

In addition, the RCHCA will consult with member agencies to establish incentives for private land owners to maintain existing levels of use in areas adjacent to conserved SKR habitat, and within habitat linkages and wildlife corridors connected to the core reserves. Such measures could include mitigation banking agreements and, where consistent with the management goals for the reserve system, assistance in securing authorizations from USFWS and/or CDFG for

incidental take of listed species other than SKR.

Regarding the conservation of linkages and corridors, the RCHCA will promote and participate as a partner in voluntary conservation efforts that build on existing public ownerships and wildlife preserves, including but not limited to the seven core reserves, Santa Rosa Plateau, and other public lands with known habitat values.

3. Project Review and Mitigation Procedures

The RCHCA's permit and agreement will cover incidental take of SKR resulting from lawful actions taken by property owners, farmers, utility companies, public agencies, and other entities within the plan area. In general, authorization for incidental take for an individual project will be given when applicable SKR biological reports have been submitted, habitat replacement mitigation has been approved by the USFWS and CDFG (applicable only to projects in core reserves resulting in incidental take of SKR), and the project is issued a building, grading, surface mining, or mobile home installation permit, as appropriate. Agencies not requiring local permits (e.g., MWD) will receive incidental take authorizations directly from the RCHCA consistent with the terms of this HCP and associated implementation agreements. Unlike the existing permit and agreement, the RCHCA will not apportion incidental take acreage among its member agencies. Instead, the following reporting, review, and documentation procedures will apply to projects covered by the permit and agreement.

a. Reporting of incidental Take and Replacement Habitat Acquisitions

When the new permit and agreement go into effect, the RCHCA will notify each member agency of the amount of habitat acquired by the RCHCA to date in excess of the incidental take authorized under the Short-Term HCP. Until the RCHCA has completed the core reserves defined in this HCP, each year the agency will calculate and report the cumulative totals of incidental take and acquisitions to the member agencies, USFWS, and CDFG. If an annual report indicates that acres of incidental take exceed acres of replacement habitat, the RCHCA will issue a notice to all member agencies requiring an immediate suspension of any further authorization of incidental take. Local authorization for incidental take of SKR will be withheld until the receipt of written notice from the RCHCA that the replacement habitat acquisitions once again exceeds the amount of incidental take acreage.

Under the Short-Term HCP, as of March 1, 1996 the RCHCA had acquired 2,212 acres of replacement SKR habitat in excess of authorized incidental take; if the new permit and agreement took effect on that day, those 2,212 acres would be credited toward the RCHCA's future habitat replacement obligations. The actual amount to be credited toward the long-term permit and agreement will depend on the totals at the time this HCP is approved. The reporting of incidental take and replacement habitat acquisitions will remain in effect until the RCHCA has fulfilled its commitment to complete the core reserves.

b. Core Reserve Review

Other than emergency response, fire prevention, and public facility maintenance and operations activities, RCHCA member agencies will require SKR biological surveys for proposed land disturbance activities within core reserves which may result in incidental take of SKR. Affected project proponents will meet with representatives of the RCHCA, USFWS, and CDFG as needed to determine appropriate methods of avoiding, minimizing, and mitigating impacts to SKR. Where possible, such determinations will be made as part of the CEQA and NEPA processes. Consistent with the provisions of this Chapter, incidental take of SKR in core reserves will be permitted only with the concurrence of USFWS and CDFG and satisfaction of 1:1 habitat replacement mitigation conditions established under this HCP.

4. Monitoring of Plan Compliance and Effectiveness

In addition to the biological monitoring programs conducted within each of the core reserves, the RCHCA will maintain responsibility for monitoring compliance with the terms and conditions of the permit and agreement and evaluating the effectiveness of the conservation and mitigation measures prescribed in this HCP.

a. Annual Reports

The RCHCA will prepare annual reports concerning reserve management and overall plan implementation, and will submit these to USFWS and CDFG. Annual reports will include the following information:

i. During the period prior to the RCHCA's completion of the core reserves, annual reports will contain an accounting of the amount of SKR occupied habitat incidentally taken by RCHCA members, the mitigation measures implemented, and the progress made towards completion of the reserve system;

ii. An overview of core reserve management activities for the previous year, including estimates of SKR occupied habitat within each reserve;

iii. Evaluation of any problems encountered in plan implementation over the previous year and corrective measures taken and planned to address those problems, and;

iv. Expenditures for acquisition and reserve management over the previous year and applicable budgets for the ensuing year.

5. Impact Avoidance and Minimization Measures

Pursuant to the requirements of the ESA, the RCHCA is committed to implement this HCP in a manner which seeks to avoid and minimize impacts to SKR to the maximum extent practicable. The primary means by which this will be accomplished is core reserve land management practice.

Within the core reserves responsible management entities will seek to avoid or minimize impacts to SKR whenever possible. Through coordination with the RCHCA and, as appropriate, USFWS and CDFG, land managers will ensure that land disturbance activities avoid areas of SKR occupied habitat whenever feasible. When avoidance is not possible or practical for emergency response, public facility operation and maintenance, and fire prevention activities, SKR biologists will be consulted to recommend methods of minimizing impacts to the species.

F. Plan Implementation

Implementation of this HCP will be governed by legal agreements executed among the RCHCA, its member agencies, USFWS, CDFG, BLM, U.S. Department of Interior (DOI), State of California Resources Agency, and other agencies as appropriate. The purpose of such agreements is to specify the terms and conditions under which the HCP will be implemented, and define the respective roles and obligations of all parties. The agreements will take the form of contracts which legally bind the all parties to the provisions contained therein. The RCHCA will execute an Implementation Agreement with DOI, USFWS, BLM, CDFG, DOI, and the State of California Resources Agency (Resources Agency). This document:

1. Identifies the roles, responsibilities, and obligations of the RCHCA, RCHCA member agencies, USFWS, BLM, CDFG, DOI, and the Resources Agency in HCP implementation;
2. Describes the institutional arrangements necessary to coordinate core reserve management;
3. Specifies assurances regarding the availability of funding for plan implementation;
4. Identifies procedures for enforcing the terms and conditions of applicable permits and agreements;
5. Prescribes procedures for addressing and responding to unforeseen circumstances, and;
6. Defines procedures for amending the HCP.

1. Roles and Responsibilities

The RCHCA and its members will be responsible for implementation of the HCP, with those parties covered by the permit and agreement sharing responsibility iw compliance with the terms and conditions. The core reserve land managers will be responsible for actual management of resources in the reserves, and their role in plan implementation will be an extension of this function. The role of USFWS and CDFG will be to oversee compliance with the terms and conditions of the permit and agreement. They will also be requested to lend their technical expertise to planning the management and expansion of the core reserves. BLM will participate in HCP implementation through its Assembled Land Exchange Agreement with the RCHCA, and also through its role as manager of federal lands in the core reserves. A summary of the roles and responsibilities of Implementation Agreement parties follows:

a. RCHCA

The RCHCA's primary roles and responsibilities for plan implementation will include:

i. Acquisition and ownership of conserved habitat;

ii. Within the parameters of the permit and agreement, adoption of policies guiding implementation of the HCP;

iii. Provision of funding for habitat acquisition, habitat management and other activities pursuant to the provisions of this HCP;

iv. Development and implementation of financing strategies to maximize funding from federal, state, and other external sources;

v. Management of RCHCA financial resources to ensure their sufficiency for HCP implementation activities;

vi. Ensuring the conduct of financial audits as required by the Implementation Agreement;

vii. Participation in cooperative conservation planning efforts with other public agencies and private property owners;

viii. Formation of and provision of staff support to the RMCC;

ix. Preparation of reports for submission to RCHCA member agencies concerning incidental take and acquisitions of replacement habitat;

x. Coordination with BLM pursuant to the Assembled Land Exchange Agreement to expedite federal land trades undertaken in support of this HCP;

xi. Preparation of reports for submission to USFWS and CDFG concerning the status of SKR populations in core reserves and management activities conducted therein;

xii. Monitoring of mitigation implementation, as required by CEQA and by the permit and agreement;

xiii. For entities exempt from RCHCA member agency permit requirements, review of SKR biological surveys and issuance of incidental take authorizations;

xiv. Submission of requests to USFWS and CDFG for SKR and multi-species credit for biological resources present on lands acquired under this HCP;

xv. As appropriate, submission of requests for amendments to the HCP, permit, and agreement to USFWS and CDFG, and;

xvi. Record keeping, public noticing, and annual report preparation on behalf of the RCHCA members.

b. RCHCA Member Agencies

Primary roles and responsibilities of the RCHCA member agencies will include:

i. Provision of funding necessary to supplement existing RCHCA cash balances to fulfill agency financial commitments in the HCP implementation budget;

ii. Implementation of applicable project review and SKR biological survey procedures;

iii. Development of SKR impact minimization and avoidance recommendations where appropriate for proposed land disturbance activities;

iv. Prior to the completion of the core reserves, reporting and record keeping for incidental take within their jurisdictions;

v. Consistent with the terms of this HCP, provision of notice to the RCHCA, USFWS, and CDFG for projects proposing incidental take of SKR within core reserves;

vi. Subject to the availability of RCHCA member agency staff, participation in cooperative conservation planning efforts with the RCHCA, other public agencies and private property owners;

vii. Where deemed appropriate by local governing bodies, amendment of General Plans or use of individual Development Agreements to permit density compensation arrangements which provide opportunities for conservation of sensitive habitat in a manner which results in no economic loss to property owners and obviates the need for public land acquisition, and; 176

viii. Where city or County owned lands are included in core reserves, development and adoption of management plans and participation in actual reserve management.

c. RMCC Members

As noted, the primary role and responsibilities of the reserve and land managers on the RMCC will be an extension of their current functions as resource managers. Specific roles and responsibilities will include:

i. Adoption of reserve management plans and annual work programs for individual core reserves, and submission of applicable portions of same to the RCHCA for consideration of funding requests for SKR management;

ii. Performance of management activities for SKR habitat within the reserves consistent with this HCP, approved multi-species HCP's, and State and local laws and policies;

iii. Development and implementation of biological monitoring activities to measure SKR populations and evaluate their viability from year to year and over the term of the permit and agreement;

iv. Development of land acquisition priorities and site selection criteria for recommendation to the RCHCA;

v. Identification and recommendation of habitat restoration and enhancement priorities and opportunities within core reserves, and;

vi. Provision of technical assistance to RCHCA staff in the preparation of Requests for Proposals for competitive procurement of biological consulting services and SKR research activities funded by the RCHCA.

d. USFWS and CDFG

Separate from but consistent with their responsibilities to oversee compliance with the terms and conditions of the permit and agreement, USFWS and CDFG will provide technical assistance in planning and providing for the management of SKR habitat. CDFG also is a manager of lands in the San Jacinto and Lake Mathews core reserves, and will participate as such on the RMCC.

In their regulatory capacity, USFWS and CDFG will be responsible for:

i. Review and approval of land acquisitions proposed as replacement habitat for incidental take of SKR in core reserves;

ii. For those cases wherein SKR incidental take authorization on lands outside the HCP area is sought through this HCP, review and approval of land acquisitions proposed as mitigation for SKR impacts;

iii. Review of SKR management activities included in reserve management plans and annual work programs;
iv. Review of RCHCA annual reports concerning SKR core reserve status;

v. Provision of technical assistance in the development and evaluation of SKR monitoring and research activities, and;

vi. Review of and timely action on amendments proposed by the RCHCA to the HCP or the legal agreements governing its implementation.

e. BLM

Pursuant to provisions of the South Coast Resource Management Plan and the Assembled Land Exchange Agreement included as Appendix A, BLM will:

i. Trade properties currently under federal ownership in western Riverside County for RCHCA lands in the Lake Mathews-Estelle Mountain core reserve. These lands will be sold by the RCHCA, with sale proceeds used to acquire additional SKR habitat in locations which support core reserves established in this HCP;

ii. Work cooperatively with the RCHCA, USFWS, and CDFG to identify SKR habitat which could be acquired through the Assembled Land Exchange Agreement;

iii. In cooperation with the RCHCA, administer the Assembled Land Exchange Agreement;

iv. Maintain ongoing responsibility for management of federal lands included within core reserves, including those properties received from the RCHCA, and;

v. Participate as an active member of the RMCC.

f. DOI

Pursuant to the terms of the Implementation Agreement for this HCP, DOI will provide and/or work with Congress to provide $3.6 million in federal financial contributions for implementation of this HCP.

g. State of California Resources Agency

As the State agency having oversight over CDFG and the California Park and Recreation Department the Resources Agency will work with those agencies to ensure that SKR habitat management supports the objectives of this HCP. Additionally, the Resources Agency will ensure, through the California Legislature and cooperative efforts with CDFG and the California Park and Recreation Department, that State funding is available to ensure appropriate SKR habitat management on State lands in the San Jacinto-Lake Perris core reserve.

2. Institutional Arrangements

All of the institutional arrangements necessary for plan implementation are either already in place or can be established through interagency and cooperative agreements. The Joint Powers Agreement which established the RCHCA empowers the agency 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."

Thus, the RCHCA Joint Powers Agreement already vests sufficient authority in the RCHCA to perform all functions and assume all responsibilities necessary to implement this HCP. The RCHCA has either executed or is in the process of developing several agreements with other agencies which have relevance to this HCP. These are described below.

Southwestern Riverside County MSHCP Cooperative Management Agreement

In 1992 the RCHCA executed a Cooperative Management Agreement with USFWS, CDFG, MWD, RCRPOSD, County of Riverside, and the Riverside County Park Facilities Corporation. This document: a) defines the terms and conditions governing the management of lands included within the Southwestern Riverside County MSHCP; b) establishes a Management Committee to oversee habitat and species management in conserved MSHCP lands, defines its responsibilities, and sets forth procedures for administering Committee activities; c) provides for addition of lands by the RCHCA and others; d) establishes procedures for development and adoption of annual operating budgets and work plans; e) provides for the granting of conservation easements over conserved habitat, and; f) establishes funding for habitat management and monitoring, biological research, and land acquisition activities to be overseen by the Management Committee.

As noted previously, upon the approval of this HCP by USFWS and CDFG, the Cooperative Management Agreement will be amended to formally add all RCHCA lands in the Lake Skinner core reserve to the MSHCP. With that action RCHCA properties will be managed by the Management Committee in accordance with the terms and conditions of the Cooperative Management Agreement.

Lake Mathews MSHCP Cooperative Management Agreement

In December of 1995 the RCHCA executed a Cooperative Management Agreement for the Lake Mathews MSHCP with MWD, USFWS, CDFG. The purpose of that document is to provide for the permanent management of conserved habitat presently owned by MWD and RCHCA in the Lake Mathews core reserve, as well as those lands to be added in the future by these agencies and other parties. The Cooperative Management Agreement: a) establishes a Management Committee comprised of CDFG, USFWS, MWD, and RCHCA; b) designates CNLM as the Reserve Director; c) establishes procedures for development and adoption of annual operating budgets and work plans; d) defines roles and responsibilities for Management Committee members; e) provides for the granting of conservation easements to CDFG over conserved habitat, and; f) establishes a non-wasting endowment to be provided by the RCHCA to finance the perpetual management of conserved habitat on MWD lands in the reserve, as well as biological monitoring, research, patrolling, and necessary administrative activities.

It is anticipated that the Cooperative Management Agreement will be amended to reflect arrangements resulting from the Assembled Land Exchange Agreement recently executed by BLM and the RCHCA. This amendment will provide that BLM will assume ownership and management responsibility for RCHCA properties in the core reserve. Financial responsibility for habitat management on those lands will be maintained by BLM. BLM also will be a member of the MSHCP Reserve Management Committee.

Memorandum of Understanding Among RCHCA Member Agencies

In anticipation of the formation of the RCHCA, in 1989 the County of Riverside and Cities of Hemet, Lake Elsinore, Moreno Valley, Perris, and Riverside executed a Memorandum of Understanding concerning the conservation of SKR. As part of this agreement the City of Riverside established commitments to provide for the ongoing management of SKR habitat in Sycamore Canyon Park. The City agreed to adopt a regional fee to be applied to all new development within its jurisdiction; that fee was to be sufficient to finance the acquisition of properties designated for inclusion in the Park. Additionally, the City documented its commitment to operate and maintain Sycamore Canyon Park ".in a fashion which shall not jeopardize SKR populations within its boundaries and which shall enhance the likelihood of the continued existence of SKR in the wild."

Memorandum of Understanding Regarding Anderson Property

In February of 1994 a Memorandum of Understanding was executed among the RCHCA, USFWS, CDFG, Riverside County Transportation Commission (RCTC), and the County of Riverside. That document established a partnership for the joint acquisition and conservation of 385 acres located adjacent to the San Jacinto Wildlife Area. The agreement provides for the conveyance of that property to CDFG for permanent management as SKR and wetlands habitat.

By means of the MOU the USFWS and CDFG agreed to cooperate with the RCHCA in the establishment of a mitigation bank based initially upon wetlands habitat acquired by the RCHCA as part of the Anderson property purchase. It is the intent of the parties to expand that mitigation bank to encompass other habitat types for eventual application to the multi-species HCP to be adopted by the RCHCA as an amendment to this HCP. The RCHCA is now exploring the potential to add other public agencies as participants in the mitigation bank.

Over the past eighteen months the RCHCA has been working cooperatively with USFWS, CDFG, and the U.S. Army Corps of Engineers to develop a mitigation banking agreement. The agreement has been drafted and is now under review by all parties. It is anticipated that a final agreement can be submitted for approval to all parties in the next six months.

Memorandum of Understanding Between the RCHCA. USFWS. BLM. and CDFG

In 1994 the RCHCA executed a .MOU with the USFWS, BLM, and CDFG which defines a process for cooperative development of an ecosystem based multi-species conservation plan. The MOU provides that following the completion and approval of the SKR, the RCHCA will prepare an ecosystem and habitat based plan intended to cover biological resources in RCHCA member jurisdictions. Through the MOU all of the parties agree to work together in the

development of a plan which will meet requirements of FESA and CESA and ensure consistency with the goals of the NCCP Act.

3. HCP Financing

As required by federal and state approval criteria for HCP's, the RCHCA will assure that adequate funding is available to carry out its responsibilities under this HCP. This assurance will be provided primarily through the commitment of RCHCA cash contributions to HCP implementation. In addition to the $30 million expended as of April 1996, the RCHCA will commit $1 1.7 million toward implementation of this HCP. RCHCA funds will be expended for three purposes: 1) acquisition of land and/or 180 conservation easements necessary to complete the core reserves defined in this HCP; 2) administration of the HCP, and; 3) establishment of non-wasting endowments to provide funding for habitat management activities in the Lake Mathews-Estelle Mountain, Lake Skinner-Domenigoni Valley, Motte Rimrock, and Sycamore Canyon-March Air Force Base core reserves.

Resources from federal and State sources also wilt be instrumental in the financing of this HCP. Direct funding assistance will be supplied by the federal government to assist in land acquisition and habitat management activities. In-kind assistance will be supplied by BLM, CDFG, and DPR to assure appropriate management of SKR habitat in several of the core reserves.
In addition to the above arrangements, the RCHCA will optimize the use of available funds by continuing and expanding its cooperative habitat conservation efforts with other agencies, actively soliciting federal, state, and private sector funding, applying for grant assistance as available, and, where appropriate, using mechanisms other than fee title acquisition to conserve habitat for SKR and other species.

a. Financial Arrangements for Completion and Expansion of the Core Reserves

Between the adoption of the first SKR mitigation fee ordinance by the County of Riverside in December of 1988 and March 1, 1996, approximately $39.8 million was raised for implementation of the SKR HCP. Of that amount, approximately 74% was generated from SKR mitigation fees, with the balance primarily derived from interest earnings, governmental and private sector grants, and payments made to the RCHCA for SKR mitigation under separate Section 7 and Section 10(a) Permit agreements. Following is a breakdown of RCHCA revenues collected as of March 1, 1996:

Riverside County Habitat Conservation Agency
Summary of Revenues
September 1990-March 1996

SKR Mitigation Fees	$29,309,724.49	73.6%
Interest Income	3,950,975.79	9.9%
Federal, State, and Other Grants	3,350,478.87	8.4%
RCTC & TLMA Land Acquisition Payments	1,252,092.00	3.1%
Other Revenues	1,021,043.93	2.6%
SKR Mitigation Payments	667,782.21	1.7%
Contract Income	238,628.00	0.6%
HCP Boundary Modification Fees	35,523.60	0.1%
TOTAL REVENUES	**$39,826.248.89**	

As of March 1, 1996 the RCHCA expended over $29.9 million to implement the Short-Term HCP and develop this HCP. Presented below is a categorical breakdown of RCHCA expenses as of March 1996:

Riverside County Habitat Conservation Agency
Summary of Expenses
September 1990-March 1996

Land Acquisition	$24,037,117.50	80.30%
Biological & HCP Consulting Services	1,441,951.42	4.80%
Management Services Contract	1,076,508.24	3.60%
Legal Services	1,030,317.74	3.40%
SKR Habitat Management	500,380.00	1.70%

Other Expenses	361,927.64	1.20%
Washington D.C. Representation	331,907.32	1.10%
Litigation Expenses	325,576.16	1.10%
RCRPOSD/WRCOG Contract	250,000.00	0.80%
Biological Research Contracts	237,605.10	0.80%
Reimbursable Expenses	225,265.74	0.80%
Audit, Office, and Public Information	82,139.92	0.30%
Travel and Training	23,622.15	0.08%
Insurance	21.912.00	0.07%
TOTAL EXPENSES	$29.946,229.93	

Of the seven core reserves designated in this HCP, four are entirely in public ownership and require no further land acquisition by the RCHCA. However, in the Lake Mathews Estelle Mountain, Lake Skinner-Domenigoni Valley, and San Jacinto-Lake Perris reserves a total of 1,153 acres of privately owned land not subject to project mitigation negotiations exists which must be acquired or otherwise conserved by the RCHCA to ensure the completion of the SKR core reserve system depicted in this plan.

The Lake Mathews-Estelle Mountain core reserve contains 683 acres in private ownership whose acquisition or conservation is planned by the RCHCA. The total projected cost of purchasing that property is approximately $4.07 million; funds available for this purpose include existing RCHCA cash reserves and financial assistance committed to the HCP by DOI.

The Lake Skinner-Domenigoni Valley core reserve contains 316 acres of private property planned for acquisition as part of this HCP. The total projected cost of property acquisition is approximately $1.3 million; funds available for this purpose include existing RCHCA cash reserves and financial assistance committed by DOI.

Finally, the San Jacinto-Lake Perris reserve includes private property which is under exclusive purchase option to the RCHCA for a cost of $2,188,516. The RCHCA has received approval for a $1 million grant under the federal ISTEA program, and these funds were requested specifically for use in the acquisition of this property. In addition, existing RCHCA cash reserves and DOI funds will be available for this purpose.

As previously noted, this HCP also calls for the core reserves to be expanded through the acquisition and conservation of additional SKR habitat in the plan area; this expansion will be accomplished through the use of federal resources. The primary asset involved in this effort will be 8,156 acres of federal land managed by BLM in western Riverside County. Pursuant to the terms of the Assembled Land Exchange Agreement included as Appendix A, these federal properties will provide the resources necessary to secure additional SKR habitat to meet the conservation goal of this HCP.

Beyond the resources provided by BLM, significant federal assets also may be available for SKR conservation if the previously discussed MAFB realignment results in a land trade for portions of property released for civilian use. Since the disposition of this issue is presently uncertain, this HCP will not speculate on the future availability of federal assets for additional SKR habitat conservation. However, if the land trade does occur, it is almost certain that the amount of SKR habitat to be conserved in the plan area will be increased by a significant amount.

b. Financial Arrangements for Ongoing Core Reserve Management Activities

As previously noted, actual management of the individual core reserves will be performed by agencies other than the RCHCA. The primary role of the RCHCA in this process will be to: 1) participate in interagency management committees or otherwise consult with responsible entities to ensure that SKR management complies with the terms of this HCP, and; 2) provide financial support in the form of non-wasting endowments to ensure appropriate SKR habitat management, species monitoring, and biological research.

In the Lake Mathews-Estelle Mountain reserve, the RCHCA and BLM will assume responsibility for financing ongoing management of SKR habitat. On MWD properties within the reserve, management will be funded through a non-wasting endowment established by MWD using $2.5 million received from the RCHCA for purchase of conservation easements over SKR habitat on MWD lands around Lake Mathews. On properties within the reserve which are now owned by the RCHCA, upon exchange of those lands pursuant to the Assembled Land Exchange Agreement, BLM will assume financial responsibility for ongoing habitat management, monitoring, and patrol activities.

In the Lake Skinner-Domenigoni Valley reserve the RCHCA will add $500,000 to the $500,000 it previously provided for management of the Shipley Reserve. That sum will supplement a $13,886,000 management fund provided by MWD and administered by the Reserve Management Committee established under the Southwestern Riverside

County MSHCP. The MSHCP also provides for an annual contribution of no less than $200,000 for habitat management to be derived from revenues from the Domenigoni Reservoir presently under construction.

In the Sycamore Canyon portion of the Sycamore Canyon-MAFB reserve the RCHCA will provide up to $100,000 to the City of Riverside Park and Recreation Department to develop a SKR management plan. In addition, the RCHCA will establish a $500,000 non-wasting endowment to assist the City in financing ongoing SKR habitat management activities.
On the March Air Force Base portion of the reserve, a $1.5 million non-wasting endowment for the SKR Management Area on the western portion of the base already exists. That endowment will continue to provide funding for SKR management activities.

In the Motte Rimrock reserve the RCHCA will establish a $300,600 non-wasting endowment to assist UCR in funding SKR management and monitoring activities. The endowment will be managed by the RCHCA, with funds used only for SKR management purposes in this reserve.

Pursuant to the terms of the HCP Implementation Agreement, in the Steele Peak and Potrero ACEC reserves, financial responsibility for ongoing management of SKR habitat will be assumed by BLM.

Finally, as provided in HCP Implementation Agreement financial responsibility for SKR habitat management on State lands in the San Jacinto-Lake Perris core reserve will be assumed by CDFG and DPR.

The total projected cost to the RCHCA for managing conserved SKR habitat over the 30-year period of the permit and agreement is approximately $3.9 million as detailed below.

RCHCA Contributions to SKR Core Reserve
Habitat Management
and Species Monitoring Expenses
1996-2026

Lake Mathews-Estelle Mountain reserve	$2,500,000
Lake Skinner-Domenigoni Valley reserve	500,000
Motte Rimrock reserve	300,600
Sycamore Canyon-March AFB Reserve SC:	600,000
MAFB: No cost to RCHCA	0.00
TOTAL RCHCA MANAGEMENT CONTRIBUTIONS	**$3.900.600**

In light of the RCHCA's desire to expand this plan into an ecosystem based multispecies HCP, it should be noted that in all likelihood SKR habitat in each reserve will be managed as a component of an overall multi-species plan. Accordingly, the projected management expenses shown above almost certainly will change depending upon the terms of the multi-species successor to this HCP. It is expected that by shifting to a multi-species approach the RCHCA will realize a much greater level of cost-effectiveness in its habitat management expenses.

c. Additional Funding Sources and Strategies for HCP Implementation

Interagency Cooperative Efforts Since 1990, the RCHCA's cooperative efforts with MWD, WCB, RCTC, Riverside County have facilitated the acquisition and conservation of over 1,660 acres in the plan area. In addition, cooperative efforts by the RCHCA, MWD, and/or the County of Riverside have resulted in the conservation of 9,000 acres of sensitive habitats at Lake Skinner-Domenigoni Valley, a 4,000-acre expansion of the Santa Rosa Plateau reserve, and a 2,500-acre expansion of the State Ecological Reserve at Lake Mathews.

Likely opportunities for future cooperative efforts will focus on use of federal lands to support conservation objectives of this SKR HCP and a successor multi-species HCP. Through the aforementioned commitments from BLM, federal lands will be included in the RCHCA's HCP and managed in a fashion consistent with its terms. Additionally, through the Assembled Land Exchange Agreement the BLM and RCHCA will work cooperatively to identify and complete land exchanges which result in the conservation of habitat valuable to the conservation of SKR and other species.

State and Federal Funding

As previously noted, under the HCP Implementation Agreement DOI and BLM provide a commitment to contribute $3.6 million to the implementation of this HCP. No less than $3.3 million will be made available to BLM within three years for the purpose of acquiring suitable SKR habitat to complete or expand the core reserves. The balance of the federal contribution will be supplied through in-kind habitat management services performed by BLM in the core reserves.

In addition, the RCHCA has received approval for a $1 million grant from the federal Intermodal Surface Transportation Efficiency Act (ISTEA). Receipt of the ISTEA funds has been delayed for a protracted period due to the

absence of necessary Congressional appropriations bills. If these monies ultimately are released, the RCHCA will expend them on land acquisition necessary to complete the San Jacinto-Lake Perris core reserve.

The RCHCA has had some success to date in attracting financial support from the State of California. The State has assisted the implementation of the SKR HCP through a $500,000 grant from the Environmental License Plate Fund, $520,000 from the California Transportation Commission's Environmental Enhancement and Mitigation grant program and most importantly, expenditures of almost $1.7 million by the Wildlife Conservation Board to acquire land for SKR conservation purposes within the Lake Mathews core reserve. All monies expended by the State for SKR conservation have been directed toward land acquisition in the core reserves.

Federal and State funding sources which will be pursued by the RCHCA to assist in the implementation of this HCP include grant programs administered by the following agencies:

i. California Department of Parks and Recreation, under the California Wildlife Protection Act (Proposition 117) and the State Grant-in-Aid Program of the federal Land and Water Conservation Fund;

ii. California Resources Agency and California Transportation Commission, as part of the Environmental Enhancement and Mitigation grant program;

iii. Riverside County Transportation Commission and California Transportation Commission, under the ISTEA grant program, and;

iv. CDFG, through the Environmental License Plate Fund.

Other Mechanisms for Habitat Conservation

In addition to cooperative efforts and grants, the RCHCA also will seek to optimize the use of its available funds by protecting habitat through mechanisms other than fee title acquisition. Such mechanisms include conservation easements, life estates, charitable donations, and implementation of density compensation and transfer programs through the General Plans of RCHCA member agencies.

d. Projected Budget for HCP Implementation

Based upon the projections and assumptions presented in this section, following is a summary budget for implementation of this HCP:

EXPENSES	
Core reserve management	$3,900,600
Management of additional SKR habitat [1]	$1,800,000
Land acquisitions	$7,600,000
HCP administration	$2,000,000
TOTAL EXPENSES	**$15,300,600**
REVENUES	
RCHCA Contributions	$11,700,600
Federal Contributions	$3,600,000
TOTAL REVENUES	**$15,300.60**

[1] Total expense for management of additional SKR habitat in expanded core reserves.

The above budget does not include the estimated cost of expanding the SKR core reserves through the Assembled Land Exchange Agreement, since the expenses incurred for acquisition of property will be limited to the revenues received from sale of BLM properties.

4. Changed or Unforeseen Circumstances

To ensure that corrective actions can be taken in response to changed or unforeseen circumstances, the RCHCA will include in its annual plan implementation reports an assessment of the following factors:

a. Any significant adverse change in SKR populations within core reserves or the amount and distribution of SKR occupied habitat within the reserve system;

b. Any significant adverse change in the assumptions regarding the availability of funding for plan implementation, and;

c. Any significant new information relevant to the HCP that was unforeseen at the time the plan was approved.

In the event that significant unforseen, extraordinary, or changed circumstances have occurred or significant new information becomes available, appropriate amendments to the HCP may be proposed. Notwithstanding the foregoing however, so long as the RCHCA and its member agencies have fully implemented the conservation requirements set forth in this HCP, any such proposed amendment or amendments shall not require or provide for the imposition of additional land restrictions or financial compensation requirements on the RCHCA, its member agencies, or non-federal land owners. In the event it is determined that additional habitat should be acquired or that additional funding is required to meet and deal with unforseen, extraordinary or changed circumstances, the USFWS or any other governmental agency will, from its own funds, provide for such additional acquisition or funding. The purpose of this provision is to recognize that Congress intended, even in the event unforseen, extraordinary, or changed circumstances, that additional mitigation requirements not be imposed upon a HCP permittee who has fully implemented the conservation requirements of the HCP.

5. HCP Amendment Process

The following types of amendments to this HCP are anticipated by the RCHCA:

a. Administrative changes to the text of the HCP, Section 10(a) and Section 2081 permit, and Implementation Agreement;

b. Changes to the terms and conditions of the permits and Agreement;

c. Changes to the boundaries of the plan area and reserves, and;

d. Changes to the authorizations provided by the permits and Agreement.

a. Administrative Amendments to the HCP

RCHCA requests for administrative amendments to the text of the plan, permit, or agreement will be submitted in writing to USFWS and CDFG and will take effect upon receipt of written approval from those agencies. Administrative amendments generally will include those minor changes not requiring formal NEPA or CEQA processing.

Pursuant to the terms of the Implementation Agreement, modifications to configurations of the core reserves will be processed by USFWS and CDFG as administrative amendments, as long as the amount of SKR occupied habitat within the reserve is not diminished. In approving core reserve configuration modifications USFWS and CDFG will make written findings that the revised configuration better addresses the overall conservation needs of the SKR.

b. Changes to HCP Terms and Conditions

Over the course of the 30-year HCP implementation period, it is anticipated that the terms of the permit and agreement may be modified to allow needed refinements and respond to changed conditions. Any amendments to the terms and conditions of the permit and agreement proposed by the RCHCA will be submitted in writing to USFWS and CDFG, and will be accompanied by environmental documentation as required under NEPA and CEQA.

c. Changes to HCP Boundaries

Since this HCP includes a commitment by the RCHCA to expand the core reserves designated in this document, the boundaries of those areas certainly will be modified over time. Such changes will not require formal amendments to this HCP; instead, they will be documented through written notice to USFWS, CDFG, and other interested parties. The RCHCA's GIS maps and data base also will be updated as land is added to the core reserve system.

Over time it is likely that the area covered by this HCP will be modified. This could occur through: 1) the addition of new unincorporated lands; 2) expansion of the RCHCA to include additional cities, or; 3) participation by individual land owners in areas not previously covered by this HCP. It is also possible that lands will be removed from the plan area due to annexations by non-member cities and/or incorporation of new cities do not join the RCHCA.

With the exception of changes to core reserve boundaries resulting from land acquisitions or dedications approved by USPWS and CDFG, all proposed changes to the plan area will be submitted in writing and subject to USFWS and CDFG concurrence. Such requested changes will be supported by environmental documentation as required under NEPA and CEQA.

d. Changes to Authorizations Provided Under the Permit and Agreement

As previously noted, the RCHCA intends to amend this HCP into a ecosystem based conservation plan covering all sensitive habitats and species in RCHCA member jurisdictions. As part of that process the RCHCA may choose to

seek authorization for incidental take of other federally or State listed species occurring in the plan area, and may also seek pro-listing agreements covering non-listed species. All changes sought by the RCHCA to the authorizations provided under the permit and agreement will be processed as an amendment to the HCP and its implementing agreements, and will be accompanied by environmental documentation as required under CEQA and NEPA.

6. Procedures for Addition of New RCHCA Member Agencies

As noted above, the addition of new cities to the RCHCA is anticipated during the term of this HCP. The following procedures will be employed in the addition of new member agencies to the RCHCA:

a. The governing body of the affected jurisdiction will send a written request for agency membership to the RCHCA Board of Directors;

b. The RCHCA Board of Directors will consider the request, and if it decides to pursue the matter, will direct staff and legal counsel to draft proposed amendments to the RCHCA Joint Powers Agreement, Memorandum of Understanding, HCP implementation agreements with USFWS and CDFG, and other pertinent documents;

c. Upon approval by the RCHCA Board of Directors, amended agreements will be forwarded to RCHCA member agencies, USFWS, CDFG, and other parties for approval;

d. Upon execution by all parties and satisfaction of all initial membership obligations which may be specified in the agreements, the affected jurisdiction will become a member of the RCHCA. Upon execution by USFWS and CDFG of permit amendments and HCP implementation agreements, the new agency will be covered by the federal and State take permits.

For new cities wishing to join the RCHCA, membership will also involve an agreement which specifies mutually acceptable arrangements for ensuring that the new member city contributes a fair share toward implementation costs of the SKR HCP. Such agreements will be subject to approval by the new member city and the governing bodies of all existing RCHCA jurisdictions.

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1992 Temporal Stability of Space Use by Dipodomys Stephens! and D. agilis in a Habitat Mosaic. Managing Habitat for Stephens' Kangaroo Rat: Effects of Shrub Removal

Price, M. V., and P. A. Kelly

1992 Demography of Two Stephens' Kangaroo Rat (Dipodomys Stephens!) Populations in Riverside County, California Monthly and Lifetime Movement Distances of Stephens' Kangaroo Rat (Dipodomys Stephens! Merriam)

Price, M. V., P. A. Kelly, and R. L. Goldingay

1992 Distinguishing the Endangered Stephens' Kangaroo Rat (Dipodomys Stephens!) from the Pacific Kangaroo Rat (Dipodomys agilis)

RECON

1991 Stephens' Kangaroo Rat Literature Review

1993 A Population Viability Analysis of the Stephens' Kangaroo Rat Core Reserves in Riverside County, California

1993 Methodology of Surveying for Stephens' Kangaroo Rat Habitat and Evaluating Suitability of Lands as SKR Permanent Reserves

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B. Glossary

Glossary abbreviations and Acronyms

ACEC	Area of Critical Environmental Concern
BIA	Building Industry Association
C1	Category 1 Candidate (for federal listing)
C2	Category 2 Candidate (for federal listing)
C3c	Category 3c Candidate (for federal listing)
CA	California
CALTRANS	California (Department of) Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFP	California Fully Protected
CFR	Code of Federal Regulations
CHP	Chaparral
CNPS	California Native Plant Society
CPI	Consumer Price Index
CR	California Rare (species status)
CRMP	Core Reserve Management Plan
CSC	California Species of Special Concern
CSS	Coastal Sage Scrub
DIS	Disturbed (habitat)
DU	Dwelling Unit
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FE	Federal Endangered (species)
FPE	Federal Proposed (for listing). Endangered
FT	Federal Threatened (species)
FWM	Fresh Water Marsh
G	Grassland
G/CSS	(Mixed) Grassland and Coastal Sage Scrub
GIS	Geographic Information System
HCP	Habitat Conservation Plan
JPA	Joint Powers Agency

JW	Juniper Woodland
LC	(Species of) Local Concern
LM-EM	Lake Mathews-Estelle Mountain
LS-DV	Lake Skinner-Domenigoni Valley
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Agreement
MRR	Motte Rimrock Reserve
MSHCS	Multiple Species Habitat Conservation Strategy (Riverside Co.
MVP	Minimum Viable Population
MWD	Metropolitan Water District of Southern California
NCCP	Natural Communities Conservation Plan(ning)
NEPA	National Environmental Policy Act
OF	(Live) Oak Forest
OW	Open Water (shoreline)
PKR	Pacific Kangaroo Rat
PVA	Population Viability Assessment
RCHCA	Riverside County Habitat Conservation Agency
RF	Riparian Forest
RMCC	Reserve Managers Coordinating Committee
RMP	Resource Management Plan
RSA	Regional Statistical Area
SC-MAFB	Sycamore Canyon-March Air Force Base
SJ-LP	San Jacinto-Lake Perris
SKR	Stephens' Kangaroo Rat
SM	Salt Marsh
SRP	Scientific Review Panel
TAC	Technical Advisory Committee
USFWS	United States Fish and Wildlife Service (Department of Interior)
VP	Vernal Pool
WCB	(California) Wildlife Conservation Board

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C. Definitions

Agricultural Preserves:
Designated areas of existing, viable, and productive agricultural land within which contracts can be enforced under the provisions of the Williamson Act to stay in agricultural use for a designated period of time. Under this contract, land is granted certain property tax advantages for continuation of agricultural use. (State of California Government Code Section 51200)

Area of Critical Environmental Concern (ACEC):
An area within federal lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic value, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

Biodiversity:
A general term for species, habitats, and genetic diversity; the distribution and abundance of different plant and animal communities and species within an area.

Category I Land Use:
Defined in the Riverside County Comprehensive General Plan as "heavy urban" characterized by high densities and intensive land uses. Examples of heavy urban land uses are large commercial centers, heavy industry, and residential land uses with a density range of 8 to 20 or more housing units per acre. These land uses require the full level of public services, such as community water systems, sewer service, complete road improvements, fire and police protection, and garbage collection. Heavy urban land uses are generally located at the center of a community and within access of a major transportation corridor.

Category II Land Use:
Defined in the Riverside County Comprehensive General Plan as "urban," characterized by a broad mix of commercial, industrial, and residential uses,
Glossary with residential density ranging from two to eight housing units per acre. These land uses require high levels of public services such as community water systems, full road improvements, sewer service in most cases, fire and police protection, and garbage collection. Urban land uses generally are located in communities or city spheres of influence.

Category III Land Use:
Defined in the Riverside County Comprehensive General Plan as "rural," characterized by low densities and fewer public facilities and improvements. Rural communities may have a variety of different land uses, including agricultural uses, small-scale commercial uses, residential uses with lot sizes of one-half acre to five acres, and industrial uses such as railroads. Water and sewer service may be provided by community systems, or may be dependent on wells and septic systems. Road systems are generally not well developed or improved.

Category IV Land Use:
Defined in the Riverside County Comprehensive General Plan as "outlying area," where development is the least dense with parcels of five acres and greater in size. Outlying areas may be located close to large tracts or publicly owned land. Outlying area land uses are often tied to agriculture, mining, industry, or residential uses. Public facilities are required where they are necessary to protect the public health, safety and welfare, but further improvements are generally not required for outlying area developments.

Category V Land Use:
Defined in the Riverside County Comprehensive General plan as a unique category for planned communities. Planned community developments are large-scale projects which offer a variety of residential, commercial, and industrial land uses. These projects are designed to "stand alone" as self-supporting communities, and must provide the highest level of public services consistent with an urban type of development. The large scale of these projects is necessary in order for them to have the ability to finance both on-site and off-site public facilities and services which are needed to support the community.

Conservation:
Methods and procedures necessary to recover an endangered or threatened species, including research, census, law enforcement, habitat acquisition, habitat protection, habitat maintenance, species propagation, and live trapping and transportation.

Corridor:
A defined tract of land, usually linear, through which a species must travel to reach habitat suitable for reproduction and other life-sustaining needs.

Critical Habitat:
Defined in the federal Endangered Species Act (1973) to include the area occupied by a species at the time it is listed, specific areas in the vicinity of the occupied habitat, and specific areas away from the occupied habitat considered essential for the conservation of the species.

Cumulative Impact:
The incremental environmental impact of an action together with impacts of past, present, and reasonably foreseeable actions (regardless of the source of the other actions).

Discretionary Project:
A project which requires the exercise of judgment or deliberation when the public agency of body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations (CEQA Guidelines 1986).

Dispersal:
The movement, usually one way, and on any time scale, of plants or animals from their point of origin to another location where they subsequently produce offspring.

Ecosystem:
A complex ecological community and environment forming a functioning whole in nature; a complex interaction among plant and animal species and their physical environment.

Endangered Species:
Any plant or animal species in danger of extinction in all or a significant part of its range.

Endangered Species Act:
Federal act of 1973, as amended, 16 U.S.C. Sections 15311543; and California Act of 1984, as amended, California Fish and Game Code, Sections 2050-2098.

Environmental Assessment (EA):
A concise public document prepared in compliance with NEPA, which briefly discusses the need for an action and alternatives to such action and provides sufficient evidence and analysis to determine whether to prepare an environmental impact statement or a finding of no significant impact.

Environmental Impact Statement (EIS):
Document prepared in accordance with the National Environmental Policy Act to describe, analyze, and consider mitigation of the significant environmental effects of a project, plan, or action.

Extinct:
Disappeared as a species due to failure to reproduce sufficient numbers to maintain succeeding generations.

Finding of No Significant Impact (FONSI):
A document prepared in compliance with NEPA, usually supported by an environmental assessment, that briefly states why a federal action will not have a significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared.

Floodplain:
The land adjacent to a river which is subject to inundation during high water flows when the river's water level rises above its established banks. The 100year floodplain refers to that area of land which will be inundated during a flood of a severity that may only take place once every 100 years.

Forb:
Any nongrass-like plant having little or no woody material on it.

Habitat:
The combination of environmental conditions of a specific place occupied by a species or a population of such species.

Habitat Conservation Plan (HCP):
An implementable program for the long-term protection and benefit of a species in a defined area; required as part of a Section 10(a) permit application under the federal Endangered Species Act.

Historic Habitat:
Areas that have supported a species in the past and may or may not continue to do so.

Historic Range:
The known general distribution of a species or subspecies as reported in current scientific literature.

Home Range:
The area to which the activities of an animal are confined during a defined period of time.

Incidental Take:
The taking of a federally listed wildlife species, if such taking is incidental to, and not the purpose of, carrying out otherwise lawful activities.

Land Use Planning Areas:
Geographic subdivisions of Riverside County utilized in the General Plan Land Use Element. The boundaries of the Land Use Planning Areas correspond to the boundaries of the Regional Statistical Areas (RSAs) within the County.

Lead Agency:
The public agency which has the principal responsibility for carrying out or approving a project.

Ministerial Decision:
A governmental decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project (CEQA Guidelines 1986).

Mitigation:
Measures undertaken to diminish or compensate for the negative impacts of a project or activity on the environment, including: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (e) compensating for the impact by replacing or providing substitute resources or environments.

Monitoring:
The process of collecting information to document implementation of mitigation measures and to evaluate whether or not the objectives of the habitat conservation plan are being realized.

Open Space:
Land on which no structural improvements are permitted.

Population:
A collection of individuals that share a common gene pool.

Population Density:
Number of individuals of a species per unit area.

Population Viability Analysis (PVA):
A general term to describe a planning process wherein all threats to a population, natural and human-caused, are identified and a determination is made whether these threats endanger the continued existence of the population. Virtually all aspects of the biology of a species affect the viability of a real population.

Raptor:
A bird of prey (e.g., eagle, owl, hawk, or falcon).

Rare Species:
A species of plan or animal which has limited numbers and/or distribution.

Recovery Plan:
A plan to ensure the conservation and survival of endangered and threatened species. Recovery plans give priority, to the extent feasible, to those endangered or threatened species that are or may be in conflict with construction or other development projects or other forms of economic activity.

Section 7:
A section of the federal Endangered Species Act that provides for consultation between federal agencies and the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species.

Section 9:
A section of the federal Endangered Species Act that prohibits the "taking" of any endangered species.

Section 10(a):
An amendment to the federal Endangered Species Act that allows for incidental takings of an endangered species if the permit for the proposed activity is accompanied with a habitat conservation plan that will demonstrably benefit the species.

Sensitive Species or Species of Concerns
Species which are rare, which have preternaturally small or declining populations, or whose probability for long-term survival is in question.

Species:
Any distinct population of wildlife that interbreeds when mature.

Species of Special Concern:
Species designated by the California Department of Fish and Game as being rare, having preternaturally small or declining populations, or whose probability for long-term survival is questioned.

Stephens' Kangaroo Rat:
Small, nocturnal mammal related to squirrel family of rodents, native to flat grasslands and coastal sage habitat of western Riverside County and northern San Diego County.

Study Area:
Locations within western Riverside County that were identified in a Short-Term HCP as potential sites for permanent SKR reserves in western Riverside County.

Take:
As defined in the federal ESA, take means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a species [listed as threatened of endangered], or attempt to do so." "Harass" and "harm" are further defined in federal regulations and case law as follows:

> "Harass" means an intentional or negligent act or omission which creates the likelihood of injuring 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. Such acts 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.
>
> As defined in the California ESA, take means "to hunt, pursue, capture, or kill or attempt the same;" the terms "harm" or "harass" are not used.

Territory:
The area that an animal defends, usually during breeding season, against intruders of its own species.

Threatened Species:
Any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Viability:
The ability of a population to persist. The converse of a vulnerability or the propensity of a population to go extinct.

Zoning:
A legal device used by local jurisdictions to control use of land and development density and to ensure that land uses are properly situated in relation to one another.

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D. Board Members

RCHCA Board of Directors
(As of March 7, 1996)

Chair	Vacant
Laura Pearson Vice Chair	Councilwoman City of Riverside
George Alongi	Councilman City of Lake Elsinore
Bob Buster	Supervisor, First District County of Riverside
Bonnie Flickinger	Councilwoman City of Moreno Valley
Steve Ford	Councilman City of Lake Elsinore
Lenwood Long	Councilman City of Perris
Andrea Puga	Councilwoman City of Corona
Robin Reeser-Lowe	Councilwoman City of Hemet
Jack van Haaster	Councilman City of Murrieta

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E. RCHCA Advisory Committee and Ad Hoc Working Groups

Advisory Committee

Chair	Gary Wanczuk Property Owner
Vice Chair	Richard D. Friesen, Ph.D.
Agricultural Interests	Bob Perkins Riverside County Farm Bureau
	Jules Wesselink Dennis Hollingsworth (Alternate) Riverside County Farm Bureau
Biological Interests	Richard D. Friesen, Ph.D.
	Bob McKernan San Bernardino County Museum
Development Interests	Rod Hanway Building Industry Association
Environmental Interests	Scott White Audubon Society
	Anne Dennis Sierra Club
	Jane Block Dan Silver, M.D. Endangered Habitats League
Property Owners	Bill Sullivan Lockheed Corporation
	Cindy Domenigoni Property Owner
	Dennis Hansberger Riverside County Property Owners Association
Public Utilities	N. Gregory Taylor Metropolitan Water District
	Jack Wyatt Southern California Edison
University of California	John Rotenberry, Ph.D. Natural Reserve System
Other Members	Lindell Marsh Siemon, Larsen & Marsh
	Bob Nelson Riverside County Waste Resources Management District
	Shelton Douthit Riverside Land Conservancy
	Carolyn Syms-Luna Riverside County Transportation and Land Management Agency
Federal and State Agencies	Jeff Newman/Michelle Shaughnessy U.S. Fish and Wildlife Service

Kevin-Barry Brennan
California Department of Fish and Game

Biology Working Group

Julie Alpert	Metropolitan Water District
Ronald Baxter	Baxter Consulting
Phillip Behrends	Dudek and Associates
John Bradley	U.S. Fish and Wildlife Service
Art Davenport	U.S. Fish and Wildlife Service
Larry Eng	California Department of Fish and Game
Richard Friesen	Biodiversity Consulting
Paul Fromer	RECON
John Gustafson	California Department of Fish and Game
Patrick Kelly	U.C. Riverside (formerly)
Karen Kirtland	LSA Associates
Earl Lauppe	California Department of Fish and Game
Leroy McClenaghan	San Diego State University
Tony Metcalf	San Bernardino Valley Audubon Society
Steve Montgomery	SJM Biological Consultants
Michael O'Farrell	O'Farrell Consulting
Mary Price	U.C. Riverside
John Rotenberry	U.C. Riverside
Gina Shultz	RECON
Peter Stine	U.S. Fish and Wildlife Service

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APPENDIX A

UNITED STATES OF AMERICA
DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT

AGREEMENT TO INITIATE ASSEMBLED LAND EXCHANGE
BETWEEN THE BUREAU OF LAND MANAGEMENT AND
THE RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY

This agreement to initiate and complete an assembled land exchange ("Agreement") is made pursuant to the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. §§ 1701 et seq.), between the Bureau of Land Management ("BLM") on behalf of the United States of America and the Riverside County Habitat Conservation Agency ("RCHCA,") hereinafter sometimes referred to as the Proponent. The BLM and the RCHCA are sometimes hereinafter also referred to as a Party or collectively as the Parties.

RECITALS:

Whereas, the RCHCA is a Joint Powers Authority created pursuant to the provisions of Article I, Chapter 5, Division 7, Title I of the Government Code of the State of California relating to the joint exercise of powers common to public agencies; and,

Whereas, the RCHCA was created by and among the County of Riverside and the cities of Riverside, Moreno Valley, City of Murrieta, Hemet, Perris, Lake Elsinore, Corona and Temecula to plan for, acquire, administer, operate and maintain land and facilities for ecosystem conservation and habitat reserves and to implement habitat conservation plans for plants and animals which are either candidates for or listed as Threatened or Endangered pursuant to the terms of the federal Endangered Species Act, 16 U.S.C. 1531 et. seq. ("FESA") and/or the California Endangered Species Act, California Fish and Game Code Section 2050 et.seq. ("CESA"); and,

Whereas, the exchange of lands as contemplated by this Agreement will assist in the implementation of the RCHCA's Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County, California ("SKR/HCP"). The Stephens' Kangaroo Rat ("SKR") has been listed as Endangered pursuant to the provisions of FESA and as Threatened pursuant to the provisions of CESA; and,

Whereas, the SKR/HCP sets forth a comprehensive long-term plan for the conservation, preservation, restoration and enhancement of the SKR and its habitat, and is intended to serve as the basis not only for long-term permits issued by and agreements with the United States Fish and Wildlife Service and the California Department of Fish and Game which will allow the incidental take of SKR, but also as the basis for a habitat and ecosystem based conservation plan which may also concurrently provide for the protection for many other species; and,

Whereas, the BLM is an agency of the Department of the Interior of the United States authorized and empowered by Congress to manage over 14 million acres of land owned by the United States within the State of California; and,

Whereas, BLM is responsible for conserving and protecting the biological and natural resources located upon the public lands, including animal and plant species and the habitats which support them; and,

Whereas, the exchange of lands contemplated by this Agreement also implements portions of the BLM's Resource Management Plan ("RMP") for the public lands it manages in western Riverside County, as well as portions of San Bernardino, San Diego, Orange and Los Angeles counties; and,

Whereas, the RMP has been prepared to guide management of these lands with two primary objectives:

a. To address the opportunities to manage the sensitive resources and open space values of these lands and to balance the protection of these resources with potential uses such as recreation and mineral development; and,
b. To improve management effectiveness and efficiency through a consolidation of scattered land ownership patterns; and,

Whereas, the RMP further provides that the BLM shall endeavor to enter into cooperative partnerships with local governments to provide open space and habitat preservation and recreational opportunities; and,

Whereas, the RMP has identified certain of its lands which may be disposed of for the purpose of acquiring other land to be managed as wildlife reserves pursuant to the SKR/HCP; and,

Whereas, implementation of this Agreement will thus fulfill significant goals of both the BLM and the RCHCA:

a. By conveying the "Selected Lands" to the RCHCA, BLM will divest itself of title to lands which are, by and large, scattered parcels, not adjacent to significant BLM holdings and thus difficult to manage; by acquiring the "Offered Lands" currently owned by the RCHCA, as hereinafter described, BLM will be able to consolidate its land ownership in western Riverside County which will facilitate effective operation and management thereof; and,
b. By conveying the Offered Lands to BLM, RCHCA will assure the effective management thereof by BLM; furthermore, by acquiring the "Selected Lands" currently owned by the United States of America and administered by the BLM, as hereinafter described, RCHCA will be able to sell and exchange those Selected Lands which have marginal habitat and conservation value and use the proceeds thereof to acquire additional SKR habitat to meet its conservation goals as set forth in the SKR/HCP; and, A-2

Whereas, the RCHCA hereby certifies that it has legal title or control of the Offered Lands and has the ability to convey title to such lands and that it is a legal entity subject to the laws of the United States and the State of California; and,

Whereas, BLM hereby certifies that it has legal title or control of the Selected Lands and has the ability to convey title to such lands; and,

Whereas, each of the Parties desire to complete an exchange of lands as hereinafter described and to establish certain terms and conditions of the exchange.

NOW THEREFORE, the Parties do hereby agree as follows:

1. DESCRIPTION OF LANDS OR INTEREST IN LANDS BEING CONSIDERED FOR EXCHANGE.

The Proponent agrees to convey to BLM the non-Federal lands as described in attached Exhibit A subject only to the reservations and exceptions shown thereon and acceptable to the United States Department of Justice Title Standards.

BLM agrees to convey to the Proponent or another legal entity designated by the Proponent, the Federal lands as described in attached Exhibit B, subject only to the reservations and exceptions shown thereon, or required by law.

All conveyances shall include all of the parties interest in the lands, including but not limited to minerals, timber, grazing use, and water rights, unless those interests are specifically reserved and shown on Exhibits A and B.

2. EXCHANGE PROCESSING RESPONSIBILITIES.

Each party will provide survey plats, maps, etc, as appropriate to aid in the identification of the lands to be exchanged.

The Proponent shall be responsible for the following items:

a. Providing preliminary title evidence.
b. Arranging for appraisals of the Federal and non-Federal lands, consistent with 43 CFR 2201.3 to be completed by an appraiser under contract to BLM. Appraisals will be completed in stages based on the priorities agreed upon by the parties.
c. Providing the following studies, reports or clearances on the Federal lands:
a. Mineral potential
b. Cultural resources
c. Biological resources, including biological assessments
d. Providing documentation regarding the qualifications of any individuals designated to receive patent to the Federal lands.
e. Contributing funds to the BLM to pay exchange processing costs in the absence of a specific federal appropriation to pay such costs. Estimated 1996 costs: $40,000. A-3

The BLM will be responsible for the following processing steps:

a. Segregating the public lands.
b. Preparing and publishing the Notice of Exchange Proposal (NOEP).
c. Adjudicating the public land records for mining claims, withdrawals, classifications, authorizations, trespasses; and taking actions, when feasible, to allow disposal of the public lands.
d. Consulting with U.S. Fish & Wildlife Service and the California Department of Fish & Game regarding the exchange of lands.
e. Preparing the Environmental Assessment for the exchange.
f. Preparing and publishing the Notice of Decision (NOD).
g. Drafting escrow instructions and all documents of conveyances.
h. Maintaining a ledger account tracking the value of lands exchanged.

3. HAZARDOUS SUBSTANCES

Each Party to this Agreement hereby declares that, with one exception, to their knowledge there have been no known or suspected release, storage, or disposal of hazardous substances on the Federal or non-Federal lands involved in this exchange. The proponent will provide documentation regarding remediation on one parcel of non-Federal lands. BLM will take whatever steps necessary to determine if hazardous substances are present on the lands involved in this exchange.

4. PHYSICAL ACCESS, RIGHT TO ENTER

Each of the Parties hereby grants permission to the other Party to enter and physically examine the exchange lands. Such examination shall be by non-surface disturbing methods.

5. RELOCATION

The Proponent certifies there are no tenants occupying the non-Federal lands. No relocation benefits are required under 49 C.F.R . § 24.101.

6. COMPENSATION FOR ASSUMPTION OF COSTS

The Parties agree to share the costs of processing this exchange, with the mutual goal of funding future habitat acquisition by the RCHCA from the sale of Federal lands conveyed to RCHCA. BLM agrees, to the maximum extent permitted, consistent with 43 CFR 2201.1-3 and 2201.6, to compensate the Proponent for completing reports on the federal lands necessary to the exchange, including but not limited to appraisal reports, cultural resource reports, biological resource reports, and mineral potential reports. Funds contributed by the Proponent, and used by BLM to pay federal exchange processing costs, shall also be subject to compensation as described above. BLM will compensate the Proponent for these costs by conveying Federal lands equal in value to the non-Federal lands plus the approved assumed costs.

7. ASSEMBLED LAND EXCHANGE.

The Parties may add or delete lands to this agreement at any time. The BLM and the Proponent seek to publish and distribute a Notice of Decision (NOD) approving the exchange of the bulk of the Federal and non-Federal lands listed in Exhibits A and B. This will enable the Proponent to market the Federal lands without the uncertainties of the exchange process.

Federal lands which are not immediately available for disposal due to mining claims, withdrawals etc." may not be included in the initial NOD. These Federal lands should be addressed in the NOEP and environmental assessment and may be added to any subsequent NOD when the lands become available for disposal.

Subsequent to the NOD, the BLM and the Proponent will enter into individual escrow transactions to transfer the Federal lands to the Proponent or the Proponent's nominee and transfer the non-Federal lands to BLM. BLM will maintain a ledger account to track the values of this assembled land exchange. The ledger account shall be updated after each escrow transaction.

The exchange will be done in phases, along the following tentative schedule:

a. Publication of the initial NOEP (December, 1995).
b. Prepare necessary reports (December 1995-April 1996).
c. Publication of the initial NOD (May 1996).
d. Close first escrow transaction (August, 1996).

In accordance with 43 CFR 2201.1, the initial and cumulative difference in value between the Federal lands and non-Federal lands conveyed, as reflected in the ledger account, may not exceed 25% of the total value of the federal lands conveyed. The ledger account must be balanced with land and/or money at least every three years.

8. CLOSING INDIVIDUAL ESCROWS

The Proponent and the BLM shall jointly agree on the Federal and non-Federal lands to be part of individual escrow transactions, based on the marketability of the Federal lands and the priority of acquisition of the non-Federal lands.

Title to the Federal lands and non-Federal lands will be transferred simultaneously through escrow procedures with a mutually acceptable title company. BLM will obtain binders or commitments to title insurance and pro-forma title insurance policies, before entering escrow. Escrow instructions will be prepared by the BLM and reviewed and executed by the BLM and the Proponent.

Individual escrow transaction will not be initiated until at least 60 days after the publication of a favorable Notice of Decision for the exchange and only if no adverse comments have been received.

The Proponent shall pay all recording and escrow fees, including the cost of an acceptable title insurance policy to the offered lands. The Proponent may also procure title insurance to the Federal lands at its own expense.

9. AMENDMENTS

This Agreement may be amended at any time upon written agreement of the Parties.

10. BINDING EFFECT

Performance by the United States of the terms of this agreement is dependent on the availability of appropriated funds. This agreement does not legally bind any party to proceed with processing or to consummate the proposed exchange, or to reimburse or pay damages to any party to this proposed exchange, or anyone doing business with any such party.

Completion of any exchange transaction envisioned under this agreement is subject to the provisions of 43 CFR Part 4, The Department of Interior Hearings and Appeals Procedures, and in the event of a protest or appeal, is contingent upon final disposition of that protest or appeal.

IN WITNESS WHEREOF, the Parties have executed this Agreement this 14th day of December, 1995.

RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY	BUREAU OF LAND MANAGEMENT
By: _____	By: _____ Ed Hastey
Its: Executive Director	Its: California State Director

IN WITNESS WHEREOF, the Parties have executed this Agreement this 14th day of December. 1995.
RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY BUREAU OF LAND MANAGEMENT ENRY"" By:
L Ed Hast T Its: Fx/r . Icr t

EXHIBIT A: RCHCA LANDS IN EXCHANGE CACA 35595 WITHIN LAKE MATHEWS CORE RESERVE LANDS DESCRIBED BY ASSESSOR PARCEL # ON ATTACHED PAGES.

EXHIBIT B: FEDERAL LANDS IN EXCHANGE CACA 35595.

EXHIBIT C: BLM PARCELS IDENTIFIED FOR USE IN THE SKR HCP.

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Appendix A – Exhibit A (Federal Lands In Exchange) (Part 1)

Exhibit A -
SKR HCP Land Acquisitions

SKR HCP
LAND ACQUISITIONS

STUDY AREA	PURCHASER	APN	TOTAL ACRES	SKR OCCUPIED ACRES	PURCHASE PRICE	PURCHASE DATE	SELLER
LAKE MATHEWS	RCHCA	391-290-002	20.0	11.6	$800,000	10/90	ESTELLE MTN RCH
		391-290-004	20.0	20.0		10/90	SCOTT
		391-290-005	20.0	20.0		10/90	CORDES
		391-290-014	20.0	17.5		10/90	GERAS/OWEN
		391-290-015	20.0	18.2		10/90	ROMERO
		391-280-001	20.0	14.1		10/90	TYLER
		391-280-008	20.0	8.2		10/90	
		391-280-010	20.0	14.1		10/90	LIM ET AL
	RCHCA	391-050-009	20.0		$214,000	8/91	ESTELLE MTN RCH
		391-050-010	20.0			8/91	ESTELLE MTN RCH
		391-050-011	20.0			8/91	ESTELLE MTN RCH
		391-050-012	20.0	32.8		8/91	ESTELLE MTN RCH
	RCHCA	391-280-006	20.7	7.7	$103,300	9/91	LIM ET AL
	RCHCA	289-100-002	20.3	12.1	$101,450	4/92	RUCKER
	RCHCA	391-280-005	20.0	5.3	$60,000	3/92	GARCIA
	RCHCA	289-090-003	20.2	13.1	$101,100	4/92	EDWARDS
	RCHCA	391-030-017	44.4	16.9	$300,000	6/92	FARTASH
		391-030-018	44.8	12.2		6/92	FARTASH
	RCHCA	289-080-007	184.7	40.8	$1,500,000	9/92	VILLAGE PROP
	RCHCA	289-110-012	20.0	10.0	$120,000	11/92	CARREON
	RCHCA	289-100-009	20.0	13.0	$120,000	11/92	BOHR
	RCHCA	289-100-010	21.4	10.7	$150,150	7/93	FDIC
		289-100-011	21.5	10.8		7/93	FDIC
		289-090-001	20.4	10.2	$1,494,263	7/93	FDIC
		289-090-002	20.2	10.1		7/93	FDIC
		289-090-004	20.1	10.1		7/93	FDIC
		289-090-005	20.2	10.1		7/93	FDIC
		289-090-006	20.1	10.1		7/93	FDIC
		289-090-007	20.2	10.1		7/93	FDIC
		289-090-008	20.1	10.1		7/93	FDIC
		289-090-011	20.2	10.1		7/93	FDIC
		289-090-012	20.2	10.1		7/93	FDIC
		289-090-013	20.1	10.1		7/93	FDIC
		289-090-014	20.3	10.2		7/93	FDIC
		289-090-015	20.3	10.2		7/93	FDIC
		289-090-016	20.2	10.1		7/93	FDIC
		289-090-017	23.4	11.7		7/93	FDIC
		289-100-012	22.1	11.1		7/93	FDIC
		289-110-002	20.0	10.0		7/93	FDIC
		289-110-003	20.1	10.1		7/93	FDIC
		289-110-004	20.2	10.1		7/93	FDIC
		289-110-010	20.0	10.0		7/93	FDIC
		289-110-011	20.0	10.0		7/93	FDIC
		289-160-026	8.0	4.0		7/93	FDIC
		289-160-029	19.4	9.7		7/93	FDIC
	RCHCA	289-160-027	18.0	12.0	$89,900	5/93	McELRAVEY
	RCHCA	289-020-002	40.0	20.0	$200,000	6/93	SCANLAN
	RCHCA	289-160-028	20.0	14.2	$106,800	7/93	DUHAMEL
	RCHCA	289-110-014	20.0	15.0	$70,000	9/93	JOHNSON
	RCHCA	391-290-012	20.0	13.3	$100,000	9/93	GLAUZ — SOLD TO STATE OF CALIFORNIA

RCHCA	391-290-016	20.1	1.1	$152,570	11/93	KAWAHARA
	391-290-017	20.0	4.4		11/93	KAWAHARA
RCHCA	391-280-009	20.0	10.0	$121,000	11/93	ROTH
RCHCA	289-030-002	9.5	4.3	$150,000	12/93	MORGER
	289-030-003	9.5	4.3		12/93	MORGER
	289-030-004	9.5	4.3		12/93	MORGER
	289-030-005	9.5	4.3		12/93	MORGER
RCHCA	391-280-004	20.1	20.1	$79,237	2/94	GARCIA
RCHCA	287-020-021	9.8	8.0	$75,000	2/94	BARTELS
RCHCA	391-020-001	42.5	NO CREDIT	$0	1/94	HOMESTEAD LDC
	391-020-003	276.1	NO CREDIT		1/94	HOMESTEAD LDC
	391-040-001	81.1	NO CREDIT		1/94	HOMESTEAD LDC
	391-040-005	162.9	NO CREDIT		1/94	HOMESTEAD LDC
RCHCA	289-100-003	20.8	10.4	$79,040	10/94	HOOVER
RCHCA	283-020-001	5.0		$7,883,960	12/94	ASD
	283-020-004	79.4			12/94	ASD
	283-020-006	109.8			12/94	ASD
	283-020-011	489.9			12/94	ASD
	283-020-012	41.3			12/94	ASD
	283-020-013	494.6			12/94	ASD
	283-020-015	9.4			12/94	ASD
	283-030-012	40.0			12/94	ASD
	283-030-013	40.0			12/94	ASD
	283-030-014	20.0			12/94	ASD
	283-040-001	80.0			12/94	ASD
	283-040-002	238.2			12/94	ASD
	283-080-001	117.9			12/94	ASD
	283-080-007	5.0			12/94	ASD
	283-080-008	5.0			12/94	ASD
	283-080-009	5.0			12/94	ASD
	283-090-010	5.0			12/94	ASD
	283-090-011	5.0			12/94	ASD
	283-090-012	5.0			12/94	ASD
	283-090-013	5.0			12/94	ASD
	283-380-001	160.0			12/94	ASD
	286-020-002	145.5			12/94	ASD
	286-070-001	80.0			12/94	ASD
	286-070-002	33.7			12/94	ASD
	286-070-003	14.2			12/94	ASD
	286-070-004	22.4			12/94	ASD
	286-070-005	20.0			12/94	ASD
	289-020-001	293.3	754.1		12/94	ASD
WILDLIFE CONSERVATION BOARD	391-280-002	20.0	1.8	$765,000	7/91	ESTELLE MTN RCH
	391-280-003	20.0	0.4		7/91	ESTELLE MTN RCH
	391-280-011	20.0	0.8		7/91	LIM ET AL
	391-280-012	20.0	1.6		4/91	KENYON
	391-280-013	20.0	7.1		4/91	KENYON
	391-280-014	20.0	4.5		4/91	KENYON
	391-280-015	20.0	6.3		7/91	ESTELLE MTN RCH
WILDLIFE CONSERVATION BOARD	391-290-001	20.0	3.6	$442,500	7/91	ESTELLE MTN RCH
	391-290-006	20.2	2.5		7/91	ESTELLE MTN RCH
	391-290-007	20.0	4.8		3/91	GINIEWICZ
	391-290-011	20.0	4.7		7/91	ESTELLE MTN RCH
	SUBTOTALS	4,818.2	1,489.8	$15,526,106	TOTAL	

RECEIVED BY QUITCLAIM DEED

OWNED BY STATE OF CALIFORNIA

TOTAL RCHCA Ownership 4,598 ACRES

$13,518,606 RCHCA

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Appendix A – Exhibit B (Federal Lands In Exchange)

EXHIBIT B
FEDERAL LANDS IN EXCHANGE CACA 35595

PARCEL	ACRES	LOCATION	APN	COMMENTS
122-021 (S)	243.14	2S,6W,S-2	173-110-005	
			173-120-002	
			173-120-003	
			173-120-004	
122-022 (S)	40.32	2S,6W,S-2	173-110-007	
160-141 (K)	40.00	4S,4W,S-14	317-190-008	U.C. Motte Reserve
160-241 (K)	40.00	4S,4W,S-24	322-280-016	U.C. Motte Reserve
160-281 (K)	160.00	4S,4W,S-28	323-020-034	Steele Peak Reserve
			323-030-022	Steele Peak Reserve
160-321 (K)	460.00	4S,4W,S-32	321-240-007	Steele Peak Reserve
			321-250-006	Steele Peak Reserve
161-061 (S)	0.18	4S,3W,S-6	302-080-031	
162-221 (K)	120.00	4S,2W,S-22	427-180-004	
			427-330-001	
162-261 (S)	113.80	4S,2W,S-26	429-090-016	
			429-120-024	
175-101 (K)	320.00	5S,5W,S-10	390-100-016	
175-241 (S)	360.00	5S,5W,S-24	390-230-008	
176-041 (K)	755.08	5S,4W,S-4	343-060-001	Steele Peak Reserve
			343-060-003	Steele Peak Reserve
			343-070-002	Steele Peak Reserve
		5S,4W,S-9	346-090-001	Steele Peak Reserve
			346-090-003	Steele Peak Reserve
			346-090-005	Steele Peak Reserve
176-141 (K)	80.00	5S,4W,S-14	345-140-011	
176-201 (K)	160.00	5S,4W,S-20	347-020-009	Steele Peak Reserve
176-261 (K)	320.00	5S,4W,S-26	349-200-012	Canyon Lake (N2 APN)
176-281 (K)	100.00	5S,4W,S-28	349-240-005	
		5S,4W,S-33	349-260-003	
177-181 (K)	157.14	5S,3W,S-18	330-170-011	
			330-170-012	
			330-170-013	
177-301 (K)	80.00	5S,3W,S-30	341-160-001	
179-261 (S)	80.00	5S,1W,S-26	454-090-014	
180-271 (K)	48.50	5S,1E,S-27	555-190-022	R/W (Flood Control)
			555-190-023	Trespass (Kelley Citrus)
			555-190-025	Trespass (Kelley Citrus)
180-272 (K)	190.00	5S,1E,S-27	555-200-010	
		5S,1E,S-34	555-300-013	
180-281 (S)	40.00	5S,1E,S-28	555-210-003	
180-341 (K)	340.00	5S,1E,S-34	555-300-014	
			555-300-015	
		5S,1E,S-35	555-300-016	
189-101 (K)	40.00	6S,4W,S-10	363-180-001	
189-341 (S)	0.05	6S,4W,S-34	NO APN	Trespass
190-301 (S)	60.06	6S,3W,S-30	362-140-013	Needs Segregation; Needs Lotting
			362-140-014	Needs Segregation; Needs Lotting
190-302 (K)	80.00	6S,3W,S-30	362-130-003	
191-041 (K)	160.86	6S,2W,S-4	466-050-016	
191-061 (K)	79.75	6S,2W,S-6	466-020-007	
191-241 (K)	40.00	6S,2W,S-24	467-120-019	Domenigoni Reserve
191-242 (K)	40.00	6S,2W,S-24	467-120-018	Domenigoni Reserve
192-101 (S)	160.00	6S,1W,S-10	469-220-007	
192-261 (S)	40.00	6S,1W,S-26	470-180-012	
193-041 (S)	145.63	6S,1E,S-4	569-020-018	
193-101 (X)	670.20	6S,1E,S-10	569-030-005	
193-181 (S)	360.00	6S,1E,S-18	569-040-028	
193-361 (X)	56.94	6S,1E,S-36	569-320-026	
205-081 (S)	40.00	7S,1W,S-8	915-030-004	
205-082 (K)	120.00	7S,1W,S-8	915-030-002	Domenigoni Reserve

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Appendix A – Exhibit C (BLM Parcels) – Part 1

APPENDIX A

BLM PARCELS IDENTIFIED FOR USE IN THE SKR HCP

BLM DESIGNATION	APN	BLM PARCEL #	ACRES
BLM Exchange or Sale*	173-110-005	122-021	122.26
	173-110-007	122-022	40.32
	173-120-002	122-021	40.00
	173-120-003	122-021	40.44
	173-120-004	122-021	40.44
	302-080-031	161-061	2.35
	362-140-013	190-301	4.39
	362-140-014	190-301	55.67
	390-230-008	175-241	360.00
	429-090-016	162-261	73.80
	429-120-024	162-261	40.00
	454-090-014	179-261	76.79
	469-220-007	192-101	160.00
	470-180-012	192-261	39.07
	555-210-003	180-281	40.00
	569-020-018	193-041	145.63
	569-040-028	193-181	360.00
	571-260-053	206-141	40.00
	571-320-003	206-101	381.65
	571-320-009	206-121	304.64
	571-360-001	206-301	166.73
	572-040-013	207-121	616.39
	572-040-014	207-121	46.86
	573-050-011	208-041	40.00
	573-330-013	208-181	50.03
	573-340-015	208-182	8.93
	575-100-029	208-132	115.15
	575-100-030	208-132	4.85
	579-160-016	223-181	240.00
	579-160-017	223-182	43.36
	579-160-020	223-161	400.00
	579-280-012	223-241	533.87

Appendix A – Exhibit C (BLM Parcels) – Part 2

	579-380-016	223-091	38.90
	580-080-005	222-071	40.00
	580-120-013	222-081	40.00
	580-120-014	222-082	40.00
	580-450-001	222-141	40.00
	581-040-024	221-041	82.35
	581-070-008	221-041	247.00
	581-070-009	221-042	160.00
	581-200-032	221-131	160.00
	583-080-011	221-221	282.03
	583-080-012	221-221	2.38
	583-160-028	221-221	120.00
	583-170-029	221-271	80.00
	583-200-044	221-351	39.88
	915-030-004	205-081	40.00
	915-140-002	205-121	122.79
		Sub Total	6,168.95

BLM Exchange Only**			
	569-030-005	193-101	670.20
	569-320-026	193-361	58.47
	573-020-015	208-061	199.71
	573-050-010	208-042	240.12
	573-050-012	208-051	40.00
	575-100-031	208-131	20.00
	583-120-073	221-301	534.00
	583-140-010	221-331	40.00
	583-150-006	221-332	200.00
	917-160-005	220-241	40.00
		Sub Total	2,042.50
BLM Exchange Parcels (SKR Conditioned)***			
	330-170-011	177-181	77.13
	330-170-012	177-181	78.48
	330-170-013	177-181	1.52
	341-160-001	177-301	80.00

Appendix A – Exhibit C (BLM Parcels) – Part 3

	345-140-011	176-141	80.00
	349-200-012	176-261	640.00
	349-240-005	176-281	25.00
	349-260-003	176-281	75.00
	362-130-003	190-302	80.00
	363-180-001	189-101	40.00
	387-270-001	188-041	82.75
	390-100-016	175-101	320.00
	427-180-004	162-221	80.00
	427-330-001	162-221	40.00
	466-020-007	191-061	79.75
	466-050-016	191-041	160.86
	555-190-022	180-271	33.62
	555-190-023	180-271	1.70
	555-190-025	180-271	0.70
	555-200-010	180-272	141.45
	555-300-013	180-272	40.00
	555-300-014	180-341	160.00
	555-300-015	180-341	140.00
	555-300-016	180-341	40.00
		Sub Total	2,497.96
BLM Committed Parcels****			
	317-190-008	160-141	40.00
	321-240-007	160-321	267.70
	321-250-006	160-321	192.01
	322-280-016	160-241	40.00
	323-020-034	160-281	80.00
	323-030-022	160-281	79.50
	343-060-001	176-041	133.28
	343-060-003	176-041	85.68
	343-070-002	176-041	120.00
	346-090-001	176-041	146.00
	346-090-003	176-041	160.00
	346-090-005	176-041	120.00
	347-020-009	176-201	160.00

Appendix A – Exhibit C (BLM Parcels) – Part 4

	391-060-011	175-081	320.00
	422-050-030	144-041	122.34
	422-050-031	144-041	80.84
	422-060-025	144-021	21.33
	422-060-026	144-021	18.67
	422-060-027	144-021	256.08
	422-060-028	144-021	6.57
	422-160-007	144-101	488.85
	467-120-018	191-242	40.00
	467-120-019	191-241	40.00
	469-030-011	192-061	120.25
	915-030-002	205-082	120.00
		SUB TOTAL	2,264.42
		TOTAL	**12,973.83**

Notes:

* Parcels suitable for FLPMA sale, but which will be given priority for exchange as guided by the RMP.

** Parcels not suitable for sale, but available for exchange. These are most often small parcels adjacent to the National Forests.

*** Parcels not available for any disposal action except exchange to acquire land at the Potrero ACEC until the acquisition threshold for the Potrero ACEC is attained. At such time these parcels would be generally available for exchange to meet other management objectives of the RMP.

**** Parcels committed to the SKR core reserve system.

See attached maps for the locations of the parcels listed above.

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APPENDIX B - Overview of Federal and State Wildlife and Habitat Conservation Laws

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This appendix presents an overview of the full range of federal and state laws that pertain to wildfire and habitat conservation in Riverside County and elsewhere. These laws are organized under three headings:

- Federal wildlife and habitat conservation laws,
- California wildlife and habitat conservation laws, and
- Federal and state environmental documentation requirements.

A. Wildlife and Habitat Conservation Laws

Federal wildlife and habitat conservation laws include the federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Fish and Wildlife Coordination Act, and Section 404 of the Clean Water Act.

1. Federal Endangered Species Act

Five sections of the federal ESA are relevant to the preparation, approval, and implementation of plans to conserve wildlife habitat and protect individual species. These are:

- Section 4, which covers the listing process, designation of critical habitat, issuance of special rules for the protection of threatened species, and preparation of recovery plans;
- Section 9, which prohibits the import, export, take, possession, transport, receipt, or sale of listed species;
- Section 10(a), which authorizes the U.S. Fish and Wildlife Service (USFWS) to issue permits for incidental take of listed species and to approve HCP's for listed unlisted species;

- Section 7, which includes provisions for the authorization of incidental take resulting from federal actions; and
- Section 6, which authorizes cooperative agreements between USFWS and states and includes provisions for the conservation of federally listed plants.

a. Section 4

Section 4 of the federal ESA stipulates that a species may be determined to be endangered or threatened based on any one of five factors:

i. Present or threatened destruction, modification, or curtailment of its habitat or range;
ii. Over utilization for commercial, recreational, scientific, or educational purposes;
iii. Disease or predation;
iv. The inadequacy of existing regulatory mechanisms; and
v. Other natural or manmade factors affecting its continued existence.

Section 4 further stipulates the steps by which species may be proposed for listing and the time frame in which decisions must be made. It also provides that critical habitat for the species may be designated concurrently with the decision to list the species, and that a plan for the conservation and survival of the species (recovery plan) be prepared by USFWS. Section 4 also provides for the issuance of special regulations for the protection of federally-listed threatened species in any State that has entered into a cooperative agreement with USFWS pursuant to Section 6 of the ESA.

b. Section 9

Section 9 of the federal ESA prohibits the taking of species listed by USFWS as threatened or endangered. As defined in the ESA, "taking" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in such conduct." "Harass" and "harm" are further defined in federal regulations and case law as follows:

"Harass" means an intentional or negligent act or omission which creates the likelihood of injuring 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" (50 CFR 17.3).

"Harm" means an act which actually kills or injures wildlife. Such acts 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" (50 CFR 17.3).

With respect to endangered plants, the ESA makes it unlawful to:

i. Remove and reduce to possession any such species from areas under federal jurisdiction;
ii. Maliciously damage or destroy any such species on such areas; or
iii. Remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation in any state or in the course of any violation of a state criminal trespass law.

ESA protection for threatened plants is substantially the same as that given to endangered plants, except that the seeds of threatened plants may be cultivated.

c. Section 10(a)

In recognition that take cannot always be avoided. Section 10(a) of the ESA includes provisions for takings that are incidental to, but not the purpose of, otherwise lawful activities. Similar provisions also are found in Section 7 for actions by federal agencies.

Under Section 10(a)(1)(B), USFWS (via powers delegated by the Secretary of the Interior) is authorized to approve "incidental take" permits provided that the applicant has met certain conditions. As described in the Code of Federal Regulations (CFR) and draft conservation planning guidelines prepared by USFWS, the application for such permits must be submitted on a specific form and must be accompanied by an HCP that contains the following information:

i. The impact that will likely result from the proposed taking of the species;
ii. Steps the applicant will take to monitor, minimize, and mitigate such impacts;
iii. The level and source of funding available to implement such steps;
iv. Procedures that will be used to deal with unforeseen circumstances;
v. The names of the responsible party or parties;
vi. Alternatives to the taking and the reasons why they were not pursued; and
vii. Other measures that may be required by USFWS as necessary or appropriate.

The application is submitted to the Regional Director of USFWS who, after a public comment period, must issue the permit if it is found that:

i. The taking will be incidental to an otherwise lawful activity;
ii. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking;
iii. The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided;
iv. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;
v. The applicant will ensure that other measures (if any) that USFWS may require as being necessary or appropriate will be met; and
vi. USFWS is assured that the conservation plan will be implemented (USFWS's practice has been to require an "implementing agreement" signed by the permittee and USFWS in which the actions identified in the HCP are presented in the form of a legal contract.)

Prior to making the decision, USFWS must conduct an internal consultation in accordance with Section 7 of the ESA. USFWS also must comply with the environmental review requirements of the National Environmental Policy Act (NEPA), which require that the potential effects of a major action be analyzed in a written statement.

Although phrased in terms of criteria for issuance of incidental take permits. Section 10(a)(1)(B) also was intended by Congress to authorize USFWS's approval of HCP's for unlisted as well as listed species. Moreover, if the HCP treats unlisted species as if it were already listed, additional mitigation would not be required within the area covered by the HCP upon the listing of that species. As stated by the House Conference Committee when Section 10(a)(1)(B) was added to the ESA in 1982:

The committee intends that the Secretary [of the Interior] may utilize this provision to approve conservation plans which provide long-term commitments regarding the conservation of listed as well as unlisted species and long-term assurances to the proponent of the conservation plan that the terms of the plan will be adhered to and that further mitigation requirements will only be imposed in accordance with the terms of the plan. In the event that an unlisted species addressed in an approved conservation plan is subsequently listed pursuant to the Act, no further mitigation requirements should be imposed if the conservation plan addressed the conservation of the species and its habitat as if the species were listed pursuant to the Act. (House of Representatives Conference Report No. 97-835, 97th Congress, 2d Session, p. 30).

d. Section 7

Section 7 of the ESA requires all federal agencies to consult with USFWS on actions involving listed species and requires USFWS to conduct internal consultations regarding the effects of its own actions on such species. It also requires USFWS to use its program to further the objectives of the ESA. A Section 7 consultation begins with a biological assessment that examines the potential effects of the action on the species in question and concludes with a written statement by USFWS staling whether the action would jeopardize a listed or proposed species or adversely affect critical habitat. If USFWS finds that the species would not be jeopardized, the written statement includes authorization for incidental take.

e. Section 6

Section 6 of the ESA authorizes USFWS to enter into cooperative agreement with States, and Section 6(c)(2) deals explicitly with conservation programs for listed plants. As stated in the ESA:

In order for a State program to be deemed an adequate and active program ... the Secretary must find, and annually thereafter reconfirm such finding, that under the State program

i. Authority resides in the State agency to conserve resident species of plants determined by the State agency or the Secretary to be endangered or threatened;
ii. the State agency has established acceptable conservation programs, consistent with the purposes and policies of this IESAI, for all resident species of plants in the State which are deemed by the Secretary to be endangered or threatened, and has furnished a copy of such plan and program, together with all pertinent details, information, and date requested to the Secretary;
iii. the State agency is authorized to conduct investigations to determine the status and requirements for survival of resident species of plants; and
iv. provision is made for public participation in designating resident species of plants as endangered or threatened...

Such a program has been authorized in California based on the state ESA, the Native Plant Protection Act, and California Native Desert Plants Act.

f. Proposed Special Rule for the Coastal California Gnatcatcher

The proposed special rule for the gnatcatcher was published in the Federal Register on March 30, 1993, and reads in its entirety as follows:

(1.) Except as noted in paragraphs (b)(2) and (3) of this section, all prohibitions of §17.31 (a) and (b) shall apply to the coastal California gnatcatcher.

(2.) Incidental take of the coastal California gnatcatcher is permitted if the take results from activities conducted in accordance with a Natural Community Conservation Plan for the protection of coastal sage scrub habitat, provided that:

(i) The Natural Community Conservation Plan has been prepared, approved, and implemented pursuant to California Fish and Game Code sections 2800-2840; and

(ii) The Fish and Wildlife service has issued written concurrence that the Natural Community Conservation Plan also meets the standards set forth in 50 CFR 17.32(b)(2). The Service shall issue its concurrence pursuant to the provisions of the Memorandum of Understanding dated December 4, 1991, between the California Department of Fish and Game and the Service regarding coastal sage scrub natural community conservation planning in southern California.

(3.) During the period that a Natural Community Conservation Plan referred to in paragraph (b)(2) of this section is being prepared, incidental take of the coastal California gnatcatcher is permitted if the take results from activities conducted pursuant to guidelines prepared by the Scientific Review Panel for this program and adopted by the California Department of Fish and game pursuant to California Fish and Game Code section 2825, provided that:

(i) The take occurs in an area within a local governmental jurisdiction that is enrolled in the natural community conservation planning process;

(ii) The Fish and Wildlife Service has issued written concurrence that the guidelines meet the standards set forth in 50 CFR 17.32(b)(2). The Service shall issue its concurrence pursuant to the provisions of the Memorandum of Understanding dated December 4, 1991, between the California Department of Fish and Game and the Service regarding coastal sage scrub natural community conservation planning in southern California; and

(iii) The total loss of coastal sage scrub habitat resulting from activities covered by this paragraph does not exceed the restrictions defined by the Scientific Review Panel/California Department of Fish and Game guidelines.

(4.) If the Fish and Wildlife Service has concurred in the guidelines referred to in paragraph (b)(3) of this section, the Service shall review the guidelines every six months to determine whether they continue to meet the standards set forth in 50 CFR 17.32(b)(2). If the Service determines the guidelines no longer meet those standards, the Service shall consult with the California Department of Fish and Game pursuant to the Memorandum of Understanding dated December 4, 1991, to seek appropriate modification of the guidelines, and shall revoke its concurrence under paragraph (b)(3) of this section if appropriate modification of the guidelines does not occur.

2. Migratory Bird Treaty Act

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 Union of Soviet States. As with the federal ESA, the act also authorizes the Secretary of the Interior to issue permits for take. The procedures for securing such permits are found in Title 50 of the CFR, together with a list of the migratory birds covered by the act.

3. Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act authorizes the Secretary of the Interior to:

a. Provide assistance to and cooperate with federal, state, and public or private agencies and organizations:

(i.) in the development, protection, rearing, and stocking of all species of wildlife, resources thereof, and their habitat,

(ii.) in controlling losses of the same from disease or other causes,

(iii.) in minimizing damages from overabundant species,

(iv.) in providing public shooting and fishing areas, including easements across public lands for access thereto, and

(v) in carrying out other measures necessary to effectuate the purposes of said sections;

b. Make surveys and investigations of the wildlife of the public domain, including lands and waters or interests therein acquired or controlled by any agency of the United States; and

c. Accept donations of land and contributions of funds in furtherance of the purposes of said sections.

The Act's stated purpose is to:

a. Recognize the contribution of the wildlife resources to the nation, the increasing public interest and significance thereof due to the expansion of the national economy and other factors; and

b. Provide that wildlife conservation receive equal consideration and be coordinated with other features of water-resource development programs.

Specifically, the Act requires that, except for water impoundment projects less than 10 acres in size and federal projects on federal lands, all federal agencies must consult with USFWS and the head of the state wildlife agency with jurisdiction over the project area with a view to preventing loss of and damage to and providing for the development and improvement of wildlife resources. The reports and recommendations from such consultations must be included in any documents prepared as part of the approval process for the project and must be considered prior to approval being given. The Act further authorizes federal agencies responsible for the construction or operation of water-control facilities to modify or add to the structures and operations of such facilities and acquire lands in order to accommodate the wildlife conservation measures.

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4. Section 404 of the Clean Water Act

Section 404 of the Clean Water Act, which is administered by the U.S. Army Corps of Engineers (COE), regulates the discharge of dredged and/or fill material into the waters of the United States. The term "waters of the United States" generally defines COE's jurisdiction and is defined at 33 CFR Part 328 as:

a. All navigable waters (including waters subject to the ebb and flow of the tide),

b. All interstate waters and wetlands,

c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce,

d. All impoundments of waters mentioned above,

e. All tributaries to waters mentioned above,

f. The territorial seas, and

g. All wetlands adjacent to waters mentioned above.

Wetlands are further defined at 33 CFR 328.3(b) as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support ... a prevalence of vegetation typically adapted for life in saturated soil conditions.

The vegetation, soils, and hydrology of a wetland is further characterized in the manual used by COE as normally meeting the following three criteria:

More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands);

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottled with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year.

Certain activities in wetlands or waters of the United States are automatically authorized by COE or granted a nationwide permit, provided they meet specific conditions. All impacts of 10 acres or more and aggregate wetland impacts greater than 1 acre require an individual permit. The permitting process entails consultation with federal agencies, public notice, and

preparation of a project alternatives analysis in accordance with guidelines issued by the U.S. Environmental Protection Agency (EPA). EPA's guidelines are used as the primary environmental criteria for evaluating the necessity of the proposed activity and for determining the least damaging feasible alternative appropriate mitigation for unavoidable impacts. In accordance with the provisions of Section 404, Fish and Wildlife Coordination Act, and, if federally listed species are present, under Section 7 of the ESA COE also is required to consult with USFWS prior to acting on a permit.

B. California Wildlife and Habitat Conservation Laws

State wildlife and habitat conservation laws include the California ESA, Native Plant Protection Act, NCCP Act, and streambed alteration laws.

1. California Endangered Species Act

The California ESA is part of the Fish and Game Code. Key sections include:

- Sections 2070-2079, which cover the state listing process;
- Section 2080, which prohibits the taking, importation, or sale of state listed species;
- Sections 2081 and 2053, which authorize California Department of Fish and Game (CDFG) to allow take that is for scientific, educational, or management purposes through memoranda of understanding (MOD'S) and specify state policy regarding projects with impacts to listed species; and
- Sections 2090-2097, which cover the state consultation process.

a. Sections 2070-2079

Sections 2070-2079 of the California ESA specify the process by which species are proposed for listing as threatened or endangered or as candidates for such listing. Unlike the federal law, however, the state law does not specify factors that could trigger a listing. Instead, state law requires the CDFG to recommend and the Fish and Game Commission to adopt criteria for determining a species' status.

b. Section 2080

Similar to Section 9 of the federal ESA, Section 2080 of the state law prohibits the import, export, take, possession, purchase, or sale of listed species unless explicitly authorized by other provisions of the law. However, the state restrictions on take differ from those under federal law in two key ways:

(i.) Take is defined simply as "to hunt, pursue, capture, or kill or attempt the same;" the terms "harm" or "harass" are not used; and

(ii.) Take of species designated as candidates for state listing is prohibited for the one-year period during which the final listing decision is made (federal law does not prohibit the taking of species proposed for federal listing).

c. Sections 2081 and 2053

Section 2081 authorizes CDFG to enter into memoranda of understanding (MOD'S) with "individuals, public agencies, universities, zoological gardens, and scientific or educational institutions, to import, export, take or possess species for scientific, educational or management purposes." In general, a 2081 MOD is similar to an implementing agreement for a 10(a) permit in that it is a legal contract with CDFG regarding implementation of conservation and mitigation measures. A "management agreement" typically is prepared in which the parties seeking the authorization for take provide CDPG with the same information required for consultation under Sections 2090-2097 (see below). The state ESA, however, does not specify the contents of or approval criteria for such agreements other than the requirement that the agreements can be approved only if they comply with Section 2053.

Section 2053 stipulates that:

"...it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitats which would prevent jeopardy."

Furthermore, it is the policy of the state and the intent of the Legislature that reasonable and prudent alternatives shall be developed by the Department (CDFG), together with the project proponent, and the state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible.

If the species also is federally listed, CDFG's practice has been to accept an HCP prepared for a federal 10(a) permit as the basis for the MOD if it contains information that is sufficient for purposes of Section 2081 and 2053.

Following review by both CDFG and the State Legal Advisors Office, the MOU is signed by the Director of CDFG.

d. Sections 2090-2097

Sections 2090-2097 of the state ESA require state lead agencies to consult with CDFG on projects with potential impacts on state-listed species and incorporate by reference Section 21104.2 of CEQA. (CEQA requires state lead agencies to consult with and obtain written findings from CDFG when preparing an environmental impact report [EIR] for a project that affects a state listed species.) These sections also require CDFG to coordinate consultations with USFWS for actions involving federally as well as state listed species, and whenever possible, to adopt the federal biological opinion as its findings in such consultations.

To make its written findings on projects involving listed species, CDFG requires that the following information be presented:

(i.) A full description of the project area and project impact area, including maps.

(ii.) Known and potential distribution of endangered and threatened species in the project area and project impact area, based on recent field surveys conducted in compliance with CDFG guidelines.

(iii.) Additional information on the species' distribution and habitat, based upon literature, scientific data review, and discussions with experts.

(iv.) Analysis of possible effects of the proposed project on listed species, including cumulative effects.

(v.) Analysis of alternatives designed to reduce or eliminate impacts to endangered and threatened species.

A specific format for the data is not stipulated, but the information must be presented clearly. CDFG then applies the following questions to the project:

(i.) Would a viable or recoverable population be eliminated, or would a significant proportion of a population be adversely affected by the project or the project's effects?

(ii.) Would the range of the species be significantly diminished by the project?

(iii.) Would habitat used by the species be reduced in quantity or quality by either the immediate or future effects of the project?

(iv.) Would a species' access to its habitat be reduced or rendered more hazardous as a result of the project?

(v.) Would the project adversely affect current or future efforts at providing protection for the species?

(vi.) Would plans for recovery or eventual delisting of the threatened or endangered species be adversely affected by the project?

(vii.) Would the project interfere with reproductive or other behavior of the endangered or threatened species?

(viii.) Would the project cause extinction of the species?

To support a no jeopardy finding, the answers to all of the questions must be no. A yes answer to any of the questions is considered the basis for an initial assumption that a threatened or endangered species would be jeopardized. Final determination of whether or not jeopardy would occur is based on the degree to which the project would increase the risk of extinction, limit options for immediate protection, or decrease the likelihood of future recovery.

2. Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The definitions of "rare" and "endangered" in the plant act differ from those in the state ESA, but the list of protected native plants encompasses ESA candidate, threatened, and endangered species. The plant act also includes its own restrictions on take, staling that "[n]o person shall import into this state, or take, possess, or sell within this state" any rare or endangered native plant, except as provided in the act. The exception is where a land owner has been notified of the presence of a protected plant by CDFG and is required to notify CDFG at least 10 days in advance of changing land uses to allow CDFG an opportunity to salvage the plants. Salvaging typically is planned and authorized in connection with consultations triggered by Sections 2090-2097 of the state ESA and Section 21 104.2 of CEQA.

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3. Natural Community Conservation Planning Act

The NCCP Act was approved in 1991 and added to the California Fish and Game Code as Sections 2800-2840. In general, the Act authorizes the preparation and approval of conservation plans for communities of plants and wildlife, with Section 2835 explicitly providing for the authorization of take of listed species covered by such plans. Currently, the NCCP program is focused on the coastal sage scrub community in southern California, which includes a broad range of sensitive plant and wildlife species.

a. Purpose and Focus

The primary purpose of NCCP program is to preserve local and regional biological diversity, reconcile urban development and wildlife needs, and meet the objectives of the state and federal ESA's by conserving habitat before species are on the brink of extinction. As stated in the planning and conservation guidelines prepared by CDFG and the Scientific Review Panel (SRP) appointed as technical advisors, the NCCP process is designed to:

- Promote coordination and cooperation among public agencies, landowners, and other private interests;
- Provide a mechanism whereby landowners and development proponents can effectively participate in the resource conservation process;
- Provide a regional planning focus which can effectively address cumulative impact concerns, minimize habitat fragmentation, and promote multiple species management and conservation;
- Provide an option for identifying and ensuring appropriate mitigation for impacts on fish and wildlife;
- Promote the conservation of broad-based natural communities and species diversity; and
- Provide for efficient use and 'protection of natural and economic resources while promoting greater public awareness of important elements of the state's critical resources.

As also stated in the guidelines, the NCCP's are intended to:

(i.) Protect sufficient coastal sage scrub habitat to ensure the long-term survival of designated "target" species associated with the habitat;

(ii.) Be based on biological data on the distribution, abundance, and habitat requirements of the designated target species;

(iii.) Include habitat enhancement and protection measures for small as well as large parcels of lands; and

(iv.) Satisfy the requirements of the federal and state ESA's for any listed species.

The "target" species recommended by the SRP include but are not limited to: the coastal California gnatcatcher, the cactus wren, and the orange-throated whiptail. The SRP also has identified other sensitive species associated with coastal sage scrub habitat and has prepared biological field survey guidelines for use in the planning process.

b. Subregional NCCP's and Ongoing Multi-Species Plans

Conservation planning under the NCCP program will be conducted in a series of ten to twenty sub regions through a process that is designed to:

(i.) Encourage maximum cooperation between landowners, local governments, and conservation interests; and

(ii.) Encourage local government participation by allowing local governments to adapt the NCCP process to their existing administrative processes relating to plan preparation, public participation, public hearing, and environmental review.

In general, the subregional planning process entails six steps:

(i.) Enrollment of local governments and landowners in the NCCP program;

(ii.) Designation of NCCP subregional boundaries by local governments and landowners who have enrolled in the NCCP program, with each subregion of sufficient size and diversity to me meet the guidelines set by the SRP and CDFG;

(iii.) Establishment of a coordinated process for the preparation, review, and approval of each subregional NCCP, with the process specified in a planning agreement signed by the participating local agencies, landowners, CDFG, and USFWS;

(iv.) Formulation of the conservation plan through a public planning process, with opportunities for public participation that equal or exceed those provided by existing ordinances, public notice and hearing requirements, and related laws;

(v.) Preparation and approval of an implementing agreement that specifies all terms and conditions of activities under the NCCP plan; and

(vi.) Preparation of appropriate CEQA and NEPA documentation for the actions to be taken on the plan, with the lead agency responsibilities and type of documentation identified in the planning agreement.

The guidelines do not specify a format for individual plans but require that the following components be included:

1. Maps and text that clearly present:

(a) The boundaries and extent of the area included in the subregional NCCP;

(b) Existing coastal sage scrub habitat within the subregion;

(c) The distribution of target species populations within the subregion and the presence of other sensitive species;

(d) Quantitative and qualitative assessments of the coastal sage scrub habitat required by the designated target species;

(e) Proposed land uses or other activities that would affect coastal sage scrub habitat.

2. A habitat conservation and management component that includes:

(a) A range of habitat protection and management options that have been evaluated for their effectiveness;

(b) Criteria for habitat conservation and mitigation that treat all of the target species as listed species;

(c) Policies for habitat protection and management, including short-term and long-term actions to mitigate identified impacts;

(d) Evaluations of potential alternatives to planned development or other activities that would result in incidental take of target species; and

(e) A recommended habitat conservation plan.

3. An implementation component that includes:

(a) A phasing program designed to assure the long-term protection of habitat and open space corridors over time;

(b) Funding measures;

(c) A mitigation monitoring program that satisfies CEQA requirements and is adequate to measure the effectiveness of plan implementation; and

(d) Procedures to address the effects of unforeseen circumstances.

The guidelines also provide for the recognition of pre-existing conservation planning efforts as NCCP equivalents if the following conditions are met:

1. The planning effort was funded and underway at the time that the NCCP Act became effective (January 1, 1992), as documented by a memorandum of understanding, an agreement, a statutory exemption, or other formal process.

2. The plan protects coastal sage scrub habitat and/or contains an mitigation agreement approved by CDFG pursuant to a prior planning effort, and the plan substantially achieves the objectives of the NCCP Act, meaning that the plan provides assurance that coastal sage scrub habitat and named species will be protected to a degree substantially equivalent to an NCCP prepared under the guidelines.

3. CDFG approves the plan, and the plan meets Section 2081 requirements for named species of concern.

4. USFWS approves the plan, and the plan meets Section 10(a) requirements for named species of concern.

Such efforts are called "on-going multi-species plans" in the process guidelines and may differ from NCCP's in one or more of the following ways:

1. The plan covers species and habitats in addition to those in the coastal sage scrub community.

2. The boundaries of the planning area are different from those for NCCP subregions (but have been previously approved by CDFG and do not significantly impair long-term opportunities for conserving coastal sage scrub region-wide).

3. Survey methodologies differ from SRP recommended guidelines but have been approved by CDFG.

4. Timing requirements differ from the target NCCP milestone.

c. Draft Conservation Guidelines and Interim Strategy

Following publication by USFWS of the proposed Special Rule for the California gnatcatcher (see above), the SRP issued draft recommendations for an interim NCCP conservation strategy. In general, the strategy is to minimize short-term loss of coastal sage scrub habitat until a long-term enhancement and conservation program is formulated. Under this strategy, interim loss would be limited to 5 percent of the coastal sage scrub habitat in any subregion. Implementation of the strategy would occur in the following sequence:

1. In each subregion where an NCCP would be prepared, a planning body would be established according to the approved NCCP process guidelines;

2. Working in consultation with USFWS and CDFG, the subregional planning body would define the boundaries of the area to be included in the subregional NCCP;

3. An inventory of coastal sage scrub habitat and species would be completed for the subregion;

4. All natural lands within the subregion would be evaluated for their long-term conservation based on the method described below;

5. The amount of coastal sage scrub within the subregion would be calculated, verified by USFWS and CDFG, and used to compute the allowable 5 percent interim loss;

6. A central clearing house for data on habitat loss would be established within the subregion, and that entity would advise the local land use jurisdictions, USFWS and CDFG regarding actual and anticipated impacts to coastal sage scrub within the subregion;

7. Interim mitigation requirements would be established for all development of coastal sage scrub habitat, either through a subregional NCCP planning agreement or other written document requiring the concurrence of USFWS and CDFG;

8. The subregional planning body would work to identify and fill data needs for long-term planning, using SRP conservation guidelines in the process; and

9. The subregional NCCPs would then be completed according to the approved process guidelines.

Regarding the evaluation of the long-term conservation value of specific lands, the SRP recommends that all lands with natural habitats be included in the analysis, including forestlands, brushlands, native and non-native grasslands, non-irrigated grazed land, and vacant or disturbed natural land. Lands subject to intensive agriculture and urban uses would be excluded. Coastal sage scrub would be identified based on the presence of primary or secondary cover characteristics as defined by the SRP. The effective size of coastal sage scrub patches would then be determined by assays of relatively continuous natural habitat and relatively dense clusters of coastal sage scrub within a one or two mile diameter circle. Proximity to other habitat patches would be measured as a direct, straight-line distance, with the appropriate scale determined for each subregion. Landscape linkages also would be determined by drawing geometric corridors that connect each higher value area to the closest two or three other higher value areas. The presence of

species also would be taken into account, with higher value assigned to areas that support significant populations of target species, highly endemic species, or rare sub-habitat types.

In this way, areas within an NCCP subregion would be determined to have higher, intermediate, or lower potential value for long-term conservation. Development would be constrained to the maximum degree practicable on the higher value area until the NCCP is completed; development in intermediate areas would be evaluated on a caseby-case basis; and development on lower potential areas would be allowed with appropriate mitigation.

4. Streambed Alteration Laws

Sections 1600-1603 of the California Fish and Game Code regulate all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports fish or wildlife. "Stream" is defined in CDFG regulations as:

A body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.

CDFG jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife and generally mirrors that of COE under Section 404 of the federal Clean Water Act.

Under state law, CDFG must be contacted for a streambed alteration agreement for any project that may impact a streambed or wetland. CDFG has maintained a "no net loss" policy regarding potential impact and has required recreation of wetlands on at least an acre-for-acre basis. Replacement ratios typically are higher than one-for-one in order to offset the immediate loss, replacement time, and inherent failures in mitigation attempts. Public agency projects are addressed under Section 1601 of the Code; private sector projects are addressed under Section 1603.

C. Federal and State Environmental Documentation Requirements

Both federal and state laws regarding the documentation and analysis of environmental impacts pertain to habitat conservation and species protection planning.

1. National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires federal agencies to evaluate the effects of their proposed actions on the human environment in a written statement that addresses:

a. The environmental impact(s) of the proposed action;

b. Any adverse environmental effects that cannot be avoided should the proposed action be implemented;

c. Alternatives to the proposed action;

d. The relationship between short-term uses of the human environment versus the maintenance and enhancement of long-term productivity; and

e. Any irreversible and irretrievable commitments of resources that would be involved if the proposed action is implemented.

Compliance with NEPA generally begins with an internal "scoping" process. If a preliminary review indicates that the proposed action has no or minimal environmental impacts, then a "categorical exclusion" may be determined and no further environmental documentation is required. If the review indicates that the proposed action may have significant effects, then an environmental assessment (EA) or an environmental impact statement (EIS) must be prepared. An EA is prepared when the preliminary review indicates that the proposed action is not likely to have significant impacts; an EIS is prepared when the expected impacts are significant.

2. California Environmental Quality Act

Similar to NEPA, the California Environmental Quality Act (CEQA) requires state agencies empowered to make discretionary decisions to evaluate the environmental effects of a proposed project before rendering a decision. The evaluation begins with an initial study that includes:

a. A description of the project, including the location of the project;

b. An identification of the environmental setting;

c. An identification of environmental effects by use of a checklist, matrix, or other method;

d. A discussion of ways to mitigate the significant effects identified, if any;

e. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and

f. The name of the person or persons who prepared or participated in the Initial Study.

If one or more significant impacts are identified, a detailed environmental impact report (EIR) must be prepared. If no significant impacts are determined or if all of the significant impacts can be mitigated, a negative declaration is prepared. CEQA also requires that a negative declaration or draft EIR be prepared if a project has statewide, regional, or area wide significance and defines projects that would substantially affect sensitive habitats as projects of area wide significance.

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Appendix C - HCP-Related Policies in the General Plans of RCHCA Member Agencies

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This appendix provides an overview of the HCP-related policies and relevant goals, objectives, and programs stated in the General Plans and Community Plans of RCHCA member agencies

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A. General Plan Requirements

The State Government Code requires each city and county in California to prepare and adopt "a comprehensive, long-term general plan for the physical development of the city or county." The General Plan must contain seven elements (land use, circulation, housing, conservation, open space, noise and public safety) and may contain other elements important to the physical development of the community (e.g., parks and recreation, public services and facilities, scenic highways and historic preservation). Habitat conservation is incorporated into the Government Code requirement in connection with three of the mandatory General Plan elements:

- As part of the conservation element, which provides for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soil, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources;"
- As part of the open space element, which in part provides for "the preservation of natural resources including but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species;" and
- Indirectly, as part of the land use element, which must designate the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space (including agriculture), natural resources, recreation, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land." C-1

B. HCP-Related General Plan and Community Plan Elements of the RCHCA Members

The adopted General Plans and Community Plans of the RCHCA members are consistent with the provisions of the Government Code; they address habitat conservation primarily under one or more of these three mandatory plan elements or a combination of elements. Taken together, these General Plans address a broad spectrum of habitat conservation-related policies, including:

- sensitive species protection;
- habitat inventory/mapping;
- habitat acquisition;
- development review/control;
- site specific biological assessment;
- wildlife buffers/corridors;
- mitigation/monitoring, and;
- multi-species planning.

All nine General Plans and pertinent Community Plans address the issue of sensitive species protection through the planning process, which provides the basic framework for habitat conservation. As a means of ensuring wildlife protection, six General Plans also specify the creation of buffer zones around sensitive habitats and the preservation of wildlife movement corridors.

Since planning is intended to produce orderly and appropriate development, the majority of General Plans also focus on policies related to the development process. Eight of the nine General Plans require further site specific biological assessment when warranted by proposed development impacts or an inadequate habitat data base, and six require appropriate mitigation measures and subsequent monitoring for new development.

Habitat acquisition (five plans), habitat inventory/mapping (three plans) and multi species planning (four plans) are also recognized by RCHCA members as important policies for implementing habitat conservation.

The most relevant of the policies stated in one or more elements of each RCHCA member's General Plan are presented below, along with a summary list of goals, policies, and programs included in each member agency plan (Table B-1).

1. County of Riverside

Unincorporated lands within the jurisdiction of the County of Riverside encompass almost 70% of the 533,954 acres covered by this HCP. Accordingly, policies adopted by the County are of particular importance to this document.

The Riverside County Comprehensive General Plan is the primary statement of goals and policies for implementing the development and conservation programs of the County of Riverside. The Community Plans, developed as subsets of the General Plan, are intended to provide additional land use goals and policies that address the unique concerns and needs existing within the Community Plan area. In so doing they are intended to facilitate the implementation of Comprehensive Genera! Plan policies and programs.

The core reserves defined in Chapter 5. SKR Conservation and Mitigation Measures are contained within the boundaries of the following Community Plans: SKR Core Reserve LS-DV SJ-LP LM-EM MRR SC-MAFB Applicable Community Plans Southwest Area Community Plan Lakeview/Nuevo Community Plan Lake Mathews Community Plan No Applicable Community Plan No Applicable Community Plan

a. Lake Skinner-Domenigoni Valley Core Reserve

A portion of the Lake Skinner-Domenigoni Valley core reserve is located within the Southwest Area Community Plan (SWAP), adopted by the Riverside County Board of Supervisors on November 28, 1989. The SWAP covers an area generally bordered to the south by the San Diego County line, to the west by the Cleveland National Forest, to the north by Keller Road, and to the east by the boundary of the Riverside Extended Mountain Area Plan. This area includes those portions of the core reserve in the vicinity of Lake Skinner.

The SWAP includes the following HCP related goals concerning open space planning for important natural resources:

- Retention of open space land containing important natural resources such as scenic beauty, sensitive vegetation, wildlife habitat, and historic or pre-historic sites;
- Preservation of the open space characteristics of the SWAP area, including Lake Skinner, Vail Lake, and the mountains, through the careful control of public services, facilities, utilities and other capital improvements;
- Preservation of agricultural lands and their associated uses;
- Support for policies and programs which implement the concept of extending urbanization contiguously from established urban centers, rather than allowing scattered development which infringes upon open space. C-4

b. San Jacinto-Lake Perris Core Reserve

The southeast portion of the San Jacinto-Lake Perris core reserve is located within the Lakeview/Nuevo Community Plan (LNCP), adopted by the Riverside County Board of Supervisors on December 18, 1990. The LNCP area lies to the east of the City of Perris, south of Lake Perris, west of the cities of San Jacinto and Hemet, and north of the communities of Homeland and Romoland.

The LNCP includes the following HCP related goals concerning open space planning for important natural resources:

- Retention of open space land containing important natural resource such as scenic beauty, sensitive vegetation, wildlife habitat, and historic or pre-historic sites;
- Preservation of the open space characteristics of the LNCP area, including the San Jacinto River and the Lakeview Mountains through the careful control of public services, facilities, utilities and other capital improvements;
- Support for policies and programs which implement the concept of extending urbanization contiguously from established urban centers, rather than allowing scattered development which infringes upon open space.

c. Lake Mathews-Estelle Mountains Core Reserve

A majority of the Lake Mathews-Estelle Mountains Core Reserve is located within the Lake Mathews Community Plan (LMCP), adopted by the Riverside County Board of Supervisors on December 22, 1987. The LMCP covers approximately 42,386 acres south of the City of Riverside; this area is within the City's sphere of influence.

The LNCP includes the following HCP related goals concerning open space planning for important natural resources:

- Retention of open space land containing important natural resources such as scenic beauty, sensitive vegetation, wildlife habitat, and historic or pre-historic sites;
- Preservation of the open space characteristics and the LMCP area, including Lake Mathews and the mountains, through the careful control of public services, facilities, utilities, and other capital improvements;
- The protection and preservation of wildlife.

d. Sycamore Canyon-March Air Force Base Core Reserve

Only a small percentage of the Sycamore Canyon core reserve is within the jurisdiction of the County of Riverside. Since there is no applicable Community Plan in this area, any proposed projects within the County's jurisdiction are evaluated for consistency with the General Plan and zoning ordinances on a case-by-case basis.

e. Motte Rimrock Core Reserve

The majority of the Motte Rimrock core reserve owned by the University of California, an entity of the State. Accordingly, the University of California acts as the lead agency when processing "projects" within the NEPA and/or CEQA process. Under the NEPA and/or CEQA process, the County acts as a commenting entity. For those lands within the County's jurisdiction no applicable Community Plan exists. Proposed projects are evaluated for consistency with the General Plan and zoning on a case-by-case basis. Both the County and the University of California exchange information on proposed projects within the vicinity of the Motte Rimrock core reserve.

2. City of Corona

The City of Corona General Plan adopted in 1992 includes nine elements, including: land use; circulation; housing; conservation; open space; parks and recreation; community design and scenic highways; noise; seismic safety and public safety. Policies contained in the conservation element of the General Plan provide a basis for implementing habitat conservation within the City.

a. Conservation Element

- **Conservation goal**: To create a productive balance between man and his uses of land and the conservation of areas with unique environmental and aesthetic value.
- **Conservation objective**: To identify and preserve lands of significant value as natural resources.
- **Conservation program**: Implement policies that will: 1) conserve the unique aspects of the City's resource base, and; 2) minimize the disruption caused by the interface between development and the resource base.

3. City of Hemet

Elements of the General Plan adopted by the Hemet City Council in 1992 include: community development; economic development; public services and facilities; transportation; public health and safety; resource management and housing. The resource management element addresses habitat conservation through a biological resources goal and discussion of related issues, strategies, and programs.

a. Resource Management Element

The Resource Management element includes the following goal and strategies related to this HCP:

- **Biological resources goal**: The management of rare, endangered, and candidate species and their habitats through appropriate and accepted preservation programs.
- **Biological resources strategy**: Promote a multi-species approach to habitat management programs, which can be used to mitigate expected impacts on biological resources of future development within the General Plan study area.
- **Biological resources strategy**: Require biological assessments to be performed by a qualified biologist in areas where the existence of rare or endangered species is known or can be reasonably expected to exist. Require the implementation of recommendations included in biological reports as a condition of approval.
- **Biological resources strategy**: Require all development, including roads, proposed adjacent to sensitive biological areas, blueline streams, and riparian and other biologically sensitive habitats, to provide adequate buffers and be set back a sufficient distance to eliminate significant impacts to such areas.
- **Biological resources strategy**: Where preservation and conservation of biological resources depends upon mitigation measures adopted as conditions of approval, establish the following monitoring

programs:

1) All discretionary approvals requiring mitigation measures for impacts to biological resources shall include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible;

2) The monitoring program shall be designed to determine if the mitigation measures were implemented and if they were successful;

3) The monitoring program shall be funded by the project applicant to ensure compliance with and effectiveness of conditions of approval;

4) Explore opportunities of land banking of both sensitive species and their habitats for use in future mitigation programs.

4. City of Lake Elsinore

The open space/conservation element of the City of Lake Elsinore General Plan encompasses eight sub-elements: biological resources; water resources; energy conservation; air resources; cultural resources; open space and visual resources; mineral resources; agricultural resources. The contents of the biological resources subelement form a basis for habitat conservation planning.

a. Open Space Element

The Open Space element identifies specific species and habitat of concern and related regulations adopted by the City.

- **Biological resources issue** Certain plant and animal communities are restricted in distribution throughout the study area, and loss of these habitats through build out of the General Plan will be significant. These habitats include sage scrub and riparian woodland communities, least Bell's vireo, Stephens' kangaroo rat, and the slender-homed spineflower.

- **Biological resources regulations** On the local level, efforts should be made to preserve important habitats and protect plant and animal species of concern. The City requires that all development proposals include adequate environmental documentation pursuant to CEQA and AB 3180 (Chapter 1232, State Statutes of 1989). Biological studies should provide adequate mitigation measures for identified significant biological impacts.

- **Biological resources procedures** Permanent open space preserves may be designated as a condition of a project approval. Permanent open space preserves may be designed in future specific plan areas for the purpose of protecting identified sensitive biological resources. Moreover, a comprehensive approach should be taken to conserve continuous areas of open space, including open space linkages between projects, wildlife corridors and trails.

Such methods to evaluate and, where appropriate, acquire areas of high biological significance may include the acquisition of land by exaction, development agreement or gift; the dedication of conservation, open space and scenic easements; joint acquisition with local agencies; the transfer of development rights; lease-purchase agreements; and eminent domain.

5. City of Moreno Valley

The conservation element of the City of Moreno Valley General Plan sets forth an objective and supporting policies which provide a basis for habitat conservation within the City.

a. Conservation Element

The conservation element identifies a habitat conservation objective and includes four HCP-related policies:

- **Objective** Maintain, protect, and preserve biologically significant habitats within the study area, including the San Jacinto Wildlife Preserve, riparian areas, habitats of rare and endangered species, and other areas of natural significance as part of the need for development of a balanced community.

- **Policy** Require all development, including roads, proposed adjacent to riparian and other biologically sensitive habitats to provide adequate buffers and be set back a sufficient distance to eliminate significant impacts to such areas. C-8

- **Policy** Require that development occurring adjacent to the San Jacinto Wildlife Preserve provide appropriate mitigation for potential impacts to the preserve. Potential measures include, but are not limited to:

  1) Project design so as to minimize or eliminate the potential for unauthorized entry into the wildlife area;

2) The creation of buffer areas adjacent to the preserve, incorporating the most passive uses of the adjacent property;

3) Provide wildlife dispersion corridors linking the wildlife preserve to the Badlands area, including roadway crossings;

4) Provide wildlife movement linkages to water sources;

5) Protect the visual seclusion of large forage areas from road intrusion by vegetative buffering;

6) Provide vegetation that can be used by wildlife for cover along roadsides; and

7) Avoid intrusion of night lighting into the wildlife preserve.

- **Policy** Require biological assessments to be performed by a qualified biologist in areas where the existence of rare or endangered species is known or can be reasonably expected to exist. Require the implementation of recommendations included in biological reports as a condition of approval.

6. City of Murrieta

The City of Murrieta General Plan adopted in June 1994 includes eight elements, including: land use; housing; circulation; conservation and open space; safety; noise; air quality and economic development. The conservation and open space element of the General Plan addresses habitat conservation through biotic resources goals and the discussion of related objectives and policies.

a. Conservation and Open Space Element

The Conservation and Open Space Element includes the following goal, objectives, and policies related to this HCP.

- **Goal** Conserve biotic resources in both natural and urban environments.

- **Objective** Biotic resources in the Plan Area, including vegetation, wildlife, and all special status species, shall be conserved through the protection of habitats and the mitigation of impacts due to development.

- **Policy** Coordinate with regional, state, and federal agencies to achieve common goals for habitat and species conservation.

- **Policy** Encourage donation or exchange of lands with sensitive biotic resources to non-profit environmental organizations or responsible agencies.

- **Policy** Preserve opportunities for establishing waterways as wildlife corridors and encouraging flood control techniques which allow the establishment of habitats. Use other open space corridors or greenbelts to link natural areas where possible. Reestablish important wildlife corridors which may have been damaged.

- **Policy** Ensure that all opportunities for the mitigation of environmental impacts are explored. Encourage the establishment of mitigation banks to protect or restore habitat within the Plan Area.

- **Policy** In the review of development projects, assess the total habitat value of a site, rather than simply the presence or absence of special status species.

- **Policy** Continue to implement regional habitat conservation programs for endangered species.

- **Policy** Develop and create an endangered species habitat data bank.

- **Policy** Development projects for major arterials and bridges in the City that would directly or indirectly impact biotic resources as a result of construction or post construction activities shall be designed to ensure that impacts to biotic resources are avoided or adequately mitigated. Consideration of the following issues shall be reflected in the design of such projects:

  1) Potential for conflicts between active recreational use and areas of wildlife habitat.

  2) The impacts of vehicular noise, light and glare on wildlife habitat.

  3) Potential for surface water contamination of watercourses and riparian habitat.

4) Plant materials that compliment natural habitat areas and support wildlife.

5) Regional Plans and the need for wildlife corridors.

- **Policy** Areas that contain significant natural habitat shall be included in the development and implementation of a wildlife and habitat management plan. The goal of the wildlife and habitat management plan will be to set forth specific development guidelines to ensure the preservation and survival of sensitive, unique, or locally limited flora and fauna that currently exist in the General Plan area. C-10

- **Policy** Wildlife corridors within the General Plan area shall be established and preserved in perpetuity to permit free movement of resident and migratory wildlife and to integrate this free movement with the preservation of General Plan area wetland resources. Such corridors shall include the floodplain of Murrieta Creek, Warm Springs Creek, their associated tributaries and Cole Creek. Plans and projects proposed in sensitive areas shall preserve these major wildlife corridors and identify a"d preserve in perpetuity additional localized or project-specific wildlife movement corridors identified in the CEQA analysis required for such a project. Such localized corridors shall connect to the corridors associated with Murrieta Creek, Warm Springs Creek, and Cole Creek.

- **Policy** All project proponents proposing development in SKR habitat areas shall participate in "Section 7" consultation with the U.S. Fish and Wildlife Service. If the City is a member of the HCA, the rules and procedures of the HCA shall apply. Both procedures could allow incidental take under Section 10(a) of the Endangered Species Act. Issuance of a 10(a) permit would enable the City to issue development permits resulting in the "incidental take" of SKR, where take is defined as any activity that would harm, kill, harass, or endanger SKR in the course of construction.

- **Policy** The City of Murrieta shall pursue joining the Riverside County Habitat Conservation Agency.

- **Policy** Areas dedicated as open space and other areas of natural habitat shall be protected from damage by off-road vehicles and other habitat-damaging disturbances such as camping, and unrestricted access by house pets. Areas shall be protected through fencing, signing and policing to indicate that such activities are prohibited.

- **Objective** Land use and landscape strategies and standards which protect wildlife habitats and important vegetation.

- **Policy** Require the use of sound conservation practices in the management of grading, drainage, protection of soils, protection of wildlife habitat areas, replacement of shrubs and ground covers, and the protection and replacement of indigenous trees.

- **Policy** Provide natural areas in urban settings to increase species diversity and provide wildlife viewing opportunities for residents of the City

7. City of Perris

The City of Perris General Plan adopted in 1991 incorporates seven elements: land use; housing; circulation; conservation/open space/recreation; public safety; noise; public facilities. Habitat conservation planning is addressed in the growth management sub element of the land use element and in the conservation and open space sub-elements of the conservation/open space/recreation element. C-11

a. Land Use Element

The Land Use element contains a growth management goal and three policies relevant to this HCP.

- **Growth management goal** Manage growth and development to avoid adverse environmental and fiscal impacts.

- **Growth management policy** Manage the outward expansion of all future development to maintain continuity with existing development, provide for orderly expansion of infrastructure and public services, minimize impacts on natural environmental resources and preserve designated or potential open space.

- **Growth management policy** Manage growth within the planning area to minimize disruption to important environmental resource areas, such as biological habitat, historical and archeological sites, steep slopes, floodplains, geologically sensitive lands, mineral resources, agricultural preserves and water recharge areas.

- **Growth management policy** Provide for the use of planned unit developments, which incorporate creative site design for new residential projects as a means of maintaining open space, reducing impacts to environmental resources and avoiding environmental constraints.

b. Conservation/Open Space/Recreation Element

This element includes a wildlife conservation goal, four related policies, and a sensitive habitats program. It also includes the following open space goals, policies, and strategies relevant to this HCP.

- **Conservation goal** Conserve and protect natural plant and animal communities.
  - **Conservation policy** Conserve and protect important plant communities and wildlife habitats, such as riparian areas, wildlife movement corridors, wetlands, oak woodlands and other significant tree stands, and rare or endangered plant and animal species by using buffers, creative site planning, revegetation and open space easements and dedications.
  - **Conservation policy** Require development proposals in areas expected to contain important plant and animal communities to include biological assessments identifying species types and locations.
  - **Conservation policy** Allow new development to remove only the minimum natural vegetation and require revegetation of graded areas with native plant species consistent with public safety requirements.
  - **Conservation policy** Support programs to consolidate public lands as a means of preserving natural habitats.
  - **Sensitive habitat program** Grasslands within the Perris planning area support other animals considered sensitive such as the Ferruginous hawk and other raptors. The most sensitive of these species is the Stephens' kangaroo rat, which is designated as endangered by the U.S. Fish and Wildlife Service. The City of Perris is participating in a joint powers agreement between surrounding cities in Riverside County and the County of Riverside to acquire habitat lands for the kangaroo rat as part of the RCHCA Habitat Conservation Plan. Three Study Areas (Steele Peak, Motte Reserve and Kabian Park) have been identified in the Perris planning area for potential permanent reserves. Mitigation fees are also collected by the cities participating within the joint powers agreement to acquire lands within these future reserve areas.
  - **Open space goal** Protect open space areas to preserve natural resources.
  - **Open space policy** Encourage in-fill and contiguous development to preserve outlying open space areas.
  - **Open space policy** Designate and acquire important open space lands such as endangered plant and animal species habitats, and land containing unique geologic features, through dedication or other means of acquisition.
  - **Open space action strategy** Jointly acquire environmentally sensitive lands through a joint powers agreement with other cities or the County.
  - **Open space action strategy** Using the City's development review process, development proposals within natural resource areas identified in the Conservation/Open Space/Recreation Element will be assessed in terms of impacts to the following characteristics where they exist on or near the proposed development site: riparian corridors; sensitive biological habitat; naturally steep slopes (over 30 percent grade); ground and surface water resources; rock outcroppings; state recognized mineral resource zones; and prime agricultural soils.

8. City of Riverside

Elements of the 1993 General Plan for the City of Riverside include: conservation; open space; community character; land use; public safety; transportation; noise; housing. The conservation element addresses habitat conservation through its natural resource goals and policies. In addition, the plan implementation section specifies recommendations for furthering natural resource protection and environmental review.

a. Conservation Element

The conservation element contains a natural resource protection goal, eight policies, and implementation recommendations which support this HCP:

- **Natural resource goal** To protect the biotic communities and critical habitats for endangered species throughout the General Plan Area.
- **Natural resource policy** The City should design its plans, policies, and implementation techniques to protect key wildlife habitats, habitats of rare, threatened, or endangered species, wetlands and other significant environmentally sensitive areas.
- **Natural resource policy** The City shall use the generalized locations of rare and endangered species habitat, identified in the Plan on the date of Plan adoption, to identify areas for which more specific analysis will be necessary as part of the development review process. The City shall update as more detailed habitat information is developed. The City may require habitat analysis for proposed developments in areas of potential habitat for other species listed in the Plan, even though such habitat is not mapped. Site specific review may be required because the habitats for these unmapped, sensitive species range from pristine to disturbed areas.
- **Natural resource policy** The City shall consider requiring development projects in areas identified in the Plan to undergo review to assess their impact on habitats of rare, threatened or endangered species. This review of habitat impacts should be conducted as part of the project's environmental review. Developers of projects found to have potential impacts on sensitive species may be required to mitigate

the impacts of proposed habitat changes.

- **Natural resource policy** The City shall cooperate with the County, State and Federal governments to protect the Stephens' kangaroo rat (SKR) by complying with the terms of the adopted Short-Term SKR Habitat Conservation Plan, including provisions for development regulations, mitigation fees, and the acquisition and operation of Sycamore Canyon as part of the park.

- **Natural resource policy** The City should participate with the County, State and Federal governments in developing and implementing both a long-term Habitat Conservation Plan for the Stephens' kangaroo rat and a county-wide multispecies Habitat Conservation Plan.

- **Natural resource policy** The City shall endeavor to protect native plant communities in the General Plan Area, including the inland sage scrub, riparian and vernal pool habitats.

- **Natural resource policy** The City should protect and enhance known wildlife migratory corridors and help create new corridors whenever possible.

- **Natural resource policy** The City should establish programs to identify, map and monitor the habitat for sensitive species listed in the Plan, or for other species added to the State or Federal listings of rare, threatened or endangered species.

- **Natural resource implementation recommendation** Require developments that include property identified as potential habitat for the rare or endangered species listed in the Plan to submit site specific analysis for the effect of the proposed development on the affected rare or endangered species and to propose strategies for minimizing those effects.

- **Natural resource implementation recommendation** Continue active participation in Federal, State and local efforts to preserve rare, threatened and endangered species in the General Plan Area.

- **Natural resource implementation recommendation** Require site specific biological assessment and appropriate mitigation measures for all developments of property containing native plant communities and other potential habitats for sensitive species listed in the Plan.

- **Natural resource implementation recommendation** Implement a program of research and field work to identify and map areas of habitat for sensitive species. Revise the Plan to reflect the results of this analysis. Periodically review and update this habitat information.

- **Environmental review implementation recommendation** Continue to use mitigation monitoring for EIR's and mitigated negative declarations in order to ensure compliance and completion of mitigation measures required of development and other projects.

- **Environmental review implementation recommendation** Continue to participate in regional and subregional environmental planning programs including, but not limited to, the development of coordinated air quality plans, habitat conservation plans and congestion management plans.

9. City of Temecula

The City of Temecula General Plan adopted in 1993 includes ten elements: land use; circulation; housing; open space and conservation; growth management/public facilities; public safety; noise; air quality; community design and economic development. Habitat conservation is addressed in the goals, policies and implementing programs of two elements: land use and open space and conservation.

a. Land Use Element

The element includes the following goal, policies, and implementation programs supportive of this HCP:

- **Land use goal** A development pattern that preserves and enhances the environmental resources of the study area.

- **Land use policy** Cooperate with other agencies to develop Multi-Species Habitat Conservation Plans in western Riverside and northern San Diego Counties.

- **Land use policy** Work with the utility districts to develop a trail system and enhance the natural resources along the San Diego Aqueduct, creeks, and other utility easements where feasible.

- **Land use policy** Conserve the resources of Pechanga, Temecula and Murrieta Creeks through appropriate densities of development, setbacks, landscaping, and site design of surrounding projects.

- **Land use implementation program** Design and development of flood control improvements, habitat conservation, and recreation uses along Murrieta Creek, Temecula Creek, and other waterways.

- **Land use implementation program** Preservation of significant biological resources in cooperation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

b. Open Space and Conservation Element

This element contains the following goal, policies, and implementation programs relevant to this HCP:

- **Open Space/Conservation goal** Conservation of important biological habitats arid protection of plant and animal species of concern, wildlife movement corridors, and general biodiversity.
- **Open Space/Conservation goal** Require development proposals to identify significant biological resources and provide mitigation including the use of adequate buffering; selective preservation; the provision of replacement habitats; the use of sensitive site planning techniques including wildlife corridor/recreational trails; and other appropriate measures.
- **Open Space/Conservation policy** Work with State, regional and non-profit agencies and organizations to preserve and enhance significant biological resources on publicly owned lands.
- **Open Space/Conservation policy** Coordinate with the County of Riverside and other relevant agencies in the adoption and implementation of the Riverside County Multi-Species Habitat Conservation Plan.
- **Open Space/Conservation policy** Maintain an inventory of existing natural resources in the City through periodic updates of the Master Environmental Assessment.
- **Open Space/Conservation policy** Limit the recreational use of designated open space areas where sensitive biological resources are present.
- **Open Space/Conservation policy** Maintain and enhance the resources of the Temecula Creek, Santa Margarita River, Pechanga Creek, and other waterways to ensure the long-term viability of the habitat, wildlife, and wildlife movement corridors.
- **Open Space/Conservation implementation program** Require development proposals in areas expected to contain important plant communities and wildlife habitat to provide detailed biological assessments, assess potential impacts, and to mitigate significant impacts.
- **Open Space/Conservation implementation program** Require the establishment of open space areas that contain significant water courses, wildlife corridors, and habitats for rare or endangered plant and animal species.
- **Open Space/Conservation implementation program** Require appropriate resource protection measures to be prepared in conjunction with specific plans and subsequent development proposals. Such requirements may include the preparation of a Vegetation Management Program that addresses landscape maintenance, fuel modification zones, management of passive open space areas, provision of
- corridor connections for wildlife movement, conservation of water courses and rehabilitation of biological resources displaced in the development process.
- **Open Space/Conservation implementation program** Develop Open Space zoning classifications that effectively regulate the types of uses and activities allowed in open space areas to minimize the impacts of grading and development in open space areas.
- **Open Space/Conservation implementation program** Require new developments to be monitored in compliance with AB 3180 ("Mitigation Monitoring Program") and report to the City on the completion of mitigation and resource protection measures required for each project.
- **Open Space/Conservation implementation program** Evaluate and pursue the acquisition of areas of high biological resource significance. Such acquisition mechanisms may include: acquiring land by development agreement of gift; the dedication of conservation, open space and scenic easements; joint acquisition with local agencies; the transfer of development rights; lease purchase agreements; state and federal grants; and impact fees.
- **Open Space/Conservation implementation program** Utilize the resources of national, regional and local conservation organizations, corporations, associations and benevolent entities to identify and acquire environmentally sensitive lands and to protect water courses and wildlife corridors.
- **Open Space/Conservation implementation program** Continue participation in multi-species habitat conservation planning, watershed management planning and water resource management planning efforts.
- **Open space-Related Plan** The Habitat Conservation Plan (HCP) for the Stephens' kangaroo rat, implemented in 1989, identifies ecological and land use characteristics of the historic range of the species. The HCP also provides a program to acquire permanent reserves for the species, using development fees to purchase land within the designated reserve areas. The Temecula General Plan Study Area is included within the HCP fee area; currently no reserve areas are designated within the General Plan study area.

C. References

- City of Corona General Plan (1992) *
- City of Hemet General Plan (1992)
- City of Lake Elsinore General Plan (no date)
- City of Moreno Valley General Plan (no date)
- City of Murrieta General Plan (1994)
- City of Perris General Plan (1991)
- City of Riverside General Plan 2010 (1993) **
- City of Temecula General Plan (1993) **
- County of Riverside Comprehensive General Plan (1992)*
- Lake Mathews Community Plan (1987)
- Lakeview/Nuevo Community Plan (1990)
- Southwest Area Community Plan (1989)

* Date of most recent plan amendment or addendum

** Draft planter review; not adopted

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APPENDIX D: The Habitat Transaction Method: A Market-Based Alternative for HCP Implementation

A. Introduction

Our present economic and regulatory systems do a tragically poor job of accounting for the value of habitat for rare and endangered species. Landowners typically find that the presence of "valuable" habitat revalues their property by virtue of the federal and state endangered species acts (ESAs) and other resource protection laws. The perverse incentive is created for landowners to destroy-by legal means or otherwise the valuable habitat whose presence destroys the economic value of their land. Riverside County can reverse this troubling result by adopting conservation strategies that align the economic interests of landowners with society's interest in protecting precious natural resources.

With such a view in mind, the Riverside County Habitat Conservation Agency (RCHCA) commissioned the development of a "market-based" alternative for implementing the Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County (the HCP) or a future multiple-species habitat conservation plan (multi-species HCP). This appendix presents the initial results of that commission. It shows how positive economic incentives can be used as the primary means of attaining habitat protection goals and that such goals need not be achieved at the expense of the local economy. The approach presented here is based upon a concept known as the "Habitat Transaction Method"[1] and shall be referred to as the "HTM alternative." Although the HTM alternative is described here in terms of the Stephens' kangaroo rat (SKR), its more appropriate application may be for a future multi-species HCP that covers the SKR along with other species and habitat types. Section G below discusses how this HTM alternative could be adapted to a multi-species HCP.

1. Principles Followed

The HTM alternative adheres to the following basic principles:

(a.) Both Preservation and Loss of Habitat are Evaluated Based on Conservation Value. All actions that preserve or destroy habitat are evaluated in terms of the "conservation value" preserved or lost. Conservation value takes into account not only the quantity and habitat quality of land, but also reserve design considerations such as how a parcel contributes to the overall contiguity and shape of a potential reserve system.

(b.) Preservation of a Quantified Amount of Conservation Value is Assured. The amount of conservation value that is believed necessary to meet the conservation objectives of the HCP is determined at the outset, and the conservation value that exists within the plan area is never allowed to drop below that level.

(c.) Reserves are Built from Existing Cores. The core areas preserved under the Short-Term Stephens' kangaroo rat habitat conservation plan (Short-Term HCP) and through other efforts act as catalysts for the building of a larger preserve network, yet the addition of new core areas is not precluded.

(d.) Mitigation Always Occurs Before Take. The mitigation required for any take of habitat shall always occur before the take.

(e.) Sufficient Funding for Acquisitions is Assured. The funding necessary to acquire a reserve system with sufficient conservation value is assured because the compensation for acquisitions is in the form of credits, which are automatically generated in proportion to the conservation value of land dedicated to the reserve system.

(f.) Landowners are Given Certain and Efficient Means to Resolve Endangered Species issues. Each landowner in the credit-trading area is given a certain and efficient means to resolve SKR issues, with the option of either dedicating land to preservation and receiving compensation (in the form of credits) or developing land after providing sufficient mitigation (in the form of credits). Owners of land outside of the credit-trading area simply pay a conservation fee prior to developing.

(g.) Landowners are Given Positive incentives to Conserve. The higher the conservation value of a parcel, the more compensation the landowner will receive by preserving it. In this way, landowners have positive incentives to protect and preserve the most important habitat.

(h.) Local Land Use Planning Is Not Impaired. The HTM alternative does nothing to impair or preclude local land use planning. Local planning can continue to be used to determine acceptable uses on all lands within the plan area.

(i.) "Fall-Safes" are Provided to Assure a Satisfactory Result. In addition to the assurance that a certain amount of conservation value will necessarily be preserved, additional fail-safes are provided in the forms of an adaptive management program and a monitoring program that will allow for "mid-course adjustments" to the HCP.

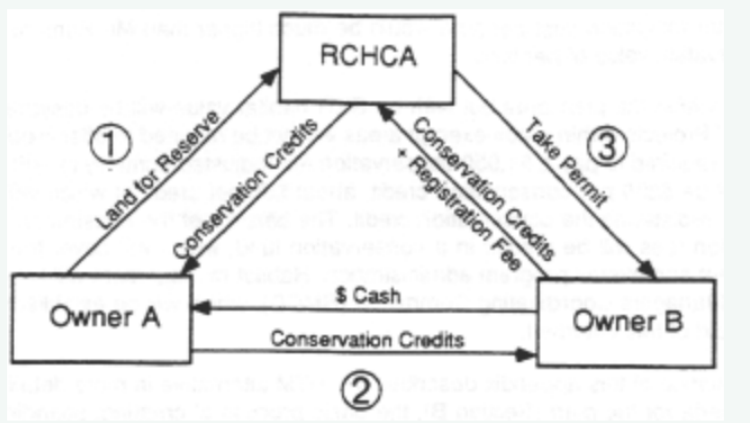
[1]See Todd G. Olson, Dennis D. Murphy, and Robert D. Thomton, "The Habitat Transaction Method: A Proposal for Creating Tradable Credits in Endangered Species Habitat," in Building Economic Incentives into the Endangered Species Act, ed. Hank Fischer and Wendy E. Hudson (Wash. D.C.: Defenders of Wildlife, 1993), 27-36. D-?

2. Summary of the HTM Alternative

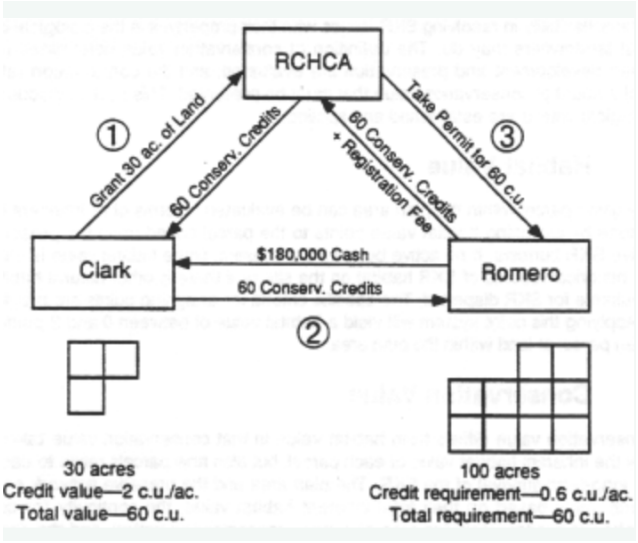
Under the HTM alternative, a process is established for measuring the initial conservation value for the SKR of all of the land in the plan area, expressed in terms of standardized conservation units. Any landowner who dedicates land within the plan area to the SKR reserve system or takes other specified conservation actions receives credits based on the conservation value added to the reserve system by the dedication. Lands that have been preserved within the plan area will be referred to collectively as the "preserve network." Any landowner proposing a project within the plan area that would

destroy SKR habitat would be required to first offer a number of credits based on the loss of conservation value that results from the development. The number of credits that would be required of such a landowner would be equal to the conservation value to be lost by the development multiplied by a pre-established "conservation ratio." Landowners who receive credits for conservation actions would be free to either use the credits to develop SKR habitat elsewhere within the plan area or sell the credits to any other landowner who needs credits to compensate for habitat impacts.

A typical set of conservation credit transactions is illustrated below. Owner A dedicates land to the SKR reserve system and receives conservation credits in return from the RCHCA. Owner A sells the credits to Owner B for cash. Owner B then uses the credits by presenting them to the RCHCA, along with a registration fee, and in return receives a permit to take (eliminate) a certain number of conservation units worth of habitat (based on the number of credits presented).



The following example further illustrates the HTM alternative. In this example, the conservation ratio is 1:1. Ms. Clark owns a 30-acre parcel of land. The conservation value of preserving her land would be 2. 0 conservation units per acre, or 60 conservation units. Mr. Romero owns a 100-acre parcel of land he would like to develop. His proposed development would result in the toss of 0.6 conservation units per acre, or 60 conservation units worth of conservation value. Ms. Clark grants her land to the RCHCA in exchange for 60 credits and advertises the credits for sale for $3,000 per credit (which equates to $6,000 per acre of land she granted to the RCHCA). Mr. Romero sees Ms. Clark's ad and buys her credits for a total of $180,000 (or $1,800 per acre of his project) plus the registration fee. By turning those 80 credits over to the RCHCA, he receives a permit to take 60 conservation units worth of habitat (based on the 1:1 conservation ratio), exactly what he needs to go forward with his project.



Because higher conservation value land was used to compensate for lower conservation value land, Ms. Claris was able to realize $6,000 per acre in compensation, but the mitigation cost to Mr. Romero was only $1,800 per acre plus the registration fee. If Ms. Clark wanted to develop her land, her mitigation cost per acre would be much higher than Mr. Romero's because of the high conservation value of her land.

Lands within the plan area but with no SKR habitat value will be designated as "credit-exempt areas." Projects within credit-exempt areas will not be required to offer credits under the HCP but will be required to pay a $1,950 conservation fee (adjusted annually for inflation). The registration fee will be $250 per conservation credit, about $50 per credit of which will be used to cover the cost of registering the conservation credit. The balance of the registration fee and all of the conservation fees will be placed in a conservation fund, which will cover the cost of reserve management and overall

program administration. Habitat management will be implemented by a Reserve Managers Coordinating Committee (RMCC), which will be established as described in the main text of this Volume 1.

The balance of this appendix describes the HTM alternative in more detail, including the biological criteria for the plan (Section B), the basic process of creating, spending, and trading credits (Section C), the reserve management program (Section D), the monitoring program (Section E), the role of biological surveys (Section F), plan administration (Section G), how the HTM alternative can be adapted for application to a multi-species HCP (Section H), how the HTM alternative could be used to satisfy the requirements of the ESAs (Section I), and a conclusion (Section J).

B. Biological Criteria

The HTM alternative is driven by biological criteria which are established as part of the HCP in coordination with the resource agencies (the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDPG)) and modified over time, as necessary, through a monitoring program (see Section D below). Although the HTM alternative give landowners flexibility in resolving SKR issues with their property, it is the biological criteria that govern what landowners may do. The definition of conservation value determines how trade-offs between development and preservation are evaluated, and the conservation ratio determines the total amount of conservation value that must be preserved. This section discusses how these key biological criteria are established and applied.

1. Habitat Value

Any given parcel within the plan area can be evaluated in terms of its inherent habitat value. That is done by assigning habitat value points to the parcel based upon the presence and density of active SKR burrows. If no active burrows are present, some habitat value is still assigned if there are historical records of SKR habitat on the site or if there is other natural habitat on the site that is suitable for SKR dispersal. The specific criteria for assigning points are provided in Attachment 1. Applying this point system will yield a habitat value of between 0 and 2 points per acre for any given parcel of land within the plan area.

2. Conservation Value

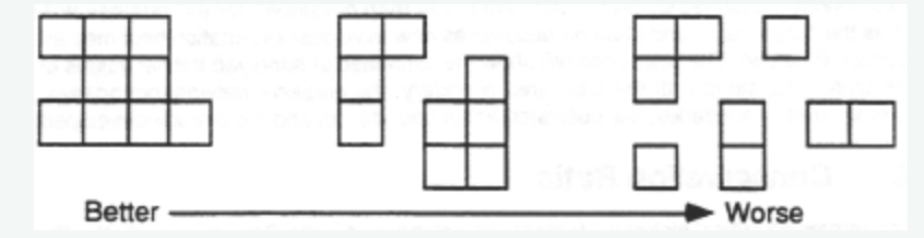
Conservation value differs from habitat value in that conservation value takes into account not only the inherent habitat value of each parcel, but also how parcels relate to each other to support the long-term survival of the SKR. The plan area and the preserve network each have a conservation value based on their total inherent habitat value, the contiguity (or connectivity) of the patches of habitat within the area (the more connected the better), and the shape of the patches of habitat within the area (the rounder the better).

Conservation value, then, applies to an entire configuration of habitat at a given point in time, such as the current habitat contained in either the plan area or the preserve network. A certain amount of conservation value exists in the plan area at the beginning of the HCP (the initial conservation value). The objective of the HCP using the HTM alternative is to create a preserve network over time that has a conservation value equal to or greater than a certain "target conservation value" which is calculated to be sufficient to meet the conservation objectives of providing for the survival and recovery of the SKR. The HTM alternative measures losses of conservation value to the plan area and additions of conservation value to the preserve network.

The remainder of this subsection (2) summarizes how the habitat value of the plan area or preserve network is adjusted for contiguity and shape to arrive at the conservation value of the area in terms of "conservation units" (abbreviated, "c.u."). Attachment 1 provides a more detailed explanation of these adjustments.

a. Contiguity Adjustment

To translate habitat value into conservation value, the first step is to adjust inherent habitat value for contiguity. The contiguity adjustment is based on how much the patches of habitat are clumped into contiguous areas, as shown below:

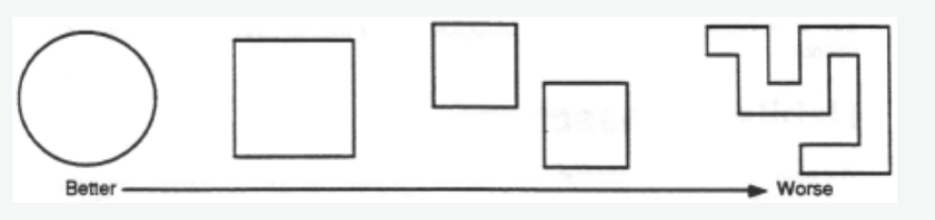


When evaluating the conservation value of the plan area, all habitat within the plan area is included to define the habitat patches. When evaluating the conservation value of the preserve network, only habitat within the preserve network is included for purposes of defining patches (i.e., habitat outside of the preserve network is treated as though it were not habitat).

b. Shape Adjustment

Finally, the contiguity-adjusted habitat value is adjusted based on the overall shape of the patches of habitat. For purposes of this adjustment, the ideal shape is a single circle. All else being equal, a circle has the smallest perimeter to police and fence for its area, and a circle maximizes the opportunity for interaction among species within its

perimeter. As shown below, the shape values of patches and groups of patches are adjusted downward as they become less round.



Once again, when evaluating the conservation value of the plan area, all habitat within the plan area is included for purposes of the shape adjustment. When evaluating the conservation value of the preserve network, only habitat within the preserve network is included.

When the habitat value of the plan area or preserve network has been adjusted for contiguity and shape, the resulting value is its conservation value, expressed in terms of conservation units. Attachment 1 provides the actual formulas and exact procedures for making these adjustments.

3. Tally of Conservation Units

An estimate of the initial conservation value of the plan area is needed as a basis for determining the conservation ratio and for measuring losses of conservation value to the plan area. In order to estimate the initial conservation value, an estimate must be made of the total habitat value contained within the plan area. The RCHCA shall use a map of the plan area overlaid with 100hectare grid cells for purposes of this estimate. Then, using existing mapping of presence and absence of SKR, the RCHCA shall assign estimated habitat value points to each cell. A value of zero will be assigned only to (1) cells that are known by site visits or aerial photography to have no SKR habitat value and that are not mapped historically as having SKR habitat value (credit exempt areas) and (2) cells that would qualify as being under cultivation based upon the definition set forth in Section C(4)(d) bestow (cultivated areas). A computer will be used to adjust each cell's habitat value for contiguity and shape. The computer will then be used to tally the initial conservation value contained within the plan area. The map developed for this purpose will be referred to as the "base map," and shall be updated as new biological information becomes available (see Section E below). The base map will show the estimated or surveyed habitat values of all lands in the plan area, along with the plan area boundary, the preserve network boundaries, the credit exempt areas boundaries, the cultivated areas boundaries, and the already-developed areas.

4. Conservation Ratio

The remaining critical biological factor to be established is the Conservation Ratio. The conservation ratio is the number of conservation units that must be preserved for each conservation unit lost to development. This ratio determines both the mitigation cost to landowners and the total amount of conservation value that will be preserved in the long run. For example, if the initial conservation value is 200,000 conservation units, and the conservation ratio is 1:1, then landowners will be required to provide one conservation credit (representing one conservation unit of preservation) for each conservation unit to be developed, and a total of 100,000 conservation units will be preserved in the long run. If instead the conservation ratio is 2:1, then landowners will be required to provide two conservation credits for each conservation unit to be developed, and a total of 133,333 conservation units will be presented in the long run.

The resource agencies and RCHCA staff will use a computer model to evaluate the types of reserve configurations that could result from various conservation ratios. They will then recommend a conservation ratio to the RCHCA Board, along with any recommended changes to the formulas for adjusting habitat values for contiguity and shape. The HTM alternative can be implemented only if the RCHCA Board approves biological criteria that are also acceptable to the resource agencies.

C. Habitat Transactions

The essence of the HTM alternative is to permit the take of conservation value from the plan area only if sufficient conservation value is first contributed to the preserve network. The amount of conservation value that must be contributed to the preserve network is equal to the conservation value to be taken from the plan area multiplied by the conservation ratio. This section describes the actions, or "habitat transactions" that landowners may take in accordance with this principle.

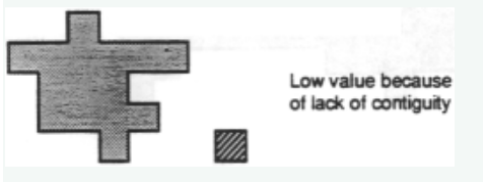
1. Credits Given for Habitat Preservation

Any owner of land within the plan area may voluntarily grant land to the RCHCA to become part of the SKR reserve system and receive conservation credits in return. The number of conservation credits that a landowner will receive is equal to the number of conservation units added to the preserve network by the grant of land. The calculation of added value would take into account the added habitat value of the new land, any increase in contiguity caused by the addition, and the net change in the shape value of the preserve network caused by the addition. The procedure for calculating increases in habitat value to the preserve network is described in Attachment 1.

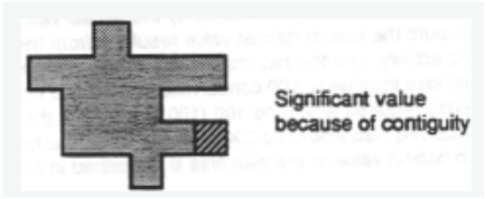
The concept of measuring increases in conservation value lo the preserve network as a whole is very important under the credit trading approach, it is this concept that provides landowners with strong incentives to preserve land that not only

has high inherent habitat value, but which also adds to the preserve network in a way that is truly beneficial from a conservation standpoint. The following observations illustrate this fact:

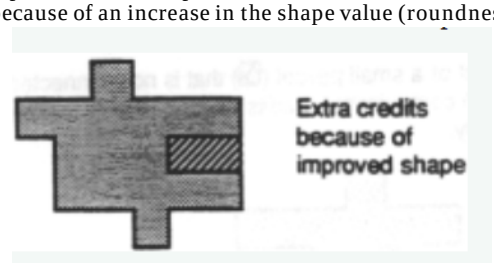
(a.) The preservation of a small parcel (▨) that is not connected to other lands that are part of the preserve network will receive minimal credits because the contiguity adjustment will discount its value dramatically.



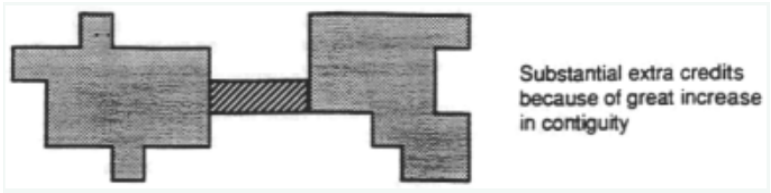
(b.) The preservation of a small parcel that is connected to a large patch of habitat within the preserve network will receive substantial credits because the contiguity value of the entire patch increases with the addition of the small parcel.



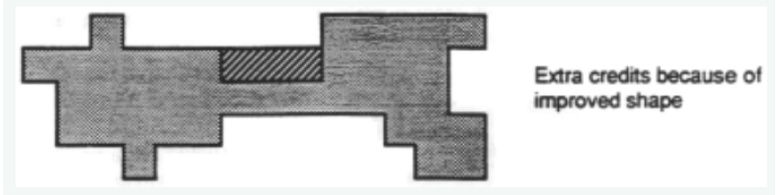
(c.) The preservation of a parcel that fills in a hole or a notch in a patch in a preserve will receive extra credits because of an increase in the shape value (roundness) of the patch.



(d.) The preservation of a parcel that creates a connection between two patches of habitat that are in the preserve network will tend to receive a large number of extra credits because the contiguity value of both of the formerly disconnected patches will increase significantly.



e. The preservation of a parcel that widens a habitat corridor will receive extra credits because of an increase in the shape value of the affected patch.

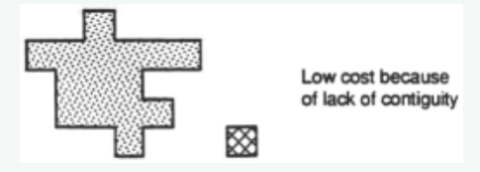


2. Credits Required for Habitat Loss

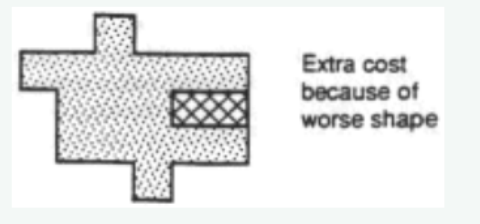
Any owner of land within the plan area may engage in an activity which reduces conservation value only by offering sufficient conservation credits to mitigate the take. The number of conservation credits that a landowner must offer is equal to the toss in conservation value to the plan area that would be caused by the activity, multiplied by the conservation ratio. The calculation of lost value takes into account the loss in habitat value resulting from the activity, any decrease in contiguity caused by the activity, and the net change in the shape value of the plan area caused by the habitat loss. If the loss in value is 100 conservation units, and the conservation ratio is 1:1, then the number of credits required would be 100 (100 c.u. x1). if the conservation ratio is 2:1, then the number of credits required would be 200 (100 c.u. x2). The more detailed procedure for calculating decreases in habitat value to the plan area is described in Attachment 1.

Complementing the concept of rewarding increases in conservation value to the preserve network as a whole is the concept of penalizing decreases in conservation value to the plan area as a whole. The following observations illustrate this fact:

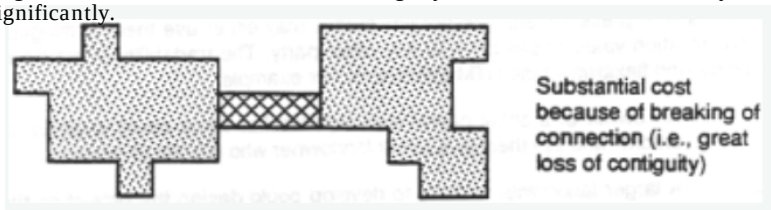
(a.) The development of a small parcel ( ) that is not connected to other SKR habitat within the plan area will cost minimal credits because the contiguity adjustment will discount its value dramatically.



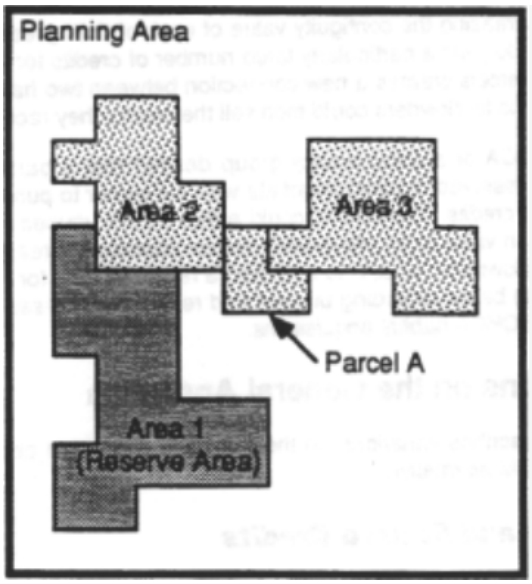
(b.) The development of a parcel that creates a hole or a notch in a patch of SKR habitat will cost additional credits because of a decrease in the shape value (roundness) of the patch.



(c.) The development of a parcel that breaks a connection between two patches of SKR habitat will tend to cost a large number of credits because the contiguity value of both of the formerly connected patches will decrease significantly.



It is important to note that the conservation value that would be added to the preserve network by preserving a parcel is not equal to the conservation value that would be lost to the plan area by developing the same parcel. In the illustration below, preserved land is indicated by the ( ) pattern, and other SKR habitat is indicated by the ( ) pattern.



If Parcel A is preserved at this time, it would generate relatively few credits because it is not connected to the existing preserve network. This result is appropriate because there is no guarantee at this time that Parcel A wilt ever be connected to the preserve network. The owner of Parcel A could increase the preservation value of the parcel either by waiting until other parcels are preserved which connect Parcel A to the preserve network or by negotiating with other landowners to have them preserve their land to make the connection to the preserve network.

If Parcel A were to be developed. Areas 1 and 2 (including the preserved portions) would be disconnected from Area 3. The result would be two separate patches of SKR habitat instead of one large one, and each of the two patches would have a smaller contiguity factor than the one large one did. As a result, the loss in conservation value to the plan area would be substantial, and the number of conservation credits required to develop Parcel A would be relatively large. On the other hand, the cost of developing Parcel A would decrease significantly if a large part of Area 3 were developed first.

3. Trading of Conservation Credits

Landowners who need conservation credits can obtain them either by preserving land and obtaining credits from the RCHCA, or by purchasing credits from another party. Conversely, landowners who preserve land and obtains credits may either use them to mitigate their own take of conservation value or sell them to any other party. The tradability of credits is a key to the efficiency and flexibility of the HTM alternative. For example:

(a.) An owner of a small parcel with high habitat value could preserve the parcel, receive credits, and sell them to a larger landowner who wishes to develop.

(b.) A larger landowner wishing to develop could design the project so that a portion of the land could be preserved to generate credits. If those credits fell short of what was needed to offset take elsewhere in the development, the landowner could purchase some credits from others. If those credits were in excess of what was needed for the development, the extra credits could be sold to another landowner.

(c.) Adjoining landowners could collaborate to preserve several parcels simultaneously, thereby increasing the contiguity value of each of their preservation actions. Such cooperation could yield a particularly target number of credits for the landowners if the combination of parcels creates a new connection between two habitat patches in the preserve network. The landowners could then sell the credits they receive.

(d.) If the RCHCA or a conservancy group desired that a particular parcel of high habitat value be preserved, it could negotiate with the owner to purchase the parcel, preserve it, and obtain credits. The credits could either be left unused (thereby increasing the total conservation value to be preserved), retired (thereby decreasing the mitigation burden on private landowners), or sold to replenish a revolving fund for future acquisitions. See subsection 4(a) below regarding unused and retired credits; see Section 0(4) below regarding direct RCHCA habitat acquisitions.

4. Variations on the General Approach

This subsection describes variations on the approach described above that would also be permitted under the HTM alternative.

a. Unused and Retired Credits

There is no obligation for a person who obtains conservation credits to sell those credits. A person with credits may, in fact, choose to either leave the credits unused or to "retire" the credits. When credits are left unused, they are still counted as having been used to permit a corresponding amount of take for purposes of adjusting the conservation ratio (see Section E (1) below regarding annual adjustment of the conservation ratio). Since the take has not actually occurred, the effect is to increase the total amount of conservation value preserved under the HCP beyond the target conservation value. If a person retires credits, the credits are no longer counted as having permitted take of habitat. Because there has been preservation with a guarantee of no corresponding take, they are not counted as having been used to permit take when adjusting the conservation ratio, and the conservation ratio is therefore reduced. In essence, a person who chooses not to sell conservation credits can either put those credits toward an increase in conservation value or toward a decrease in landowner burden.

b. Public Lands

Public lands would generally be treated like private lands for purposes of the tong-term SKR Plan. If a public agency permanently preserves SKR habitat and allows it to be managed by the RCHCA, it will receive credits in accordance with fts habitat value, which it is free to use, hold, or sell. Similarly, public agencies may mitigate impacts on SKR conservation value by providing conservation credits. The following are exceptions to these general rules:

(i.) The RCHCA may not receive credits for lands it has purchased to offset take of SKR habitat that was allocated to landowners under the Short-Term HCP.

(ii.) Federal and state agencies will be subject to the restrictions of the HCP and will enjoy the benefits of the HCP only if they formally agree to submit their lands to its restrictions.

(iii.) Conservation credits will not be issued for public parks or open space unless such lands are specifically dedicated for permanent preservation in accordance with the HCP, and such lands shall be treated as not part of the preserve network unless and until they are so preserved.

c. Conservation Easements

Any public or private landowner may preserve land by a conservation easement in favor of the RCHCA rather than by grant deed to the RCHCA. Such a conservation easement must, however, forbid all uses other than as an SKR habitat reserve, with such restrictions as the RCHCA may adopt for time to time for other portions of the SKR reserve (except

with the prior approval of the resource agencies). The conservation easement must also grant the RCHCA full control over the management of the land. The option of using a conservation easement rather than a grant deed provides flexibility to avoid legal or other restrictions against grants of fee title to land. It may also provide means of preserving portions of a parcel without being required to subdivide it under the Subdivision Map Act.

d. Replacement Preservation

A landowner who sets aside habitat and receives conservation credits may retain the right to later replace the habitat preserved with habitat or with conservation credits of equal conservation value. A conservation easement would be the method of preservation in such cases. If management costs were incurred by the RCHCA (e.g., fencing or habitat enhancement) after the original grant of easement, dollar compensation for those management costs must be paid to the RCHCA along with the replacement habitat or credits. If the original habitat offering increased in conservation value after it was preserved because of adjacent preservation, the replacement habitat would be required to match the higher conservation value. Once the replacement has occurred, the landowner would still be required to provide conservation credits in order to develop the land that was formerly preserved.

The replacement preservation option would provide added flexibility to owners of large tracts of land when they cannot be certain which portions of their land will be most valuable to develop or preserve in the long term. Since the conservation value of the original preservation must be matched by any replacement preservation, this option does not compromise the overall conservation value of the preserve network.

e. Restoration and Enhancement

Landowners may desire to restore and/or enhance habitat before offering it for preservation in order to increase its habitat value (and therefore the number of conservation credits the landowner can receive). The RCHCA shall publish restoration and enhancement guidelines from time to time describing what restoration or enhancement activities a landowner may conduct on land currently occupied by SKR and providing restoration and enhancement suggestions based upon the best research available. Such guidelines must be approved by the resource agencies prior to publication.

f. Agriculture

Certain agricultural activities are partially compatible with the existence of the SKR, making them a special case under the HCP. In order to avoid placing an undue burden on agriculture, while providing incentives for agricultural conservation, the following special rules apply to agricultural activities:

(i.) Exemption for Ongoing Cultivation. All land under cultivation when the HCP takes effect, or which had been under cultivation during at least 6 months during the past 7 years, shall be designated as cultivated lands on the base map. Cultivation activities, including specified incidental land uses, may continue on cultivated lands without any requirement for surveys, payment of a conservation fee, or payment of conservation credits, regardless of fallow periods after the HCP takes effect and regardless of actual presence of SKR. Such lands shall be treated as having no habitat value for purposes of calculating the contiguity and shape factors. Owners of agricultural lands that were not initially designated as cultivated lands may petition to have their lands so designated upon offering sufficient evidence that their lands qualify as cultivated lands. Any conversion of cultivated lands from cultivation to other uses shall be treated the same as any other development activity under the HCP based on the actual conservation value of the converted land.

(ii.) Agricultural Conservation Easements. Agricultural land which (a) is of a specified list of soils types, (b) is cultivated in accordance with specified rules, and (c) is adjacent to the preserve network, will be assigned a habitat value equal to 0.5 per acre for purposes of calculating the conservation value of granting a special agricultural conservation easement over such land. Provided that an owner of such land enters into a conservation easement in a form pre-approved by the RCHCA and the resource agencies restricting the land to such agricultural use and practices, the owner shall receive conservation credits in accordance with the conservation value of granting the easement. Individual landowners may negotiate variations on the pre-approved conservation easements and corresponding changes to the standard habitat value assigned. Agricultural conservation easements will permit replacement presentation in accordance with Section C(4)(b) above.

(iii.) Preservation of Agricultural Land. Agricultural land which (a) is of a specified list of soils types, (6) was either last planted with specified crops or has been fallow for at least 12 months, and (c) is adjacent to the preserve network, will be assigned a habitat value equal to the greater of AS current habitat value in accordance with the normal valuation procedures or 1. 0 points per acre for purposes of calculating the conservation value of preserving such land. All other agricultural land will be assigned a habitat value in accordance with the normal valuation procedures only.

g. Utilities

Utility companies and public agencies providing utility services will generally be treated the same as other landowners under the HCP, except that the following special rules shall apply:

(i.) Emergency Maintenance and Repair. Utility companies shall be automatically permitted to conduct emergency maintenance and repairs on existing facilities in accordance with guidelines published by the RCHCA from time to time with the concurrence of the resource agencies.

(ii.) Temporary Disturbance. The construction, maintenance, and use of dirt or gravel roads used for maintenance and repair of utility facilities, and periodic boring or trenching of dirt areas for purpose of maintenance and repair of utility facilities, shall require mitigation in consolation credits at 50% of the level that would be required for other development activities on the same land.

(iii.) Utility Conservation Easements. An owner of land that is used only for utility facilities may receive conservation credits for granting a conservation easement over such land in a form pre-approved by the RCHCA and the resource agencies restricting the use of portions of the land to conservation purposes only, restricting the use of other portions to temporary disturbance activities only (as in (2) above), and designating other areas as containing existing facilities which disturb the land. The credits given will be based upon the actual conservation value of the conservation-only areas, 50% of the actual conservation value for the portions designated for temporary soil disturbance, and no credit for the footprint of areas containing existing facilities, individual landowners may negotiate variations on the pre-approved utility conservation easements and corresponding changes to the habitat values assigned. Utility conservation easements will permit replacement preservation in accordance with Section C(4)(b) above.

D. Reserve Management Program

In order to assure the best use of program resources for the benefit of the SKR, an adaptive reserve management program for the reserve system is a key component of the HCP. Reserve management will be implemented in accordance with a Core Reserve Management Plan and will be funded from the conservation fund. Reserve management shall consist of both habitat management activities conducted by the RMCC and direct habitat acquisitions conducted by the RCHCA.

1. Core Reserve Management Plan

The RCHCA shall adopt a Core Reserve Management Plan (CRMP) from time to time upon the recommendation of the RMCC. The CRMP is similar to that described in the main text. The primary purpose of the CRMP is to establish priorities for reserve management activities based upon their conservation value and their cost effectiveness. The CRMP shall be updated upon each periodic review date under the monitoring program (described in Section E (2) below), and any other times as may be necessary or appropriate.

2. Conservation Fund

Although the credit-trading component of the HTM alternative provides the primary means of habitat acquisition, there is still the need for cash to cover various costs of the HCP. These include the cost of ongoing reserve management, the cost of overall plan administration, and the cost of direct RCHCA. land acquisitions. All of these additional costs are funded out of a conservation fund that would be supplied from the following sources:

(a.) Any unspent monies generated by the Short-Term HCP.

(b.) The $1,950 per acre conservation fee (adjusted for inflation) collected on projects in the credit-exempt areas.

(c.) That portion of the $250 per conservation unit registration tee that is not needed to cover the cost of registering conservation credits: this excess portion is expected to be approximately $200 per conservation unit.

(d.) State and local bond issues, supplemental utility fees, and other local sources, to the extent available.

(e.) State and federal grants and other special funding, to the extent available.

3. Habitat Management Activities

The CRMP will establish priorities for undertaking management activities that are intended to provide the most benefit to SKR conservation for each dollar expended. The types of management activities that may be undertaken are listed in the main text. The management activities will be coordinated by the RMCC. The ongoing management will be funded out of a management endowment fund established in accordance with the CRMP using funds from the conservation fund.

4. Direct RCHCA Habitat Acquisitions

The CRMP will allocate management monies between habitat management of the existing preserve network and a revolving fund for direct RCHCA acquisitions of additional habitat. The credit-trading system is designed to bear the primary burden of habitat acquisition, so the need for direct RCHCA habitat acquisitions is provided primarily as a safety net for the credit- trading component of the program. In addition to acquisitions out of the revolving fund. the RCHCA may, if the resources are available, make "supplemental acquisitions" as a means of (1) enhancing the amount of conservation that can be accomplished under the HCP and (2) relieving existing landowners from bearing all of the cost of the HCP. Revolving fund acquisitions and supplemental acquisitions are further described in the following two subsections.

a. Revolving Fund Acquisitions

Based on the CRMP, the RCHCA may allocate money to a revolving fund for key acquisitions. Moneys in the revolving fund would be used to acquire lands for permanent preservation. The RCHCA would receive conservation credits for the lands preserved, which it would auction or otherwise sell to replenish the revolving fund. In this manner, the fund can be repeatedly replenished.

Revolving fund acquisitions would not increase the total quantity of conservation value that gets preserved because the RCHCA will sell the credits generated by the preservation, which in turn will permit the same amount of development as 'if a private party preserved the land and obtained the credits. The RCHCA can use the revolving fund technique, however, to influence the location of preservation in the following ways:

(i.) Acquire targeted parcels on which it discovers special conservation values that it desires to ensure are preserved.

(ii.) "Seed" an area with newly preserved habitat to provide a magnet that attracts future preservation to the same area (by virtue of the contiguity adjustment).

(iii.) Acquire key parcels needed to start or complete a new corridor between reserve patches or between a reserve patch and other natural lands. The use of the revolving fund for these various purposes would be in accordance with priorities established by the CRMP.

b. Supplemental Acquisitions

Supplemental acquisitions are acquisitions of habitat that are not followed by the sale of the resulting conservation credits to replenish the revolving fund. Instead, the credits are either left unused or retired in order to either increase the total amount of conservation value that will be preserved or to decrease the mitigation burden on private landowners (see Section C(4)(a) above regarding unused and retired credits). Potential sources for funding of supplemental acquisitions are public and private grants earmarked for acquisitions, state and local bond measures, and any conservation fund amounts that can be allocated to supplemental acquisitions under the CRMP after covering administration, habitat management, and revolving fund requirements.

Since supplemental acquisitions can be used either to increase total conservation or decrease economic burden, a tension is created over the use of supplemental acquisition funds. In order to encourage both conservation interests and landowner interests to support efforts to obtain funding for supplemental acquisitions, the RCHCA shall split the use of credits generated from supplemental acquisitions. Fifty percent of the credits shall be left unused to increase total conservation, and fifty percent shall be retired to decrease economic burden.

E. Monitoring Program

The monitoring program is an integral pan of the HTM alternative that is designed to assure that the conservation goats of the HOP are being satisfied and that no unnecessary economic burdens are being imposed by the plan. Under the monitoring program, as new information becomes available, the conservation ratio is automatically adjusted annually, the CRMP is adjusted from time to time as necessary, and numerous other changes can be made pursuant to a periodic review process. In addition, an emergency review may be initiated at any time by USFWS or CDFG in the event of certain unforeseen circumstances.

1. Annual Adjustments to the Conservation Ratio

The HTM alternative is based upon assuring that, at a minimum, the target conservation value will be preserved in the long term, and that the preservation of the target conservation value is never precluded by development in the interim. In keeping with this objective, the conservation ratio will be adjusted annually and automatically, on each anniversary date of the commencement of the HCP, based upon the following formula:

$$\text{Conservation Ratio} = \frac{\text{Target CV - Preserved CV}}{\text{Uncommitted CV - Target CV - Preserved CV}}$$

For purposes of this-formula, Target CV is the target conservation value: Preserved CV is the total conservation value that has been committed to permanent preservation; and Uncommitted CV is the total estimated conservation value existing within the plan area (based upon the official base map) less the conservation value already committed to preservation and less the total conservation value represented by unused conservation credits (retired conservation credits are not subtracted). The resulting conservation ratio shall be rounded upward \o the nearest 1/10. For example, if the formula yields a conservation ratio of 1. 024, then the new, rounded conservation ratio would be 1. 1 (i.e., 1. 1-to-1).

Based on the foregoing formula, the discovery that less uncommitted conservation value exists than previously shown on the base map will result in an increase in the conservation ratio. Conversely, the discovery that more uncommitted conservation value exists than previously shown on the base map will result in a decrease in the conservation ratio. Also, if a public agency or other entity preserves habitat, then retires the resulting credits (rather than holding them or selling them), the conservation ratio will decrease.

2. Periodic Reviews

Periodic reviews shall be conducted beginning on the following anniversary dates of the HCP (periodic review dates): the first, second, third, sixth, ninth, twelfth anniversary dates, and each fifth anniversary date thereafter. On each scheduled periodic review date, the RCHCA shall deliver to the resource agencies the current base map and an accounting (both in terms of changes since the previous periodic review and cumulatively) of the current conservation value preserved, conservation value uncommitted, conservation credits issued, and conservation credits retired. On the same date, the RMCC shall deliver to the resource agencies a qualitative report on the condition of habitat and species in each portion of the preserve network, a description of management activities utilized and an evaluation of their success, the results of any special studies performed since the RMCC's previous report, and an evaluation of any extraordinary threats to the long-term survival of the SKR that ft has discovered. Based upon all of this information, and any other information obtained by the RCHCA or the resource agencies from any source, adjustments can be made to the HCP, if necessary. Such adjustments fall into three categories-CRMP modifications, minor HCP adjustments, and major HCP adjustments.

a. CRMP Modifications

As discussed in Section D (1) above, the CRMP is modified upon each periodic review, and at other times as necessary. In this manner, the reserve management strategy can be adjusted at any appropriate time to accommodate new information or understanding without an amendment to the HCP.

b. Minor HCP Adjustments

Minor HCP adjustments are those that are anticipated under the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and are permissible with minimal review. The following are minor HCP adjustments:

(i.) Modifications to Biological Survey Guidelines. Modifications to the biological survey guidelines for determining the density of active SKR burrows.

(ii.) Modifications to Habitat Value Point Assignments. Modifications to the number of points per acre assigned to each category of SKR presence or absence.

(iii.) Minor Additions to Plan Area. Modifications of plan area boundaries that add land with an aggregate estimated conservation value of no more than 5% of that existing in the plan area prior to the adjustment, based upon the base map. In order to qualify as a minor HCP adjustment, the conservation ratio must be adjusted using the formula described in Section D (1) above after adding the values pertaining to the land to be annexed. For purposes of that calculation, the amount to be added to the target conservation value shall be the total estimated conservation value existing within the annexed area multiplied by the following-factor:

$$\text{Conservation Ratio}/(\text{Conservation Ratio} + 1)$$

Minor HCP adjustments must be proposed within 30 days after a periodic review date by the RCHCA, USFWS, or CDPG (these parties shall be referred to as the "coordinating agencies"). The proposal shall be made by notifying all persons who have previously submitted a request for such notices. A 30-day public comment period shall commence from the date of the notice. If at the end of the public comment period any coordinating agency has objected to the proposed adjustment, then the adjustment may be made as a major HCP adjustment (see. subsection (c) below). If no such objection is made, then the party which proposed the adjustment shall have an additional 30 days to review the public comments and decide whether to make the adjustment final, abandon the proposed adjustment, or modify the adjustment and submit the modified proposal for an additional 90-day review in the same manner as the initial review. No CEQA or NEPA processing will be necessary for minor HCP adjustments because minor HCP adjustments will be contemplated by the original EIR/EIS. The HCP shall operate as usual (without the adjustment) while a minor HCP adjustment is under review.

c. Major HCP Adjustments

Major HCP adjustments are any adjustments to the HCP recommended by a coordinating agency which do not qualify as minor HCP adjustments. Such adjustments may include, without limitation, changes to the conservation fee or the registration fee, a change of the target conservation value, additions to the plan area that do not qualify as minor, etc.

Major HCP adjustments must be proposed within 60 days after a periodic review date by a coordinating agency. The proposal shall be made by notifying the other Coordinating Agencies and all persons who have previously submitted a request for such notices. A 60-day public comment period shall commence from the date of the notice. During the second 30 days of the comment period, the RCHCA Board shall hold a public hearing on the proposed modification (unless the RCHCA is proposing the adjustment and previously held a public hearing on the matter) and shall vote whether to approve it, disapprove it, or approve it with modifications. If the adjustment is approved by the RCHCA Board with modifications, then the RCHCA shall so notify the other coordinating agencies. If the RCHCA Board approves the adjustment and, by 30 days after the closing of the comment period, the party which proposed the adjustment has approved any changes to it approved by the RCHCA, and none of the other coordinating agencies have entered a written objection to the proposed adjustment, then the adjustment will be deemed approved. If the adjustment is not approved, the party which proposed it may submit a revised proposal within 30 days for processing in accordance with the foregoing.

If counsel to the RCHCA or to the party that proposed the adjustment deems it necessary to take action to comply with CEQA and/or NEPA, then the foregoing process shall be modified to accommodate concurrent CEQA and/or NEPA processing. The HCP shall operate as usual (without the adjustment) while a major HCP adjustment is under review.

3. Emergency Reviews

In the event of unforeseen circumstances (as defined in the main text) which create a substantial risk of precluding the survival and recovery of the SKR if changes are not made to the HCP prior to the next scheduled periodic review date, either USPWS or CDPG may commence an emergency review. An agency commences an emergency review by notifying the other coordinating agencies and all persons who have previously submitted a request for such notices of the corn commencement of the review and of the unforeseen circumstances which gave rise to the emergency review. The agency calling the emergency review may, if it deems necessary, suspend the issuance of new conservation credits during the pendency of the emergency review.

Commencement of an emergency review starts a 30-day public comment period during which the other coordinating agencies and members of the public may suggest adjustments to the HCP to remove the emergency condition. Within 30 days after the close of the public comment period the agency that commenced the emergency review must specify the adjustments to the HCP, o alternative sets of adjustments, that would remove the emergency condition. If within 60 days: thereafter, the RCHCA approves such a course of action, or another course of action which is approved by the agency that commenced the emergency review, then the HCP shall continue with such adjustments; otherwise, the agency that commenced the emergency review may suspend or revoke its permit to take SKR.

In the event that an emergency condition exists because of a failure of a coordinating agency of an RCHCA member jurisdiction to fulfill its obligations under the HCP, then the default provisions of the implementing agreements for the HCP, and not this subsection, shall apply.

F. Biological Surveys

The habitat value of land under the HTM alternative is determined by surveys performed by qualified biologists under contract to the RCHCA. The base map will be updated based on each survey that is certified in accordance with this section.

1. Types of Biological Surveys

Three types of biological surveys may be performed in furtherance of the HCP: habitat value surveys, habitat value estimates, and exemption surveys. The scope and purpose of each of these types of surveys is as follows:

(a.) Habitat Value Survey. This is the ordinary survey performed to determine the habitat value of a parcel of land in order to calculate the credits available for preserving the parcel or the credits required for developing a parcel (base map information may be used for calculating contiguity factors but is not sufficient to determine the habitat value of a given parcel). A habitat value survey involves a procedure of sampling transects to estimate active SKR burrow density.

(b.) Habitat Value Estimates. This is a survey performed for purposes of refining the base map. It employs rougher means for determining presence of SKR and for estimating burrow densities than a habitat value survey. It is not sufficient for purposes of calculating the actual habitat value of the land surveyed, but 'it is sufficient for purposes of calculating contiguity and shape factors. A habitat value estimate may not be used to override the existing base map information if the existing information is based upon more precise surveys than the habitat value estimate, and such surveys are no more than three years old.

(c.) Exemption Surveys. This is a survey performed only to confirm the absence of any habitat value. If any habitat value is found, the survey report simply states that fact, and no adjustment is made to the base map. If the absence of habitat value is confirmed, then the area surveyed is designated a credit-exempt area, and conservation credits can thereafter neither be issued for preserving land in that area nor required for development within that area. Only a subsequent habitat value survey can reverse the credit-exempt area designation. Credit-exempt areas are subject to the standard conservation fee.

Any private party may request that the RCHCA perform any of these three types of surveys so long as the requester pays any relevant survey fee and access is available to the subject lands. The RCHCA may also perform any of these three types of surveys on its own initiative in furtherance of the HCP. As its resources allow, the RCHCA shall conduct ongoing exemption surveys to continually refine the base map as to the location of credit-exempt areas.

2. Survey Requirements and Fees

A current habitat value survey shall be required as part of the conservation value determination for purposes of issuing conservation credits for preserving habitat or requiring conservation credits for purposes of permitting the take of habitat. Only if land has been designated as part of a credit-exempt area will no survey be required prior to development. Agricultural lands in cultivated areas may be cultivated without a survey. A habitat value survey is current if it has been certified by the RCHCA within the previous nine (9) months, habitat value estimates and exemption surveys are never required, but a party may find it advantageous to have one of these optional surveys performed.

The cost of surveys that are performed at the request of a landowner shall be reimbursed to the RCHCA based upon a standard fee schedule that takes into account the number of acres to be surveyed and the type of survey to be performed. The fee shall be waived for the first 10 acres of survey work requested by any given landowner on his or her own land

during any two-year period. The fee for an exemption survey shall be reimbursed to a landowner who requests it for any portion of his or her land that is designated as a credit-exempt area as a result of the survey.

3. Survey Process

Biological surveys must be certified by the RCHCA before they may be used for any purpose under the HCP. The survey and certification process will take between 90 and 180 days for parcels of 100 acres or less, and between 150 and 270 days for parcels of more than 100 acres. The actual time depends upon whether or not the initial survey is challenged. The survey process is set forth here.

Each time a survey is certified, regardless of survey type, the base map is updated to reflect the new information, and contiguity and shape factors are thereafter calculated based upon the updated base map.

4. Survey Guidelines

All surveys shall be performed in accordance with survey guidelines which are published by the RCHCA from time to time with the concurrence of the resource agencies. The survey guidelines shall set forth the methodology to be used by biologists to determine the density of active SKR burrows, including a method for determining which burrows should be counted as SKR burrows. The procedures required shall be designed to provide good quality data for their cost; costly procedures that yield only marginal increases in data quality will be avoided. The procedures required for each type of survey shall be appropriate for the level of accuracy they are intended to achieve. The procedures for habitat value surveys shall be the most rigorous.

5. Qualification of Survey Biologists

All biologists retained by the RCHCA to conduct SKR surveys for purposes of the HCP must be qualified to perform the surveys. In order to be qualified, a biologist must be permitted by USFWS to trap SKR and must sit for a seminar with the RCHCA staff biologists on the HCP and the biological guidelines. If a biologist meets these qualifications, the RCHCA may contract with the biologist or his or her firm to do survey work under the HCP. If at any time the Executive Director of the RCHCA or the RCHCA Board determines that a biologist is in breach of its contract with the RCHCA, is unwilling or unable to follow the survey guidelines, or is otherwise unfit to do survey work under the HCP, such biologist shall be disqualified from doing such further work.

G. Administration

The responsibilities of the coordinating agencies and the RCHCA member agencies with respect to the HCP shall be set forth in detail in the implementing agreements. This section provides a summary of those responsibilities.

1. Resource Agency Responsibilities

The HCP is administered primarily through the RCHCA and its member agencies. The RCHCA receives its authority to permit take, however, from a master take permit from USPWS under Section 10(a) of the federal ESA and from CDFG under an agreement pursuant to Section 2081 of the California Fish and Game Code (the Permit and Agreement). See Section H below for a discussion of how the HTM alternative can meet the requirements of the ESAs for the issuance of take authority.

Based upon the Permit and Agreement, the RCHCA will have the authority to permit individual projects to take SKR upon presentation of sufficient conservation credits in accordance with the HCP. The role of the resource agencies after the issuance of the Permit and Agreement is primarily as follows:

(a.) To monitor the RCHCA to ensure that it is authorizing take only in accordance with the HCP;

(b.) To participate as a member of the RMCC;

(c.) To participate in the monitoring program by proposing changes to the HCP as appropriate and by calling for and participating in emergency reviews if necessary;

(d.) To review survey guidelines, restoration and enhancement guidelines, emergency utility maintenance and repair guidelines, and acceptable forms of conservation easements from time to time, as requested by the RCHCA; and

(e.) To evaluate proposed exceptions to forms of conservation easement and other matters when they are proposed.

The resource agencies ultimately have the authority to suspend or revoke the Permit and Agreement if the RCHCA is allowing significant take to occur that is not in accordance with the HCP or if an emergency review is called, and sufficient steps are not taken by the RCHCA to remove the conditions that prompted the need for the emergency review. Upon a suspension or revocation of the Permit and Agreement, no new consolation credits will be issued, but conservation credits then in circulation may be used to obtain project take permits in accordance with the HCP.

2. RCHCA Responsibilities

The RCHCA has overall responsibility for the administration of the provisions of HCP. Its responsibilities after the issuance of the Permit and Agreement are summarized as follows:

(a.) To contract with staff biologists and survey biologists to carry out the survey provisions of the HCP:

(b.) To contract with an accounting firm to perform the duties of the Registrar described under subsection (5) below, and to oversee the Registrar;

(c.) To contract with an accounting firm other than the Registrar prior to each periodic review date, and at such other times as it deems necessary or appropriate, to audit the Registrar;

(d.) To contract with a law firm to provide general legal advice to the RCHCA and to review the forms of grant deeds and conservation easements to ensure that they are in accordance with the approved forms and properly executed and recorded;

(e.) To participate as a member of the RMCC and provide staff lo the RMCC as it deems appropriate;

(f.) To provide annual reports to the public and to the resource agencies on the status of the HCP;

(g.) To implement the monitoring program in accordance with the HCP;

(h.) To collect fees from its member agencies for projects occurring in credit-exempt areas;

(i.) To publish from time to time, upon advice from the RMCC and with the concurrence of the resource agencies, survey guidelines, restoration and enhancement guidelines, emergency utility maintenance and repair guidelines, and acceptable forms of conservation easements;

(j.) To manage administrative costs so as to make as much of the conservation fund as possible available for the acquisition of key habitat and for the management of the reserve system; and

(k.) To promulgate regulations from time to time that provide detailed guidance regarding the implementation of the procedures set forth in the HCP.

3. Member Agency Responsibilities

Each member agency of the RCHCA shall have the following responsibilities:

(a.) To establish and administer a process to require the presentation of a project take permit prior to allowing any activity to occur within its jurisdiction that would disturb land that is within the plan area, unless the land has been designated on the base map as a credit exempt area (each jurisdiction may use its normal permitting processes as the checkpoint for this requirement for any activities which require a permit from the agency);

(b.) To collect the conservation fee prior to allowing disturbance of land within the credit exempt areas; and

(c.) To enforce the illegal take ordinance decreed in subsection (6) below, and report such enforcement actions to the RCHCA. If a member agency fails to meet any of its responsibilities in a material manner, the RCHCA shall suspend the issuance of any new conservation credits for preservation of land in that agency's jurisdiction and the issuance of project take permits for projects within that agency's jurisdiction until the member agency has remedied its failure to the satisfaction of the RCHCA.

4. RMCC Responsibilities

Each member of the RMCC shall have the follow in a responsibility:

(a.) To carry out specific responsibilities allocated to it for the implementation of the habitat management portion of the CRMP;

(b.) To participate in the RMCC's production of a qualitative report on the preserve network in conjunction with each periodic review.

(c.) To recommend from time to time, and in no event less frequently than upon each periodic review, an updated CRMP; and

(d.) To advise the RCHCA from time to time, at the request of the RCHCA, on adoption of survey guidelines, restoration and enhancement guidelines, emergency utility maintenance and repair guidelines, and acceptable forms of conservation easements.

5. Registrar Responsibilities

The RCHCA is required to contract with an accounting firm to act as the "Registrar" for the HCP. The Registrar is the central clearing house for the creation, exchange, and use of credits. The Registrar will subcontract with an escrow and title insurance company and an engineer to assist it in verifying and registering conservation credit transactions. Landowners are required to register the following actions:

(a.) Creation of Credits. To obtain conservation credits for a preservation action, the landowner must apply to the Registrar with (a) a certified habitat value survey for the land to be preserved, (b) a completed standard worksheet showing the landowner's calculation of the conservation value of the preservation action, (c) an executed grant deed or grant of conservation easement in a standardized form for the land being preserved. The Registrar verifies the amount of credit, checks the form of the grant deed or conservation easement, and verifies that the grantor has insurable fee title, free and clear of monetary liens (except liens for nondelinquent property taxes and

assessments). When all such items are in order, the Registrar records the grant deed or conservation easement and issues conservation credits to the grantor.

(b.) Transfer of Credits. To transfer conservation credits from one landowner to another, the transferor must sign the credits over to the Registrar, give the Registrar the name and address of the transferee and the dollar price paid for the transfer, and pay a flat $100 transfer fee. The Registrar will issue a new certificate in the name of the transferee and mail it to the transferee.

(c.) Spending of Credits to Obtain Prelect Tate Permits. To use conservation credits, a landowner must apply to the Registrar with (a) a certified habitat value survey for the land to be disturbed, (b) a completed standard worksheet showing the landowner's calculation of the conservation value to be lost by the disturbance, (c) conservation credits sufficient to compensate for the proposed disturbance, (d) an assignment of those credits to the RCHCA in a standardized form, and (e) a registration fee of $250 per credit. The Registrar verifies the number of credits required and checks the form of assignment. When those items are in order, the Registrar issues a taking permit to the applicant for the parcel(s) described in the application. The Registrar will process all requests for registration within five (5) days and will act upon requests in the order they are received. If a check of conservation value by the Registrar yields a less favorable conservation value than indicated by the worksheet completed by the applicant, the Registrar will immediately notify the applicant and suspend processing of the application until the applicant notifies the Registrar whether it wishes to go forward with the application.

The Registrar will make the following information available to the public to facilitate habitat evaluations and transactions in conservation credits:

(i.) The current base map.

(ii.) The current size of each patch of undisturbed habitat, and the contiguity factor for each of those patches.

(iii.) The current size of each patch of habitat in the preserve network, and the contiguity factor for each of those patches.

(iv.) The current shape factor for the plan area.

(v.) The current shape factor for the preserve network.

(vi.) A list of the transfers of conservation certificates, with the following information for each transfer: number of credits transferred, sale price, and description of any special terms of transfer (such as seller financing).

6. Enforcement Against Illegal Take

Each member agency shall have in place an ordinance that imposes an automatic penalty for any disturbance of land in the plan area that is not in accordance with the HOP or otherwise permitted by State or federal law. The penalty shall be to obtain and assign to the RCHCA conservation credits equal to the number that would have been required to obtain a permit for the disturbance, but assuming a habitat value of 2. 5 habitat units per acre, which is 25% greater than the greatest habitat value that can otherwise be assigned to a parcel. Since the penalty credits are greater than the highest possible credit requirement for permitted take, the penalty system leaves no incentive whatsoever for illegal take to occur. The penalty shall become a lien against the parcels affected, and no activity shall be allowed on the disturbed parcels until the penalty is paid in full. The enforcement measures described in this subsection are in addition to any law enforcement actions that the federal or State government may take under federal or state law.

7. Summary of Program Funding

Acquisitions under the HTM alternative are funded entirely by the issuance of conservation credits and therefore require no outside funding source. Costs that must be funded are general RCHCA administrative costs, the cost of biological surveys, credit registration and transfer costs. the cost of ongoing reserve management, and the cost of any direct RCHCA habitat acquisitions. The funding sources for these various costs are summarized below:

COST	SOURCE
1. Acquisitions generally	Issuance of conservation credits (no monetary cost)
2. Reserve management	Endowment funded out of the conservation fund
3. RCHCA administrative costs	Conservation fund
4. Biological surveys	Survey fees charged to landowners; conservation fund for RCHCA-sponsored surveys
5. Credit registration & transfer	Registration fees and transfer fees
6. Revolving fund acquisitions	Conservation fund
7. Supplemental acquisitions	Conservation fund + earmarked public and private grants, matching funds, and bond funds

H. Multi-Species Planning

The HCP, as presented in the main text, would achieve its purposes in a simpler fashion than the HTM alternative would allow. This fact is due in large part to the existence of the core reserves described in the main text. By contrast, the existence of numerous endangered, threatened, and sensitive species on thousands of parcels of private land across Western Riverside County continues to create an intractable problem for both the environmental and economic health of the region. In this context, the HTM approach could be a valuable implementation tool for a multi-species HCP. The HTM approach is well-suited to the challenge of achieving quantifiable multi-species protection while providing landowners with a certain and equitable means of addressing project impacts to most Western Riversidian species. A multi-species HCP would be a major step toward ending the biological and economic tragedy of having to deal with one endangered species listing after another in Western Riverside County, and the HTM approach could help make such a multi-species HCP practical.

The same basic methodology presented in this appendix for the SKR can be adapted for multispecies planning. Since the sage scrub, chaparral, and grassland habitat types typically occur in a mosaic across Western Riverside County, these three habitat types could be considered for protection together using a single type of credit and an integrated conservation valuation methodology. Since the SKR inhabits a type of native grassland, SKR take permitting might also be covered by the new sage/chaparral/grasslands (SCG) credit system.

In addition to the SCG credits, which would cover a large percentage of the remaining natural habitat in Western Riverside County, separate credits might be developed for the following:

1. Riparian habitat, with the objectives of (a) no net loss of wetlands habitat, (6) qualification for a take permit under Section 10(a) of the federal ESA for listed and other sensitive riparian species, and possibly (c) qualification for a programmatic filling and dredging (Section 404) permit from the Army Corps of Engineers for small to moderate fills that may not otherwise qualify for a nationwide permit (e.g." up to 25 acres).

2. Oak woodlands habitat, with the objective of meeting or exceeding the level of protection provided by the existing oak tree ordinance.

3. Vernal pool habitat, with the objective of qualification for a take permit under Section 10(a) of the federal ESA for Riverside fairy shrimp and other sensitive vernal pool species.

Other species that require very specialized habitats or occur in very limited geographic ranges may not be conducive to protection using the HTM approach and may have to be protected by other means. Most such species that have attained protected status are plant species, for which mitigation is typically easier to provide than for animal species. As part of the multi-species HCP, the RCHCA might undertake a planting program to attempt to expand the populations of rare plant species on appropriate sites within the multi-species preserve network. Such populations could serve as a habitat bank for mitigation of project impacts on those species.

For each of the four types of credit-SCG, riparian, oak woodlands, and vernal pool-separate biological criteria would be developed. Except for the oak woodlands, the biological criteria for these credits would emphasize overall habitat quality and diversity, using presence of selected target or indicator species as well as other measures of habitat quality. Each of the four habitat types would have its own contiguity factor, although contiguity among habitat types may also be given a certain amount of value. Similarly, the shape of each habitat type may have its own value, but the combined shape of all protected habitat could also be considered.

Many parcels will contain more than one type of habitat. For example, a parcel might be predominantly SCG, with a riparian corridor and a patch of Munz's onion. In such a case, the conservation value for both SCG and riparian would be considered, and credits would be given or required (depending on whether the land is to be preserved or developed) for both. Since Munz's onion would not be covered by the general credit system, the landowner could either seek to bank Munz's onion values for sale to other landowners, or perhaps relocate the onions to a suitable site within the multi-species as a mitigation measure for developing the parcel.

When doing multiple-species planning, it will be critical to landowners that they receive as much assurance as possible that offering credits will solve their endangered species problem, with minimal risk that future listings will halt future phases of their projects. Existing law does not give clear standing to pre-listing endangered species permits, but it is hoped, and coming to be expected, that pre-listing permitting authority will be clarified with the reauthorization of the federal ESA. If Riverside County moves toward multi-species planning, it should consider lobbying for this change, or for a pilot program for the County that would provide the benefits of a pre-listing take permit.

1. Meeting ESA Requirements

The HCP must satisfy the criteria of Section 10(a) of the federal ESA and Section 2081 of the California Fish and Game Code in order to be the basis for the issuance of the Permit and Agreement. This section discusses the conservation assurances of the HTM alternative generally, then discusses in detail how the HCP could meet the requirements of the ESAs for issuance of take authority.

I. Summary of Conservation Assurances

a. Existing Preserved Land

The first assurance is that substantial acreage of land containing occupied SKR habitat has already been set aside for permanent preservation under the Short-Term HCP to form the initial core reserves. This assurance is not peculiar to the HTM alternative and is discussed more full) in the main text.

b. Inherent Safeguards

The HTM alternative provides substantial inherent safeguards which are calculated to assure that the conservation objectives of the HCP will be met (i.e., the target conservation value will be preserved). These assurances are summarized below:

(i.) The quantitative objective of protecting a given amount of conservation value (measured in conservation units) is assured of being attained in the long run by requiring mitigation in the form of preserving conservation value. **This Is the key assurance because It Is the assurance of a particular result that is based upon sound principles of conservation biology.**

(ii.) The mitigation requirements make it impossible for any development or the accumulation of development to preclude the attainment of the target conservation value.

(iii.) Because acquisitions are based on project mitigation, it is impossible to have a funding shortfall for purposes of attaining the target conservation value.

(iv.) Mitigation always occurs prior to the take of habitat.

(v.) The contiguity and shape factors ensure that preservation will not be fragmented, but rather will occur in configurations that have substantial long-term conservation value.

c. Direct Agency Acquisitions

If the RMCC and the RCHCA find it appropriate, funds from the conservation fund that are not needed for administrative costs or reserve management may be used to make key acquisitions within the plan area for the HCP. This option provides a means for the RCHCA to directly intervene to influence the conservation outcome rather than leave the outcome entirely to the results of the creation, trading, and use of conservation credits. Moreover, the RCHCA can replenish its acquisition fund at least partially by selling the conservation credits it receives for preserving the land acquired. In this manner, an ongoing acquisition effort on the part of the RCHCA is greatly facilitated by the HTM Alternative.

d. Monitoring Program

As an additional safeguard, the HCP incorporates a comprehensive monitoring program. Under this program, new information that adjusts the estimated amount of existing SKR habitat results in an automatic adjustment in the conservation ratio on an annual basis; new information regarding the efficacy of various management strategies can be effected at any time by modifying the CRMP; new information on the characteristics of SKR habitat value can be easily incorporated into the definition of habitat value at each periodic review; limitless other adjustments can be made to the HCP with the concurrence of the participating agencies at each periodic review; and emergency reviews that call for emergency action can be called by the resource agencies immediately upon a finding of certain adverse unforeseen circumstances. This multi-tiered monitoring process provides an important set of fail-safes for the HCP.

2. Meeting of Federal ESA Requirements

The criteria applied to the review of applications for take permits under Section 10(a) of the federal ESA and a description of how each of these criteria is satisfied under the HTM alternative are shown in the following table:

SECTION 10(a) CRITERIA	HOW SATISFIED
The taking will be incidental to an otherwise lawful activity	All takings would be pursuant to the Permit and Agreement, which would allow only incidental take
The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking	The conservation ratio quantifies the impact of take that will be permitted and the extent to which take will be minimized and mitigated in terms of conservation value for the SKR; the cost of mitigation to private landowners is also reflected by the conservation ratio, and the public discussion of the conservation ratio and its impact will provide ample documentation that the ratio finally implemented, with the automatic adjustment mechanism incorporated into the monitoring plan, minimizes and mitigates "to the maximum extent practicable"
The applicant will ensure that adequate funding for the HCP will be provided	Acquisition is through private actions taken to mitigate project impacts; since mitigation is required on a true "pay-as-you-go" basis, with preservation of replacement habitat always occurring prior to take of habitat, acquisition "funding" is assured Funding for administration and reserve management is provided from a combination of registration fees and conservation fees (including any unused funds generated by the Short-Term HCP); the conservation fee and registration fee is to cover projected costs and can be modified as necessary if actual costs vary too greatly from projections
The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild	The combination of the following factors should be found to meet the survival and recovery standard: • Substantial SKR conservation value is already under permanent preservation; • The conservation value to be protected under the HCP is likely to equal or exceed what is required to provide for the survival and recovery of the SKR; • The management program to be implemented under the HCP assures that the conservation value of the SKR habitat preserved is likely to be maintained or increased during the life of the permit; and • The monitoring program provides a means of continually adjusting to new scientific information and of implementing emergency measures in the case of unforeseen circumstances
The applicant will assure that other measures (if any) that USFWS may require as being necessary or appropriate will be met	Such "other measures" must be addressed as they become known, but the HCP has the flexibility to coordinate well with a wide variety of "other measures"
The applicant will ensure that procedures to deal with unforeseen circumstances will be provided	The monitoring program provides multiple levels of review to incorporate new information, including emergency review provisions to deal with unforeseen circumstances
USFWS must be assured that the conservation plan will be implemented	The RCHCA already has the political and basic administrative framework in place to implement the plan, as well as a three-year track record of implementing perhaps the most complex HCP ever undertaken; in addition, all funding mechanisms necessary to implement the plan will be in place from the outset of the HCP, and the implementing agreements will be in place setting forth the specific responsibilities of the resource agencies, the RCHCA, and the RCHCA's member agencies

3. Meeting of State ESA Requirements

In order to issue take authority under Section 2081 of the California Fish and Game Code, CDPG must be able to determine that the proposed action (implementation of the HCP) will not jeopardize a listed or candidate species. Since the State ESA requires CDPG to coordinate with USPWS with respect to federally listed species and, whenever possible, adopt its findings, compliance with Section 10(a) of the federal ESA should, as a practical matter, result in a no jeopardy finding by CDPG. Therefore, the above description of how the HCP would complies with Section 10(a) of the federal ESA should suffice for purposes of Section 2081.

J. Conclusion

The HTM alternative is designed to satisfy the requirements of the ESAs by employing economic incentives to preserve habitat. The HTM approach assures that quantifiable conservation objectives will be reached while providing landowners with certainty and flexibility concerning the use of their lands.

It may not be appropriate, however, to apply the HTM alternative to the HOP. Because substantial lands have been preserved under the Short-Term HCP, a long-term plan for the SKR may be attainable in a relatively simple fashion. If the strategy descried in the main text is acceptable to the resource agencies, then there is little need for the HTM approach for purposes of the SKR alone. On the other hand, as the RCHCA faces the challenges of multi-species planning, it may find the HTM approach to be a useful tool to assist in achieving the conservation goals and economic needs of the community.

Attachment 1 - Calculation of Conservation Value under the HTM Alternative

The procedure for calculating the habitat value and the conservation value of any given configuration of habitat is described in detail below.

A. Habitat Value

The habitat value of a parcel or group of parcels refers to its inherent habitat quality, based upon the presence of SKR. Do to 2.0 points per acre are awarded to the land area as follows:

POINTS	PER ACRE OF
0.00	Unoccupied
0.25	Suitable for Dispersal
0.50	Historically Occupied
1.00	Trace to Low Density
2.00	Medium to High Density

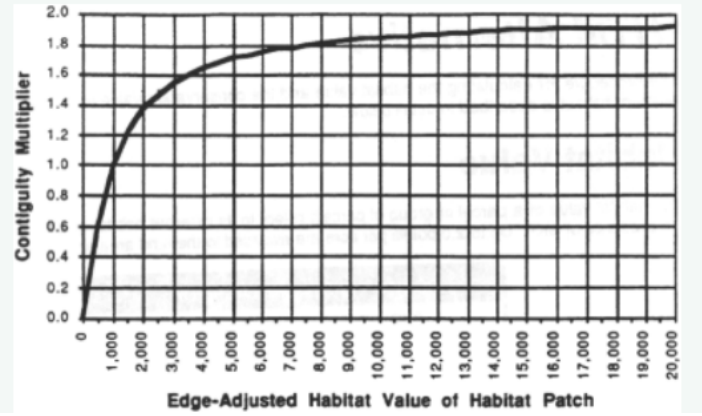
Applying this point system using the survey guidelines referred to in Section E (4) of the text & yield a habitat value of between 0.0 and 2.0 points per acre for any given parcel of land.

B. Adjustments to Determine Conservation Value

In order to determine the conservation value of the plan area or the preserve network at any point in time, the habitat value of such area must be adjusted for contiguity and shape as follows:

1. Contiguity Adjustment

The habitat value is 'first adjusted for contiguity. Each patch of habitat has a contiguity fact-based upon the habitat value of the patch. The contiguity-adjusted value of the plan area or p serve network is determined by multiplying the habitat value of each patch by the contiguity factor for that patch. A formula represented by the following graph is used to determine the contiguity factor for each patch of habitat:



The formula for the contiguity factor represented by the foregoing curve is as follows for any habitat patch with a habitat value x that is greater than zero:

$$f(x) = 2\left(1 - \frac{1}{x/F + 1}\right)^2, \quad \text{where } F = \frac{1000}{\left(\frac{1}{1-\sqrt{1/2}} - 1\right)} = 414.21$$

Note that the contiguity factor for a habitat patch with a habitat value of 1,000 is 1.0, and that the contiguity factor approaches, but is never greater than or equal to 2.0. The RCHCA will publish a table of contiguity factors to facilitate calculation of conservation values without the use of the above formula.

For purposes of these calculations, a contiguous habitat patch is defined as the maximum unbroken area from any given starting point (insisting of any combination of SKR habitat with an unadjusted habitat value of at least 1.0 point per acre and alt natural land within a radius of 300 feet of all such SKR habitat. Any place where such a patch is connected only by land with a minimum width of 300 feet or less shall be considered a break in contiguity at that

point. The mapping of contiguous habitat on the base map shall govern contiguity calculations, subject to updates of the base map with more detailed surveys.

2. Shape Adjustment

Finally, the contiguity-adjusted habitat value is adjusted for shape. A single shape factor exists for the entire plan area or preserve network based on the total land area (A) and the total perimeter (P) of all the habitat patches combined. The formula for the shape factor is as follows:

$$f(A,P) = 2\pi\left(\frac{\sqrt{A/\pi}}{P}\right)$$

This formula will yield a factor between 0 and 1, which is applied to the total contiguity-adjusted habitat value of the plan area or the preserve network to produce the conservation value of such area in terms of conservation units. As for the contiguity factor, the RCHCA will publish a table of shape factors to facilitate calculation of conservation values without the use of the above formula.

Appendix E - Biogeographic, Land Use, and Land Ownership Profile of the SKR Core Reserve

Attachment (E-1)

- *Other Species of Concern Associated with Habitats in the Plan*

Table (E-1)

- *Summary Characteristics of Acreage in SKR Core Reserves*

Figures

- *HCP Plan Area and SKR Core Reserves*
- *Lake Skinner-Domenigoni Valley Core Reserve: Cover Types*
- *Lake Skinner-Domenigoni Valley Core Reserve: Stephens' Kangaroo Rat Habitat*
- *Lake Skinner-Domenigoni Valley Core Reserve: Ownership.*
- *Appendix E Lake Mathews Core Reserve: Cover Types*
- *Lake Mathews Core Reserve: Stephens Kangaroo Rat Habitat*
- *Lake Mathews Core Reserve: Ownership*
- *San Jacinto Lake Perris Core Reserve: Cover Types*
- *San Jacinto Lake Perris Core Reserve: Stephens' Kangaroo Rat Habitat*
- *San Jacinto Lake Perris Core Reserve: Ownership*
- *Sycamore Canyon - March Air Force Base Core Reserve: Cover Types*
- *Sycamore Canyon - March Air Force Base Core Reserve: Stephens' Kangaroo Rat Habitat*
- *Sycamore Canyon - March Air Force Base Core Reserve: Ownership*
- *Steele Peak Core Reserve: Cover Types*
- *Steele Peak Core Reserve: Stephens' Kangaroo Rat Habitat*
- *Steele Peak Core Reserve: Ownership*
- *Potrero ACEC Core Reserve: Cover Types*
- *Potrero ACEC Core Reserve: Stephens' Kangaroo Rat Habitat*
- *Potrero ACEC Core Reserve: Ownership*
- *UC Motte Rimrock Core Reserve: Cover Types*
- *UC Motte Rimrock Core Reserve: Stephens' Kangaroo Rat Habitat*
- *UC Motte Rimrock Core Reserve: Ownership*

A. Overview

The SKR core reserve system consists of seven core reserves encompassing 41,221 acres, including 12,460 acres of SKR occupied habitat. (Table E-1 and Figure E-1).

Vegetation mapping completed in 1994 under an interagency contract with Pacific Southwest Biological Services (PSBS) indicated the presence of seven habitat types within the SKR core reserves. Sage scrub is the most abundant vegetation (16,899 acres) within the core reserve system, followed by grassland (1 1,452 acres), chaparral (6,495 acres), alkali playa (2,965 acres), riparian (497 acres), woodland (325 acres), and marsh (2 acres) (Table E-1). It should be noted that the PSBS data is based on vegetation data obtained prior to the October 1993 California Fire which burned a significant portion of the Lake Skinner-Domenigoni Valley core reserve. Accordingly, vegetation calculations contained in this Appendix do not reflect temporary alterations of habitat resulting from the fire.

In addition to SKR, III other species of concern are either known to occur or potentially occur in one or more of the SKR core reserves (Attachment E-1).

Following are detailed descriptions of the SKR core reserves, including information concerning SKR occupied habitat, vegetation types, and current land ownership information. For convenience of review, the sequence of tabulated data and corresponding maps for each reserve follows the narrative description of the individual reserve.
Additional technical information concerning soils associated with SKR and other habitat factors is included in the literature review and individual reports found in Volume II.

B. Lake Skinner-Domenigoni Valley Core Reserve

The Lake Skinner-Domenigoni Valley core reserve is located southwest of Hemet and east of State Highway 79 (Figure E-1). This is the southern and easternmost core reserve, consisting entirely of unincorporated territory under County jurisdiction. Encompassing approximately 13,158 acres. Lake Skinner-Domenigoni Valley is the largest SKR core reserve. The majority of this core reserve is owned either by Metropolitan Water District of Southern California ("MWD") or the RCHCA (Figures E-2, E-3, and E-4). The RCHCA holds SKR conservation easements over 1,336 acres of MWD property, 46 acres of County of Riverside property, and 205 acres of private property.

1. Topography

The topography of the Lake Skinner-Domenigoni Valley reserve is variable, consisting of steeply sloped mountainous terrain as well as relatively flat and gently sloping areas. Elevations range from approximately 1,500 feet to 2,672 feet above mean sea level. The lowest elevations occur around the existing Lake Skinner Reservoir in the southern portion of the reserve, and the proposed Domenigoni Reservoir in the northern portion of the reserve. The highest portions of the reserve lie south of the proposed Domenigoni Reservoir site and on Black Mountain near the eastern boundary. Elevations in areas north of the Lake Skinner Reservoir are nearly as high, reaching up to 2,412 feet above mean sea level.

2. Soils

The Lake Skinner-Domenigoni Valley core reserve contains 89 different soil types from34 different soil series. Based upon previous research, 63 of the 89 soil types which occur in this reserve are known to support SKR (Knecht 1971, O'Farrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

This core reserve supports six major vegetation communities (Table E-1). The three most common vegetation types are chaparral (5,093 acres), sage scrub (4,834 acres) and mixed grassland (2,264 acres). These three vegetation communities cover approximately 97% of the core reserve. Other vegetation communities within the reserve include riparian (288 acres), and woodland (158 acres). Approximately 521 acres or 4% of the reserve consists of land cleared of native vegetation.

4. SKR Occupied Habitat

As of March 1996, approximately 1,988 acres of SKR occupied habitat were contained in the Lake Skinner-Domenigoni Valley core reserve. (Figure E-3). Although a majority of the reserve contains appropriate soils and topography for SKR, the dominant vegetation in this reserve (chaparral and sage scrub) is not suitable for this species. Much of the SKR occupied habitat in this core reserve occurs on lands which were converted from sage scrub and chaparral to cleared land by agriculture, grazing, and/or fire.

5. Other Species of Concern

In addition to SKR, 32 other species of concern (including 7 plants, 5 reptiles, 14 birds, and 6 mammals) are known to occur in the Lake Skinner core reserve. An additional 78 species of concern (including 35 plants, 3 invertebrates, 14 amphibians and reptiles, 19 birds and 7 mammals) potentially occur in this area. (Attachment E-1).

6. Ownership

As of January 1995, the Lake Skinner-Domenigoni Valley reserve included lands in both public and private ownership. Within the reserve, MWD is the largest land owner (over 9,700 acres), followed by the RCHCA (approximately 2,088 acres). County of Riverside (662 acres), and BLM (305 acres). The remaining 316 acres in the reserve are currently in private ownership.

7. Land Use

Most of the land within this reserve is undeveloped, but is crossed by numerous dirt roads. Some portions of this core reserve have been used for agriculture in the past, particularly grazing. Land surrounding Lake Skinner is developed as a County Regional Park with camping and water recreation facilities. The park is classified as a scenic park/recreation area/cultural heritage site. Current uses include 24-hour camping and recreational vehicle hook-ups, swimming, fishing, boating, equestrian and hiking trails, and picnicking.
Land uses adjacent to the boundaries of the reserve are generally agriculture intermixed with some rural residential development and open space.

8. Connectivity

The Lake Skinner-Domenigoni Valley core reserve is part of a contiguous block of relatively natural habitat that extends east to the San Bernardino National Forest, and southeast to the Cleveland National Forest. Included in this region is Vail Lake, an area encompassing many sensitive animal and plant species. Vegetation in this area is dominated by chaparral but also includes grassland, coast live oak woodland, riparian forest, and desert chaparral. All of this land is presently unincorporated and is under much less development pressure than areas to the north near Hemet, to the west in the vicinity of State Highway 79, and to the south near the City of Temecula.

C. Lake Mathews-Estelle Mountain Core Reserve

The Lake Mathews core reserve covers an area of 11,243 acres located south of the City of Riverside and northeast of Interstate 15 (Figure E-1). This reserve consists entirely of land within the jurisdiction of the County of Riverside. The Lake Mathews reserve includes approximately 4,264 acres of SKR occupied habitat, more than any other reserve. (Figures E-5, E-6, and E-7).

1. Topography

In the northern portion of the reserve around Lake Mathews, the topography is relatively flat and gently sloping with elevations ranging from 1,180 feet to 2,200 feet; the majority of land lies between 1,400 and 1,600 feet. In the southern portion of the reserve the land is mostly rugged and steep, with elevations ranging from 1,000 feet at the western end of Dawson Canyon to 2,767 feet at the summit of Estelle Mountain.

2. Soils

The Lake Mathews core reserve includes 45 different soil types from 26 different soil series. Of this group, 32 of the soils types are known to support SKR (Knecht 1971, O'Farrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

Six major vegetation communities are included within this reserve. (Table E-1). The two most common vegetation types are sage scrub (5,609 acres) and grassland (3,488 acres); approximately 81% of the entire reserve is covered by these two vegetation communities. The other vegetation types occurring within the reserve are chaparral (315 acres), woodland (164 acres), riparian (163 acres), and marsh (2 acres). Within this core reserve 13% of land is cleared of native vegetation.

4. SKR Occupied Habitat

As noted above, the Lake Mathews core reserve contains approximately 4,264 acres of SKR occupied habitat; this represents 34% of all SKR occupied habitat within the entire reserve system. At present approximately 38% of all land in the reserve is occupied by SKR.

Although a majority of the reserve contains vegetation and soils capable of supporting SKR, the topography in some areas (particularly in the southern portion of the reserve), is too steep and rugged for the species.

5. Other Species of Concern

In addition to SKR, the Lake Mathews core reserve is known to support 46 other species of concern (including 8 plants, 7 reptiles, 23 birds, and 8 mammals). An additional 43 species of concern (including 19 plants, 2 invertebrates, 12 amphibians and reptiles, 5 birds, and 5 mammals) potentially occur in this area. (Attachment E-1).

6. Ownership

The Lake Mathews core reserve presently includes lands under both public and private ownership. MWD is the largest land owner (over 5,100 acres) followed by the RCHCA (4,598 acres), BLM (320 acres), and the Wildlife Conservation Board (WCB) (221 acres). Approximately 292 acres of land owned by Western Waste Industries will be conveyed to the RCHCA pursuant to the El Sobrante Landfill Expansion Mitigation Plan as described in 5. SKR Conservation and Mitigation Measures. The remaining 683 acres in the core reserve are currently in private ownership.

7. Land Use

Lands surrounding the lake are essentially undeveloped. The northwest corner is also undeveloped but is crossed by numerous roads. Orchards (citrus and avocado) and vineyards are located along the north edge of the reserve, south of El Sobrante Road and in the central portion of the reserve, south of Cajaico Road. There is a large water tank

surrounded by intensive off-road-vehicle tracks in the northeast corner, and a water works facility is located near the Colorado River Aqueduct inlet on about 10 acres. MWD also is in the process of identifying the route and configuration of a bypass system along the perimeter of the reservoir to intercept urban runoff. Between El Sobrante Road and the eastern boundary of the core reserve, the land is mainly undeveloped.

Over 80% of the reserve is within the County's Lake Mathews Community Plan area. Land outside the Lake Mathews Community Plan with slopes grater than25 percent is designated "mountainous area," which permits low intensity land uses on 10-acre minimum lot sizes. Land uses within the vicinity of the northern edge, and the northern half of the eastern edge of the reserve primarily consists of agriculture and residential development. Land within the vicinity of the remainder of the reserve is primarily undeveloped with some agriculture.

8. Connectivity

The Lake Mathews core reserve is part of a contiguous block of generally undeveloped grassland, sage scrub, and chaparral habitats extending from State Highway 91 to Interstate 15. The best opportunity for connections to regionally significant open space exists in the southwestern portion of the reserve. In this area it is still possible to link the core reserve to the Cleveland National Forest through the Temescal Wash. from the boundary of the core reserve, the Wash extends to the southwest, crosses under Temescal Canyon Road, an abandoned railroad line, and 1-15, and continues into the Cleveland National Forest.

D. San Jacinto-Lake Perris Core Reserve

The San Jacinto-Lake Perris core reserve encompasses 10,932 acres located south of central Moreno Valley and north of the Ramona Expressway (Figure E-1). Approximately 3,640 acres of SKR occupied habitat are contained within this area. Over 93% of this reserve lies within the County of Riverside; most of the balance is within the City of Moreno Valley, and less than an acre of the southern portion of the reserve lies within the City of Perris. (Figures E-8, E-9, and E-10).

1. Topography

The topography of the San Jacinto-Lake Perris core reserve consists of areas of relatively flat and gently sloping terrain around the lake and in the eastern portion of the reserve. Land to the south of the lake is steep and rugged. Elevations in this SKR core reserve range from 1,420 feet to 2,689 feet.

2. Soils

Included in this core reserve are 62 different soil types from 23 different soil series. Forty of the soil types within the reserve are known to support SKR (Knecht 1971, O'Farrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

Six major vegetation communities exist within the core reserve. (Table E-1). Approximately 90% of the land within the reserve consists of grassland (3,606), sage scrub (3,749 acres), and alkali playa (2,965 acres). The other vegetation communities within the reserve are chaparral (52 acres), riparian (39 acres), and woodland (3 acres). Less than 1 % of the reserve consists of land cleared of native vegetation (32 acres).

4. SKR Occupied Habitat

The San Jacinto-Lake Perris core reserve includes approximately 3,640 acres of SKR occupied habitat. This suggests that nearly all of the grassland habitat most suitable for SKR is presently occupied by the species. Moreover, it is likely that SKR may have ventured into sparsely vegetated sage scrub habitat.

5. Other Species of Concern

In addition to SKR, 13 other species of concern (including 5 reptiles, 6 birds, and 2 mammals) are known to occur in this core reserve. An additional 88 species (including 34 plants, 2 invertebrates, 14 amphibians and reptiles, 27 birds, and 11 mammals) have the potential to occur in this area.

6. Ownership

With the exception of approximately 154 acres under option to the RCHCA, the entire San Jacinto-Lake Perris core reserve is presently in public ownership. The State (through the Department of Parks and Recreation, CDFG, and Department of Water Resources) is the largest land owner in this reserve, covering more than 96% of the total acreage. The balance of acreage is owned either by the RCHCA or the County of Riverside.

7. Land Use

The San Jacinto-Lake Perris core reserve consists of undeveloped hills and slopes surrounding Lake Perris, active recreation and water resource facilities in the State Recreation Area, and previously farmed lands to the east. The State Recreation Area has several paved access roads and developed campgrounds on about 500 acres near the lake, with several water tanks located in the surrounding hills. A small area west of the dam is basically undeveloped, except for small support and maintenance facilities and areas that are farmed or used as fairgrounds. The San Jacinto Wildlife Area has been previously grazed and includes a small office, limited visitor facilities, levees, and ponds.

Land within the vicinity of the core reserve are primarily in agriculture to the south and east and residential development to the north and west.

8. Connectivity

The northeast portion of the reserve extends east of Gilman Springs Road and adjoins the Badlands. The Badlands cover a large block of sage scrub, grassland, and chaparral habitats extending to the San Bernardino National Forest. This area, which includes significant blocks of land under County of Riverside and BLM ownership, is generally considered a wildlife migration corridor of regional importance. Through the acquisition of the Anderson property the RCHCA secured an important section of habitat necessary to ensure the conservation of this corridor.

E. Sycamore Canyon-March Air Force Base Core Reserve

The Sycamore Canyon-March Air Force Base core reserve is located south of Highway 60 and west of Interstate 215 (Figures E-11, E-12, E-13). The reserve encompasses 2,502 acres of land. Approximately half of the reserve lies within Sycamore Canyon Park in the City of Riverside. The balance of the reserve south of Alessandro Boulevard is part of March Air Force Base and therefore under the jurisdiction of the Department of Defense.

1. Topography

The Sycamore Canyon portion of the reserve consists of moderate and rocky terrain, with elevations ranging from 1,100 feet to 2,660 feet above sea level. The southern portion of the reserve on March Air Force Base consists of relatively flat and gently sloping terrain, with elevations ranging from 1,540 feet to 1,800 feet above sea level.

2. Soils

The Sycamore Canyon-March Air Force Base core reserve includes 29 soil types from 11 different soil series. Of these 29 soil types, 23 are known to support SKR (Knecht 1971, O'Farrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

The two major vegetation communities within this core reserve are grassland (1,721 acres), and sage scrub (741 acres) (Table E-1). The remaining 40 acres encompass lands classified by PSBS as are residential/urban/exotic (36 acres) and riparian (4 acres).

4. SKR Occupied Habitat

Approximately 1,355 acres of SKR occupied habitat are contained within the Sycamore Canyon-March Air Force Base core reserve; thus, more than 50% of the reserve is occupied by SKR. Although a majority of the reserve contains vegetation (grassland and sage scrub), and soils which are suitable for SKR, the topography in portions of the Sycamore Canyon is too steep and rugged to support this species.

5. Other Species of Concern

This core reserve supports 25 species of concern (including 7 reptiles, 15 birds, and 3 mammals). Another 35 species of concern (including 21 plants, 2 invertebrates, 4 birds, and 8 mammals) potentially occur in this area (Attachment E-1).

6. Ownership

Most of the core reserve is presently under public ownership. The City of Riverside is the largest land owner (1,230 acres), followed by the Department of Defense (1,040), and the State of California (132 acres). Approximately 100 acres of private land is under negotiation.

7. Land Use

The reserve is essentially undeveloped, but is crossed by underground water and gas lines, overhead electric lines, and a number of dirt roads. Sycamore Canyon Park is designated as a wilderness area to be protected and preserved. Ultimately, the park will include an interpretive center and hiking trails. The Sycamore Canyon Park portion of the reserve is presently surrounded to the north and west by development, and will be surrounded to the east as welt. A narrow MWD easement traverses the southern section of the Sycamore Canyon Park. This easement, commonly referred to as the Box Springs Feeder project is not a part of the Sycamore Canyon/March Air Force Base core reserve. The northern and southern portions of the reserve are bisected by Alessandro Boulevard, a major arterial. The southern portion of the reserve on March Air Force Base is generally undeveloped with the exception of a weapons storage area. This area is bordered to the west and south by residential development.

8. Connectivity

As noted above, the Sycamore Canyon-March Air Force Base core reserve is largely surrounded by development. As a result, opportunities for connections to other areas of open space are relatively few. A potential wildlife corridor may be established between the core reserve and Box Spring Mountain County Park. The University of California at Riverside and the Riverside Land Conservancy have sought to define and initiate conservation efforts in this corridor. However, the success of these endeavors will depend upon the availability of new funding for necessary land acquisitions.

The most significant issue is ensuring a connection across Alessandro Boulevard between the Sycamore Canyon and March Air Force base portions of the reserve. As detailed in the HCP text, this connection is now highly problematical

due to the abandonment by the USFWS of a 1990 Biological Opinion requirement for construction of a wildlife undercrossing beneath Alessandro Boulevard.

F. Steele Peak Core Reserve

The Steele Peak core reserve is located east of Interstate 215 and adjacent to the northern boundary of the City of Lake Elsinore (Figure E-1) and southeast of the Lake Mathews. The majority of the reserve is located within the County of Riverside; approximately 157 acres of the southern portion of the reserve lies with in the City of Lake Elsinore. The Steele Peak core reserve is comprised of five large blocks of publicly owned land which, in the aggregate, encompass 1,753 acres (Figure E-14, Figure E-15, and Figure E-16).

1. Topography

The reserve consists primarily of moderately rolling rocky hills and, in some areas, steep rocky ridgelines. Elevations in the reserve range from 1,640 feet to 1,860 feet above sea level in the southern portion, 1,960 feet to 2,460 feet above sea level in the central portions, and 1,720 feet 102,160 feet above sea level in the northern portions. Several natural drainage courses traverse the reserve from a south/southeast to north/northwest, direction.

2. Soils

The Steele Peak core reserve includes 27 soil types from 16 different soil series. Of these 27 soil types, 10 are known to support SKR (OTarrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

The three major vegetation communities within this core reserve are sage scrub (961 acres), grassland (226 acres), and chaparral (561 acres) (Table E-1). The remaining 5 acres of reserve land are classified as residential/urban/exotic (3 acres) and riparian (2 acres).

4. SKR Occupied Habitat

Approximately 860 acres of SKR occupied habitat are contained within the Steele Peak Core reserve; thus, almost 49% of all land in the reserve is occupied by SKR.

5. Other Species of Concern

This core reserve supports 12 species of concern (including 5 reptiles, 6 birds, and 1 mammal). Another 52 species of concern (including 23 plants, 2 invertebrates, 7 reptiles, 9 birds, and 11 mammals) potentially occur in this area (Attachment E-1).

6. Ownership

The entire core reserve is presently owned by two public agencies. The U.S. Bureau of Land Management owns approximately 1,544 acres and the RCHCA holds title to 209 acres.

7. Land Use

The Steele Peak core reserve is essentially undeveloped, but is crossed by dirt roads and trails. Five private inholdings exist within BLM land which comprises the central portion of the reserve. Access to these inholdings is presumed to be from the existing dirt road network. The BLM has agreed to manage their Steele Peak properties consistent with the goals and objectives established by the SKR HCP.
Existing and general plan designated land uses within the vicinity of the core reserve consist primarily of rural agriculture and rural residential designations. The minimum lot sizes for these designations range from one half acre to two and a half acres within the northern portions of the reserve and from five to ten acres interspersed among the northern and central and southern portions of the reserve.

8. Connectivity

As illustrated above, the private property surrounding the five blocks of land which comprise the Steele Peak core reserve are either heavily parcelized, zoned for relatively small lots, or have existing structures and/or residences. Present and future parcelization of property in the surrounding area provide for limited and tenuous land connections between the blocks of land which comprise the Steele Peak core reserve, connections with the Lake Mathews core reserve to the west, and the Motte Rimrock core reserve to the northeast. However, the Steele Peak core reserve mosaic may lend itself to providing critical habitat for the California gnatcatcher and other listed species which do not depend solely on actual land connections between significant habitat patches.

G. Potrero ACEC Core Reserve

The Potrero ACEC core reserve is located south of Highway 60 and west of Gilman Springs Road (Figure E-1). The entire reserve lies within the unincorporated area of Riverside County. (Figure E-17, Figure E-18, and Figure E-19).

The Potrero Area of Critical Environmental Concern ("ACEC") core reserve is owned and managed exclusively by the U.S. Bureau of Land Management ("BLM"). In the June 1994 Record of Decision for the BLM South Coast Resource Management Plan ("RMP"), the land was formally identified as an ACEC. Not only has the BLM committed to managing this reserve for sensitive habitats and resource values, they have also committed to acquiring and additional 1,000 acres in the vicinity of the Potrero ACEC to consolidate ownership and improve management. The BLM has indicated that it will manage the Potrero ACEC consistent with the goals and objectives set forth in the SKR HCP.

1. Topography

The Potrero ACEC is situated in the portion of western Riverside County commonly referred to as the Badlands area. Steep, undulating hills and valleys are characteristic of the land in and around the reserve. Elevations range from 1,680 feet to 2,500 feet above sea level.

2. Soils

The core reserve includes 6 soil types from 4 different soil series. Of these 6 soil types, 3 are known to support SKR (O'Farrell and Uptain 1989, Price and Endo 1989). Soils within the Badlands region of Riverside County are generally unstable and of poor quality.

3. Vegetation

The two major vegetation communities within this core reserve are sage scrub (503 acres) and chaparral (474 acres) (Table E-1). The remaining 18 acres are classified as grassland (17 acres) and riparian (1 acre).

4. SKR Occupied Habitat

Approximately 18 acres of SKR occupied habitat have been identified within the Potrero ACEC core reserve. This primarily due to the lack of suitable vegetation, topography, and soils. Much of the topography within the Potrero ACEC core reserve is too rugged and too steep to support large populations of SKR.

5. Other Species of Concern

This core reserve supports 4 species of concern (including 2 reptiles and 2 birds). Another 51 species of concern (including 15 plants, 1 invertebrate, 1 amphibian, 10 reptiles, 11 birds, and 13 mammals) potentially occur in this area (Attachment E-1).

6. Ownership

The core reserve is owned entirely by the BLM.

7. Land Use

The reserve is relatively undisturbed but crossed by several dirt roads/trails. The BLM is committed to managing the land for SKR and multi-species values and supplementing their existing holdings with the purchase of an additional 1,000 acres of lands contiguous to the Potrero ACEC.

Land surrounding the Potrero ACEC is generally undisturbed open space. The Riverside County DeAnza Regional Park is contiguous to the northern boundary of the reserve. Of the estimated 4,100 acres of regional park land, 60 acres is a cycle park (closed pending further discussions with the State of California), 1,110 acres is identified as the Badlands Sanitary Landfill, and the remaining 2,930 is left in open space with intermittent farming near the San Timeteo River drainage. The cycle park is closed pending future negotiations with the State of California. The landfill site will, under existing agreements, eventually be capped and converted to the County Park and Open Space District.

8. Connectivity

Opportunities for connections to other areas of open space are relatively broad. As discussed above, the reserve is located within an area commonly referred to as the Badlands Area. The Badlands cover a large block of sage scrub, grassland, and chaparral habitats extending to the San Bernardino National Forest. This area, which includes significant blocks of land under County of Riverside and BLM ownership, is generally considered a wildlife migration corridor of regional importance.

Potential connections exist to the south of the Potrero ACEC reserve through the San Jacinto-Lake Perris core reserve, to the north via the 4,100 acre Riverside County DeAnza Regional Park land. A possible wildlife corridor may be established from Box Spring Mountain County Park to Forest Service lands to the east inclusive of the Potrero ACEC. The University of California at Riverside and the Riverside Land Conservancy have sought to define and initiate conservation efforts in this corridor. However, the success of these endeavors will depend upon the availability of new funding for necessary land acquisitions.

H. Motte Rimrock Reserve Core Reserve

The Motte Rimrock core reserve is located two miles northwest of Perris, east of Old Elsinore Road and south of Cajaico Road (Figure E-1). Approximately 338 acres within this reserve are under the jurisdiction of the County of Riverside and 318 acres lie within the City of Perris. Encompassing approximately 638 acres, the Motte Rimrock Reserve is the smallest of the SKR core reserves. (Figure E-20, Figure E-21, and Figure E-22).

1. Topography

The topography of the Motte reserve consists of numerous ridges and depressions. A ridge forms a steep escarpment on the eastern side of the reserve, while other ridges consist of relatively gentle slopes. Elevations on the reserve range from 1,700 feet to 1,985 feet above sea level.

2. Soils

This core reserve includes 11 different soil types from six different soil series. Of the 11 soil types, six are known to support SKR (Knecht 1971, O'Farrell and Uptain 1989, Price and Endo 1989).

3. Vegetation

Only two major vegetation communities are contained within the Motte Rimrock core reserve. These include sage scrub (502 acres) and grassland (130 acres). The remaining six acres of the reserve is classified by PSBS as residential/urban/exotic.

4. SKR Occupied Habitat

Approximately 335 acres of SKR occupied habitat are contained in the core reserve. Although a large portion of the reserve contains vegetation, soils, and topography suitable for SKR, large rock outcroppings scattered throughout the reserve preclude SKR from colonizing some areas.

5. Other Species of Concern

In addition to SKR, 33 other species of concern (including 10 reptiles, 19 birds, and 4 mammals) are known to occur in the Motte Core Reserve. Another 6 species (including two invertebrates and four mammals) potentially may occur in the area (Attachment E-1).

6. Ownership

All land within the Motte Rimrock reserve is presently in public ownership. The State of California (UCR) is the largest land owner (397 acres) followed by the RCHCA (161 acres) and BLM (80 acres).

7. Land Use

Lands within this core reserve are almost entirely undeveloped. Land uses surrounding the reserve consist primarily oi residential development, open spaces, and a small amount of agriculture.

8. Connectivity

Of all the SKR core reserves, Motte Rimrock is the most isolated. The reserve is not part of a large contiguous block of habitat and is almost completely surrounded by urbanization. Although difficult, a narrow connection between the habitat in Motte Rimrock and the Steele Peak area may be established, but this would include a significant amount of private property subdivided into small lots.

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Attachment E-1
Other Species of Concern Associated with Habitats in the Plan Area and Their Known or Potential Occurrence in the SKR Core Reserves

Species Name and Status	Habitat and Range	Occurrence in Core Reserve						
		LS-DV	LM-EM	SJ-LP	SC-MAFB	S	P	MRR
PLANTS								
Braunton's milk-vetch *Astragalus brauntonii* FPE, CNPS1B, NCCP	Occurs in burned CSS. Range includes Los Angeles County south into the Santa Ana Mtns.	U	U	U	U	U	U	N
California bedstraw *Galium californicum* ssp. *primum* C2, CNPS 1B	Occurs in the shade along the lower edge of the pine belt between 4,050 and 5,100 feet. Range restricted to the San Jacinto Mtns.	N	N	N	N	N	N	N
California orcuttgrass *Orcuttia californica* FE, SE, CNPS1B	Associated with VP. Range extends from Los Angeles and western Riverside Counties south into northern Baja, California.	U	N	N	N	N	N	N
Clay bindweed, aka "small-flowered morning glory" *Convolvulvus simulans* CNPS 4	Occurs in G. Range includes Contra Costa County to cismontane southern California, Santa Catalina Island, and Baja, California.	U	Y	U	U	U	U	N
Coulter's matilija poppy *Romneya coulteri* CNPS4, NCCP	Occurs along creek beds and canyons of CHP and CSS below 1,000 feet. Ranges from the Santa Ana Mtns. south into San Diego County.	U	U	U	U	U	N	N
Coulter's saltmarsh daisy *Lasthenia glabrata ssp. coulteri* C2, CNPS 1B	Occurs in SM and VP. Ranges from San Diego County to Kern County and Twentynine Palms.	U	N	N	N	N	N	N
Curving tarplant, aka "graceful tarplant" *Holocarpha virgata ssp. elongata* C2, CNPS 4	Occurs in G and OF. Ranges includes mesas west of Murrieta, Riverside and San Diego Counties.	N	N	N	N	N	N	N
Cuyamaca larkspur *Delphinium hesperium* ssp. *cuyamacae* C2, CR, CNPS 1B	Occurs in meadows. Ranges from San Jacinto Mtns. to Palomar and Cuyamaca Mtns.	N	N	N	N	N	N	N
Cuyamaca meadowfoam *Limnathes gracilis* var. *parishii* C2, SE, CNPS 1B	Occurs in wet meadows and along lake shores above 4,300 feet. Range includes the Peninsular Ranges of southern California.	U	U	U	N	N	N	N
Dehesa bear-grass *Nolina interrata* C1, SE, CNPS 1B	Occurs in CHP and CSS below 6,200 feet. Range includes Ventura, Riverside, Orange, and San Diego Counties.	U	U	U	U	U	U	N
Ditch navarretia *Navarretia fossalis* FPT, C1, CNPS 1B	Occurs in VP. Range includes western Riverside and southwestern San Diego Counties into Baja, California.	U	N	N	N	N	N	N
Englemann oak	Occurs in canyons and open slopes of southern oak woodland	Y	U	N	N	N	N	N

Quercus engelmannii CNPS 4	below 4,000 feet. Ranges from Los Angeles County south to inland San Diego County and inland into Baja, California.							
Gambell's watercress *Rorippa gambelii* FE, ST, CNPS 1B	Associated with wetlands. Ranges from Santa Barbara County south into Los Angeles, Riverside, Orange, and San Diego Counties, and Baja, California.	U	U	U	N	N	N	N
Great valley phacelia *Phacelia ciliata var. opaca* C2, CNPS, 1B	Occurs in G. Ranges from Glen County to Kern County with uncommon populations occurring south to Baja, California.	U	Y	U	U	U	U	N
Heart-leaved pitcher-sage Lepechinia cardiophylla C2, CNPS 1B	Occurs in CHP between 1,800 and 3,600 feet. Ranges throughout the Peninsular Ranges of the Santa Ana Mtns.	U	N	U	N	U	U	N
Jaeger's milkvetch *Astragalus pachypus var. jaegeri* C2, CNPS 1B	Occurs in CHP and dry places below 2,500 feet. Ranges from Banning to Aguanga.	U	N	U	N	U	U	N
Johnston's rock cress *Arabis johnstonii* C1, CNPS 1B	Occurs on dry, rocky slopes between 4,050 and 4,500 feet. Limited to the San Jacinto Mtns.	N	N	N	N	N	N	N
Knotweed spineflower *Chorizanthe polygonoides var. longispina* C2, CNPS 1B	Occurs in G, CSS, and G/CSS. Range is limited to western Riverside and San Diego Counties.	U	Y	U	U	U	U	N
Lemon lily *Lilium parryi* C2, CNPS 4	Occurs in meadows and near streams in montane coniferous forests between 3,900 and 7,800 feet. Range extends throughout Transverse and Peninsular Ranges.	N	N	N	N	N	N	N
Little mousetail *Myosurus minimus ssp. apus* C2, CNPS 3	Occurs in VP. Range includes Riverside, San Bernardino, and San Diego Counties south into Baja, California.	U	N	N	N	N	N	N
Many-stemmed dudleya *Dudleya multicaulis* C2, CNPS1B, NCCP	Occurs in dry stony places of CSS and G below 2,000 feet. Ranges from Los Angeles County to west San Bernardino, Riverside, Orange, and north coastal San Diego Counties.	U	Y	U	U	N	N	N
Marsh sandwort Arenaria paludicola FE, SE, CNPS 1B	Occurs in shallow waters. Associated with RF and FWM. Range limited to localized areas of central and southern California, including San Luis Obisbo County and the Santa Ana River.	U	U	U	N	N	N	N
Mission Canyon blue-cup *Githopsis diffusa ssp. filicaulis* C2, CNPS 1B	Occurs in moist or disturbed areas between 1,350 and 2,100 feet. Ranges through Peninsular Ranges of San Diego and Riverside Counties.	U	N	U	U	U	N	N
Munz's hedgehog cactus *Echinocereus engelmannii var. munzii* C2	Occurs in dry habitats, such as CHP, below 7,200 meters. Range extends from San Bernardino Mtns., Peninsular Ranges, Desert Province to Utah, Arizona, and Mexico.	U	N	U	U	U	U	N
Munz's mariposa lily *Calochortus palmeri var. munzii* C2, CNPS 1B	Occurs in lower conifer forest. Endemic to San Jacinto Mtns.	N	N	N	N	N	N	N
Munz's onion	Occurs in G, CSS, and G/CSS.	Y	Y	U	U	U	U	N

Allium munzii FPE, C1, CNPS1B, ST, NCCP	Range includes eastern south coastal California, the northwest Peninsular Ranges, and western Riverside County.						
Nevin's barberry *Berberis nevinii* C1, SE, CNPS 1B	Occurs in sandy and gravelly places of CSS and CHP between 1,000 and 2,300 feet. Range includes San Bernardino, Riverside, and San Diego Counties.	U	U	U	U	U	N N
Orcutt's brodiaea *Brodiaea orcuttii* C2, CNPS 1B	Associated with VP, G, and seasonal streams. Range extends from northern Sierra Juarez in Baja, California through San Diego County and southwestern Riverside and San Bernardino Counties.	U	U	U	U	U	N N
Orcutt's linanthus *Linanthus orcuttii* C2, CNPS 1B	Occurs in CHP between 4,000 and 5,000 feet. Ranges includes Los Angeles, Riverside, and San Diego Counties and Baja, California.	N	N	N	N	N	N N
Palmer's grapplinghook *Harpagonella palmeri* var. *palmeri* C2, CNPS 2, NCCP	Occurs in CSS, CHP, and G; typically on open clay slopes and burn areas below 3,300 feet. Ranges from Los Angeles County to San Diego County into Baja, California.	Y	Y	U	N	N	U N
Palmer's mariposa lily *Calochortus palmeri* var. *palmeri* CNPS 1B, C2	Occurs in yellow pine forest. Ranges limited to San Jacinto Mtns.	N	N	N	N	N	N N
Parish's bush mallow *Malacothamnus parishii* C2, CNPS 1A	Occurs in CSS and CHP generally below 1,500 feet. Probably endemic to Riverside County.	U	U	U	U	U	N N
Parish's gooseberry *Ribes divaricatum* var. *parishi* C2, CNPS 1B	Occurs in RF. Ranges from east Los Angeles basin into San Bernardino and Riverside Counties. May be extirpated.	U	N	U	N	N	N N
Parish's saltbush *Atriplex parishii* C2, CNPS 1B	Associated with alkali sinks and alkali scrub. Range includes southwestern California, western Mojave Desert, and Baja, California.	U	N	U	N	N	N N
Parry's spineflower *Chorizanthe parryi* var. *parryi* C2, NCCP, CNPS 3	Occurs in CSS. Range includes central and eastern south central California, eastern transverse ranges and northwest edge of Sonoran Desert.	Y	Y	U	U	U	U N
Payson's jewelflower *Caulanthus simulans* C2, CNPS 4, NCCP	Occurs in rocky places of CHP and pinyon-juniper woodland below 5,000 feet. Range extends from Riverside County to interior San Diego County.	Y	Y	U	N	U	U Y
Plummer's mariposa lily *Calochortus plummerae* CNPS 1B, C2	Occurs in CSS and yellow pine forest in dry rocky places below 5,000 feet. Range limited to San Jacinto Mtns.	U	N	U	U	U	U N
Robust prickly poppy *Argemone munita* ssp. robusta C3B	Occurs in open areas of CHP and cismontane woodland between 2,000 and 9,000 feet. Found in the Santa Ana Mtns.	N	N	N	N	N	N N
San Diego button-celery *Eryngium aristulatum* var. *parishi* FE, SE, CNPS 1B	Occurs in VP. Ranges from Riverside and San Diego Counties south into northern Baja, California.	U	N	N	N	N	N N
San Diego button bush *Tetracoccus dioicus*	Occurs on dry slopes with CHP and CSS below 3,000 feet.	U	N	N	N	N	N N

C2, CNPS 1B	Ranges from southwestern Riverside County into San Diego County and Baja, California.						
San Jacinto River saltbush *Atriplex coronata var. notatior* **FPE, C1, CNPS 1B**	Associated with alkali sinks and alkali Scrub. Range includes eastern south coast of California's San Jacinto Valley and Riverside County.	Y	N	U	N	N	N
San Miguel savory *Calamagrotis densa* C3c	Occurs in rocky canyons in CHP below 2,500 feet. Range includes west Riverside, Orange, and San Diego Counties and northern Baja, California.	U	U	U	N	U	U N
Santa Ana River wooly-star *Eriastrum densifolium ssp. sanctorum* FE, SE, CNPS 1B	Occurs in CSS with infrequently flooded, and scoured riparina terraces with sandy soils. Range limited to Santa Ana River and lowland tributaries below 1,500 feet within southwest San Bernardino.	U	U	U	N	N	N
Slender-horned spineflower *Dodecahema (= Centrostegia). leptoceras* FE, SE, CNPS 1B, NCCP	Occurs in G, CSS, and G/CSS. Range includes central and eastern portions of southern California and adjacent foothills of the Transverse and Peninsular Ranges.	U	U	U	U	U	U N
Small flowered microseris *Microseris douglasii var. platycarpha* CNPS 4	Occurs in G. Range includes central and southern portions of southern coastal California, southern channel islands, and Baja, California.	U	Y	U	U	U	N N
Smooth tarplant *Hemizonia pungens ssp. laevis* C2, CNPS 1B	Occurs in G below 500 feet. Range includes southwestern Kern County, Los Angeles, San Bernardino, Riverside, and San Diego Counties.	Y	U	U	U	U	N N
Southern tarplant *Hemizonia parryi ssp. australis* C2, CNPS 1B	Occurs in G below 650 feet. Ranges from Santa Barbara County south to San Diego County.	U	U	U	U	U	N N
Sticky-leaved dudleya *Dudleya viscida* C1, CNPS 1B, NCCP	Occurs in G on rocky cliffs and bluffs below 330 feet. Range includes Orange, Riverside and San Diego Counties.	U	U	U	U	U	N N
Thread-leaved brodiaea *Brodiaea filifolia* FPT, C1, SE, CNPS 1B	Associated with clay soils in G and VP. Range extends from San Gabriel and San Bernardino Mtns. in Los Angeles and San Bernardino Counties south to Riverside and San Diego Counties.	U	U	U	N	N	N
Vail lake Ceanothus *Ceanothis ophiochilus* C2, CE, CNPS 1B	Occurs on north facing slopes of CHP at about 1,500 feet. Range is limited to area near Vail Lake.	U	N	N	N	N	N
INVERTEBRATES							
Cuckoo bee *Holocopasites ruthae* LC	Occurs in encelia dominated CSS.	U	U	U	U	U	N U
Quino checkerspot *Euphydryas editha quino* FPE, NCCP	Occurs in G. Range includes western edge of Colorado Desert in San Diego and Riverside Counties.	U	U	U	U	U	U U
Riverside fairy shrimp *Streptocephalus woottoni* FE, NCCP	Occurs in VP. Ranges from Riverside County into San Diego County.	U	N	N	N	N	N N
Vernal Pool fairy shrimp *Branchinecta lynchi*	Occurs in VP. Known to occur on Santa Rosa Plateau and in Rancho	U	N	N	N	N	N N

FT	California.							
	AMPHIBIANS AND REPTILES							
Arroyo toad *Bufo microscaphus californicus* FE, CSC, NCCP	Frequents sandy banks of washes, streams, and arroyos with large deciduous trees. Range extends west of desert from San Luis Obispo County to northwest Baja, California.	U	U	U	N	N	U	N
California red-legged frog *Rana aurora draytonii* FPE, CSC, FSS	Occurs near permanent sources of water in lowland and foothill woodlands, grasslands, and streamsides. Range extends from coastal northern California to Baja, California up to 8,000 feet.	U	U	U	N	N	N	N
Coast patch-nosed snake *Salvadora hexalepis virgultea* C2, CSC, NCCP	Occurs in G and CHP in sandy and rocky areas on the lower slopes of mountains. Range extends from San Luis Obispo County south to Baja, California.	U	U	U	Y	U	U	Y
Coastal rosy boa *Lichanura trivirgata roseofusca* C2, NCCP	Occurs in CSS, G/CSS, and DIS. Range includes southern California from San Gabriel Mtns. south into Baja, California.	U	Y	U	Y	Y	U	Y
Coastal western whiptail *Cnemidophorus tigris multiscutatus* C2, NCCP	Occurs in G, G/CSS, CSS, RF, JW, DIS, and FWM. Prefers areas with sparse vegetation and loose soil. Range includes coastal California from Ventura south to western Baja, California.	Y	Y	Y	Y	Y	Y	Y
Coast range newt *Taricha torosa torosa* CSC	Found in or under logs, in rodent burrows or under rocks; in or near streams, ponds, and reservoirs. Range includes coastal areas of California from Mendocino County to western slopes of Peninsular Ranges in San Diego County.	U	U	U	N	N	N	N
Large-blotched salamander *Ensatina eschscholtzii klauberi* C2, CSC	Occurs in OF, old CHP, and shaded canyons with abundant leaf litter and surface objects. Found in the mountains of San Diego and Riverside Counties from 4,000 to 6,000 feet.	U	U	U	N	N	N	N
Mtn. yellow-legged frog *Rana muscosa* C2, CSC	Occurs in rocky stream courses with rocks or vegetation to water's edge; rocks and boulders forming pools and small waterfalls. Range includes Sierra Nevada Mtns., California over 4,500 feet; mountains of southern California from Pacoima Ranch south (1,200-7,500 feet) to the isolated population on Palomar Mtn.	N	N	N	N	N	N	N
Northern red diamond rattlesnake *Crotalus ruber ruber* C2, CSC, NCCP	Occurs in G, G/CSS, CSS, and DIS. Range includes San Diego County and portions of Riverside, San Bernardino County, and Baja, California.	Y	Y	Y	Y	Y	U	Y
Orange-throated whiptail *Cnemidophorus hyperythrus beldingi* C2, CSC, NCCP	Occurs in CSS, CHP, G, and G/CSS on coastal slopes below 8,000 feet. Range extends from Orange and San Bernardino Counties to south central Baja, California.	Y	Y	Y	Y	Y	U	Y
San Bernardino ringneck snake *Diadophis punctatus modestus* C2	Occurs in CSS. Range includes San Bernardino, Riverside, and Orange Counties.	U	Y	U	N	U	U	Y
San Diego banded gecko	Occurs in rocky areas associated with CHP.	U	U	U	Y	U	U	Y

Coleonyx variegatus abbotti C2, NCCP	Range includes San Diego and Orange Counties and may extend into Los Angeles and Riverside Counties.						
San Diego horned lizard *Phrynosoma coronatum blainvillii* C2, CSC, NCCP	Occurs in CSS, CHP, cismontane JW, and alluvial fan scrub. Range extends from San Bernardino County to northwestern Baja, California. (Distribution not well known.)	Y	Y	Y	Y	Y	Y Y
San Diego ringneck snake *Diadophis punctatus similis* C2	Occurs in moist areas in woodland, forest, CHP, G, and gardens. Range extends from southwest San Bernardino County south into Baja, California.	U	U	U	N	U	U Y
Silvery legless lizard *Anniella pulchra pulchra* C2, CSC	Occurs in CSS, CHP, and open RF. Spotty distribution from Contra Costa County south into Baja, California.	U	U	U	N	U	U N
Southern rubber boa *Charina bottae umbratica* C2, ST, FSS	Occurs under bark of standing and fallen dead trees, beneath rocks, rotting logs and forest litter in damp woodland, broken CHP and coniferous forests; also found in moist sandy areas along rocky streams in above habitats. Range includes Tehachapi Mtns., Mt. Pinos, Mt. Abel, and the San Bernardino and San Jacinto Mtns.	U	U	Y	N	U	U N
Southern sagebrush lizard *Sceloporus graciosus vandenburgianus* C2	Occurs in sagebrush, manzanita, and ceonothus brushlands. Range extends from southern California into northern Baja, California.	U	U	U	N	U	U N
Southwestern pond turtle *Clemmys marmorata pallida* C2, CSC, NCCP, FSS	Typically occurs in ponds, small lakes, reservoirs, and slow-moving streams; has been reported in brackish and sea water; frequently associated with areas having abundant aquatic vegetation. Occurs in the coastal ranges and west San Francisco bay to Baja; also in Mojave River.	Y	U	U	N	N	N N
Two-striped garter snake *Thamnophis hammondii* C2	Often occurs near permanent water and intermittent streams with rocky beds. Range extends from Monterey County south into Rio Rosario, Baja, California.	U	U	U	N	N	N N
Western spadefoot toad *Scaphiopus (=Spea) hammondii* C2, CSC, NCCP	Occurs primarily in aquatic and G habitat but also in a variety of other types; requires at least ephemeral aquatic conditions for breeding. Ranges west of the desert from San Francisco to Baja, California.	U	Y	U	N	N	N N
BIRDS							
American peregrine falcon *Falco peregrinus anatum* FE, SE, CFP	Occurs in G, AG, and desert. Ranges throughout North and Central America.	U	N	Y	N	U	U N
Bald eagle *Haliaeetus leucocephalus* FE, SE, CFP, BEPA	Occurs in inland bodies of water. Range extends over most of the U.S. in the summer, Canada and Alaska in the winter.	Y	Y	Y	N	N	N N
Bank swallow *Riparia riparia* ST, MBTA	Occurs in RF in coastal lowlands. Nest sites are burrowed out of vertical banks of fine-textured soils along streams and rivers. Summers through most of North America.	U	Y	U	Y	N	N N
Belding's savanah	Occurs in salt marshes and lagoons dominated by *Salicornia*.	U	U	Y	Y	N	N N

sparrow *Passerculus sandwichensis beldingi* C2, SE	Ranges along the Pacific coast from Goleta, California to El Rosario, Mexico.							
Bell's sage sparrow *Amphispiza belli belli* C2, CSC, NCCP, MBTA	Occurs in CHP and CSS. Range is along the coastal slopes from Trinity County south into northwestern Baja, California.	Y	Y	U	Y	Y	Y	Y
Black-crowned night heron (rookery)*Nycticorax nycticorax* LC, MBTA	Occurs in RF and OW. Range includes most of the U.S. and Mexico.	U	Y	U	N	N	N	N
Black-shouldered kite *Elanus caeruleus* CFP, MBTA	Nests in RF and forages in G. Range includes coastal California and parts of the Caribbean gulf coast.	Y	Y	Y	Y	U	U	Y
Blue grosbeak *Guiraca caerulea* LC, MBTA	Occurs in RF, G, and DIS. Range extends through the southern half of the U.S. and into Mexico.	U	Y	U	Y	N	N	Y
California Brown pelican *Pelecanus occidentalis californicus* FE, SE, CFP	Occurs in coastal salt water and open ocean, rare vagrant inland. Ranges along the U.S. and Mexican coasts.	U	U	U	N	N	N	N
Burrowing owl *Speotyto cunicularia* C2, CSC, MBTA	Occurs in G, AG, and DIS. Ranges throughout most of western North America.	Y	Y	U	Y	U	N	N
California horned lark *Eremophila alpestris actia* C3C, CSC, NCCP, MBTA	Occurs in G, G/CSS, AG, and DIS. Ranges over most of North America.	Y	Y	U	Y	Y	U	Y
Caspian tern *Sterna caspia* LC, MBTA	Occurs in OW. Range includes most of North America south to Venezuela in winter.	U	Y	U	N	N	N	N
Coastal California gnatcatcher *Polioptila californica californica* FT, CSC, NCCP, MBTA	Occurs in CSS and G/CSS. Range includes southern Los Angeles County, Orange County, western Riverside, and San Diego Counties, south into northern Baja, California.	Y	Y	Y	Y	Y	U	Y
Cooper's hawk *Acipiter cooperi* CSC, MBTA	Breeds in OF. Forages in G and AG. Range includes most of continental U.S., excluding Alaska, part of Montana, and most of the Dakotas.	Y	Y	U	Y	Y	U	Y
Downy woodpecker *Picodes pubescens* LC, MBTA	Occurs in RF. Ranges throughout most of North America above Mexico.	U	Y	U	Y	U	U	Y
Ferruginous hawk *Buteo regaus* C2, CSC	Occurs in grasslands and agricultural fields. Ranges over the western U.S.	Y	U	U	N	U	U	N
Golden eagle *Aquila chryaetos* CSC, MBTA, BEPA, CFP	Forages in CSS, CHP, G, and AG; uses cliffs and outcrops for nesting. Rare but distributed throughout North America.	Y	Y	Y	Y	U	N	Y
Grasshopper sparrow *Ammodramus savannarum perpallidus* LC, MBTA	Occurs in G and G/CSS. Localized summer populations occur throughout California.	U	Y	U	U	U	U	N
Great blue heron	Occurs in RF and OW.	Y	Y	U	N	N	N	Y

(rookery) *Ardea herodius* LC, MBTA	Range includes the entire U.S. and Mexico.						
Least Bell's vireo *Vireo bellii pusillus* FE, SE, MBTA	Occurs in RF with willows and cottonwoods and an understory of mulefat and herbaceous annuals. Breeds in southern California and northwestern Baja, California.	Y	U	U	N	N	N
Loggerhead shrike *Lanius ludovicianus* CSC, MBTA	Occurs in G, G/CSS, AG, CHP, and DIS. Range includes most of the continental U.S. and Mexico.	Y	Y	U	Y	Y	Y
Northern harrier *Circus cyaneus* CSC, MBTA	Occurs in CSS, G, G/CSS, SM, FWM, and AG. Winters and migrates throughout California.	U	Y	U	Y	U	Y
Mountain Plover *Charadrius montanus* C2, CSC	Occurs in grasslands and agricultural areas with unplanted plowed fields. Winter range includes California and parts of Mexico. Summer range is in the Rocky Mtns.	U	U	U	N	N	N
San Diego cactus wren *Campylorhynchus brunneicapillus couesi* C3C, CSC, NCCP	Occurs in CSS; requires cactus thickets for nesting. Ranges from southeast Orange County south to the Tijuana River area.	N	Y	N	U	N	Y
Sharp-shinned hawk *Accipiter striatus* CSC	Occurs in CSS, RF, and FWM. Inhabits most of North America.	U	Y	U	Y	U	Y
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens* C2, CSC, NCCP, MBTA	Occurs in CSS and G/CSS on rocky hillsides and canyons. Range includes Santa Barbara County south to northwestern Baja, California; occurs infrequently above 1,500 feet, but can be found up to 4,000 feet.	Y	Y	U	Y	Y	Y
Southwestern willow flycatcher *Empidonax traillii extimus* FPE, SE, FSS, MBTA	Occurs in RF, usually along streams, ponds, lakes or in canyon or drainage bottoms. Range includes southwestern U.S. and northwestern Mexico.	Y	U	U	N	N	Y
Tricolored blackbird *Agelaius tricolor* C2, CSC, NCCP, MBTA	Occurs in AG. Forages in pasture, cropland, lakeshores, and irrigated grassy areas; breeds in FWM composed of cattails, tules, willows, mulefat, and tamarisk. Range includes most of North America; a spring and summer breeding resident in southern California.	U	Y	U	U	N	Y
Western grebe *Aeschmophorus occidentalis* LC, MBTA	Occurs in FWM and OW. Winters along the Pacific coast of North America.	U	Y	U	N	N	N
Western least bittern *Ixobrychus exilis hesperis* C2, CSC	Occurs in salt cedar scrub bordering dense marshes. Ranges throughout California, Mexico, Oregon, and Baja, California.	U	N	U	N	N	N
Western snowy plover *Charadrius alexandrinus nivosus* FT, CSC	Occurs in sandy beaches, lagoon margins, and tidal mud flats. Winters along the Pacific coast of U.S. and Baja, California. Summer range includes desert areas of California and Nevada.	U	U	U	N	N	N
Yellow-breasted chat *Icteria virens* CSC, MBTA	Occurs in RF. Range includes most of the continental U.S. and Mexico.	U	Y	U	U	N	Y
Yellow warbler	Occurs in RF.	U	U	U	N	N	Y

Dendroica petechia brewsteri CSC, MBTA	Ranges throughout the entire North American continent.							
White-faced ibis *Plegadis chihi* C2, CSC	Forages in flooded fields, marshes, ditches, and occupied estuaries. Ranges throughout U.S., west of Mississippi River.	U	U	U	N	N	N	Y
	MAMMALS							
American badger *Taxidea taxus* LC	Occurs in CSS, G/CSS, and open G. Ranges from south central Canada through mid to western U.S. and into north central Mexico and Baja, California.	Y	Y	U	Y	U	U	N
Big free-tail bat *Nyctinomops macrotis* C2, CSC	Roosts in cliff crevices. Breeds in rugged, wooded, mountainous areas of southern California. Ranges from northern South America and the Caribbean to western U.S.	U	Y	U	N	U	U	U
California mastiff bat *Eumops perotis californicus* C2, CSC	Occurs in G, G/CSS, and DIS. Prefers rugged, rocky areas with suitable crevices for roosting. Range extends from central California to west Texas and northern Mexico.	U	Y	U	U	U	U	U
Los Angeles little pocket mouse *Perognathus longimembris brevinasus* C2, CSC, NCCP	Occurs in lower elevation CSS, G/CSS, and G with open ground fine, sandy soils. Range includes the Los Angeles Basin, from Burbank and San Fernando to San Bernardino and south to Aguanga.	Y	U	U	U	U	N	N
Mountain lion Felis concolor CFP	Occurs in a variety of habitats such as rugged mountains, forests, and swamps. Range includes southwestern Oregon, most of California, western Nevada, and northwest Baja. Known to occur in San Jacinto and San Bernardino Mtns.	Y	Y	U	U	U	U	N
Northwestern San Diego pocketmouse *Chaetodipus (=Perognathus) fallax fallax* C2, CSC, NCCP	Occurs in CSS, G/CSS, CHP, and open weedy areas. Range includes San Bernardino, Riverside, and San Diego Counties, most of Orange County, and east Los Angeles County.	Y	Y	U	Y	U	U	Y
Pallid bat *Antrozous pallidus* CSC	Roosts in caves, tunnels, and attics. Ranges from southwestern U.S. into British Columbia.	U	Y	U	U	U	U	U
Pocketed free-tail bat *Nyctinompos femorosacca* CSC	Rocky desert areas with relatively high cliffs. Range includes southern California, southern Arizona and Mexico.	U	Y	U	N	U	U	U
Ringtail *Bassariscus astutus* CFP	Occurs in cliffs and rocky ravines in CHP. Ranges over much of the U.S. and into Mexico.	U	U	Y	U	N	U	N
San Bernardino Merriam's kangaroo rat *Dipodomys merriami parvus* C1, CSC, NCCP	Occurs in CSS and G/CSS. Range includes southwestern San Bernardino County and parts of western Riverside County.	U	U	U	U	U	U	Y
San Diego black-tailed jackrabbit *Lepus californicus bennettii* C2, CSC, NCCP	Occurs in G, G/CSS, CSS, JW, DIS, and southern willow scrub. Ranges from near Mt. Pinos southward and west of the Peninsular Range into Baja, California.	Y	Y	Y	Y	Y	U	Y
San Diego desert	Occurs in CSS, RF, and JW.	Y	Y	U	U	U	U	Y

woodrat *Neotoma lepida intermedia* C2, CSC	Ranges from coastal areas of San Luis Obispo into Baja, California; inland to San Bernardino Mtns. and Julian.							
Southern grasshopper mouse *Onychomus torridus ramona* C2, CSC, NCCP	Occurs in open areas of G, creosote or sagebrush with sandy or gravelly soils. Ranges in southern California from near Palmdale east to Riverside and south to the Tijuana River Valley.	U	U	U	U	U	U	N
Spotted bat *Euderma maculatum* C2, CSC	Occurs in high rugged remote habitats. Range includes most of California Mtns.	N	N	N	N	N	U	N

SOURCE: RECON June 1994; CNPS Inventory of Rare and Endangered Vascular Plants of California (February 1994); Federal Register: December 9, 1993; September 30, 1993; November 21, 1991.

Status Codes	
BEPA	Bold and Golden Eagle Protection Act
C1	Category 1 candidate for federal listing
C2	Category 2 candidate for federal listing
C3b	Names that, on the basis of current taxanomic understanding, do not represent distinct entities meeting the Act's definition of "species"; it also includes vertebrate populations that do not meet this definition
C3c	Taxa that have proven to be more abundant or widespread than previously believed and/or that are not subject to any identifiable threat
CFP	Fully protected in California
CNPS	Listed by the California Native Plant Society as (1B)rare or endangered in California and elsewhere (2) rare or endangered in California and more common elsewhere (3) more information needed before assignment to 1, 2 or 4 (4) plants of limited distribution
CR	Rare in California
CSC	Identified by CDFG as a species of special concern in California
FE	Listed as endangered under the federal ESA
FPE	Proposed for listing as endangered under the federal ESA
FPT	Proposed for listing as threatened under the federal ESA
FT	Listed as threatened under the federal ESA
LC	Species of local concern
MBTA	Protected by the Migratory Bird Treaty Act
NCCP	On the list of sensitive species for the NCCP program
SE	Listed as endangered under the California ESA
ST	Listed as threatened under the California ESA
Core Reserve Codes	
LS-DV	Lake Skinner-Domenigoni Valley
LM-EM	Lake Mathews Estelle Mountain
MRR	Motte Rimrock Reserve
SC-MAFB	Sycamore Canyon-March Air Force Base
SJ-LP	San Jacinto-Lake Perris
S	Steele Peak (BLM and RCHCA)
P	Potrero ACEC (BLM)
Habitat Codes	
AG	Agriculture
CHP	Chamise and mixed chaparral
CSS	Coastal sage scrub
DIS	Disturbed habitat
FWM	Fresh water marsh
G/CSS	Mixed annual grassland/Coastal sage scrub
G	Annual grassland
JW	Juniper Woodland
OF	Coast live and engelmann oak forest
OW	Open water/shoreline
RF	Riparian forest
SM	Salt marsh
VP	Vernal Pool
Occurrence Codes	
N	Absent and not potential
U	Occurrence unknown, but potential
Y	Present

Appendix E – Table E-1

Table E-1
Summary Characteristics of Acreage in SKR Core Reserves

CATEGORY	LS-DV	LM-EM	SJ-LP	SC-MAFB	SP	POTRERO	MRR	TOTAL
Total Reserve Area*	13,158	11,243	10,932	2,502	1,753	995	638	41,221
Total SKR Habitat	1,988	4,264†	3,640	1,355	860	18	335	12,460
On Public Land	1,656	4,134	3,638	1,261	860	18	335	11,902
On Private Land	332†	130	2	94	0	0	0	558
Vegetation								
Non-native Grassland	2,264	3,488	3,606	1,721	226	17	130	11,452
Sage Scrub	4,834	5,609	3,749	741	961	503	502	16,899
Chaparral	5,093	315	52	0	561	474	0	6,495
Riparian	288	163	39	4	2	1	0	497
Woodland	158	164	3	0	0	0	0	325
Marsh	0	2	0	0	0	0	0	2
Alkali Playa	0	0	2,965	0	0	0	0	2,965
Open Water	0	36	33	0	0	0	0	69
Agriculture	487	1,455	453	0	0	0	0	2,395
Residential/Urban/ Exotic	34	11	32	36	3	0	6	122
Total Public	12,842**	10,560	10,778	2,402	1,753	995	638	39,968
Total Private	316	683	154	100††	0	0	0	1,253††

Codes

LS-DV	Lake Skinner-Domenigoni Valley	SJ-LP	San Jacinto-Lake Perris	SP	Steele Peak
LM-EM	Lake Mathews-Estelle Mountain	SC-MAFB	Sycamore Canyon-March Air Force Base	MRR	Motte Rimrock Reserve

Notes

* Excludes lakes, reservoirs, and MWD operations areas.

** The RCHCA holds SKR conservation easements for 1,336 acres of MWD property, 46 acres of County of Riverside property, and 205 acres of private property at Finisterra Farms.

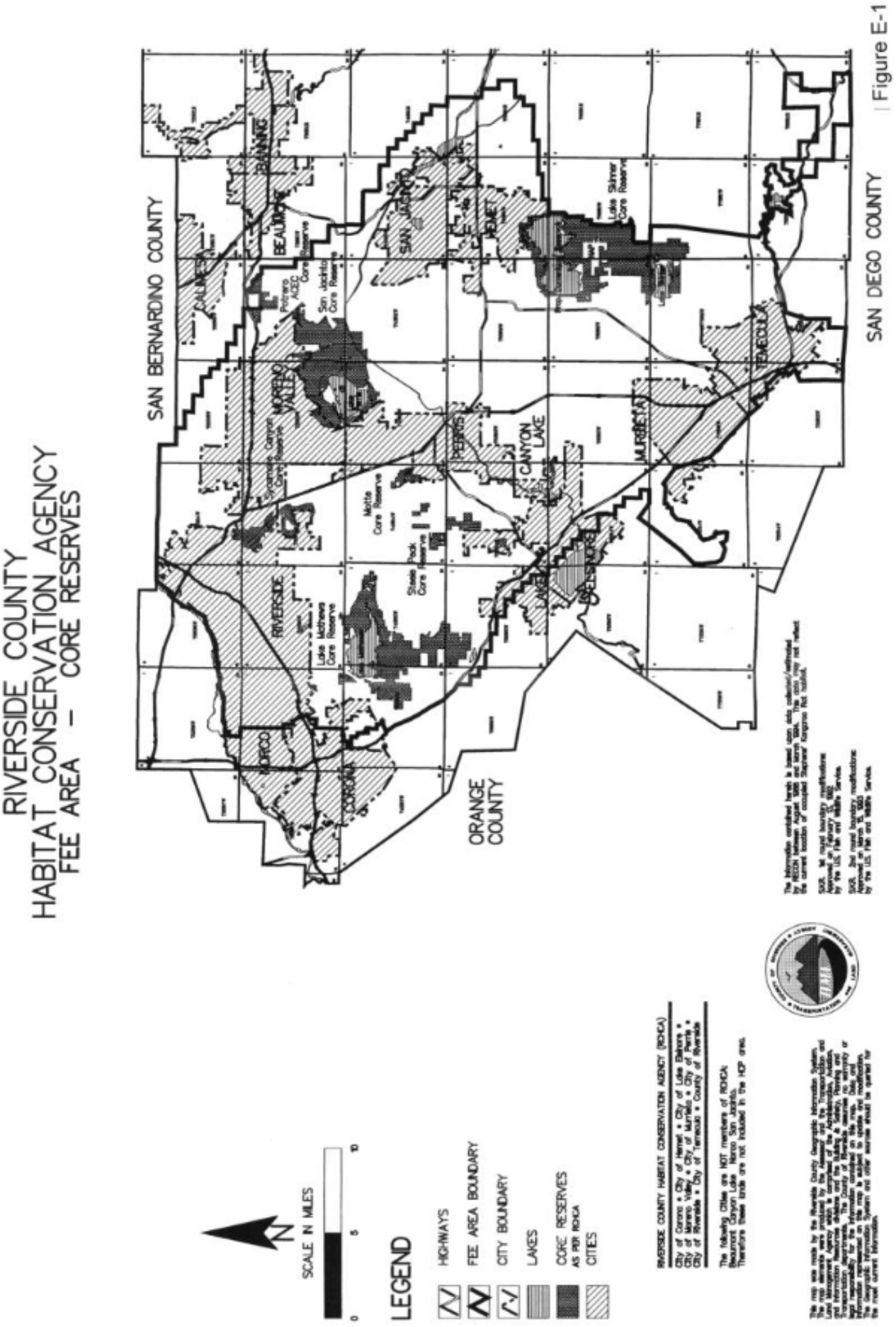
† Includes 2,321 acres of occupied SKR habitat on MWD reserve lands as identified in the Lake Mathews MSHCP/NCCP.

†† Caltrans is negotiating the acquisition of this property pursuant to a Section 7 consultation.

††† Of this amount, the RCHCA will commit to purchase or otherwise conserve 1,153 acres.

Sources: RECON SKR March 1994 GIS SKR occupied habitat overlay, Pacific Southwest Biological Consultants May 1994 vegetation survey of western Riverside County, MWD, and Riverside County GIS data base.

Appendix E – Figure 1



Appendix E – Figure 2

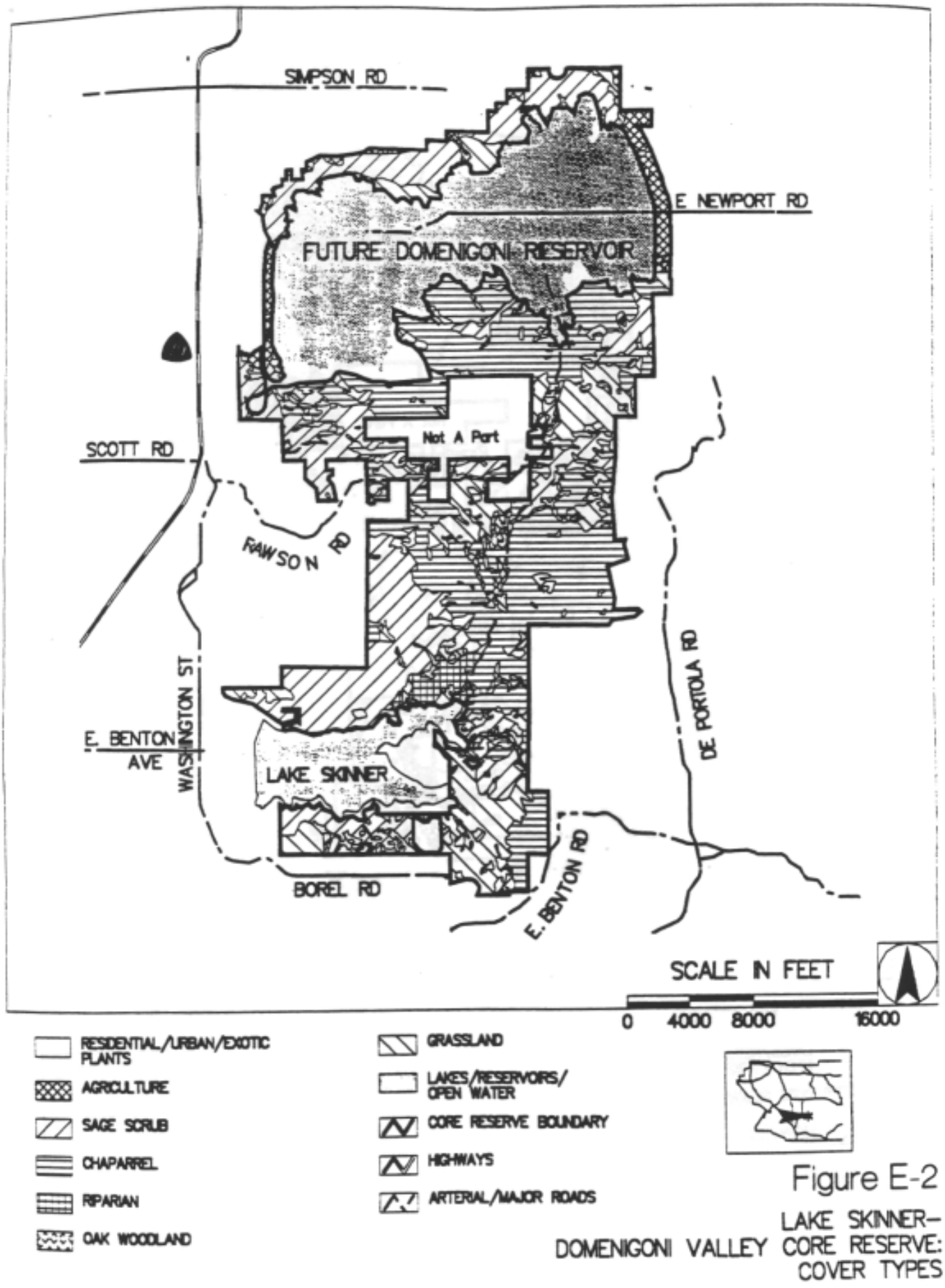


Figure E-2

DOMENIGONI VALLEY LAKE SKINNER–CORE RESERVE: COVER TYPES

Appendix E – Figure 3

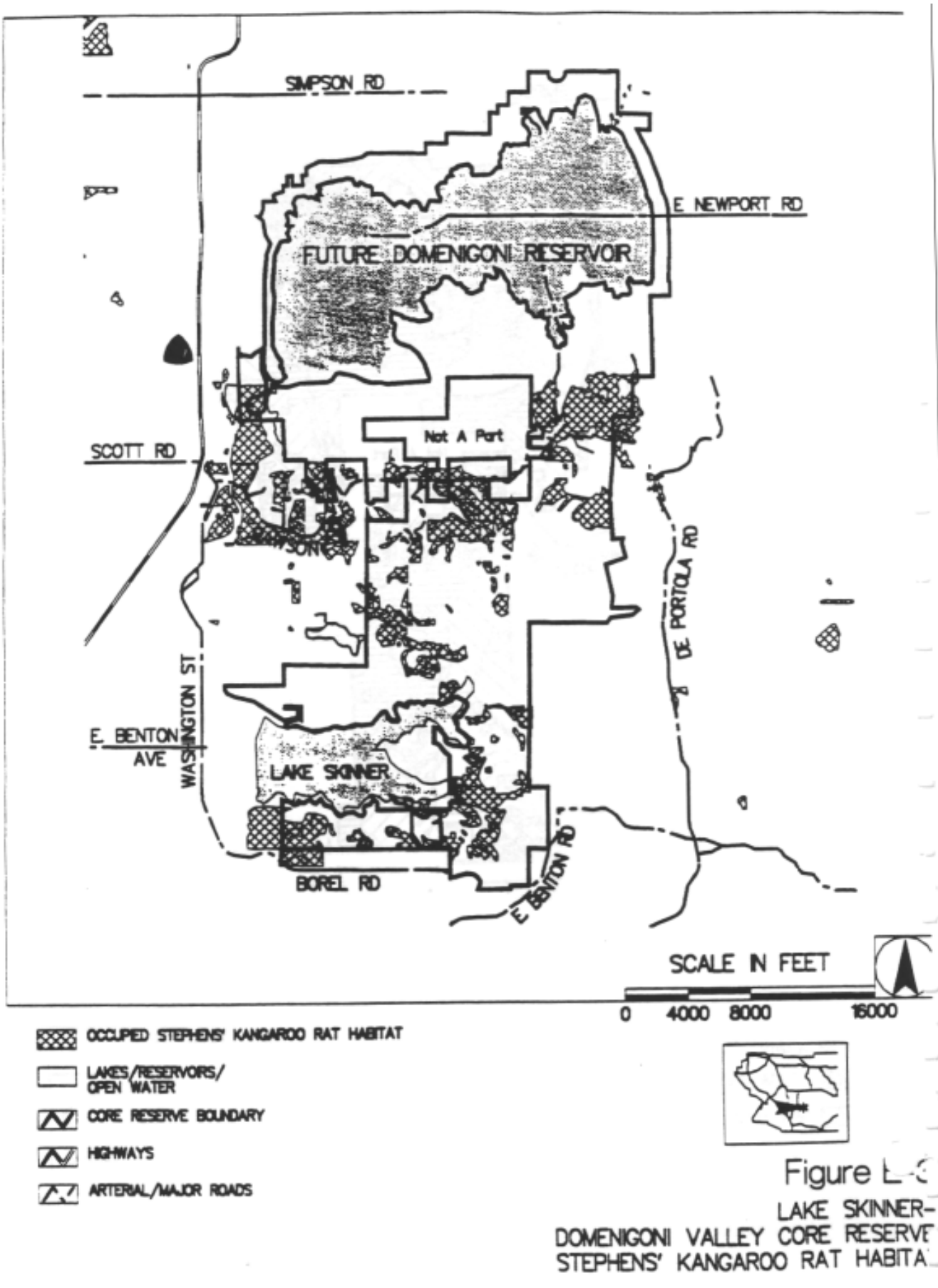


Figure E-3
LAKE SKINNER-
DOMENIGONI VALLEY CORE RESERVE
STEPHENS' KANGAROO RAT HABITAT

Appendix E – Figure 4

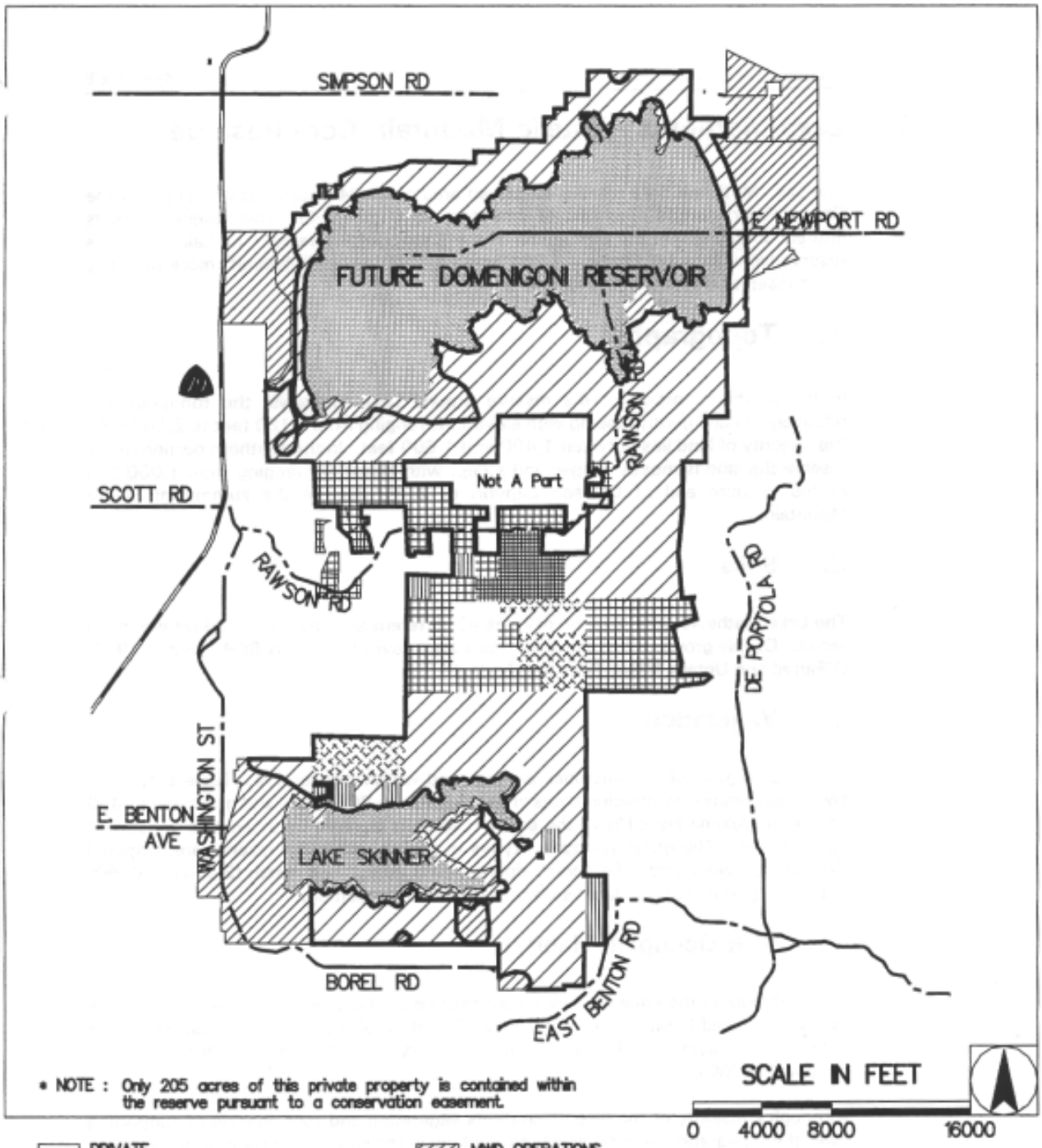


Figure E-4

LAKE SKINNER–
DOMENIGONI VALLEY CORE RESERVE:
OWNERSHIP

Appendix E – Figure 5

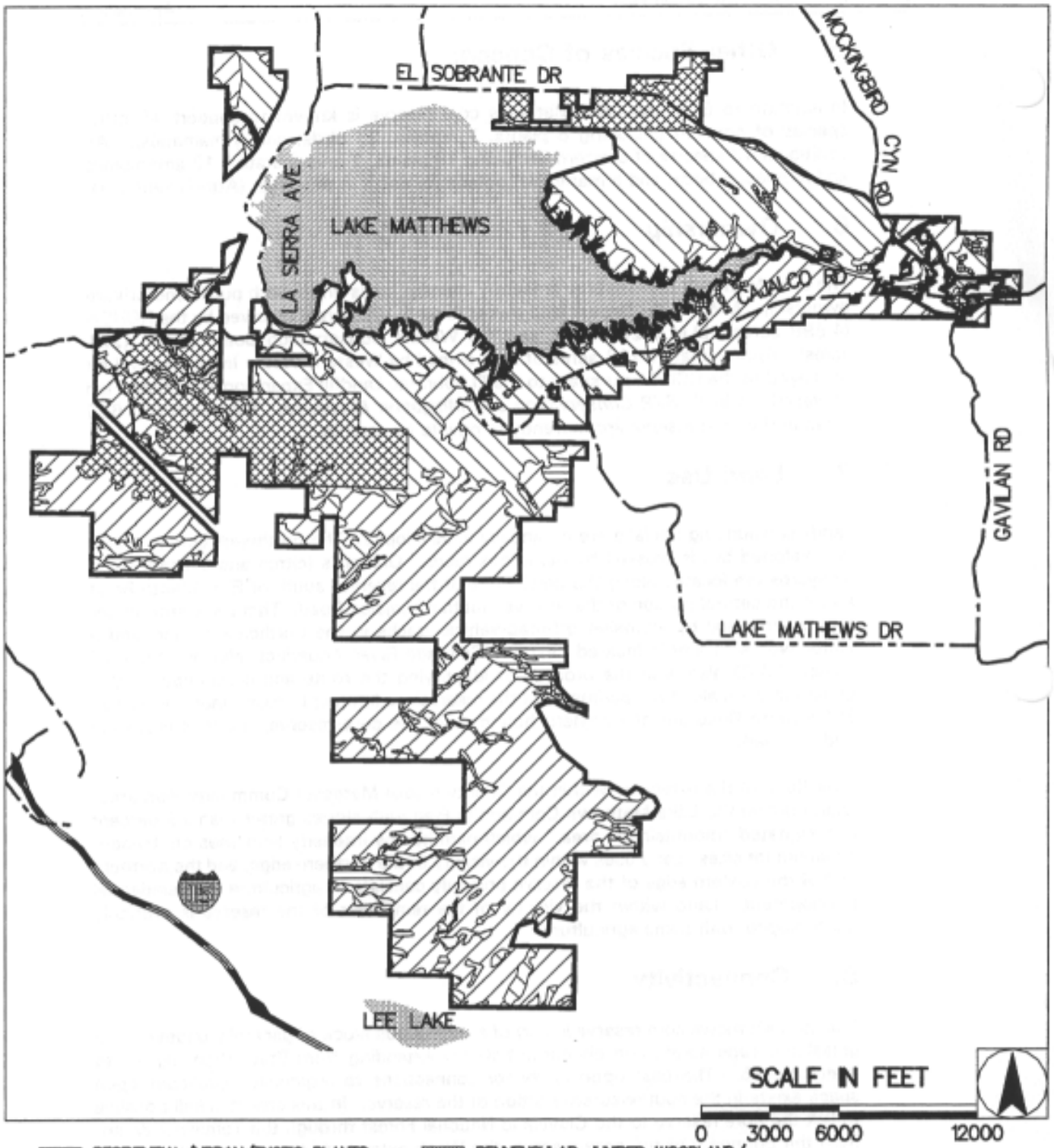


Figure E-5

LAKE MATHEWS–ESTELLE MOUNTAIN CORE RESERVE: COVER TYPES

Appendix E – Figure 6

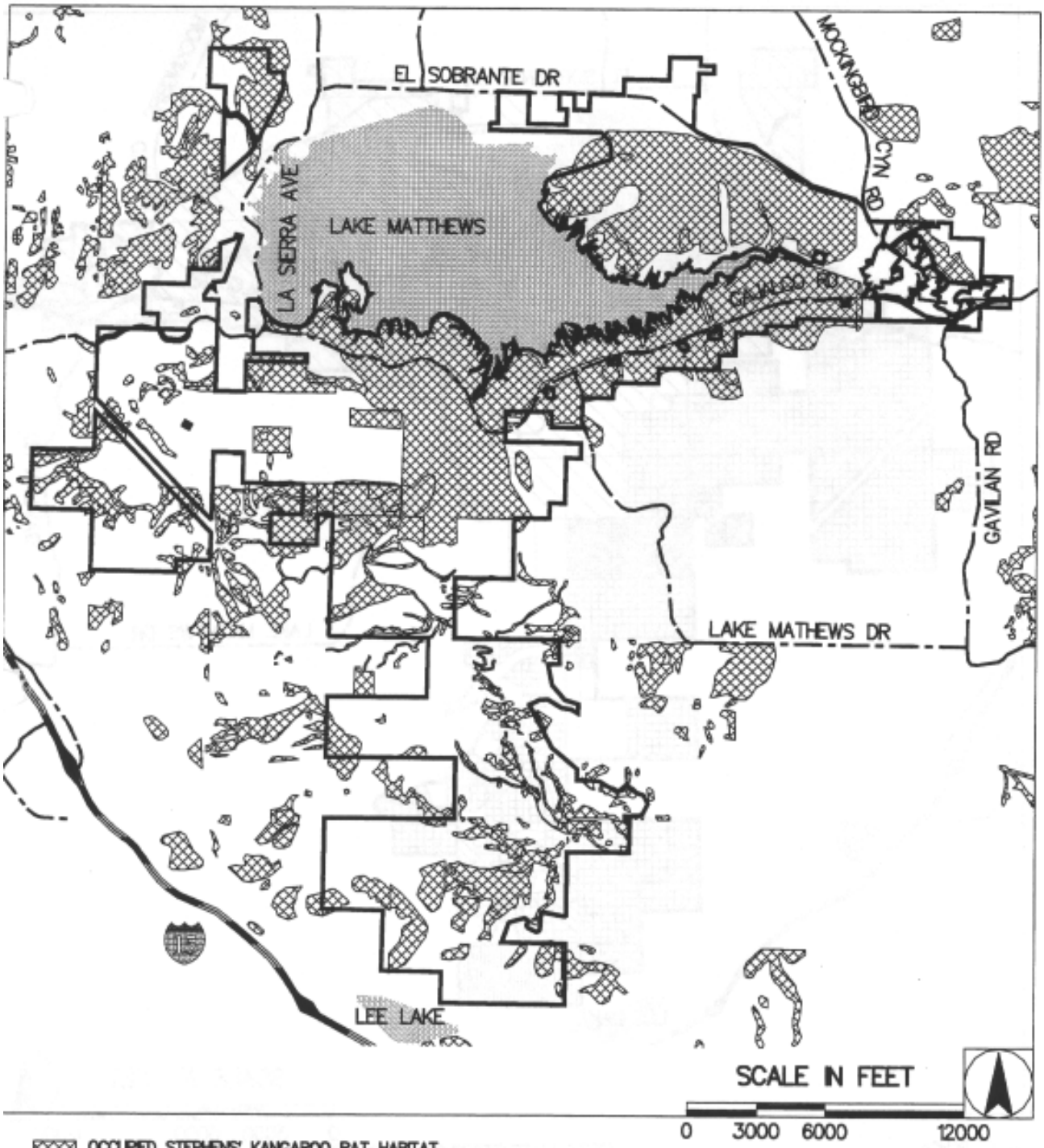


Figure E-6

LAKE MATHEWS–ESTELLE MOUNTAIN CORE RESERVE: STEPHENS KANGAROO RAT HABITAT

Appendix E – Figure 7

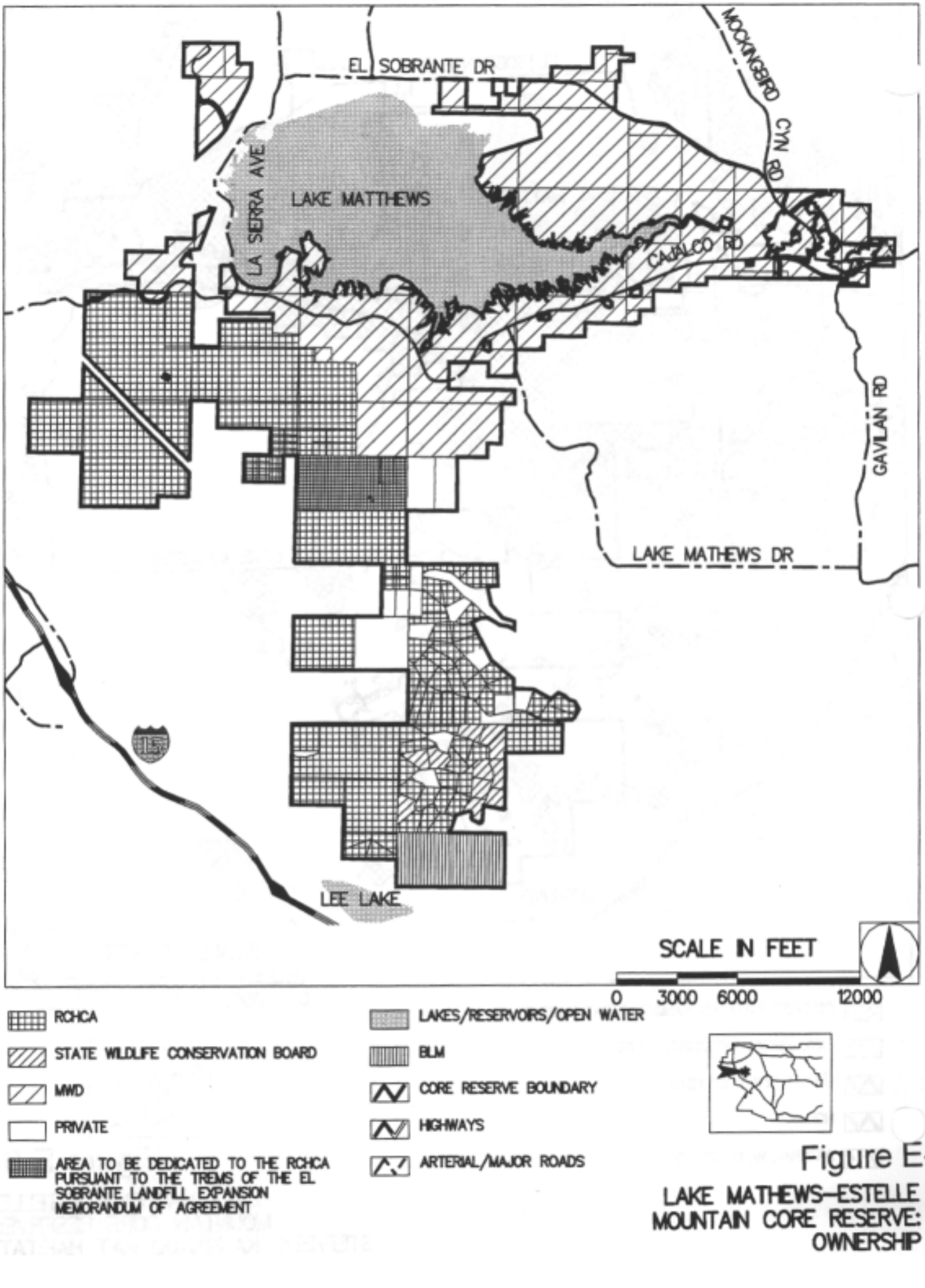


Figure E

LAKE MATHEWS–ESTELLE MOUNTAIN CORE RESERVE: OWNERSHIP

Appendix E – Figure 8

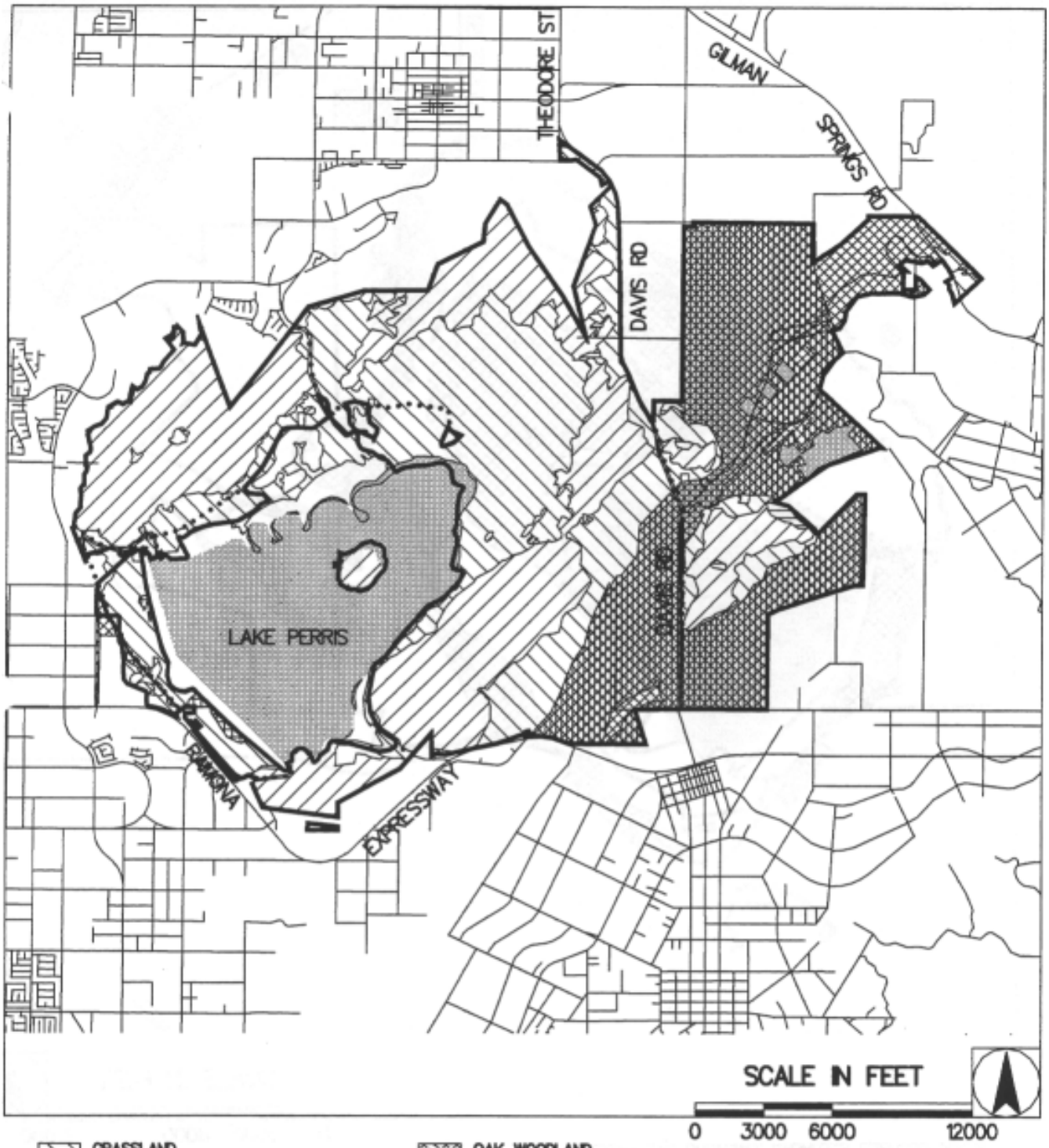


Figure E-8

SAN JACINTO–LAKE PERRIS CORE RESERVE: COVER TYPES

Appendix E – Figure 9

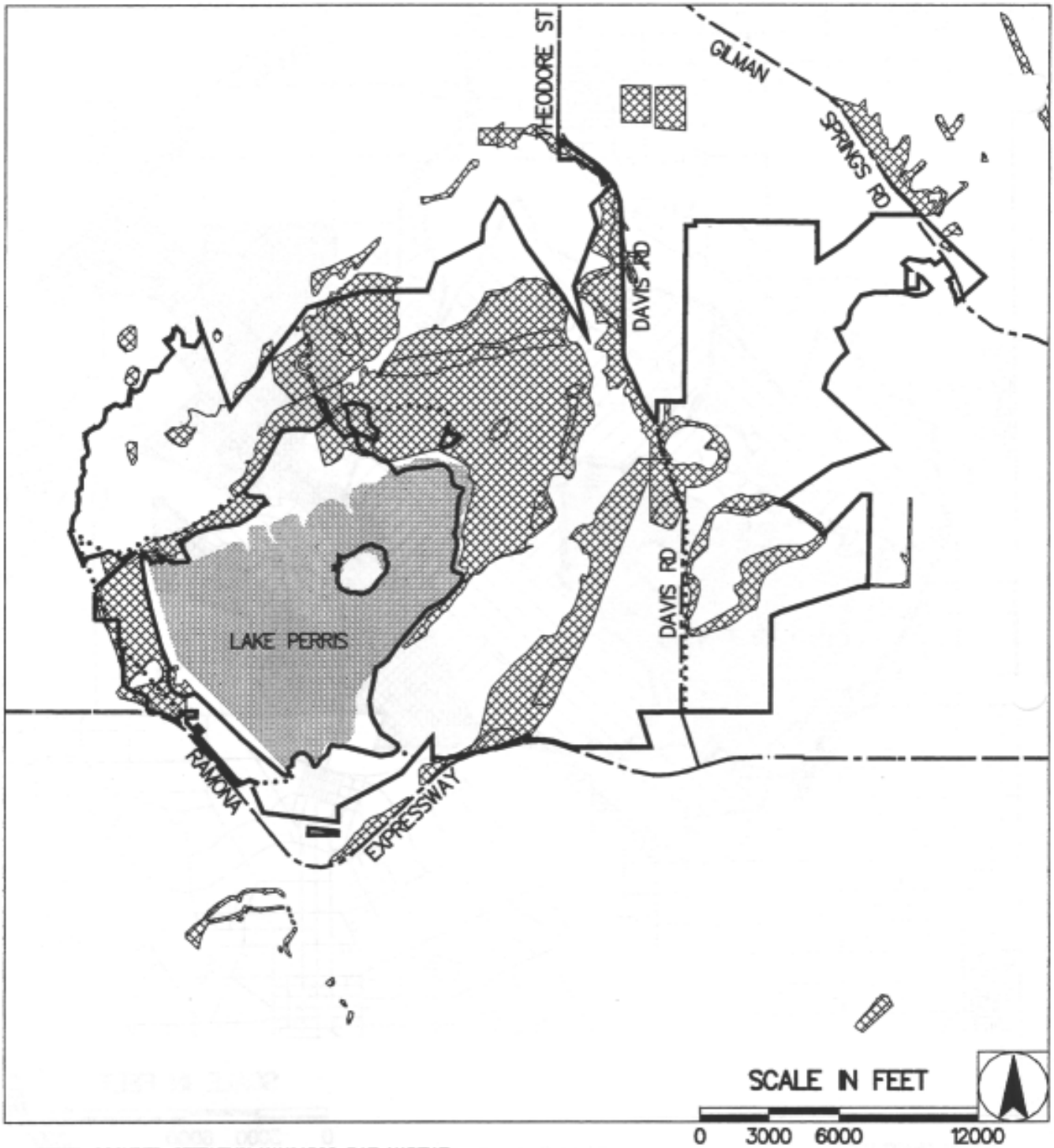


Figure E-9

SAN JACINTO–LAKE PERRIS CORE RESERVE: STEPHENS KANGAROO HABITAT

Appendix E – Figure 10

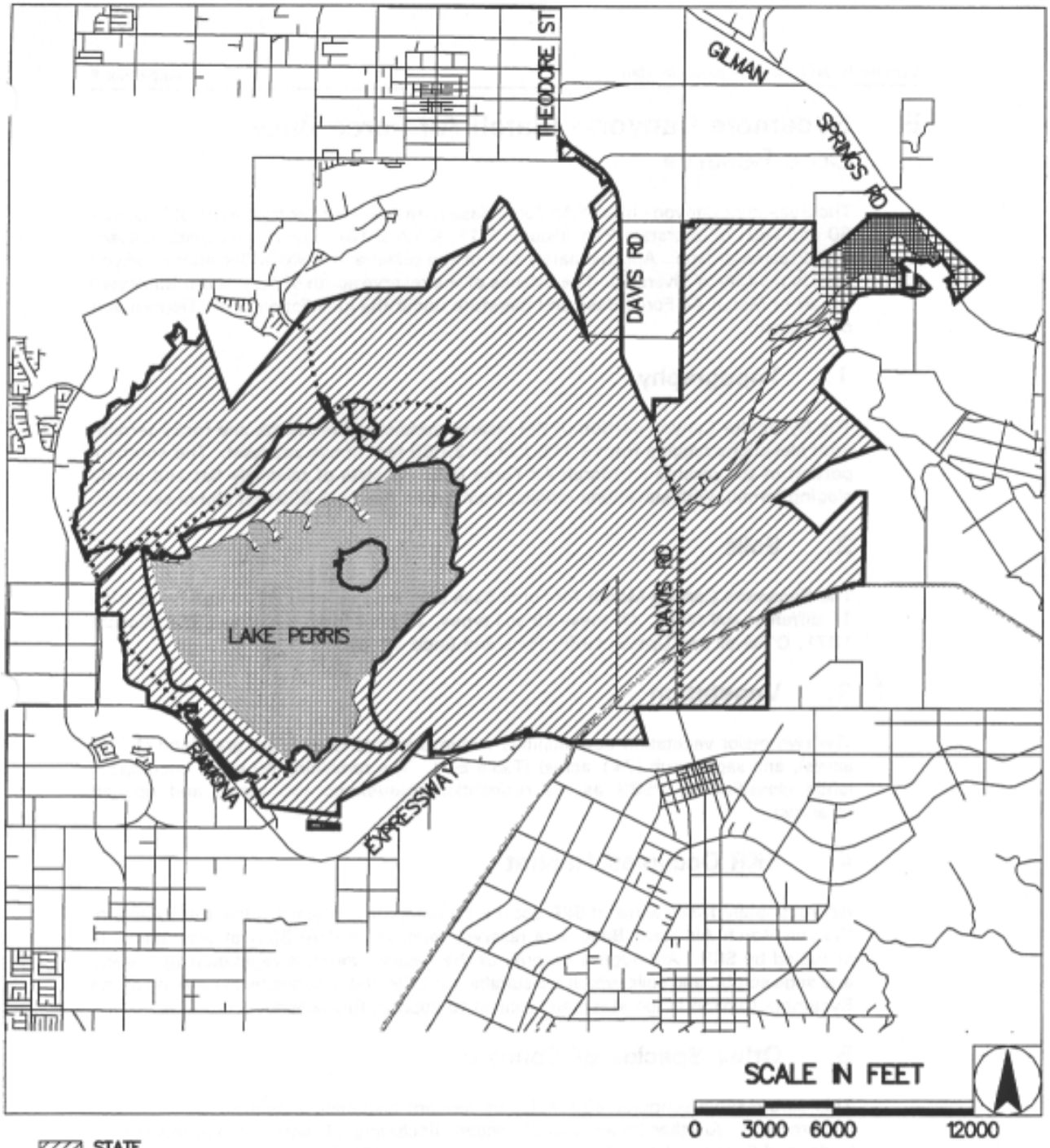


Figure E-10
SAN JACINTO–LAKE PERRIS CORE RESERVE: OWNERSHIP

Appendix E – Figure 11

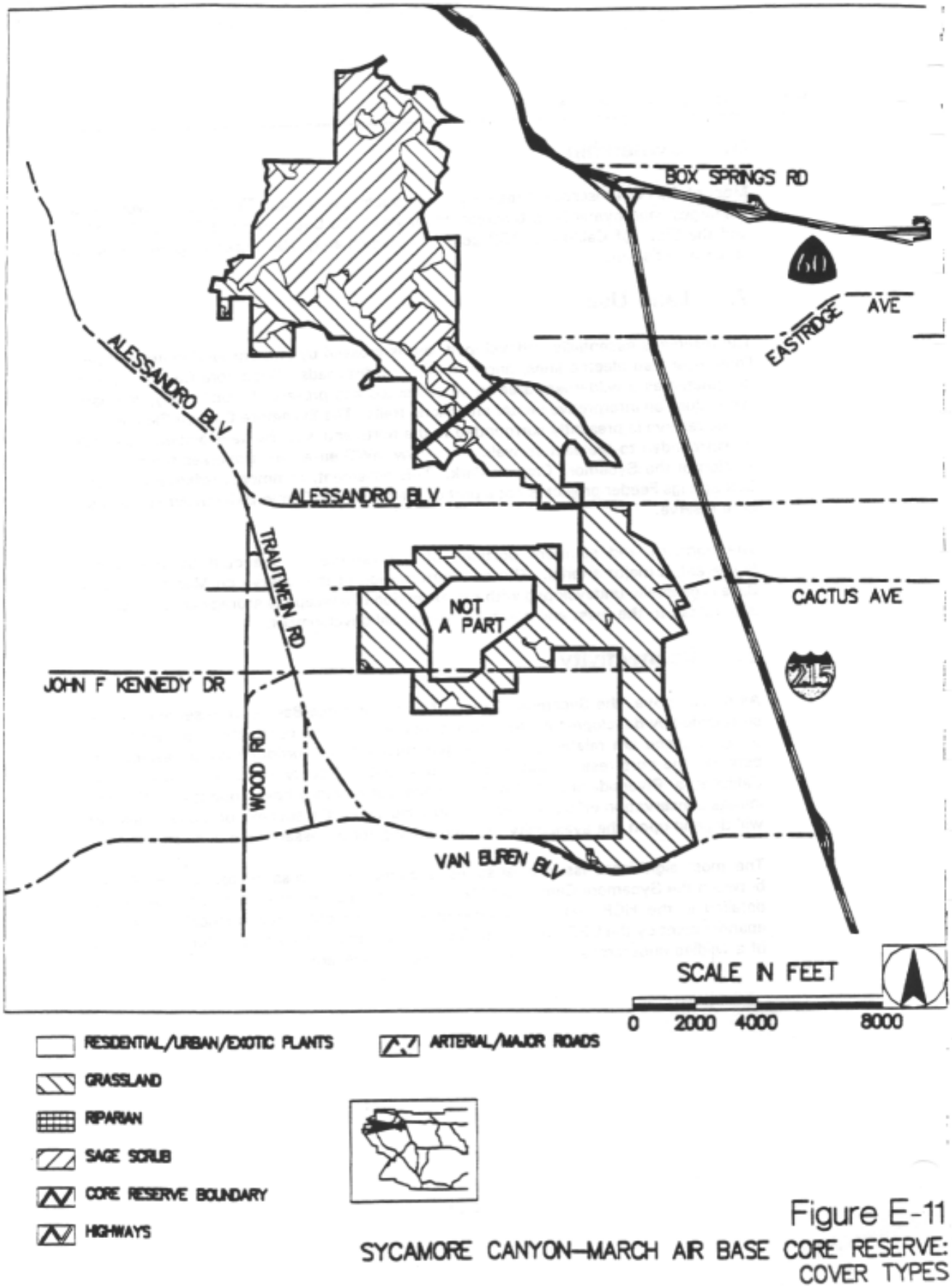


Figure E-11

SYCAMORE CANYON–MARCH AIR BASE CORE RESERVE: COVER TYPES

Appendix E – Figure 12

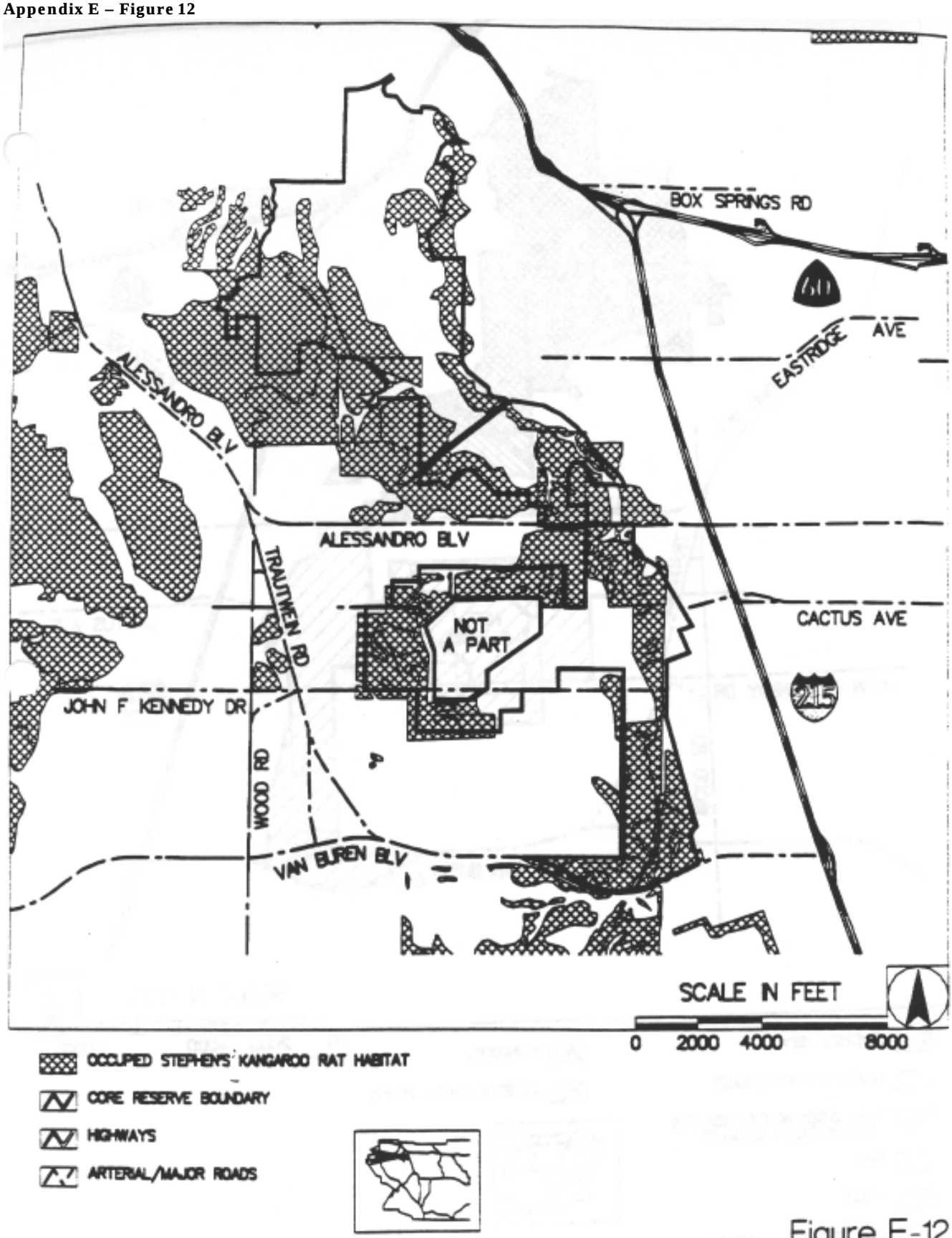


Figure E-12

SYCAMORE CANYON–MARCH AIR BASE CORE RESERVE: STEPHENS KANGAROO RAT HABITAT

Appendix E – Figure 13

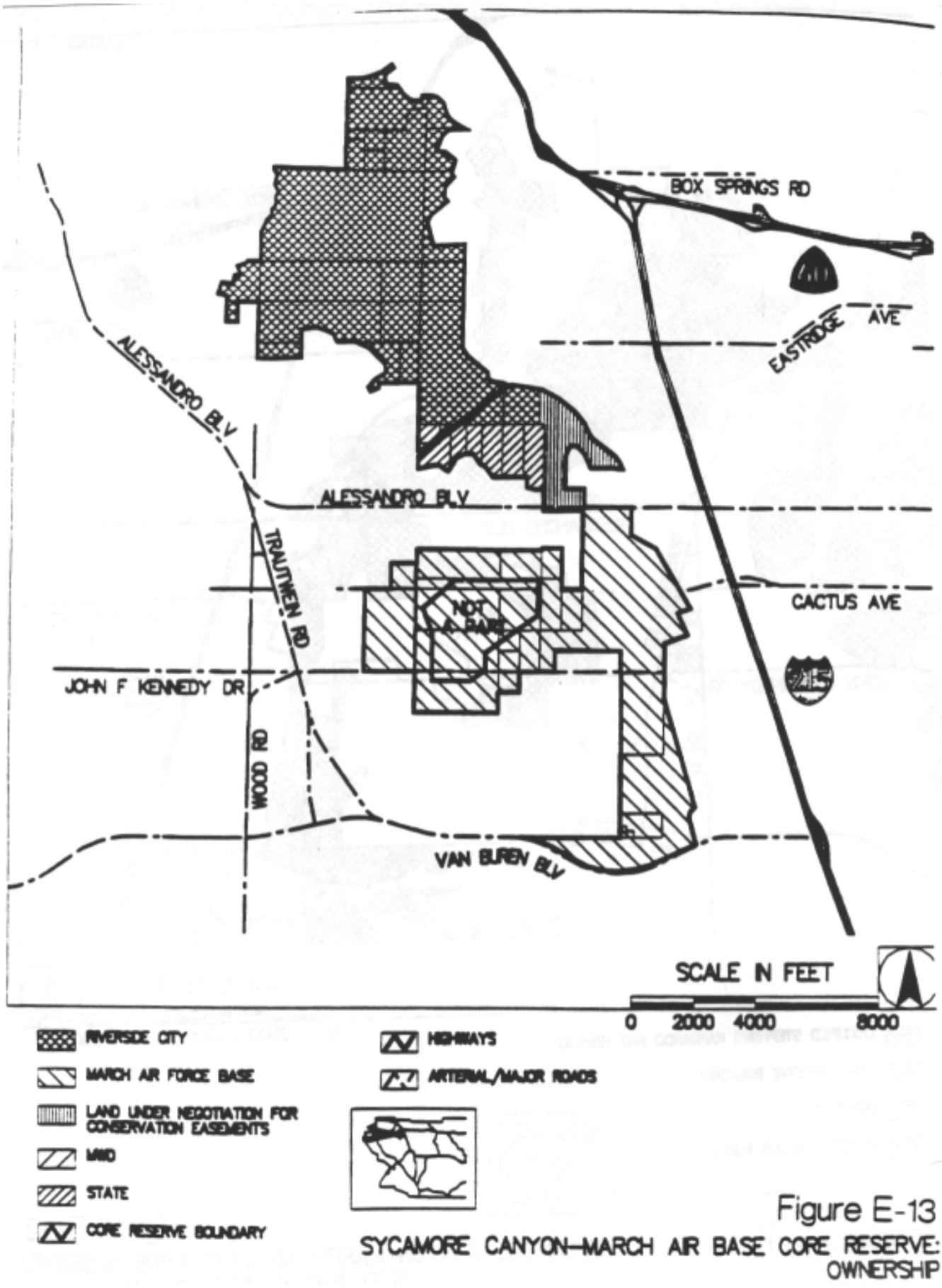


Figure E-13

SYCAMORE CANYON–MARCH AIR BASE CORE RESERVE: OWNERSHIP

Appendix E – Figure 14

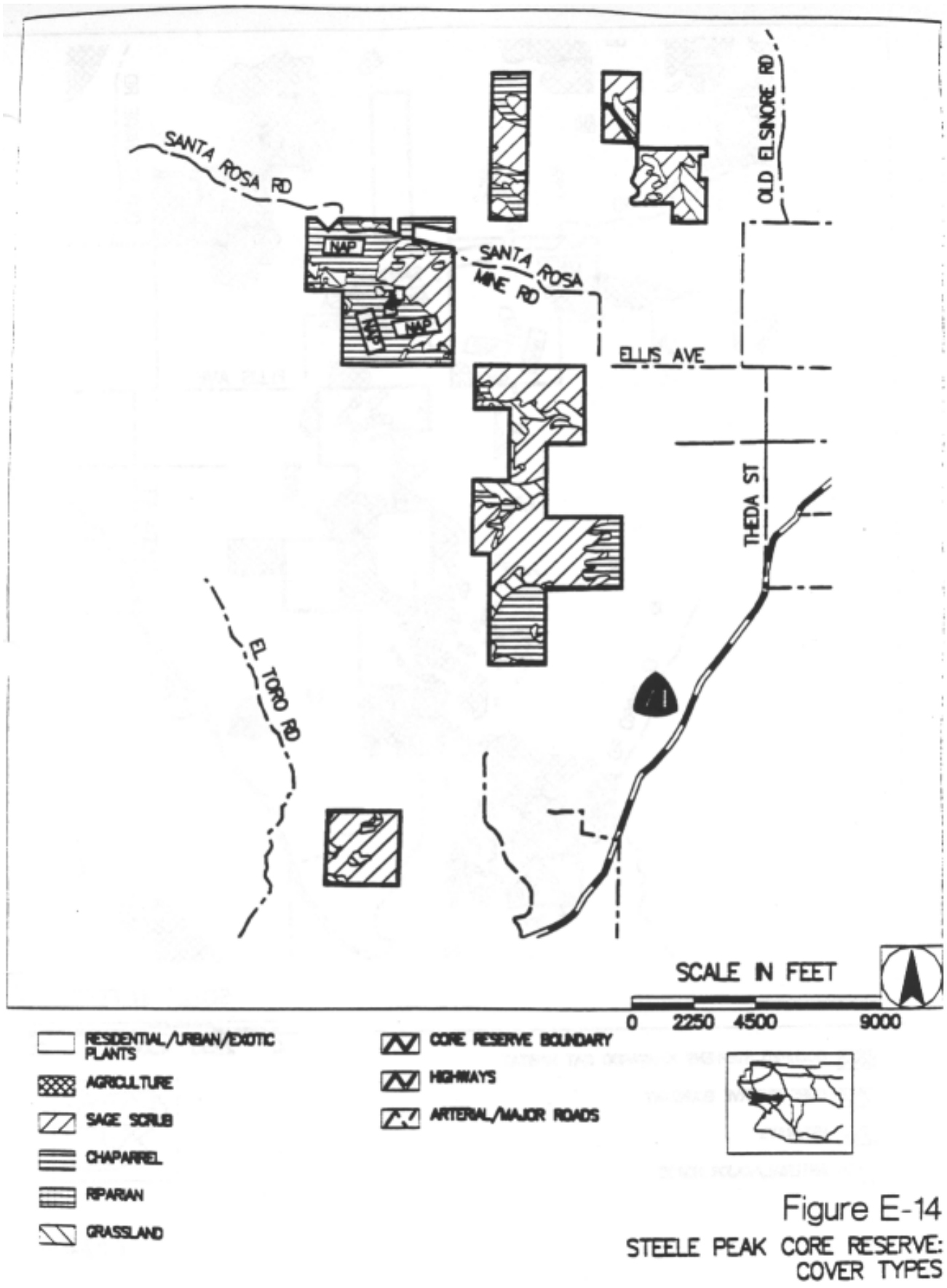


Figure E-14

STEELE PEAK CORE RESERVE: COVER TYPES

Appendix E – Figure 15

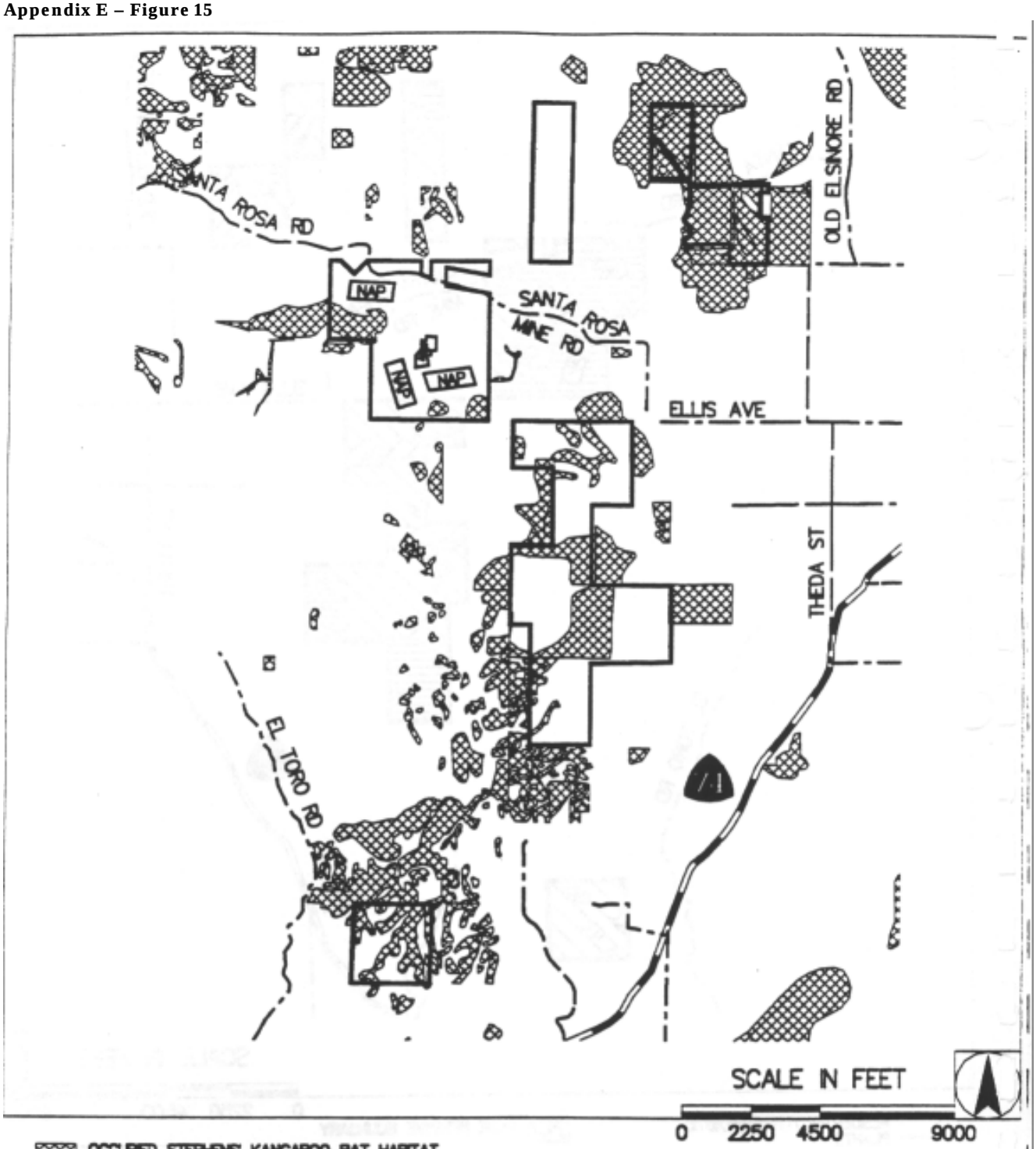


Figure E-15
STEELE PEAK CORE RESERVE
STEPHENS' KANGAROO RAT HABITAT

Appendix E – Figure 16

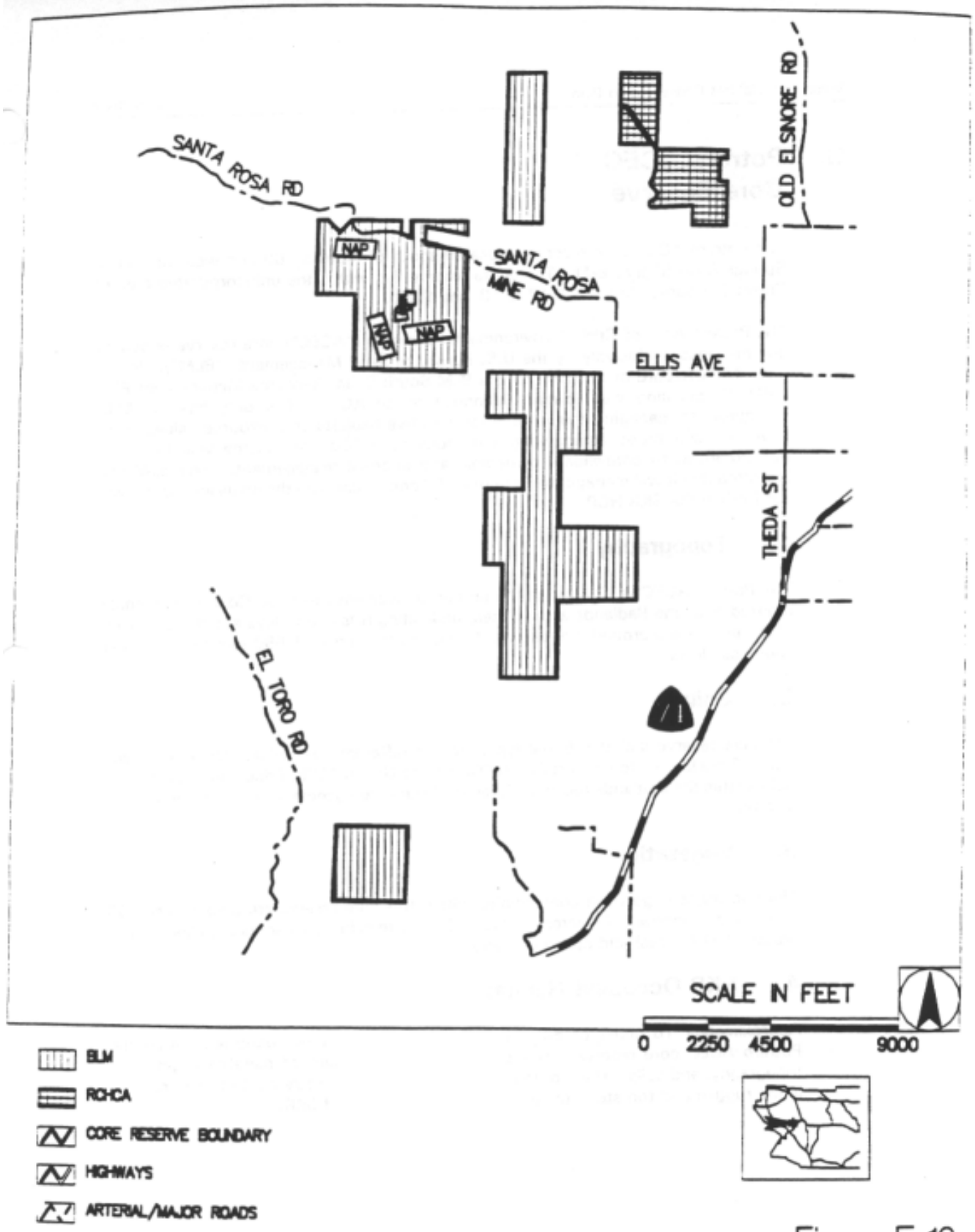


Figure E-16
STEELE PEAK CORE RESERVE:
OWNERSHIP

Appendix E – Figure 17

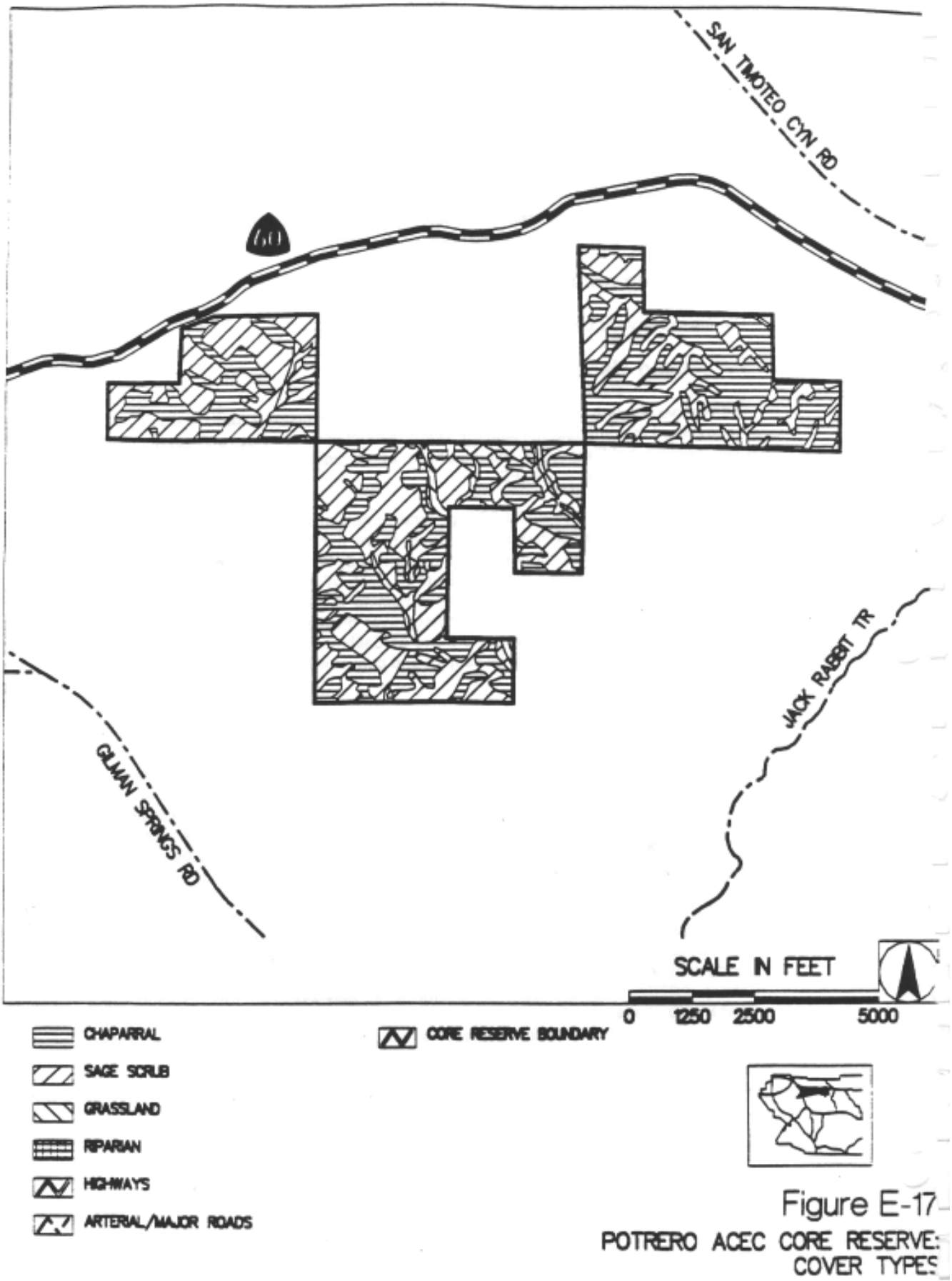


Figure E-17
POTRERO ACEC CORE RESERVE: COVER TYPES

Appendix E – Figure 18

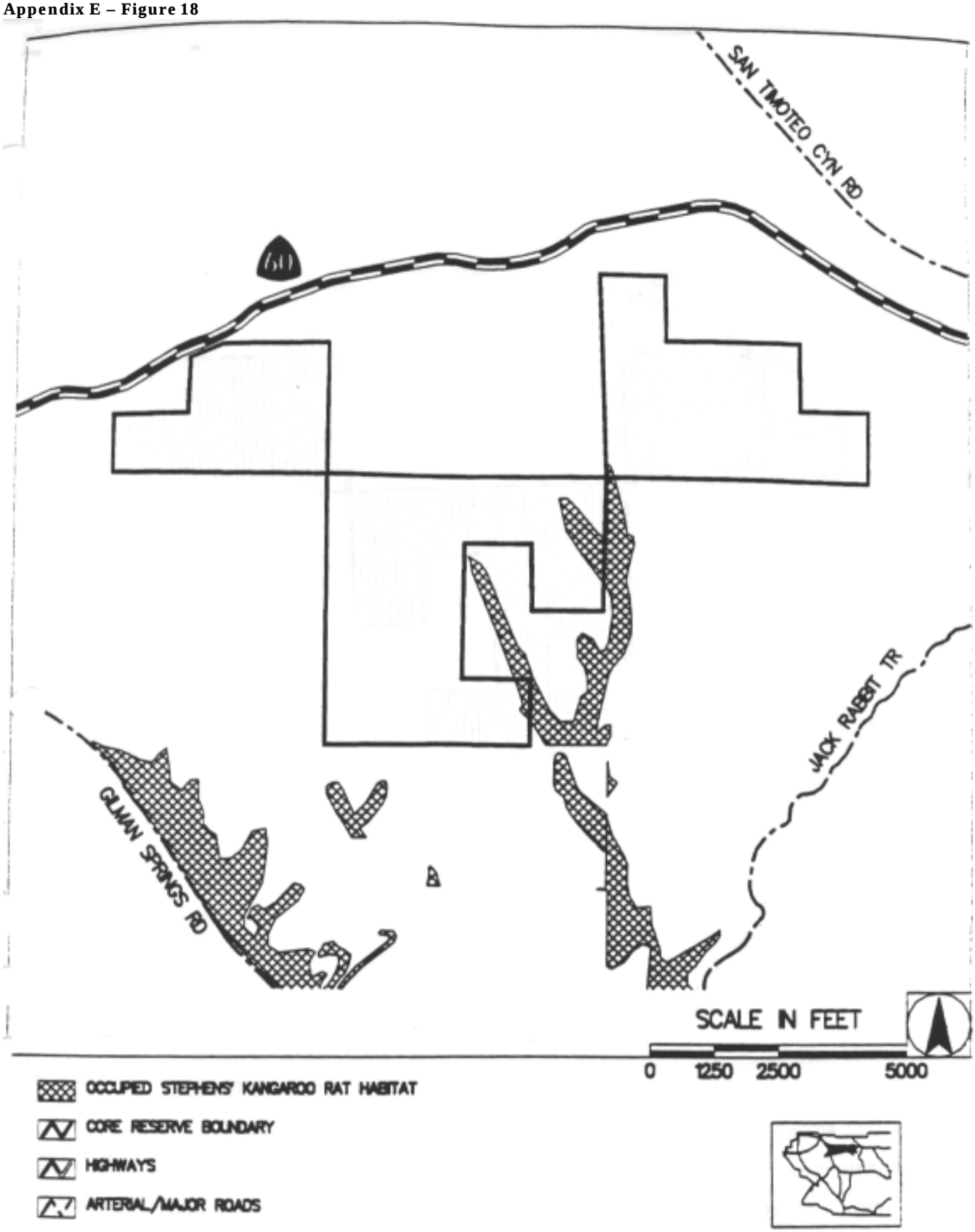


Figure E-18
POTRERO ACEC CORE RESERVE:
STEPHENS' KANGAROO RAT HABITAT

Appendix E – Figure 19

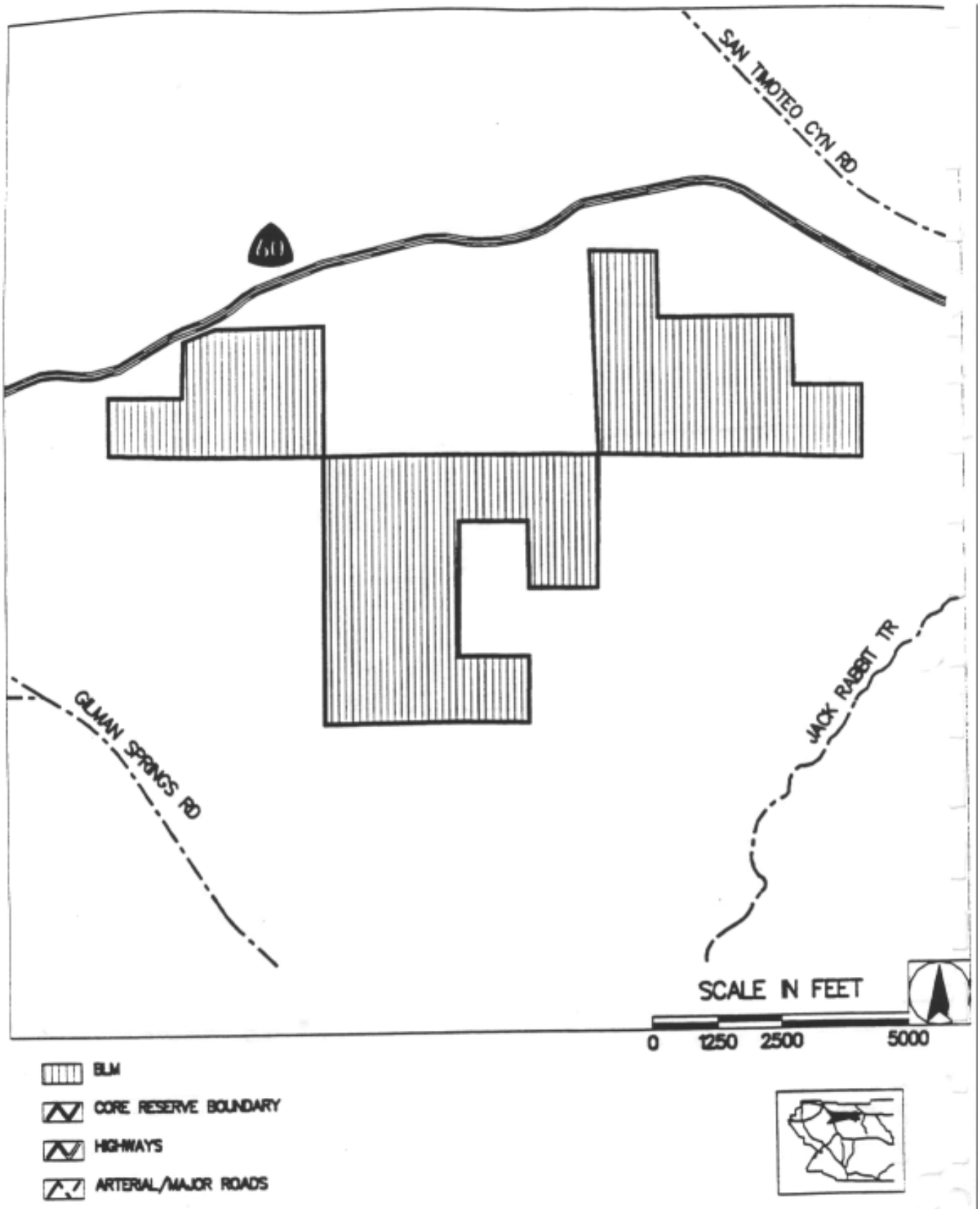


Figure E-19
POTRERO ACEC CORE RESERVE
OWNERSHIP

Appendix E – Figure 20

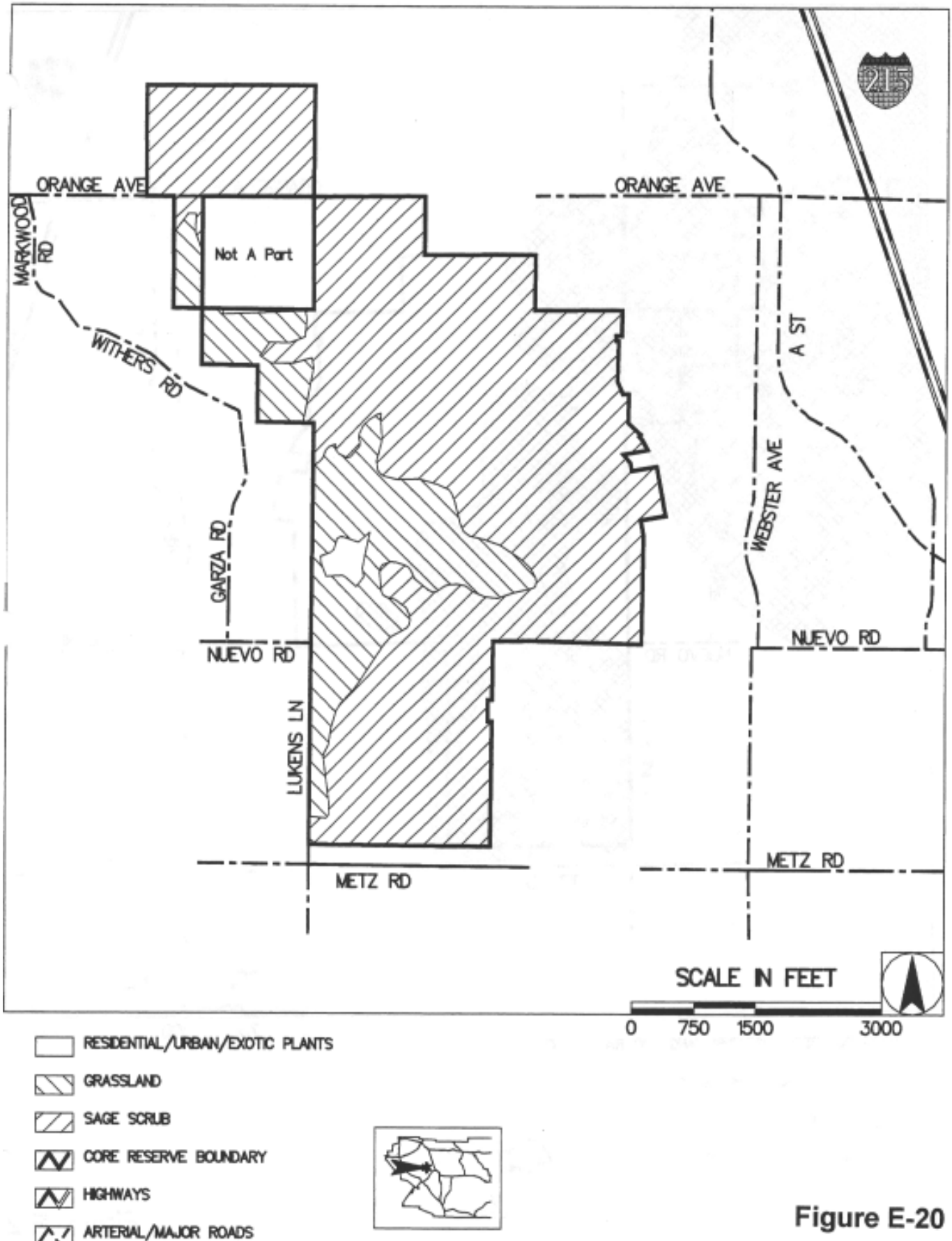


Figure E-20

UC MOTTE RIMROCK CORE RESERVE:
COVER TYPES

Appendix E – Figure 21

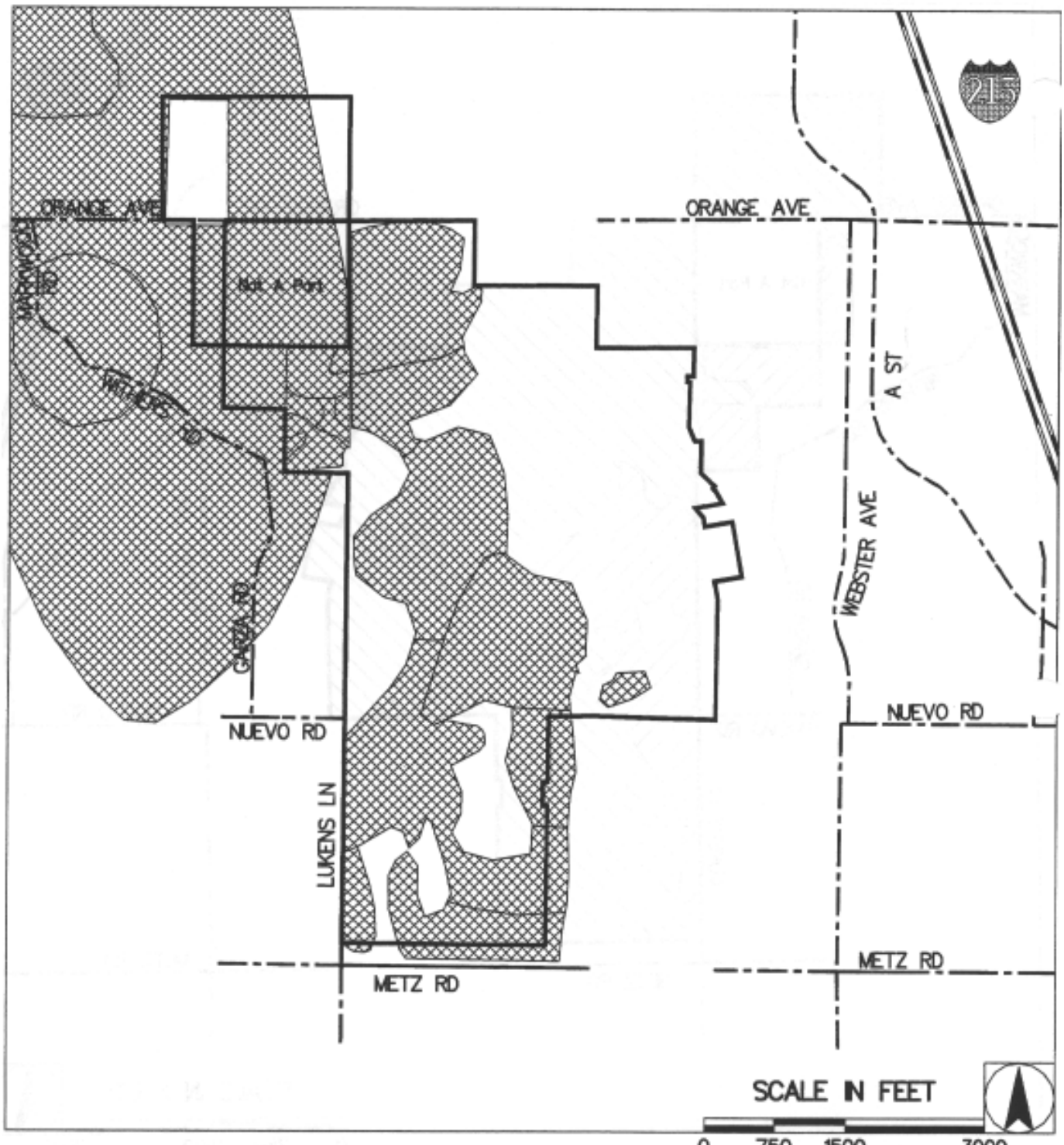


Figure E-21

UC MOTTE RIMROCK CORE RESERVE:
STEPHENS' KANGAROO RAT HABITAT

Appendix E – Figure 22

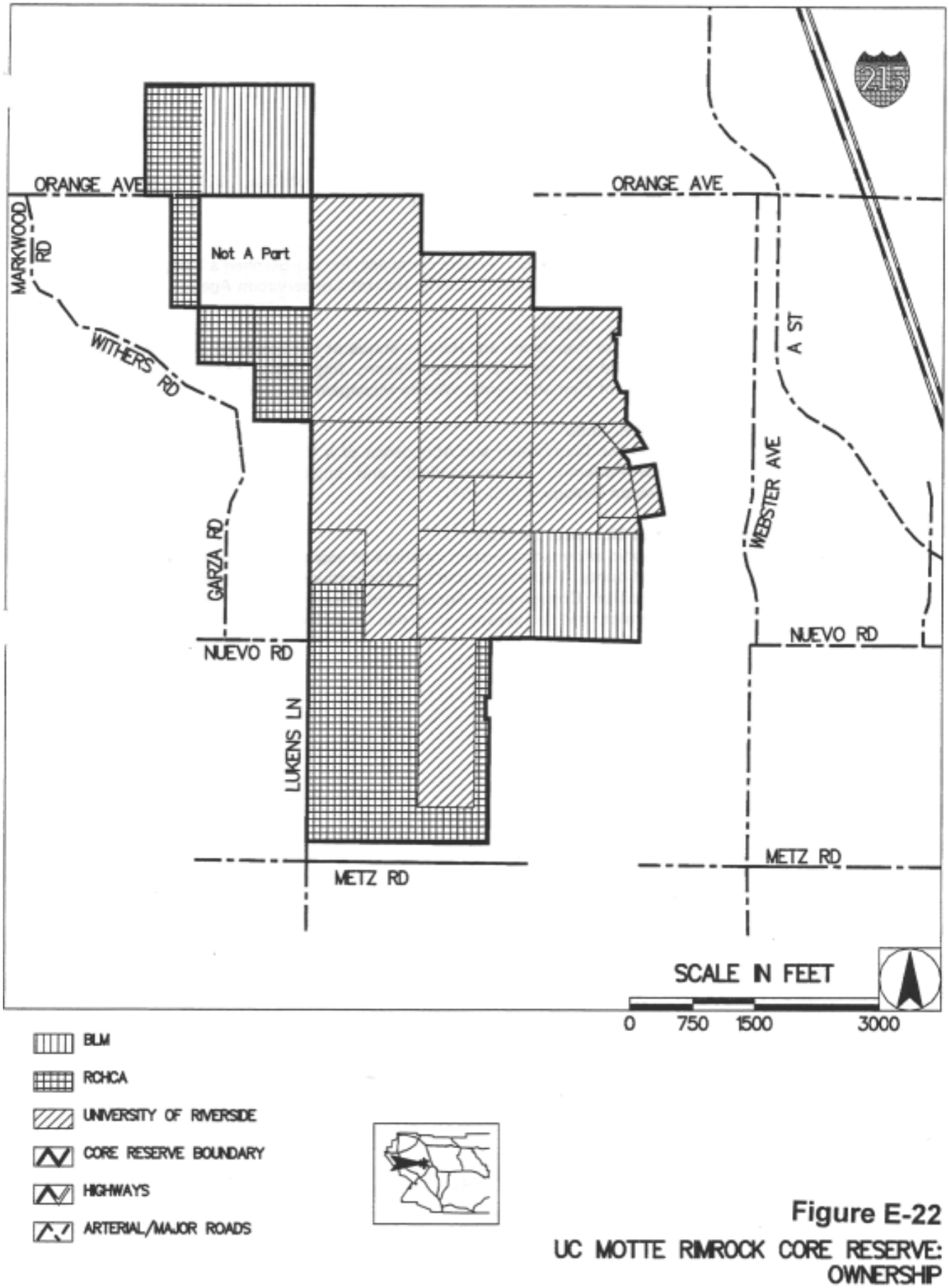


Figure E-22

UC MOTTE RIMROCK CORE RESERVE: OWNERSHIP

APPENDIX F - Transportation, Flood Control, and Waste Management Operations and Maintenance Activities

A. Road Maintenance Activities, Temporary Haul Roads and Borrow Sites.

Within the boundaries of the HCP area, incidental take of SKR during the course of otherwise lawful activities may occur in connection with a member agency's performance of maintenance activities necessary to provide safe travel on public roadways, the construction of temporary haul roads, and the creation of temporary borrow sites without obtaining further approval or authorization from the RCHCA, USFWS and CDFG. Such incidental take of the SKR may occur whether the subject property is inside or outside the boundaries of a core reserve.

For purpose of this HCP, the term "road maintenance activities" shall include, but not be limited to, the following activities:

1. Signage. The installation and maintenance of signs to control traffic speed, stops, or to clearly identify potentially hazardous conditions such as curves, narrow roads, etc.

2. Traffic Control Devices. The installation and maintenance of traffic control devices including, but not limited to, signing, street lights, striping, pavement markings, flashing beacons, and traffic signals in order to control, regulate, and provide guidance to traffic movements and to clearly identify potentially hazardous conditions.

3. Guardrails and Fences. The installation, replacement and maintenance of guardrails and fences solely for vehicle and pedestrian safety.

4. Pavement Repairs. Pothole repair, chipseal, skin patching, slurry sealing, and resurfacing of roadways performed for the purpose of reducing roadway hazards.

5. Tree Trimming. Routine tree and shrub trimming within road rights-of-way to improve sight distance and eliminate potential roadway blockage, fixed hazards, or hazards resulting from limited sight distance.

6. Natural Disaster Damage/Restoration of Emergency Access. Clearance of debris, rocks, and other natural material from roadways that results from natural disasters such as flooding, earthquakes, and fire. Such actions shall be necessary for public safety, especially in providing vehicular movement during emergency operations.

7. Storm Damage. Clearance of mud and debris accumulated on the roadway due to a storm event. Road crews will complete these projects as soon as possible following the end of a storm event, and may use the excess mud on the roadway as fill for the shoulders.

8. Weed Control. Control of vegetation within road rights-of-way (including graded shoulder areas and open or closed channels) by means of mowing, discing, hand labor, or herbicide application in order to control weed populations and eliminate sight distance problems, roadway hazards, prevent fires, and provide proper drainage. This includes the control of weeds and grasses in revegetated mitigation areas and landscaped areas in order to allow plant establishment by the methods outlined above.

9. Grading Shoulders. Shoulder grading up to 12 feet from the edge of paved or unpaved roadways in order to reduce accident potential and improve safety. Additional fill material may be needed to restore the original grade at the edge of the pavement; such material may consist of dirt, gravel, decomposed granite, or rip rap.

10. Grading Existing Dirt Roadways. Grading of existing County-maintained dirt roadways in order to reduce accident potential and improve safety.

11. Dust Stabilization. The placement of dust stabilizers on the soil including, but not limited to, magnesium chloride, permazion, penetration and gravel, in order to prevent erosion, provide dust control and improve sight distance when traffic visibility is reduced due to dust clouds.

12. Culverts/Drop Structures. Construction, replacement, and cleaning out of culverts/drop structures in areas where flooding hazards may arise. This includes the clearing of brush, sand, sediment, debris, and other obstructions to flow.

13. Curbs/Gutters/Sidewalks. Construction, replacement, and repair of curbs, gutters and sidewalks as necessary in order to reduce vehicular and pedestrian accident potential, improve safety and prevent storm damage.

14. Roadway Widening. Minor widening consisting of 2 to 4 feet or less than a lane width (12 feet) of an existing roadway which is necessary for safety reasons.

15. Rolled Berms. Construction of rolled berms as part of a resurfacing project to control drainage.

16. Roadway Resurfacing. Grinding the pavement surface, relaying the pavement, and grading of dirt shoulders.

17. Ditch Clearing. Clearing of ditches and stabilization of the banks of drainage courses along roadways.

18. Landscape Maintenance. Maintenance and repair of irrigation systems, landscape plantings, and associated landscape facilities.

19. Bridge Maintenance. Removal of vegetation, debris, sand, silt, sediment, and other obstructions to flow. The term "temporary haul roads" includes those roads necessary to construct a permanent public road facility and which

is only used during the construction of the public road facility. The term "temporary borrow site" includes any site temporarily used as a source of fill material for a project at another location.

Within core reserves RCHCA member agencies will mitigate impacts to the SKR for the construction of temporary haul roads and the creation of temporary borrow sites by restoring haul roads and temporary borrow sites to a condition allowing recolonization by SKR. Site restoration may include the preparation and implementation of a revegetation plan in consultation with USFWS and CDFG.

Outside of core reserves, construction of temporary haul roads or creation of temporary borrow sites is covered under the discussion of public facility operations and maintenance activities presented in Chapter 5(C) of this HCP.

B. Water and Flood Control Operations and Maintenance Activities

As generally described in Chapter 5, this HCP is intended to allow for incidental take of SKR occurring in conjunction with all operational and maintenance activities conducted by MWD and other water districts in the plan area. Such activities are essential to the continued provision of adequate water supplies for present and future residents of western Riverside County. Within the boundaries of the HCP area, incidental take of the SKR during the course of otherwise lawful activities may occur in connection with the Riverside County Flood Control and Water Conservation Districts' performance of maintenance activities necessary to ensure that flood control facilities continue to provide the design level of flood protection to which the facilities were constructed, to protect the public's investment, to prevent loss of life and property and to comply with local ordinances and regulations, the regulations pertaining to the National Flood Insurance Program and other federally mandated programs without obtaining further approval or authorization from the RCHCA, USFWS and CDPG. Such incidental take of the SKR may occur whether the subject property is inside or outside the boundaries of a core reserve.

For purposes of this HCP, the following terms are hereby defined:

1. Bridges. Structures greater than 20 feet in length which span depressions or obstacles, usually drainage courses or channels.

2. Closed Channel. Underground storm sewers designed to collect and convey storm water runoff.

3. Culverts. Closed conduits, other than a bridge, which allow water to pass under a road. Culverts have a span of less than 20 feet; if multi-span, individual spans are each 20 feet or less.

4. Improved Channel. A waterway in which significant man-made alteration has occurred to improve the passage of flood flows, including straightening and containing the flows within constructed banks (including levees) and concrete lined, riprap or earth trapezoidal channels with engineered banks.

5. Improved Basin. A facility which has been designed and constructed to temporarily impound flood waters and/or debris during times of flood flows. An improved basin is typically located along a natural watercourse and has flood waters and/or debris delivered to it via the watercourse or an improved basin may be located apart from a natural watercourse and have flood waters and/or debris delivered to it via an improved channel or underground storm drain system.

6. Maintenance. The removal of sand, silt, sediment, debris, rubbish, woody and herbaceous vegetation and other obstructions to flow, the control of weeds, grasses and emergent vegetation and the repair and/or replacement, cleaning and clearing of constructed channel or basin improvements all as necessary to maintain the structural integrity and capacity of the improved channel(s) or basin(s).

7. Open Channels. Open channels include flood control channels (both lined and unlined), drainage swales, roadside drainage ditches, flow lines, and natural drainage courses.

The term "flood control facilities/maintenance activities" shall include but shall not be limited to the following activities:

1. Control of weeds and grasses on maintenance roads and on the areas between the top of banks (improved channel and improved basin) and adjacent property to comply with local fire regulations and to provide a safe travel way to conduct facility inspection and maintenance activities by mowing, discing, hand labor or herbicide application.

2. Control of weeds and grasses, and emergent aquatic vegetation on earthen channel bottoms and banks to maintain channel design capacity, or to comply with local fire regulations, or to conduct facility inspection. Vegetation control will be accomplished by mowing, hand labor or herbicide application.

3. Control of weeds and grasses on the basin banks to comply with local fire regulations or to conduct facility inspection by mowing, hand labor or herbicide application.

4. Control of weeds and grasses in revegetated mitigation areas and landscaped areas to allow plant establishment by mowing, discing, hand labor or herbicide application.

5. Removal of vegetation, sand, silt, sediment and debris and other obstructions to flow within the immediate vicinity (not to exceed 100 feet) of the following structures: (1) stream flow measuring stations; (2) culverts and bridges; (3) storm drain outfall structures; (4) drop structures (energy dissipaters), and (5) basin inlet and outlet structures, to maintain the structures design function. Surface flowing water, if any, will be diverted, if possible, from the work area when using equipment in the improved channel or improved basin.

6. Control and/or removal of woody and herbaceous vegetation with large tractor-pulled rotary mowers or equivalent and/or hand labor and tools on channel bottoms and channel banks to maintain channel design capacity.

7. Control and/or removal of woody and herbaceous vegetation, weeds and grasses with large tractor-pulled rotary mowers or equivalent and/or hand labor tools on basin bottoms to comply with local fire regulations or to minimize the potential for obstructing the basin outlet structure.

8. Removal of trees or branches that are in imminent danger of falling, fallen trees and associated debris to maintain the channel or basin outlet structure design capacity.

9. Removal of accumulated sand, silt, sediment, woody and herbaceous vegetation, debris, rubbish and other obstructions from concrete-lined or rocklined channels or transition sections to maintain design capacity.

10. Removal of accumulated sand, silt, sediment, debris, rubbish and other obstructions or accumulations in improved channels with unlined channel bottoms to maintain channel or basin design capacity.

11. Removal of accumulated sand, silt, sediment, debris, rubbish and other obstructions or accumulations in improved channels with unlined channel bottoms to maintain low flow channel design capacity or, when necessary, to provide fish passage or habitat identified in District environmental documents.

12. Repair of failed sections of rock, gabion, masonry block, rail and wire, concrete-lined, granite, grouted concrete riprap or other bank protections to maintain bank stabilization measures or drop structures to provide invert stabilization measures. Surface flowing water, if any, will be diverted from the work area, if possible, when using equipment in the improved channel. Maintenance activities shall be confined to the section affected by the failure. Upon maintenance activity completion, disturbed portions of the channel bottom shall be scarified from the work site to the equipment entrance where equipment traffic has caused compaction of the streambed soil materials.

13. Restoration of eroded earth levees or channel and basin banks previously installed and/or maintained for public health and safety. Surface flowing water, if any, will be diverted from the work area, if possible, when using equipment in the improved channel or improved basin.

14. Scarify bottom of improved channel(s) or improved basin(s) by discing, ripping or bulldozing for the purpose of increasing the percolation rate related to the promotion of groundwater recharge.

15. Control of borrowing rodents in channel, basin (including dam embankment) or levee banks with application of rodenticides.

16. Removal of accumulated sand, silt, sediment, woody and herbaceous vegetation, debris, rubbish and other obstructions from basin bottoms including low flow "wet" areas by mowing, discing, bulldozing, hand labor or herbicide application.

C. Landfill and Other Waste Management Facilities Operation and Maintenance Activities, Temporary Haul Roads and Borrow Sites

Within the boundaries of the HCP area, incidental take of SKR during the course of otherwise lawful activities may occur in connection with the Riverside County Waste Resources Management District's or assignee's performance of operational and maintenance activities necessary to provide for the safe operation, closure and post-closure maintenance activities of landfills and other waste management facilities, the construction of temporary haul roads, and the creation of temporary borrow sites without obtaining further approval or authorization from the RCHCA, USFWS and CDFG. Such incidental take of the SKR may occur whether the subject property is inside or outside the boundaries of a core reserve.

For purposes of this HCP, the term "landfill and other waste management facilities operational and maintenance activities" shall include but shall not be limited to the following activities:

1. Signage. The installation and maintenance of signs to control traffic speed, stops, or to clearly identify potentially hazardous conditions such as cross traffic, curves, narrow roads, etc.

2. Guardrails and Fences. The installation, replacement and maintenance of guardrails and fences for vehicle and pedestrian safety, litter control, etc.

3. Pavement Repairs. Pothole repair, chipseal, skin patching and resurfacing of roadways in order to reduce roadway hazards.

4. Tree Trimming. Routine tree and shrub trimming to improve sight distance and eliminate potential roadway blockage.

5. Natural Disaster Damage/Restoration of Emergency Access. Clearance of debris, rocks, and other natural material from on site roadways that results from natural disasters such as flooding, earthquakes, and fire.

6. Storm Drains. Construction and repair of storm drains and clearance of mud and debris accumulated on the roadway due to a storm event. Work crews shall complete these projects immediately following the end of a storm event and may use the excess mud on the roadways as fill for the shoulders.

7. Weed Spraying/Mowing. Spraying and mowing of weeds and vegetation within graded shoulder areas in order to control hazards, and prevent fires.

8. Grading Shoulders. Shoulder grading up to 50 feet from the edge of the landfill roadways in order to reduce accident potential and improve safety. Additional fill material may be needed to restore the original grade at the edge of the pavement.

9. Grading Existing Fire Breaks. Grading of existing County-maintained fire breaks, mowing or discing combustible vegetation.

10. Drainage Control Structures. Construction of, or improvement to, drainage control structures; such as, watercourses, downdrains, berms, debris and sediment retention basins, grade stabilizers, energy dissipators, runoff flow meters, inlet or outlet works.

11. Curbs/Gutter/Sidewalks. Construction or replacement of curbs, gutters and sidewalks as necessary in order to reduce vehicular and pedestrian accident potential, improve safety and prevent storm damage.

12. Roadway Widening. Minor widening of an existing roadway which is necessary for safety reasons.

13. Rolled Berms. Construction of rolled berms as part of a resurfacing project to control drainage.

14. Roadway Resurfacing. Grinding the pavement surface, relaying the pavement, and grading of dirt shoulders.

15. Ditch Cleaning. Clearing of ditches and stabilization of the banks of drainage courses along roadways.

16. Dust Control. Mechanical application of soil stabilizers to control dust from landfill operations. Soil stabilizers include, but are not limited to, the application of hydroseed, chemical stabilizers, or water in compliance with Rule 403 control measures as approved by the South Coast Air Quality Management District (SCAQMD).

17. Litter Control. Activities associated with the collection, transport and disposal of on-site litter.

18. Drop Off Programs. Establishment of areas within the landfill for the collection and temporary storage of recyclables such as white goods and scrap metals.

19. Environmental Monitoring Facilities. Construction, maintenance and operation of ground water wells, landfill gas migration probes, wind recording devices, rain gauges, leachate or landfill gas migration barriers, treatment facilities or collection facilities, landfill gas condensate collection and removal facilities and installation, repair and operation of seismic monitoring devices and landfill gas flare stations.

20. Landfill Cover. Placement of and repair to landfill cover, including movement of heavy equipment adjacent to the landfill area.

21. Haul Roads. Construction and maintenance of access and haul roads required for landfill operations or for public access to the landfill operations.

22. Bird Control. Placement of mitigation devices such as construction supports for overhead wires to effect seagull and other bird species control.

23. Surveys. Access for engineering, biological, or other environmental surveys.

24. Expansion. Construction related to landfill footprint expansion.

25. NPDES Structures. Construction and maintenance of federally required monitoring stations for control of surface waters in compliance with the Nation Pollutant Discharge and Elimination System.

26. Maintenance Materials. Stockpiling of materials such as soils, gravel, etc. for the placement and repair of landfill cover.

27. Miscellaneous. Installation of security fencing and placement of land survey monuments and control points.

In addition, the term "temporary haul roads" shall include those roads necessary to construct a permanent landfill cell, life or phase or provide access to a monitoring site, and which is only used during the construction of same and the term "temporary borrow site" shall include any site temporarily used as a source of fill material for a waste management facility at another location.

The member agency shall mitigate impacts to the SKR for the construction of temporary haul roads or creation of temporary borrow sites within core reserves by restoring the temporary haul road or temporary borrow site to a condition that allows recolonization by the SKR which may include the preparation and implementation of a revegetation plan, as required by the USFWS and CDFG on a case by case basis. No mitigation shall be required for the construction of temporary haul roads or creation of temporary borrow sites outside the core reserves.

D. Other Public Facility Maintenance Activities, Temporary Haul Roads and Borrow Sites.

Within the boundaries of the HCP area, incidental take of the SKR during the course of otherwise lawful activities may occur in connection with a public agency's performance of public facility maintenance activities necessary to protect the structural integrity of the facility and continue operation of the facility, the construction of temporary haul roads, and the creation of temporary borrow sites without obtaining further approval or authorization from the RCHCA, USFWS and CDFG.

For purposes of this HCP, the term "temporary haul road" shall include those roads necessary to construct a permanent public facility and which is only used during the construction of the public facility. In addition, the term "temporary borrow site" shall include any site temporarily used as a source of fill material for a project at another location.

The public agency shall mitigate impacts to the SKR for the construction of temporary haul roads and the creation of temporary borrow sites within core reserves by restoring the temporary haul road and temporary borrow site to a condition that allows recolonization by the SKR which may include the preparation and implementation of a revegetation plan, as required by the USFWS and CDFG on a case by case basis. No mitigation shall be required for the construction of temporary haul roads or creation of temporary borrow sites outside of the core reserves.

Table S-1

RCHCA Member Agency Plan Area Acreage and SKR Occupied Habitat

RCHCA Member	Total Acres	Acres of Occupied SKR Habitat*
County Unincorporated Area	371,758	23,650
Cities		
Corona	1,771	225
Hemet	13,266	<25
Lake Elsinore	14,319	700
Moreno Valley	31,267	600
Murrieta	15,246	***
Perris	20,285	700
Riverside	49,914	3,400
Temecula	16,128	700
Subtotal	**162,196**	**6,350**
Total Plan Area	533,954	30,000
Area within Core Reserves	**41,221****	**12,460**

Sources: RECON, USFWS and RCHCA member agencies.

* Estimates rounded to nearest ten acres, except for Hemet and Corona, which have the smallest amounts of SKR habitat among the RCHCA members.

** Does not include lakes or future Domenigoni Reservoir.

*** Estimate for Murrieta is not available at this time but is not expected to substantially increase amount in the plan area.

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Table S-2

Summary Characteristics of Acreage in the SKR Core Reserves

Characteristic	LS-DV	LM-EM	SJ-LP	SC-MAFB	SP	POTRERO	MRR	TOTAL
SKR Habitat	1,998	4,264	3,640	1,355	860	18	335	12,460
On Public Lands	1,656	4,134	3,638	1,261	860	18	335	11,902
On Private Lands	332	130	2	94	0	0	0	558
Total Area*	**13,158****	**11,243**†	**10,932**	**2,502**	**1,753**	**995**	**638**	**41,221**
Public Lands	12,842	10,560	10,778	2,402	1,753	995	638	39,968
Private Lands	316	683	154	100††	0	0	0	1,253†††

MRR	Motte Rimrock Reserve
LS-DV	Lake Skinner-Domenigoni Valley
LM-EM	Lake Mathews-Estelle Mountain
SJ-LP	San Jacinto-Lake Perris
SC-MAFB	Sycamore Canyon-March Air Force Base

*	Excludes lakes, reservoirs, and MWD operations areas.
**	The RCHCA holds conservation easements for 1,336 acres of MWD property, 46 acres of County of Riverside property, and 205 acres of private property at Finisterra Farms.
†	Includes 2,321 acres of occupied SKR habitat on MWD reserve lands as identified in the Lake Mathews MSHCP/NCCP.
††	Caltrans in negotiating the acquisition of this property pursuant to a Section 7 consultation.
†††	Of this amount, the RCHCA will commit to purchase or otherwise conserve 1,153 acres.

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Table 1 -

Public Meetings Providing Opportunities for Scoping Comments and Public Hearings on the Draft SKR Habitat Conservation Plan

Date/Time	Purpose	Location
March 8, 1993 9:00 am	Workshop: Public Agency/General Public	University of California Riverside, CA
March 8, 1993 7:00 pm	Public Scoping Meeting	Caliaway Winery Temecula, CA
March 10, 1993 7:00 pm	Public Scoping Meeting	Riverside City Council Chambers Riverside, CA
March 11, 1993 7:00 pm	Public Scoping Meeting	Perris High School Perris, CA
March 18, 1993* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
March 25, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
April 8, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
April 15, 1993* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
April 29, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
May 20, 1993* 8:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
May 27, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
June 17, 1993* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
July 1, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
July 15, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
July 28, 1993* 7:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
August 16, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
August 19, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
September 16, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
September 30, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
October 21, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
October 28, 1993* 1:00pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
November 9, 1993* 9:00 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
November 18, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
December 9, 1993* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
December 16, 1993* 9:30 am	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
January 6, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA

January 20, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
January 31, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
February 10, 1994* 1:00 pm	RCHCA Board Meeting	County Administrative Center Riverside, CA
February 17, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
February 24, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
April 21, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
April 28, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
June 16, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
June 30, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
July 21, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
July 28, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
August 11, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
August 18, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
August 25, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
September 15, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
September 29, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
October 20, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA
October 27, 1994* 1:00 pm	RCHCA Advisory Committee Meeting	County Administrative Center Riverside, CA
November 17, 1994* 9:30 am	RCHCA Board Meeting	County Administrative Center Riverside, CA

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Table 2 –

HCP Information Requirements and Approval Criteria	
Federal ESA	**California ESA**
HCP requirements, as stated in Section 10(a) and 50 CFR 13 and 17: 1. Common and scientific names(s) of species; 2. Names of responsible parties; 3. Impacts likely to result from the taking; 4. Measures to monitor, minimize, and mitigate impacts; 5. Funding available to undertake the proposed measures; 6. Procedures to with unforeseen circumstances; 7. Alternatives that would not result in and the reasons why the alternatives were not adopted; 8. Additional measures (if any) required by USFWS as necessary or appropriate.	2081 agreement requirements, as in CDFG draft guidelines: 1. Description of the affected species and their habitat(s); 2. Description of the project that will affect the listed species; including maps showing the overall project and impact area; 3. Analysis of potential impacts, including cumulative effects on in and adjacent to the project area; 4. Analysis of alternatives designed to reduce or eliminate impacts to the listed species; 5. Description of on and off mitigation measures; 6. Financial assurances regarding the implementation of mitigation measures.
Approval Criteria	
Approval criteria for an Incidental take permit, as stated in Section 10(a)(1)(B) and 50 CPR 13 and 17: 1. The taking will be incidental to an otherwise lawful activity; 2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking; 3. The applicant will ensure that adequate funding for the plan and procedures to with unforeseen circumstances will be provided; 4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; 5. The applicant will ensure that the other measures, if any, required by USFWS will be met; and 6. USFWS is assured that the conservation plan will be implemented.	No approval criteria stated in ESA; questions used by CDFG in consultations under Section 2090 used to identify impacts that the plan should avoid or adequately mitigate: 1. Would a viable or recoverable population be eliminated or a significant proportion of a population be adversely affected? 2. Would the range of the species be significantly diminished? 3. Would the quantity or quality of the species' habitat be reduced by immediate or future effects? 4. Would the species' access to its habitat be reduced or rendered more hazardous? 5. Would current or future efforts to protect species be adversely affected? 6. Would plans for the recovery or eventual desisting of the be adversely affected? 7. Would the project interfere with reproductive or other behavior of the species? 8. Would the project cause, or increase the risk of, the species' extinction?

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Table 3 - Summary List of HCP-Related Goals, Policies, and Programs in General Plans of the RCHCA Members

Summary List of HCP-Related Goals, Policies, and Programs in General Plans of the RCHCA Members

	Type of HCP-Related Goals, Policies, and Programs							
RCHCA Member/ Plan Element	Sensitive Species Protection	Habitat Inventory Mapping	Habitat Acquisition Presentation	Development Review/ Control	Site Specific Biological Assessment	Wildlife Buffers/ Assessment	Mitigation Monitoring	Multi-Species Planning
Riverside County								
Land Use	X	X			X		X	
Regional							X	
Environmental Hazards/Resources	X	X	X	X	X		X	
Corona								
Conservation	X							
Hemet								
Resource Management	X				X	X	X	X
Lake Elsinore								
Conservation/ Open Space	X		X	X	X		X	
Moreno Valley								
Conservation	X				X	X	X	
Murrieta								
Conservation/ Open Space	X		X	X	X	X		
Perris								
Land Use	X							
Conservation/ Open Space	X		X	X	X	X		
Riverside (City)								
Conservation	X	X		X	X	X	X	X
Temecula								
Land Use	X							X
Conservation/ Open Space	X	X	X	X	X	X	X	X

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Table 4 –

Acres per RCHCA Member in the Plan Area

RCHCA Member	Acres	% of Total
Riverside County	371,758	69.6
Cities	371,758	69.6
Corona	1,771	0.3
Hemet	13,266	2.5
Lake Elsinore	14,319	2.7
Moreno Valley	31,267	5.9
Murrieta	15,246	2.9
Perris	20,285	3.8
Riverside (City)	49,914	9.3
Temecula	16,128	3.0
Subtotal	162,196	30.4
Plan Area	533,954	100.0

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Table 5 –

Population In RCHCA Member Cities and Other Areas of Riverside County, 1980-1993

Jurisdiction	1980	1985	1990	1991	1992	1993	% Change over period	Average Annual % Change
RCHCA Cities								
Corona	37,791	44,141	69,980	81,330	88,260	92,584	145	11
Hemet	22,454	28,590	35,669	38,007	48,946	52,120	132	10
Lake Elsinore	5,982	9,494	15,971	19,223	22,120	22,747	280	22
Moreno Valley		58,010	114,903	126,337	131,851	133,706	130	16
Murrieta						25,518		
Perris	6,827	9,093	18,884	23,964	27,275	28,892	323	25
Riverside	170,591	186,786	218,499	230,016	238,061	242,249	42	3
Temecula				27,382	31,603	33,950	24	12
Subtotal	229,991	336,114	473,906	546,259	588,116	631,766		
Other Western Riverside Cities								
Banning	14,020	16,540	20,973	22,069	22,995	23,476	67	5
Beaumont	6,818	7,764	9,968	9,998	10,363	10,440	53	4
Canyon Lake					10,301	10,501	2	2
Norco	19,732	2,254	25,342	23,442	23,871	24,281	23	2
San Jacinto	7,098	10,089	15,310	17,576	20,892	22,255	214	16
Subtotal	47,668	56,939	71,593	73,085	88,442	90,953		
East County Cities	108,975	136,088	178,907	198,408	220,608	228,323		
County Unincorporated	276,565	271,808	385,615	407,266	392,546	351,760	27	3
Total County	663,199	800,949	1,110,021	1,225,018	1,289,712	1,328,320	100	8

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Table 6 –

Growth Forecast for Western Riverside County

RSA	Population			Households			Employment		
	1990	2010	% Change	1990	2010	% Change	1990	2010	% Change
45	71,544	79,364	10.93	21,941	23,748	8.24	15,874	28,388	78.83
46	486,606	884,961	81.86	152,353	281,516	78.22	152,303	291,089	91.12
47	104,950	303,453	189.14	37,121	98,377	165.02	20,069	85,470	325.88
48	95,576	245,568	156.93	40,716	100,230	146.17	28,299	54,549	92.76
49	105,516	371,428	252.01	36,040	125,313	247.71	30,188	93,525	209.81
50	47,487	103,355	117.65	17,565	38,247	117.75	13,958	29,390	110.56
Totals	911,679	1,988,129	118.07	305,736	657,431	115.03	260,691	582,411	123.41

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Table 7 –

1995 Land Use Inventory for Plan Area*

Land Use Category	Areas	%
Urban/Residential	86,260	16
Commercial/Office/Institutions	19,893	4
Industrial	4,902	1
Mineral Extraction	1,663	0
Airfield/Airports	1,645	0
Transportation/Utilities/Public Facilities	11,035	2
Under Construction	8,107	1
Parks and Recreation	15,018	3
Open Space/Wildlife Reserves	2,181	0
Agriculture	120,352	22
Water/Inundation Area	10,603	2
Vacant/Urban Lands	10,208	2
Vacant Undifferentiated	2,606,783	47
No Photo Coverage Available	31	0
Total	**552,576**	**100**

* Includes area of non-RCHCA members encompassed by outer plan area boundaries.
Source: Southern California Association of Governments 1995 GIS Data

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Table 8

Table 8
Building Permits Issued in RCHCA Member Cities and Other Riverside County Jurisdictions, 1983 - 1993
(number of residential building permits)

JURISDICTIONS	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
RCHCA Cities											
Corona	471	817	1,133	1,884	2,450	3,595	3,180	1,219	712	436	469
Hemet	625	551	644	1,620	378	605	743	1,608	216	203	94
Lake Elsinore	312	560	345	398	469	383	245	274	259	232	335
Moreno Valley	--	--	3,521	4,098	2,292	4,030	3,862	922	392	436	173
Perris	168	404	152	349	433	1,433	1,243	805	595	322	600
Riverside	1,160	3,250	3,292	3,107	1,525	1,587	2,232	1,253	1,001	556	389
Temecula	--	--	--	--	--	--	--	72	456	661	813
Subtotal	2,736	5,582	9,087	11,456	7,547	11,633	11,505	6,153	3,631	2,846	2,873
All Other Cities	3,318	5,439	4,346	5,864	3,124	4,842	5,518	4,268	3,139	2,700	2,149
Unincorporated	6,179	7,971	3,738	6,623	7,276	19,021	8,679	5,210	2,586	2,660	2,277
TOTAL	12,233	18,992	17,171	23,943	17,947	35,496	25,702	15,631	9,356	8,206	7,299

Source: Construction Industry Research Board (December 1994)

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Table 9 –

Table 9
Value of New Construction in RCHCA Member Cities and Other Riverside County Jurisdictions, 1983-1993
(in millions of 1993 dollars)

JURISDICTIONS	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
RCHCA Cities											
Corona	72.1	111.7	105.0	185.6	302.1	448.9	468.4	174.6	110.3	96.1	101.1
Hemet	42.0	42.3	42.5	88.2	39.2	69.7	115.3	185.8	38.5	41.6	18.7
Lake Elsinore	30.6	34.8	30.8	31.5	54.6	59.5	42.5	41.5	55.3	40.8	51.7
Moreno Valley	0	0	0.3	348.9	254.6	439.4	514.0	176.4	91.6	111.8	33.0
Perris	7.3	20.8	14.7	29.1	36.2	112.2	98.7	81.4	70.2	33.0	59.8
Riverside	151.2	298.6	318.4	351.1	298.8	313.7	425.3	259.1	199.6	200.4	108.9
Temecula	0	0	0	0	0	0	0	30.0	100.7	90.0	96.6
Subtotal	303.2	508.2	511.7	1034.4	985.4	1443.5	1664.2	948.9	666.3	613.6	469.9
All Other Cities	447.1	614.1	590.0	667.5	535.1	693.7	838.2	639.4	507.7	518.2	363.0
Co. Unincorporated	712.3	978.5	883.2	807.4	927.6	2132.7	1304.5	904.6	423.5	375.7	311.5
TOTAL	1462.6	2100.7	1985.0	2509.2	2448.0	4270.0	3806.9	2492.9	1597.4	1507.5	1144.4

Source: Construction Industry Research Board (December 1994)

Notes: 1) "New Construction" denotes the sum of residential and nonresidential building permit valuations. Dollar valuations approximate construction costs.

2) Totals may not add to sums because of independent rounding.

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Table 10 –

Vegetation Types in Western Riverside County and the Plan Area (acres)

Vegetation/Cover Type	Western Riverside County	HCP Plan Area
Sage Scrub		
Coastal Scrub	7,159	44
Diegan Coastal Sage Scrub	15,764	779
Riversidean Sage Scrub	134,658	97,665
Riversidean Alluvial Fan Sage Scrub	7,052	2,325
Miscellaneous Scrub (semi-desert succulent scrub, big sage brush scrub)	14,346	0
Chaparral		
Chaparral	379,725	67,591
Chamise Chaparral	361	352
Red Shank Chaparral	84,285	227
Semi-Desert Chaparral	19	0
Grassland		
Valley and Foothill Grassland	2,734	0
Non-native Grassland	149,648	83,178
Vernal Pool		
Vernal Pool	19	18
Southern Interior Basalt Vernal Pool	71	23
Meadow (montane, wet and dry montane meadow)	704	0
Alkali Playa	7,840	7,529
Marsh		
Marsh	87	87
Cismontane Alkali Marsh	1,265	16
Coastal and Valley Freshwater Marsh	391	121
Riparian		
Riparian Forest	1,163	506
Southern Cottonwood/Willow Riparian	6,317	953

Table 10 – (cont.)

Montane Riparian Forest	294	0
Southern Sycamore/Alder Riparian Woodland	189	48
Riparian Scrub	3,392	1,531
Mule Fat Scrub	625	366
Southern Willow Scrub	1,612	1,445
Montane Riparian Scrub	7	7
Tamarisk Scrub	272	265
Arundo/Riparian Forest	492	71
Woodland		
Oak Woodland	26,383	923
Coast Live Oak Woodland	6,723	882
Dense Engelmann Oak Woodland	4,108	266
Peninsular Juniper Woodland and Scrub	1,106	945
Forest		
Broadleaved Upland Forest	2,762	0
Black Oak Forest	9	0
Lower Montane Coniferous Forest	9,097	0
Jeffrey Pine	15,424	0
S. Cal. White Fir	6,899	0
Lodgepole Pine	1,654	0
Subalpine Coniferous	541	0
Mixed Evergreen Forest	7,965	0
Subtotal	903,192	268,163
Land Cleared of Native Vegetation (incl. agriculture, water areas, and residential/urban/exotics, and disturbed alluvial)	393,034	265,791
TOTAL	1,296,226	533,954

Source: Pacific Southwest Biological Services May 1994 Vegetation Survey of Western Riverside County, Riverside County GIS.

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Table 11 –

Summary of HCP-Related Studies and Research Conducted in the Plan Area

Project/Researcher(s)	Description and Status
SKR Literature Review* RECON	Existing literature on the biological characteristics, known distribution, and current status of the SKR was reviewed and summarized. Summary prepared in 1992 and updated in 1993.
GIS Data Base of HCP Fee Area and SKR Reserve Study Areas RECON County of Riverside	GIS data base created and maintained for Fee Area and Study Area boundaries, distribution of SKR habitat, parcels and ownership within Study Areas, land uses and zoning designations within and immediately adjacent to Study Areas; land ownership within and immediately adjacent to Study Areas; and vegetation types in Fee Area based on U.C. Riverside mapping (see below). Data base conveyed to County for use by RCHCA and member agencies.
GIS Vegetation Database Pacific Southwest Biological Services	Cover types on approximately 1.3 million acres in western Riverside County were mapped and categorized using 1993 aerial photography and spot satellite image processing. Mapping and data were subsequently entered into geographic information system to allow overlay with jurisdictional, Study Area, and SKR occupied habitat boundaries. Mapping completed in 1994.
Distinguishing the Endangered SKR from the Pacific Kangaroo Rat (PKR)* Price, Kelly and Goldingay University of California, Riverside	Study conducted of skull, hair, and live specimen characteristics to develop a protocol for distinguishing SKR from PKR. Discriminant analysis indicated that the two species can be distinguished more successfully on basis of weight, ear length, and head shape than solely on basis on hair characteristics. Identification protocol established using ear-length and postorbital head width. Final report submitted January 15, 1992.
Demography of Two SKR Populations in Riverside County, California* Price and Kelly University of California, Riverside	Studies conducted at Motte Rimrock Reserve and San Jacinto Wildlife Area in 1990-1991. Data collected and analyzed include rainfall patterns, individual growth, survivorship, reproductive phenology, and changes in population density. Final report submitted to RCHCA on January 15, 1992.
Home Range Use of Stephens' Kangaroo Rats: Implications for Density Estimation* Price and Kelly University of California, Riverside	Study conducted at Motte Rimrock Reserve and San Jacinto Wildlife Area. Home range and space-use patterns of SKR were studied in 1991 using live trapping and radiotelemetry. Data collected and analyzed include home range shape and overlap, and boundary strip estimation and sex ratio. Final report submitted January 15, 1992.
SKR Literature Review* RECON	Existing literature on the biological characteristics, known distribution, and current status of the SKR was reviewed and summarized. Summary prepared in 1992 and updated in 1993.
Monthly and Lifetime Movement Distances of SKR* Price and Kelly University of California, Riverside	Study conducted at Motte Rimrock Reserve and San Jacinto Wildlife Area in 1990-1991. Dispersal rings and trap stations established at 30 meter intervals along two live trapping grids, out to a distance of 150 meters. Data collected and analyzed included distance from first to last capture, maximum distance between captures, distances between first and last home range centers, and maximum monthly movement distances within monthly censuses for animal caught more than once. Final report submitted January 15, 1992.
Effects of PKR on Home Range and Habitat Use by SKR* Price and Ascanio University of California, Riverside	Study conducted August-December 1991 at site in Motte Rimrock Reserve where SKR and PKR occur in close proximity. Home ranges of several SKR and PKR determined using radiotelemetry and live-trapping. Preliminary results reported in January 15, 1992.
Temporal Stability of Space Use by SKR and PKR in a Habitat Mosaic* Price and Goldingay University of California, Riverside	Study conducted at three sites with different mixtures of sage scrub and grassland habitats within Motte Rimrock Reserve in 1990-1991. Live trapping conducted at sites over two-week periods in the spring and fall. Data collected and analyzed included microhabitat measurements, rodent species composition, temporal population trends, spatial distribution of kangaroo rats, segregation of species within grids, and microhabitat associations of SKR and PKR. Final report submitted January 15, 1992.
Managing Habitat for SKR: Effects of Shrub Removal* Price and Goldingay University of California, Riverside	Study conducted on 10 plots (five pairs) in boundary between sage scrub and grassland in San Jacinto Wildlife Area in 1990-1991. One plot in each pair assigned at random to receive shrub removal, with trapping done on both plot before and after removal. Final report submitted January 15, 1992.

Table 11 – (cont.)

An Analysis of Genetic Variability Within and Among SKR Populations in Riverside County* McClenaghan and Truesdale San Diego State University	Study conducted at Lake Mathews, Lake Skinner, San Jacinto, Sycamore Canyon, Steele Peak, and Motte Rimrock SKR reserve Study Areas. Blood samples from 236 SKR were analyzed for genetic similarity and variability. Final report submitted March 21, 1991.
SKR Literature Review* RECON	Existing literature on the biological characteristics, known distribution, and current status of the SKR was reviewed and summarized. Summary prepared in 1992 and updated in 1993.
An Analysis of Temporal and Spatial Demography Patterns of SKR Populations in Riverside County* McClenaghan and Taylor San Diego State University	Study conducted at Lake Mathews, Motte Rimrock, and San Jacinto SKR Study Areas in 1989-1991. Over the study period 308 SKR were captured, marked, released, and monitored. Final report submitted June 24, 1991.
A Viability Model for SKR in Western Riverside County* Gilpin University of California, San Diego	Computer model developed to estimate SKR population persistence in existing habitat within SKR reserve Study Areas and to provide a comparable measure of SKR population size in each area at the end of 200 years. Persistence time measured as number of years the local SKR population can survive without dropping to extinction levels. Preliminary report submitted May 1991; model data base and parameters modified for this HCP in summer of 1993, with revised report submitted in September 1993.
SKR Population Monitoring Program O'Farrell Biological Consulting	Study conducted at sites in Lake Mathews, Domenigoni Valley, San Jacinto Wildlife Area, Lake Perris, Lake Skinner, Vail Lake, Potrero Valley, and Crown Valley in 1989-1991. Twenty-nine plots studied in 1989-1990 to develop a linear regression model that allows estimation of SKR densities from active burrow counts. Seven plots at Lake Mathews studied in 1991 using mesh live traps rather than Sherman traps. Report submitted August 20, 1992.
SKR Translocation Studies at the Lake Mathews Ecological Reserve O'Farrell Biological Consulting	Study conducted at 40 plots established at Lake Mathews from October 1990 to October 1992. Forty study plots established to determine efficacy of translocating SKR, with ancillary studies of SKR distribution and abundance mosaic and testing of habitat manipulation techniques. Existing habitat features and SKR densities were examined in 1991 prior to treatment and then reassessed in 1992 for change. Final report submitted March 1993.
SKR Literature Review* RECON	Existing literature on the biological characteristics, known distribution, and current status of the SKR was reviewed and summarized. Summary prepared in 1992 and updated in 1993.
SKR Habitat Enhancement and Management Studies on the Shipley/Skinner Reserve O'Farrell Biological Consulting	Five year study (1991-1995) conducted at 20 plots established in the Shipley Reserve and around Lake Skinner, with study designated to interface with Lake Mathews project and to build on data collected in 1989-1990. Study has four components: manipulation of replicate plots to determine efficacy of habitat treatments; documentation of changes induced by specific treatments and annual weather patterns; monitoring of changes in SKR population levels in relation to habitat treatments, and; monitoring of annual trends in SKR population and habitat structure in order to formulate management protocol. Progress reports submitted in 1992 and 1993. Final report submitted in 1996.
Monitoring of Rare Plant Species on Shipley Reserve Rotenberry University of California, Riverside	Seven year study (1992-1998) is being conducted at Shipley Reserve of Payson's jewelflower and Parry's spineflower. Primary purpose of study is to determine whether the jewelflower on site is another sub-species.
Habitat and Life History of the Smooth Tarplant Ogden Environmental	Three year study is being conducted of smooth tarplant in an effort to identify variables that affect its success, in advance of transplanting the species from the Domenigoni Valley reservoir site to another location in the multi-species reserve.
Dispersal of California Gnatcatchers Wagner Biological Consulting	Six year study (1993-1998) is being conducted above the impact area for the Domenigoni reservoir to monitor gnatcatcher movements into other habitat in the multi-species reserve. Study also will identify any birds in habitat at elevations above 2,000 feet.

Table 11 – (cont.)

Effects of Fire on the Ecology of the California Gnatcatcher Wirtz Pomona College	Study is being conducted at Lake Mathews in areas of previously burned Riversidean sage scrub. Sites will be surveyed for gnatcatcher density and reproductive activity, and vegetation at sites will be quantified.
SKR Literature Review* RECON	Existing literature on the biological characteristics, known distribution, and current status of the SKR was reviewed and summarized. Summary prepared in 1992 and updated in 1993.
California Gnatcatcher Life History and Habitat Preference Study USFWS San Bernardino County Museum	Four year study is being conducted at sites in the Southwestern Riverside County Multi-Species Reserve, Lake Mathews, and Motte Rimrock Reserve. Study is focused on gnatcatcher nesting and habitat use, together with post-nesting season dispersal of fledglings.

* Report found in Volume II.

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Table 12

Table 12
Estimated Acreage of Occupied SKR Habitat in Riverside and San Diego Counties

Location	Acres*	% of Total
Riverside County		
HCP Area	30,000	62.0
Anza Valley	1,000	2.0
Balance of County	3,450	6.9
Subtotal	34,450	70.9
San Diego County		
Fallbrook Naval Weapons Annex	2,700	5.6
Lake Henshaw/Warner Ranch	11,400	23.5
Subtotal	14,100	29.1
San Bernardino County	0	0
RANGEWIDE TOTAL	48,550	100.0

* Estimates have been rounded upwards to the nearest 100.

Sources: RECON and the USFWS.

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Table 13

Acres of SKR Occupied Habitat per RCHCA Member Jurisdiction in the Plan Area

RCHCA Member	Acres*	% of Total
County Unincorporated Area **	23,650	78.8
Cities		
Corona	225	0.8
Hemet	< 25	0.1
Lake Elsinore	700	2.3
Moreno Valley	600	2.0
Murrieta **	--	--
Perris	700	2.3
Riverside	3,400	11.4
Temecula ***	700	2.3
Subtotal	6,350	21.2
HCP Area	30,000	100.0

Sources: RECON, USFWS, and RCHCA member agencies.

* Estimates have been rounded upwards to the nearest 100, except for Hemet and Corona which have the fewest acres of occupied SKR habitat.

** Estimate for Murrieta is not available at this time but is not expected to substantially increase amount in plan area.

*** Estimate for the County and Temecula includes approximate acres; data not yet in GIS or on Figure 19.

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Table 14

Table 14
Acreage and SKR Occupied Habitat in Short-Term HCP Study Areas*

Location	Total Area**	SKR Occupied Habitat
Study Areas		
Kabian Park	4,622	1,153
Lake Mathews-Estelle Mountain	17,703	5,602
Lake Skinner	15,864	2,961
Motte	2,576	1,045
Potrero	3,054	1,332
San Jacinto-Lake Perris	18,676	3,979
Santa Rosa Plateau	3,092	0
Steele Peak	10,983	2,146
Sycamore Canyon-March A.F. Base	2,607	1,185
Subtotal	79,177	19,403
Remainder of Short-Term HCP	447,597	12,147
Total Short-Term HCP	526,774	31,550

Sources: RECON March 1994 GIS overlay of SKR occupied habitat and Riverside County GIS data base.

* 1994 Acreage calculations based on approved adjustments to the study areas during the first and second boundary modification rounds.

** Based on current delineation of the SKR Fee Area as defined by the Short-Term HCP.

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Table 15

Table 15
SKR Short-Term HCP Study Area Land Ownership

STUDY AREA	TOTAL ACRES	PRIVATE ACRES	% PRIVATE OWNERSHIP	PUBLIC ACRES	% PUBLIC OWNERSHIP	TOTAL PARCELS	PRIVATE PARCELS	PUBLIC PARCELS
San Jacinto	18,676	4,869	26.07%	13,807	73.93%	256	106	150
Lake Mathews	17,703	7,189	40.61%	10,514	59.39%	658	521	137
Lake Skinner	15,864	5,371	33.86%	10,493	66.14%	305	196	109
Steele Peak	10,983	8,694	79.16%	2,289	20.84%	1,114	1,078	36
Kabian Park	4,622	2,888	62.48%	1,734	37.52%	360	339	21
Santa Rosa Plateau	3,092	3,092	100.00%	0	0.00%	5	5	0
Potrero	3,054	2,698	88.34%	356	11.66%	30	20	10
Sycamore Canyon	2,607	457	17.53%	2,150	82.47%	106	52	54
Motte Reserve	2,576	1,963	76.20%	613	23.80%	406	373	33
TOTALS	79,177	37,221	47.01%	41,956	52.99%	3,240	2,690	550

General conservation principles also guided the following additional goals for the SKR reserve system:

1. Inclusion of the best remaining examples of SKR habitat in the plan area;
2. Protection of the ecosystem on which SKR and other species depend;
3. Inclusion of heterogeneous terrain and vegetation, and;
4. Inclusion of some geographically isolated populations to reduce the potential for catastrophic losses of SKR due to localized diseases, natural disasters, or other effects.

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Table 16 –

RCHCA Short-Term HCP Land Acquisitions by Study Area

Purchaser/Location	Total Acres	Acres of SKR Habitat	Purchase Price $/acre	Month/Year of Acquisition
RCHCA Acquisitions in Lake Mathews-Estelle Mountain Study Area	160.0	123.7	$5,000	10/90
	80.0	32.8	$2,675	8/91
	20.7	7.7	$4,990	9/91
	20.3	12.1	$4,998	4/92
	20.0	5.3	$3,000	3/92
	20.2	13.1	$5,005	4/92
	89.2	29.1	$3,363	6/92
	184.7	40.8	$8,121	9/92
	20.0	10.0	$6,000	11/92
	20.0	13.0	$6,000	11/92
	42.9	21.5	$3,500	7/93
	435.8	218.3	$3,429	7/93
	18.0	12.0	$4,994	6/93
	40.0	20.0	$5,000	7/93
	20.0	14.2	$5,340	7/93
	20.0	15.0	$3,500	10/93
	20.0	13.3	$5,000	10/93
	20.0	15.0	$3,500	10/93
	40.1	5.5	$3,806	10/93
	20.2	10.1	$3,804	10/93
	20.0	10.0	$6,050	10/93
	38.0	17.2	$3,947	12/93
	562.6	0	--	1/94
	20.1	20.1	$3,942	2/94
	9.8	4.5	$7,653	2/94
	20.8	10.4	$3,800	9/94
	2,614.6	754.1	$3,000	12/94
Subtotals	4,598.0	1,438.4	$4,592 (avg.)	10/90-12/94
RCHCA and WCB Acquisitions in Lake Mathews-Estelle Mountain Study Area	140.0	22.5	$5,464	4/91 & 7/91
	80.2	15.6	$5,517	3/91 & 7/91
Subtotals	220.2	38.1	$5,491 (avg.)	
RCHCA Acquisitions in the Lake Skinner Area	80.0	43.5	$6,000	5/91
	17.7	17.7	$7,062	9/91
	60.0	30.0	$5,250	1/92
	38.8	30.3	$5,995	11/91
	19.4	12.6	$6,000	2/92
	20.0	14.0	$6,000	2/92
	39.8	12.3	$3,266	8/92
	40.5	31.1	$5,926	9/92
	40.0	19.9	$5,000	9/92
	26.6	18.5	$6,090	10/92
	36.6	18.3	$3,279	12/92
	80.0	40.0	$3,000	11/92
	80.3	40.2	$3,786	11/92
	40.0	40.0	$6,000	4/93
	36.6	18.3	$3,802	5/93
	82.4	41.2	$3,838	6/93
	59.1	29.5	$3,494	7/93
	17.6	11.5	$5,666	8/93
	20.2	19.1	$6,012	8/93
	20.0	17.4	$6,000	8/93
	37.5	18.8	$3,800	8/93
	40.0	20.0	$3,800	11/93
	10.0	5.0	$9,250	4/94
	700.1	220	$997	6/94
	445.0	240	--	11/94
Subtotals	2,088.2	993.2	$4,971 (avg.)	5/91 - 11/94

Table 16 - (cont.)

RCHCA Acquisitions in the Motte Study Area	10.0 89.5 10.3 10.2 10.2 19.9	10.0 74.7 9.2 10.2 10.2 2.0	$7,500 $10,050 $7,864 $6,863 $6,863 $4,221	12/92 4/93 4/93 9/93 10/93 5/95
Subtotals	150.1	116.3	$7,227 (avg.)	12/92-5/95
RCHCA Acquisitions in Steele Peak Study Area	137.9 70.8	132.4 66.2	$5,028 $6,000	8/90 3/92
Subtotals	208.7	198.6	$5,514 (avg.)	8/90-3/92
MWD, RCHCA, County Acquisitions in Lake Skinner Study Area (Shipley Reserve)	1,326.2	1,326.2	--	10/91
RCHCA Acquisitions in San Jacinto	90.4 72.8 68.8	42.0 7.1 --	$9,847 $9,839 $9,864	4/94 12/94 5/95
Subtotals	232.0	49.1	9,850 (avg.)	4/94-5/95
San Jacinto River	69.3	--	$0	12/94
Total	**8,892.7**		**$5,296 (avg.)**	10/90-5/95

*Land was conveyed as a result of a Section 7 consultation between the project proponent and USFWS. Therefore, SKR credit was retained by the project proponent and not the RCHCA.

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Table 17

Table 17
"Short-Term HCP Third Round" Boundary Modification Requests

Location	Proposed Additions (net acres)		Proposed Removals (net acres)	
	Total Area	SKR Habitat	Total Area	SKR Habitat
Fee Area West of Lake Mathews				
3M Corporation	852.6	99.5	0	0
Fee Area East of Lake Skinner				
D2 Enterprises	41.3	19.6	0	0
Heffner	20.0	5.2	0	0
Kingsley	20.4	20.4	0	0
Subtotal	81.7	45.2	0	0
Lake Mathews Study Area				
Western Waste Industries	0	0	552.2	196.8
Morger - 1	0	0	247.9	78.0
Morger - 2	0	0	949.7	221.0
Subtotal			1,749.8	495.8
Lake Skinner Study Area				
Domenigoni-Barton	0	0	1,603.4	375.0
Finisterra Farms	0	0	353.6	266.9
Wanczuk	0	0	40.0	1.7
Pourroy	0	0	55.1	0
Subtotal	0	0	2,052.1	643.6
Steele Peak Study Area				
Idaleona	0	0	327	132
Schori	0	0	40.0	3.5
Hall	0	0	9.3	3.5
Halsted	0	0	180.0	104.0
TMC	0	0	1,500.0	445.3
Subtotal	0	0	2,056.3	688.3
Sycamore Canyon Study Area				
Levinson/Jaffe	0	0	78.0	77.0
Davidson Assoc.	0	0	176.0	17.8
Subtotal	0	0	254.0	94.8
TOTAL	934.3	144.7	6,112.2	1,922.9

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Table 18

Table 18
Summary Characteristics of Acreage in SKR Core Reserves

CATEGORY	LS-DV	LM-EM	SJ-LP	SC-MAFB	SP	POTRERO	MRR	TOTAL
Total Reserve Area*	13,158	11,243	10,932	2,502	1,753	995	638	41,221
Total SKR Habitat	1,988	4,264†	3,640	1,355	860	18	335	12,460
On Public Land	1,656	4,134	3,638	1,261	860	18	335	11,902
On Private Land	332†	130	2	94	0	0	0	558
Vegetation								
Non-native Grassland	2,264	3,488	3,606	1,721	226	17	130	11,452
Sage Scrub	4,834	5,609	3,749	741	961	503	502	16,899
Chaparral	5,093	315	52	0	561	474	0	6,495
Riparian	288	163	39	4	2	1	0	497
Woodland	158	164	3	0	0	0	0	325
Marsh	0	2	0	0	0	0	0	2
Alkali Playa	0	0	2,965	0	0	0	0	2,965
Open Water	0	36	33	0	0	0	0	69
Agriculture	487	1,455	453	0	0	0	0	2,395
Residential/Urban/ Exotic	34	11	32	36	3	0	6	122
Total Public	12,842**	10,560	10,778	2,402	1,753	995	638	39,968
Total Private	316	683	154	100††	0	0	0	1,253†††

Codes

LS-DV Lake Skinner-Domenigoni Valley
LM-EM Lake Mathews-Estelle Mountain
SJ-LP San Jacinto-Lake Perris
SC-MAFB Sycamore Canyon-March Air Force Base
SP Steele Peak
MRR Motte Rimrock Reserve

Notes

* Excludes lakes, reservoirs, and MWD operations areas.

** The RCHCA holds SKR conservation easements for 1,336 acres of MWD property, 46 acres of County of Riverside property, and 205 acres of private property at Finisterra Farms.

† Includes 2,321 acres of occupied SKR habitat on MWD reserve lands as identified in the Lake Mathews MSHCP/NCCP.

†† Caltrans is negotiating the acquisition of this property pursuant to a Section 7 consultation.

††† Of this amount, the RCHCA will commit to purchase or otherwise conserve 1,153 acres.

Sources: RECON SKR March 1994 GIS SKR occupied habitat overlay, Pacific Southwest Biological Consultants May 1994 vegetation survey of western Riverside County, MWD, and Riverside County GIS data base.

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Table B-1

Table B-1
Summary List of HCP-Related Goals, Policies, and Programs in General Plans of the RCHCA Members

RCHCA Member/ Plan Element	Type of HCP-Related Goals, Policies, and Programs							
	Sensitive Species Protection	Habitat Inventory Mapping	Habitat Acquisition	Develop-ment Review/ Control	Site Specific Biological Assessment	Wildlife Buffers/ Corridors	Mitigation Monitoring	Multi-species Planning
Riverside County								
Land Use	X	X			X		X	
Regional							X	
Environmental Haz/Resources	X	X	X	X	X		X	
Corona								
Conservation	X							
Hemet								
Resource Management	X				X	X	X	X
Lake Elsinore								
Open Space/ Conservation	X		X	X	X		X	
Moreno Valley								
Conservation	X				X	X	X	
Murrieta								
Conservation/ Open Space	X		X	X	X	X		
Perris								
Land Use	X							
Conservation/ Open Space	X		X	X	X	X		
Riverside (city)								
Conservation	X	X		X	X	X	X	X
Temecula								
Land Use	X							X
Open Space/ Conservation	X	X	X	X	X	X	X	X

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Figure S-1

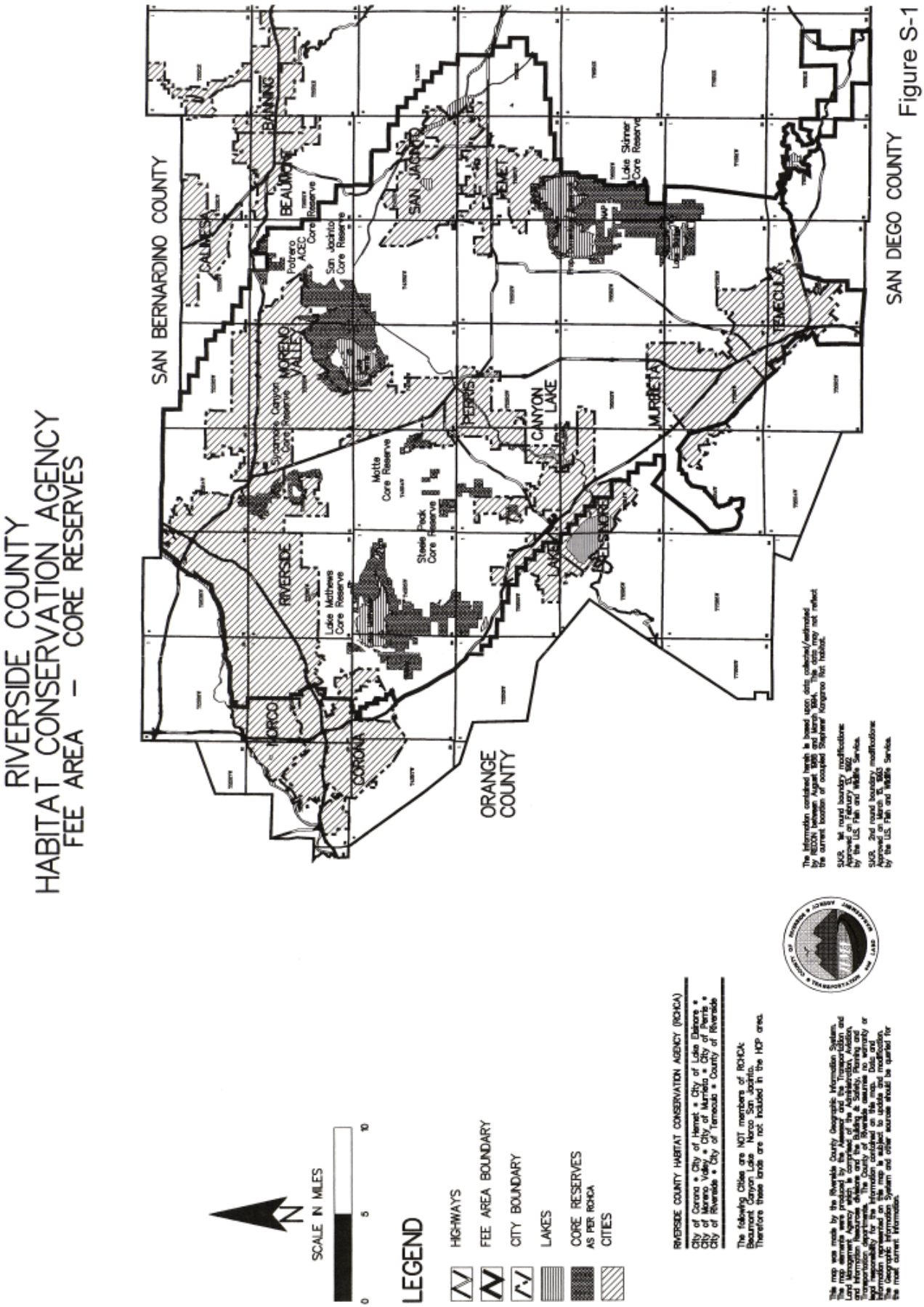

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Figure 1

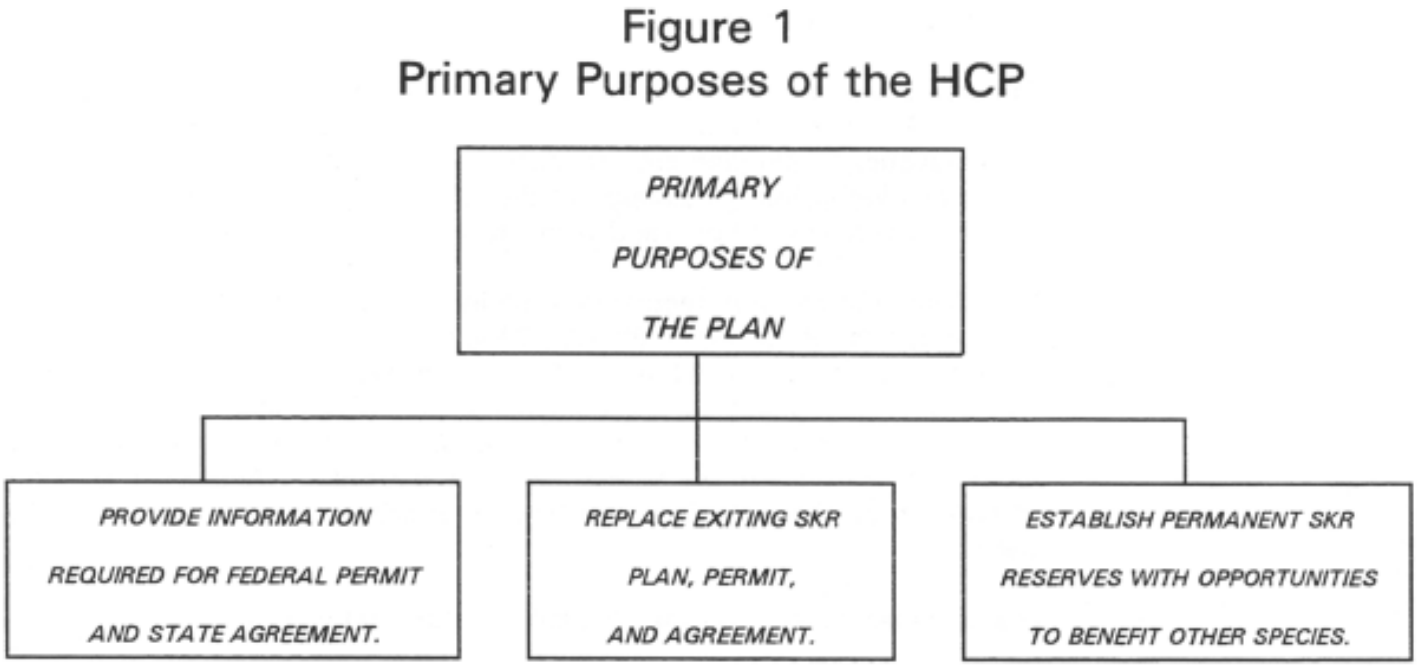
Figure 1
Primary Purposes of the HCP
PRIMARY PURPOSES OF THE PLAN
PROVIDE INFORMATION REQUIRED FOR FEDERAL PERMIT AND STATE AGREEMENT.
REPLACE EXITING SKR PLAN, PERMIT, AND AGREEMENT.
ESTABLISH PERMANENT SKR RESERVES WITH OPPORTUNITIES TO BENEFIT OTHER SPECIES.

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Figure 2

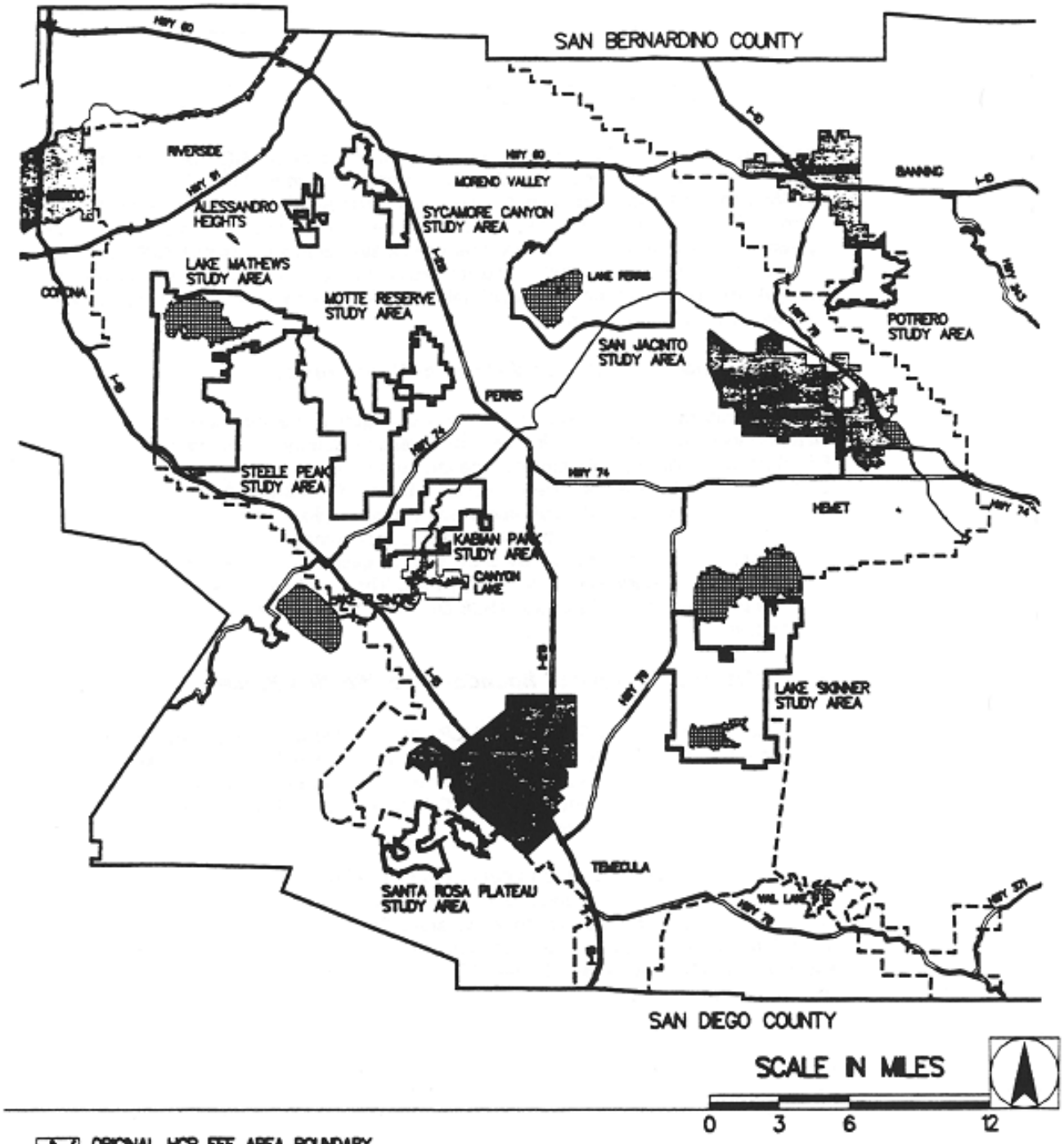

Figure 2

ORIGINAL HCP FEE AREA AND
STEPHENS' KANGAROO RAT STUDY AREA

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Figure 3

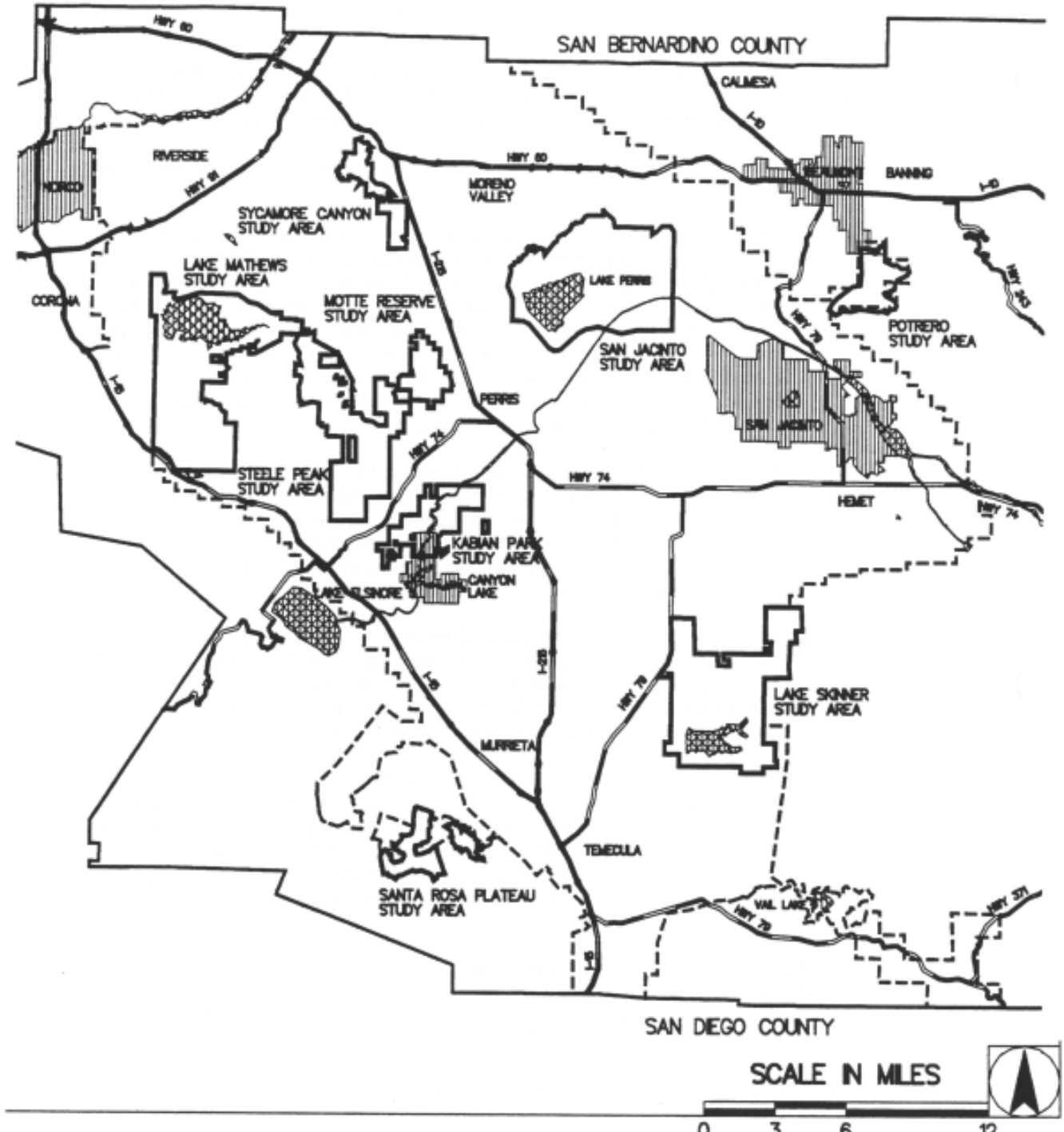

Figure 3

CURRENT STEPHENS KANGAROO RAT FEE AREA AND STUDY AREAS

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Figure 4

Figure 4

State and Regional Context of Riverside County

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Figure 5

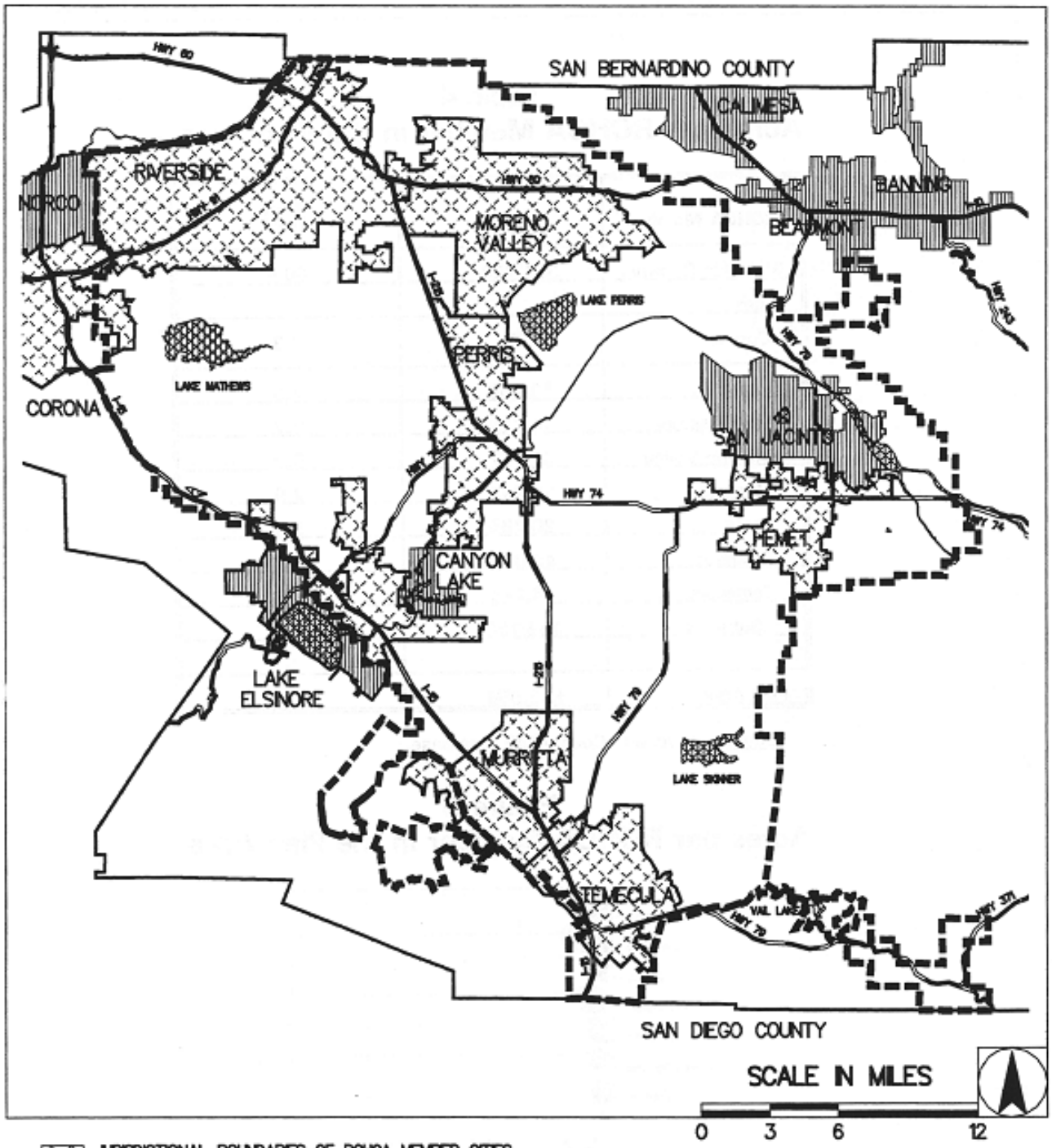

Figure 5

JURISDICTIONAL BOUNDARIES OF RCHCA MEMBER CITIES AND COUNTY UNINCORPORATED LAND WITHIN THE HCP FEE AREA

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Figure 6

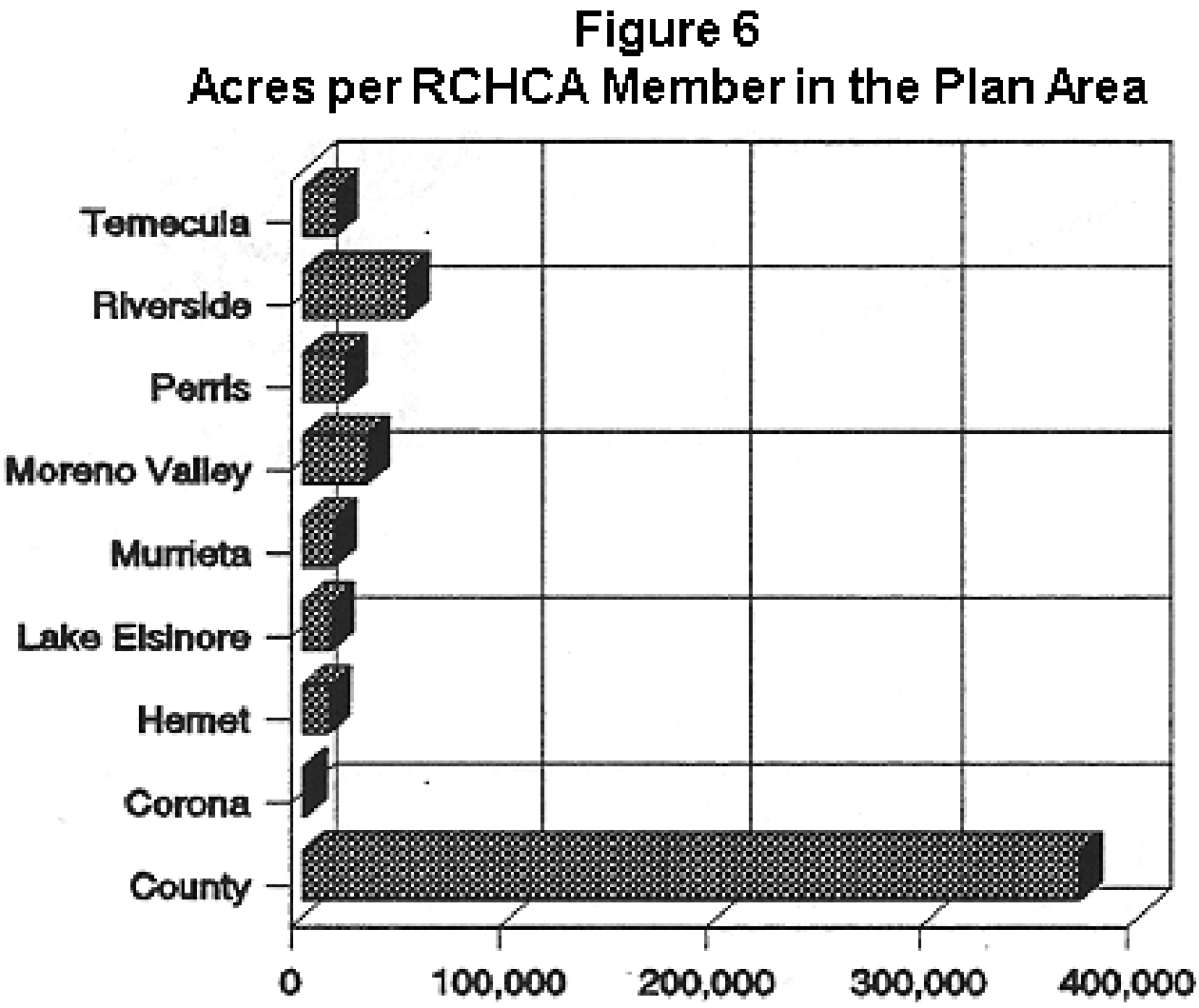
Figure 6
Acres per RCHCA Member in the Plan Area
Temecula
Riverside
Perris
Moreno Valley
Murrieta
Lake Elsinore
Hemet
Corona
County
0
100,000
200,000
300,000
400,000

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Figure 7

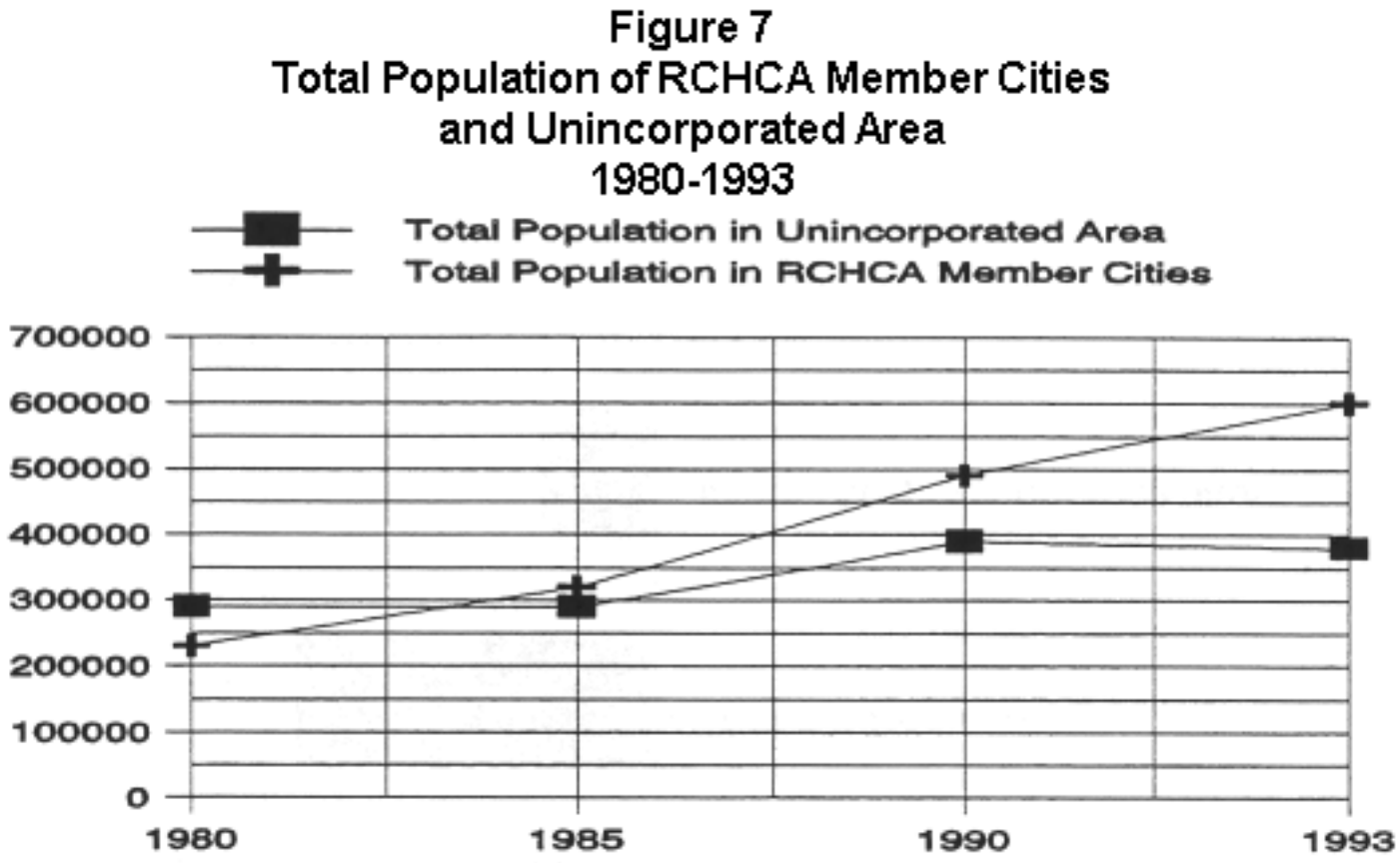
Figure 7
Total Population of RCHCA Member Cities
and Unincorporated Area
1980-1993
Total Population in Unincorporated Area
Total Population in RCHCA Member Cities
700000
600000
500000
400000
300000
200000
100000
0
1980
1985
1990
1993

Top

Figure 8

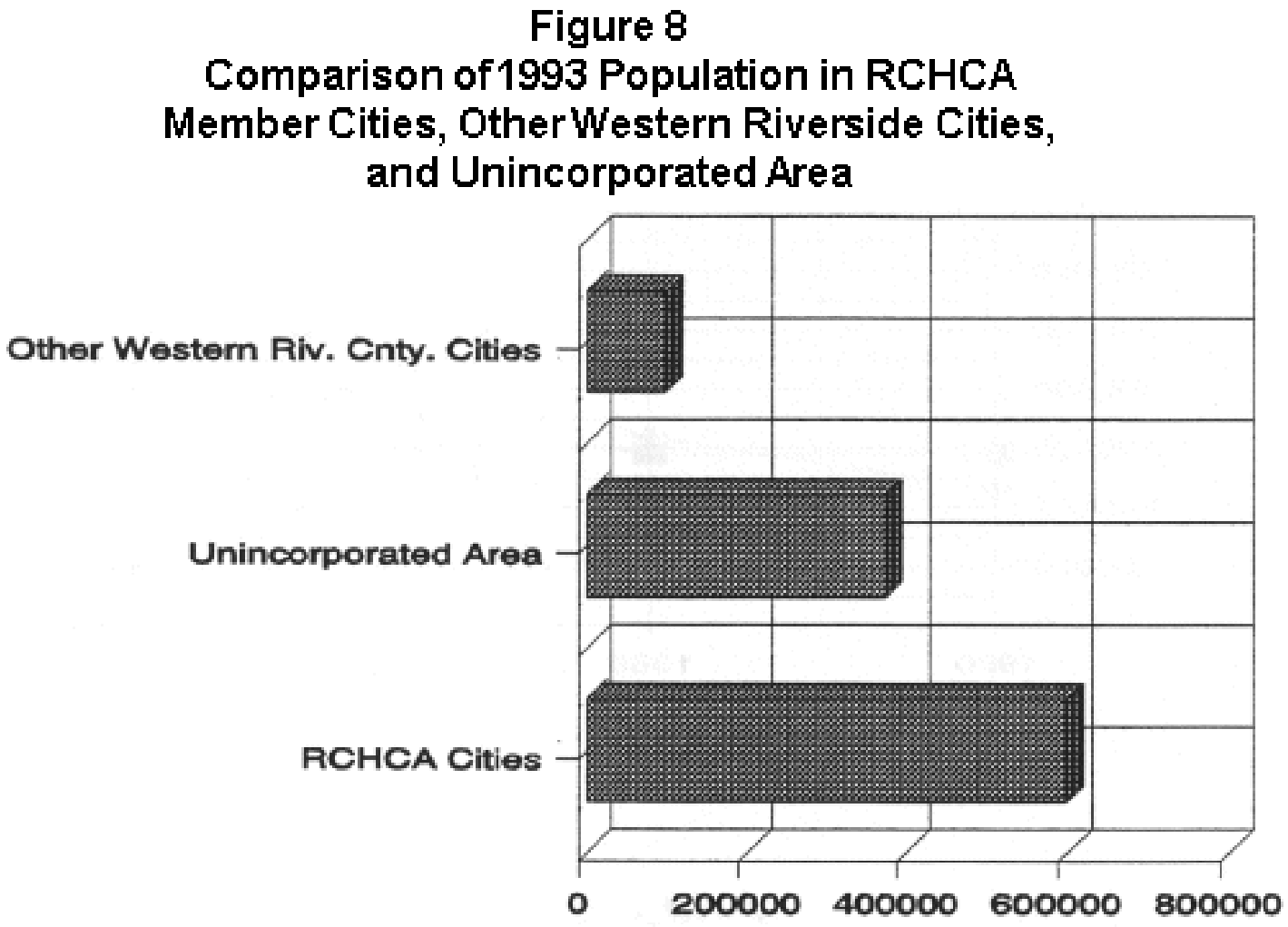
Figure 8
Comparison of 1993 Population in RCHCA Member Cities, Other Western Riverside Cities, and Unincorporated Area
Other Western Riv. Cnty. Cities
Unincorporated Area
RCHCA Cities
0
200000
400000
600000
800000

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Figure 9

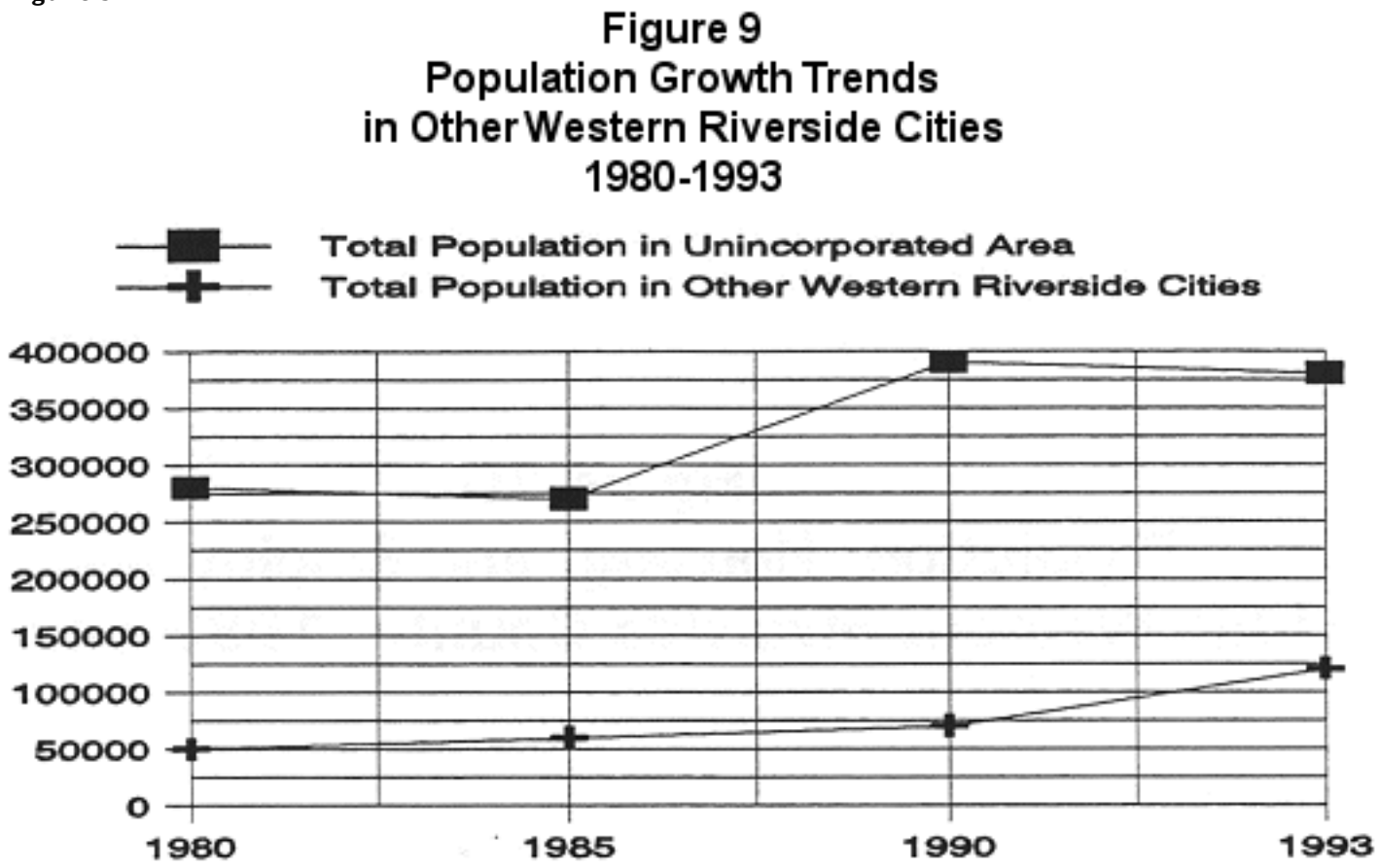
Figure 9
Population Growth Trends
in Other Western Riverside Cities
1980-1993
Total Population in Unincorporated Area
Total Population in Other Western Riverside Cities
400000
350000
300000
250000
200000
150000
100000
50000
0
1980
1985
1990
1993

Top

Figure 10

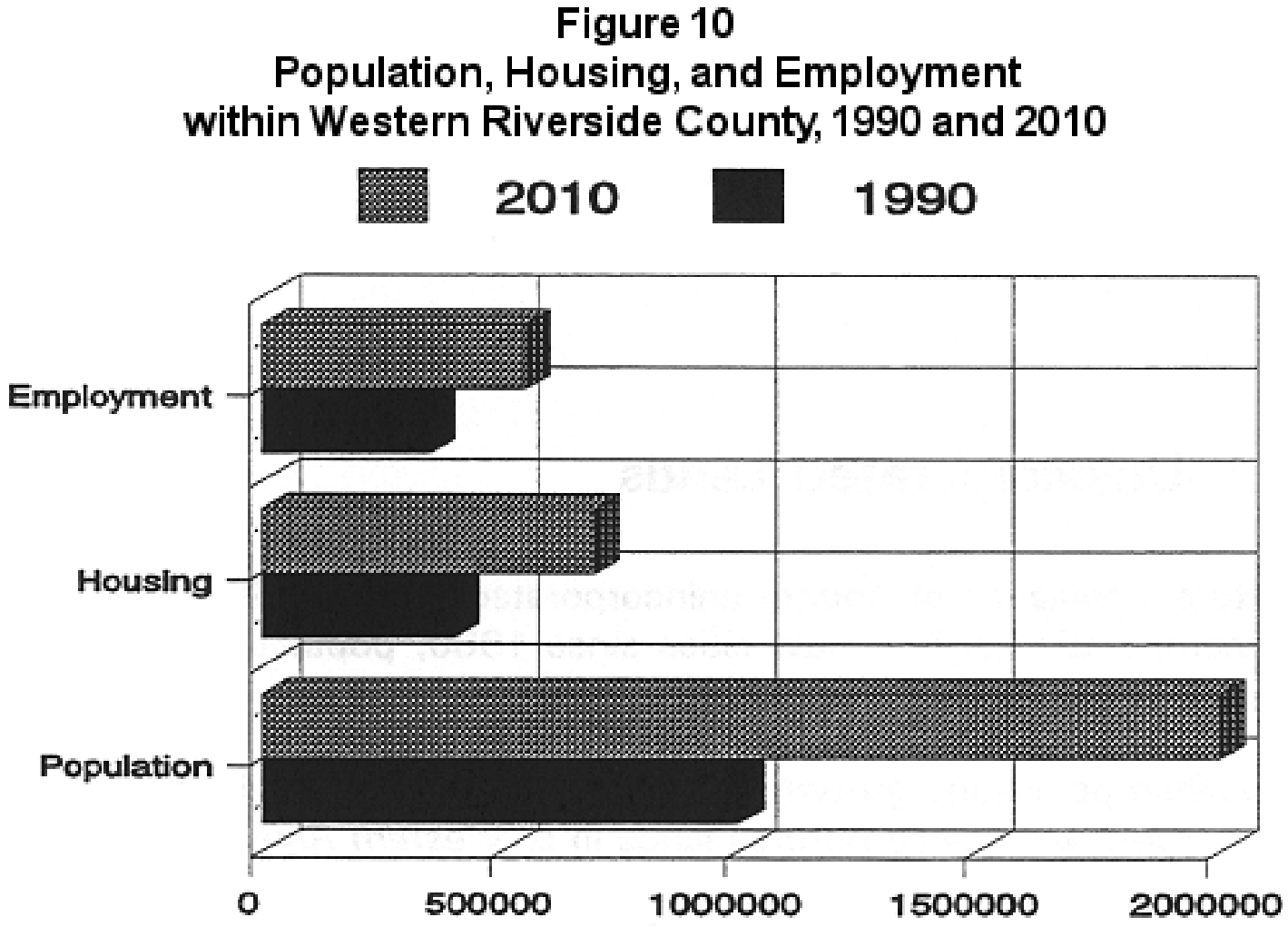

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Figure 11

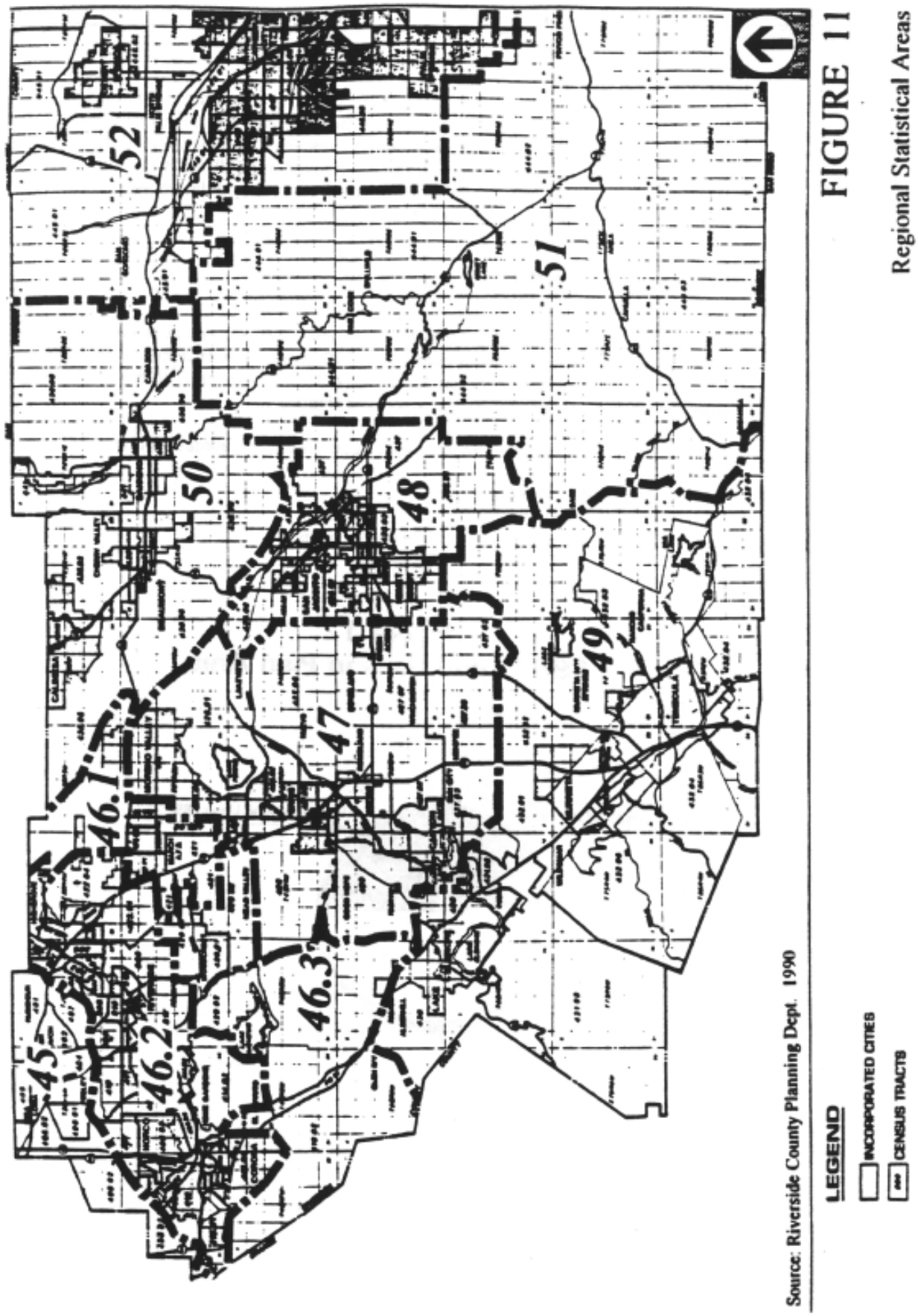

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Figure 12

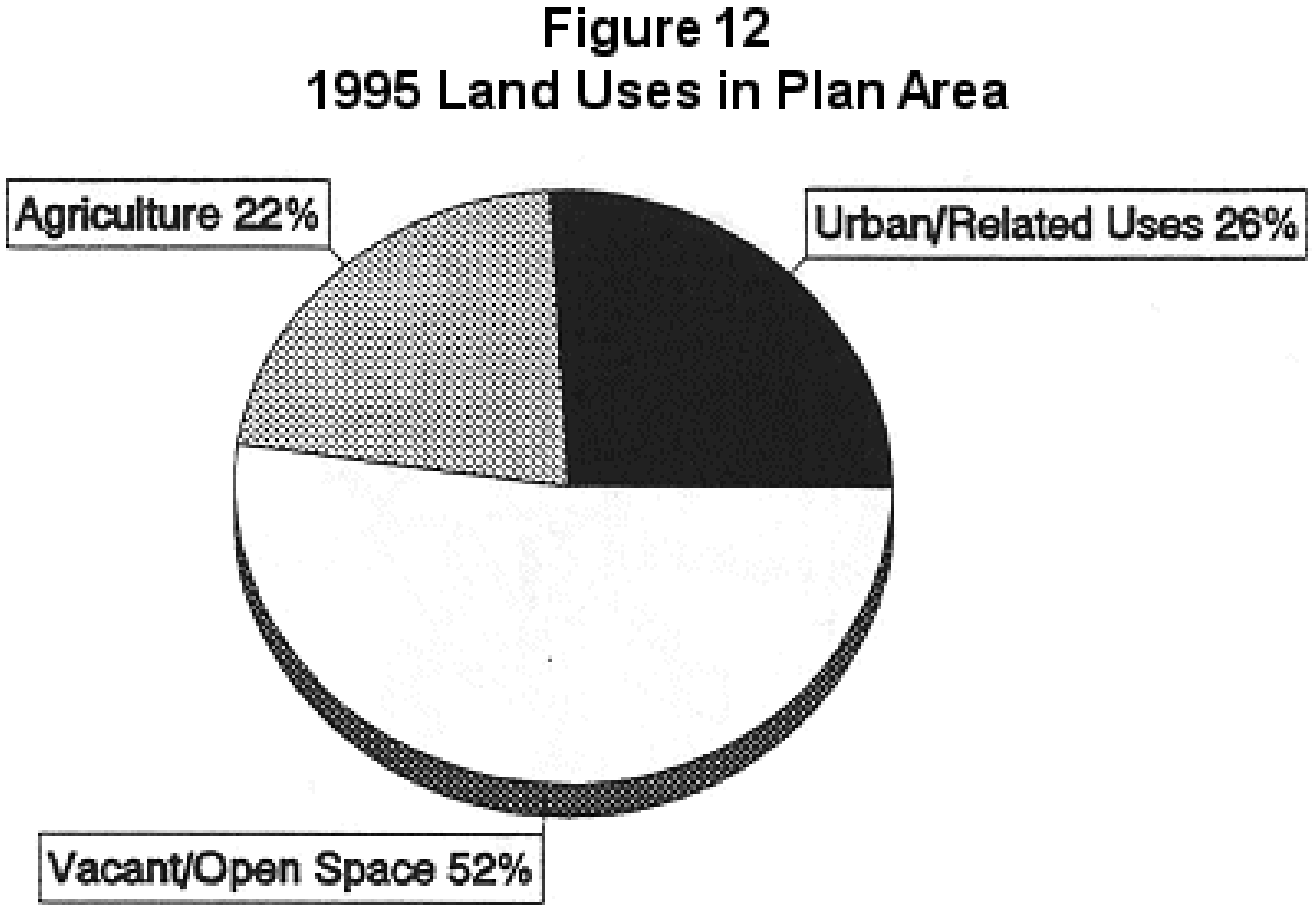

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Figure 13

Figure 13
Annual Building Permits Issued by RCHCA Member Cities and Other Riverside County Jurisdictions, 1983-1993
(number of permits)

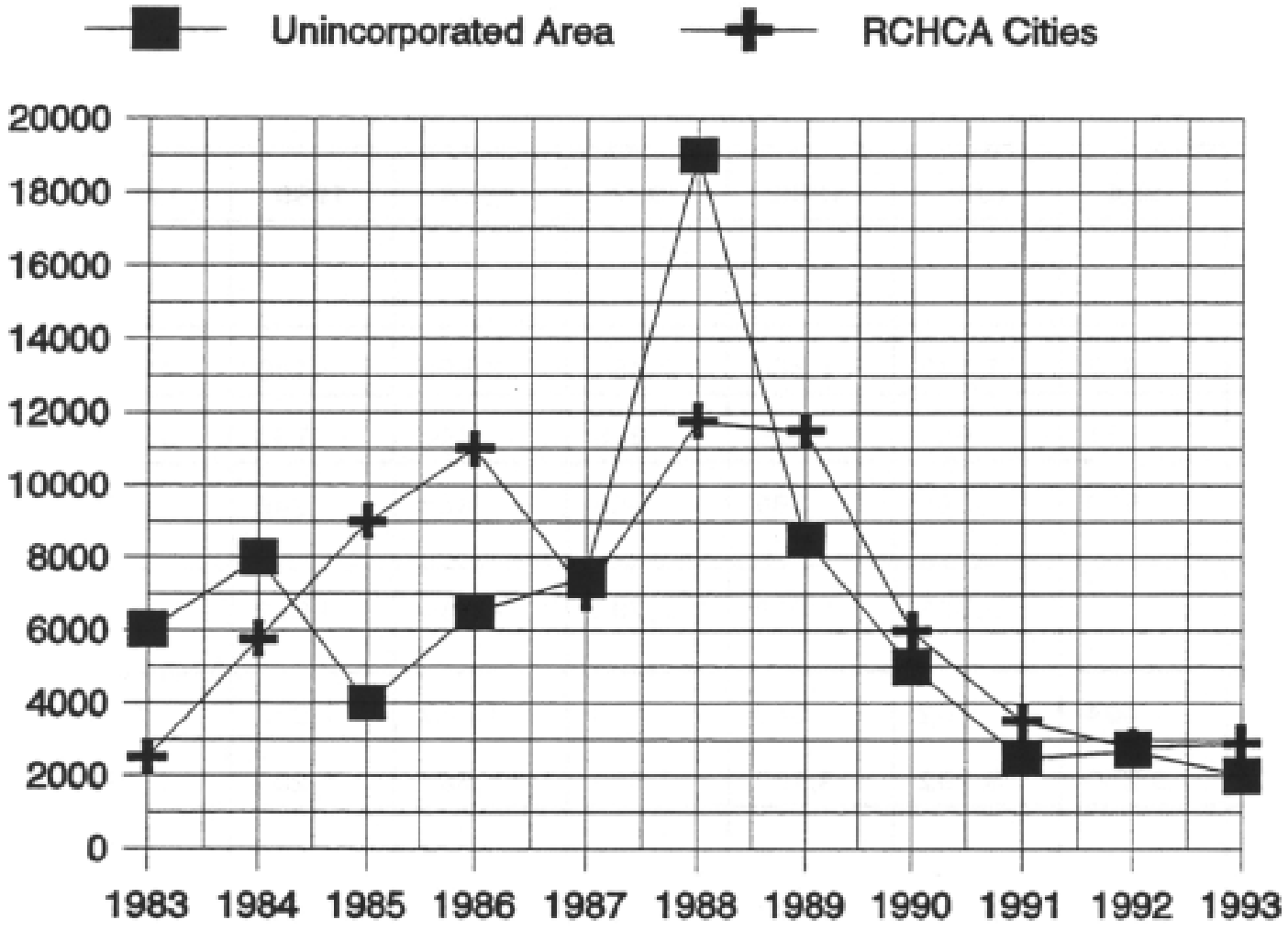

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Figure 14

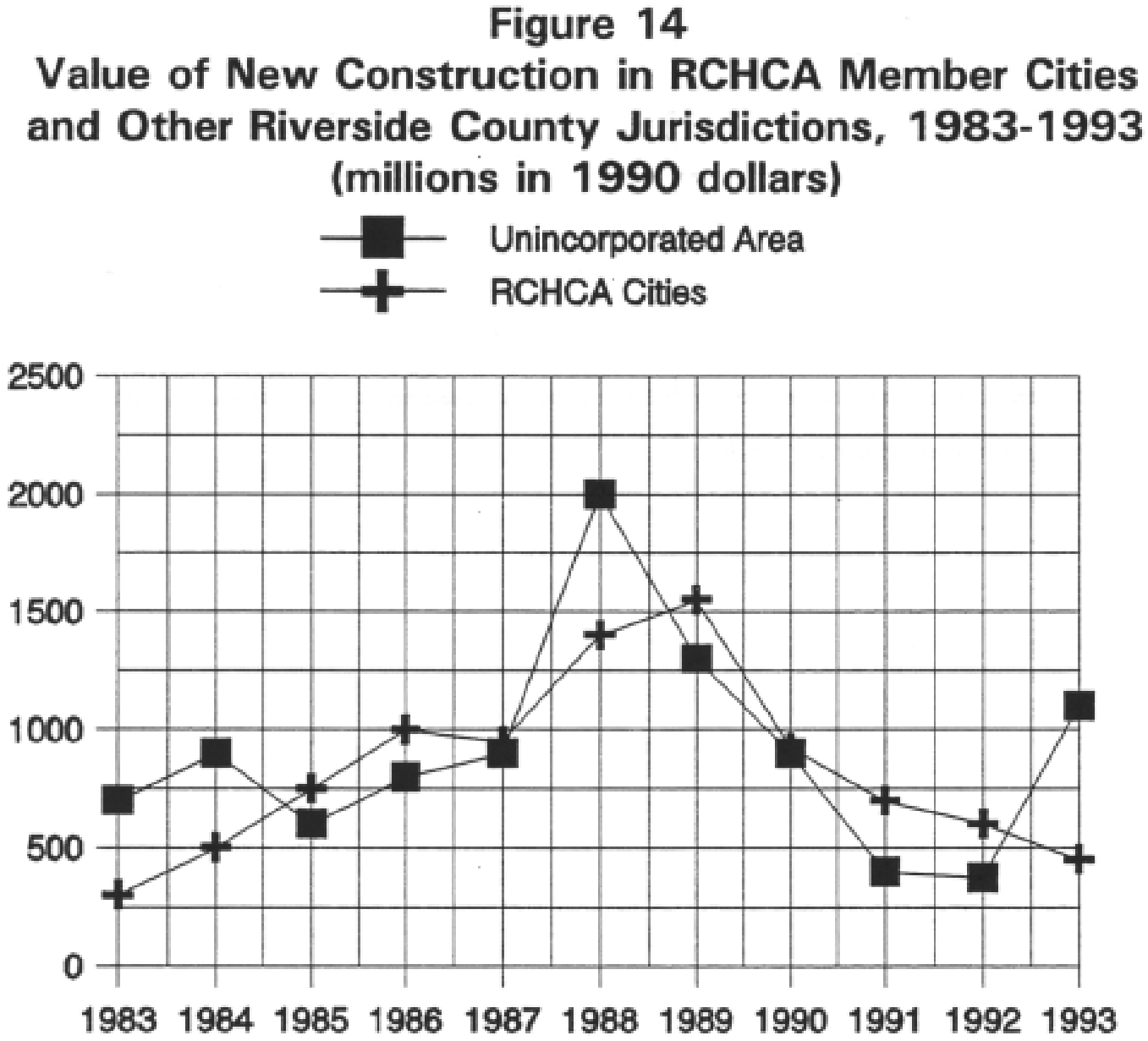

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Figure 15

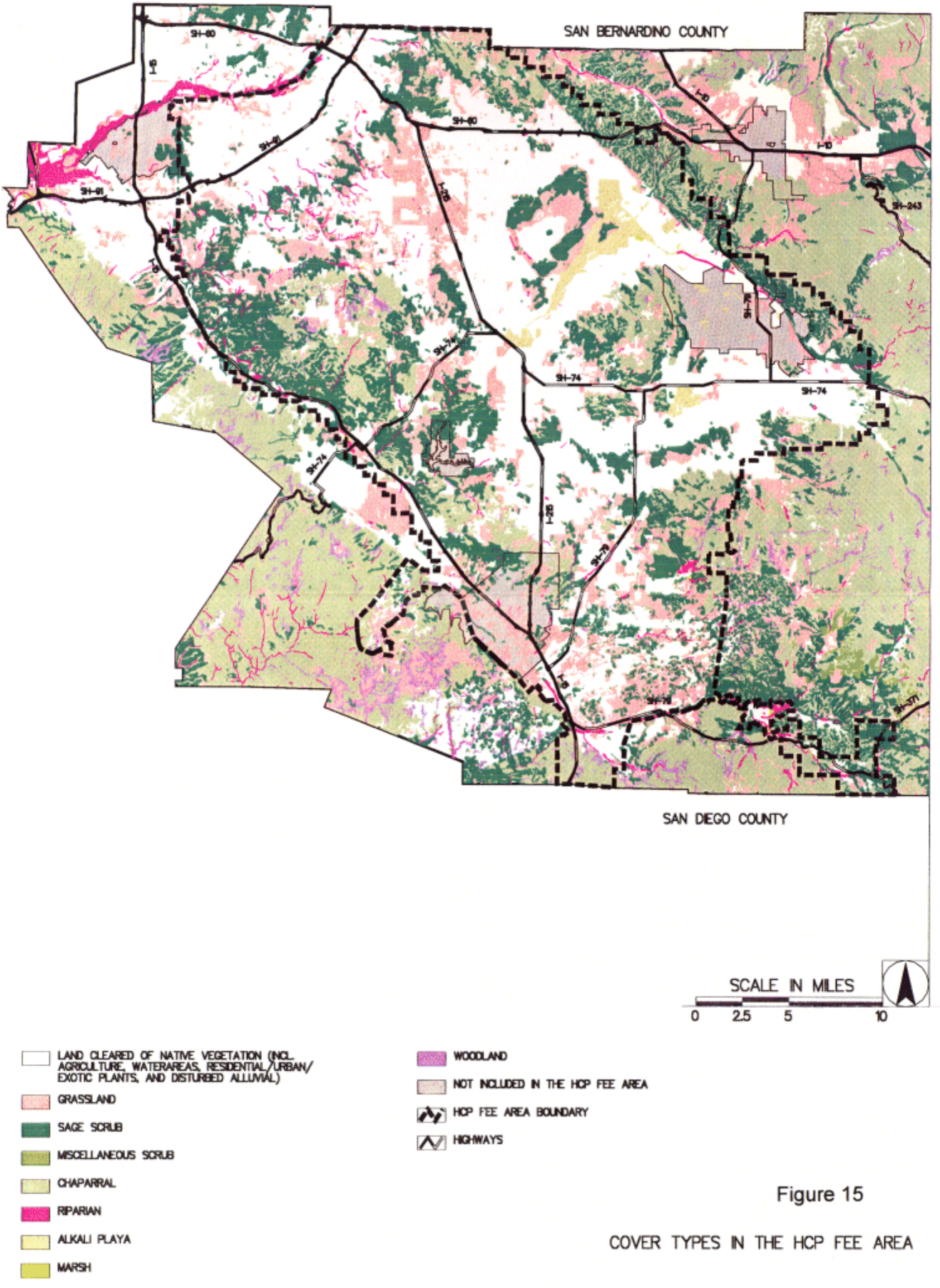

Figure 15

COVER TYPES IN THE HCP FEE AREA

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Figure 16

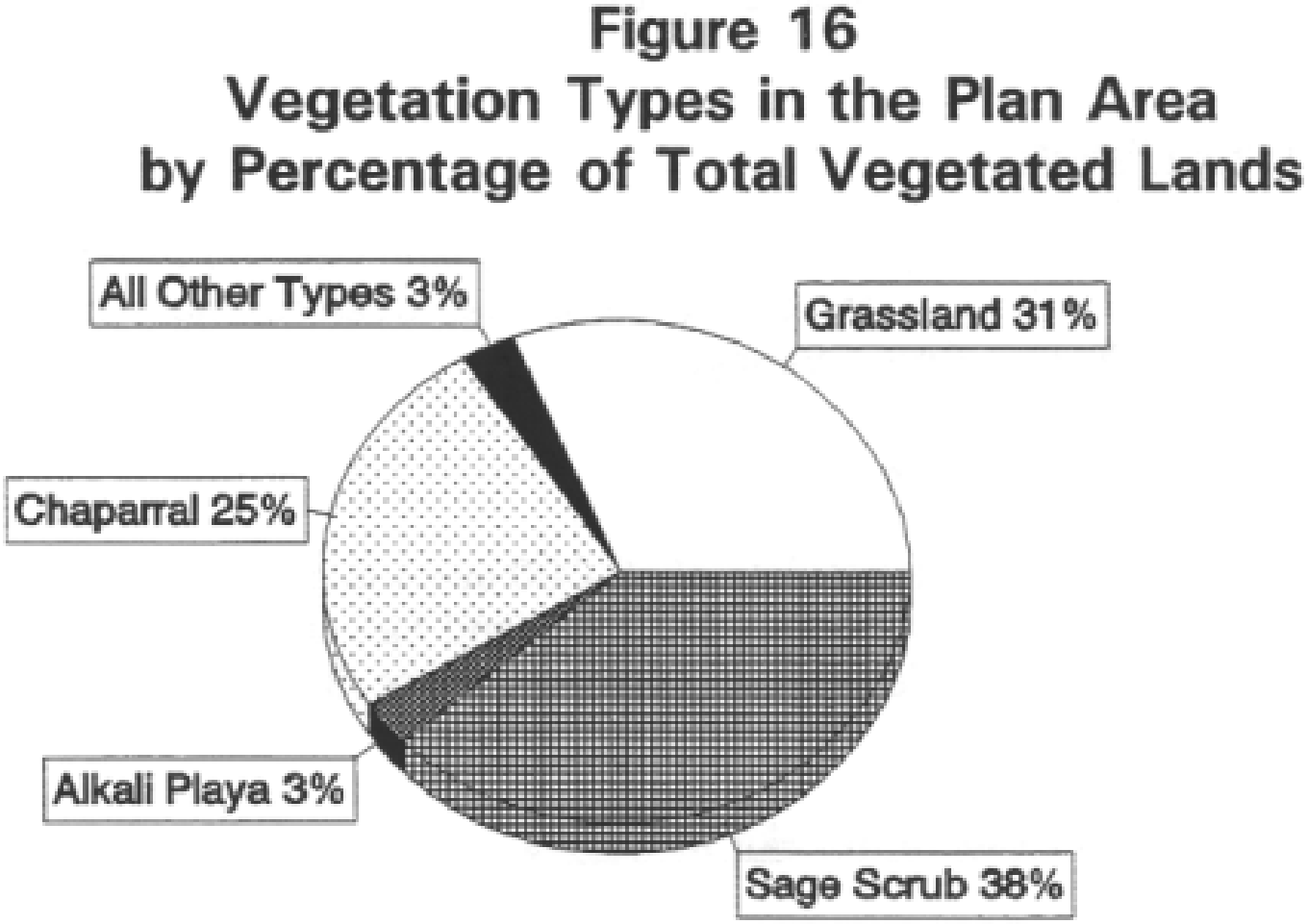

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Figure 17

Photo: B. "Moose" Peterson/WWFP

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Figure 18

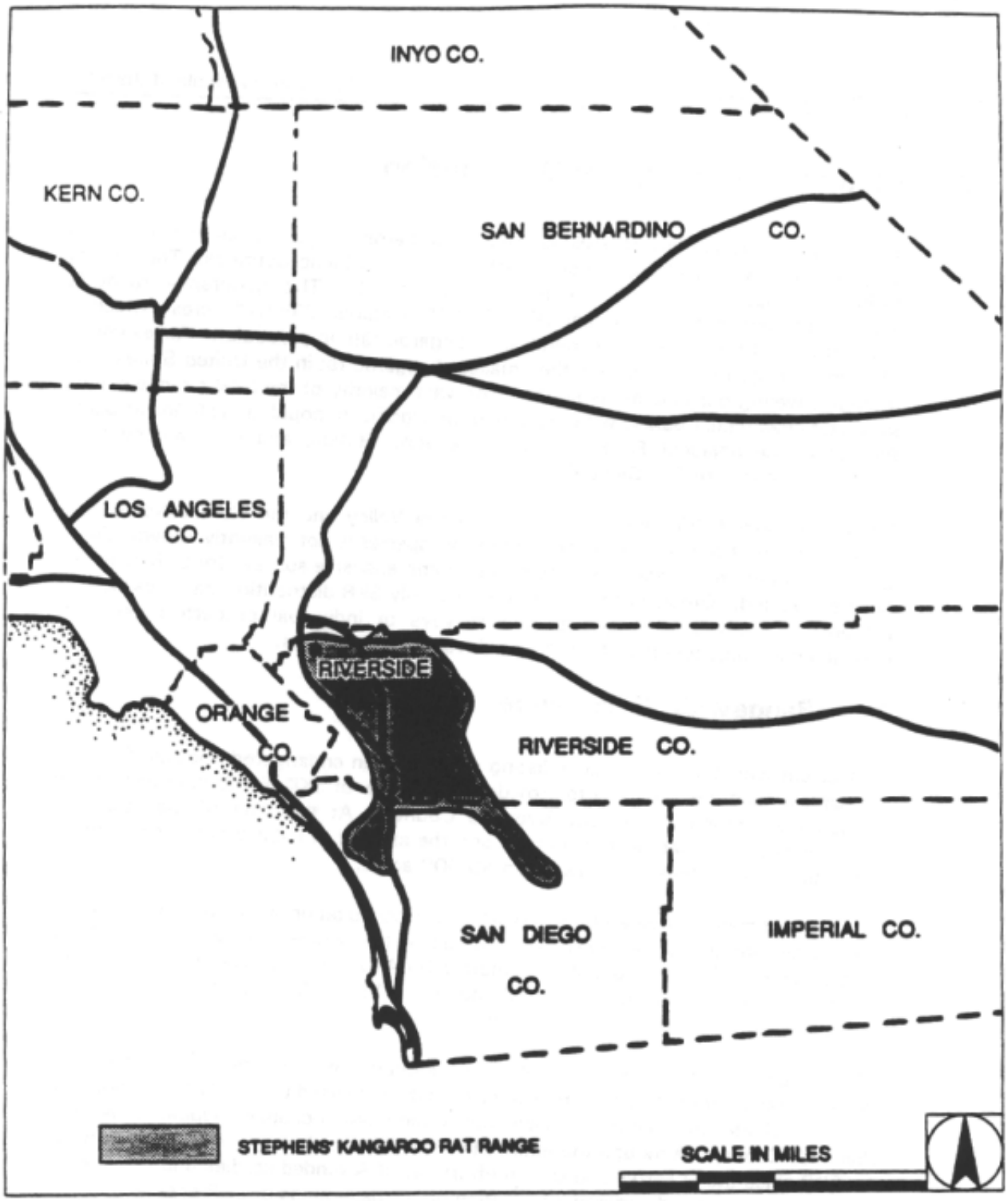

Figure 18

Range of the Stephens' Kangaroo Rat

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Figure 19

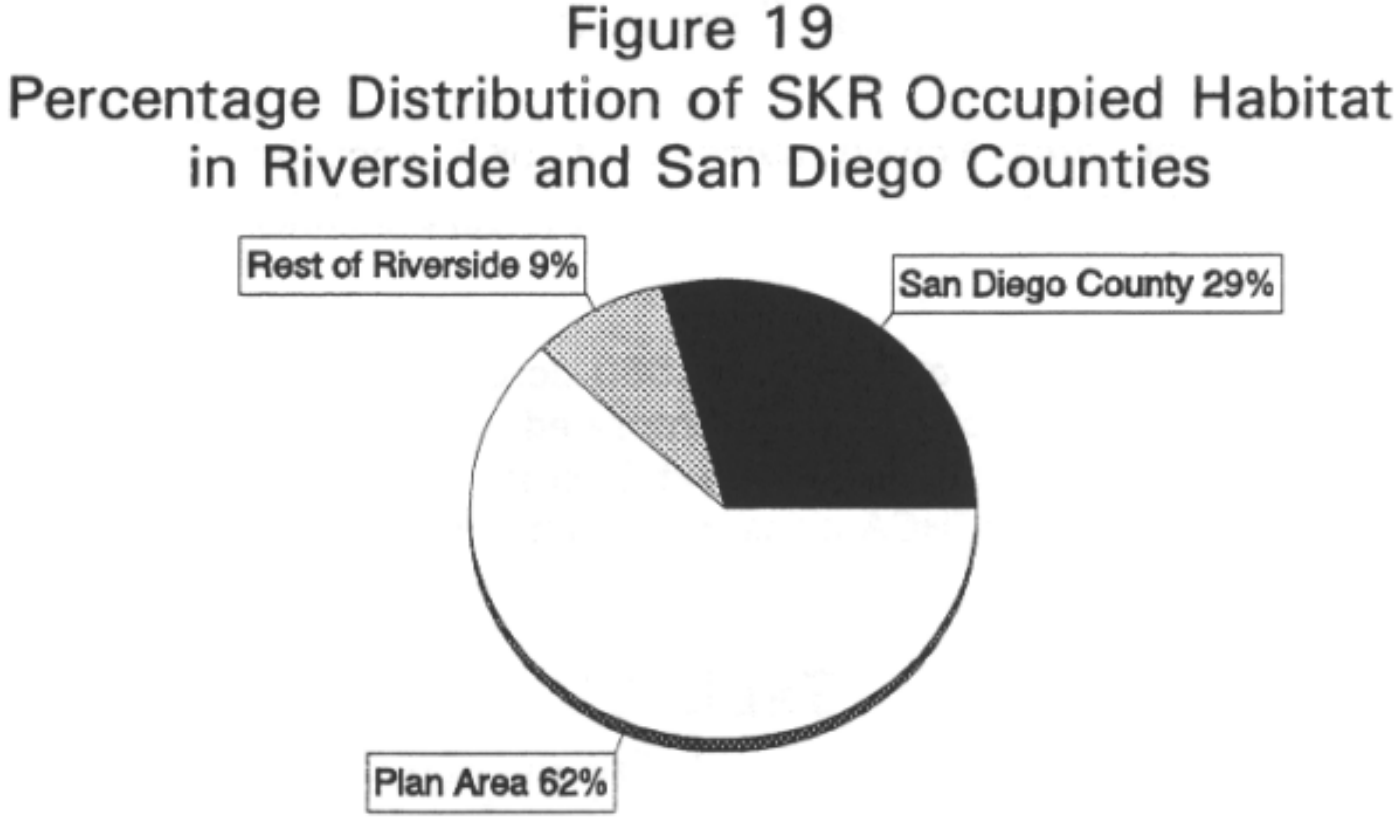

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Figure 20

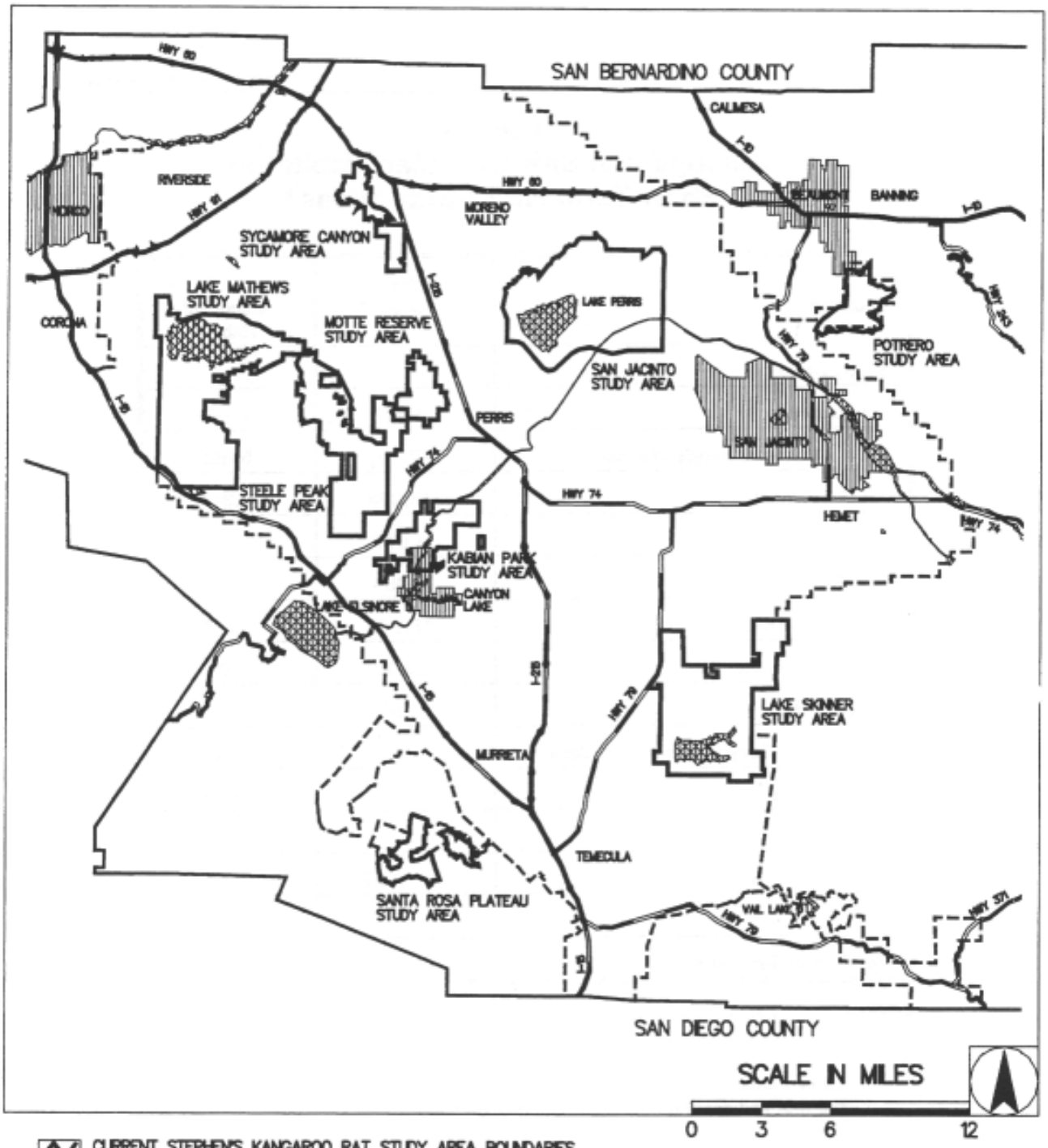

Figure 20

CURRENT STEPHENS KANGAROO RAT FEE AREA AND STUDY AREAS

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Figure 21

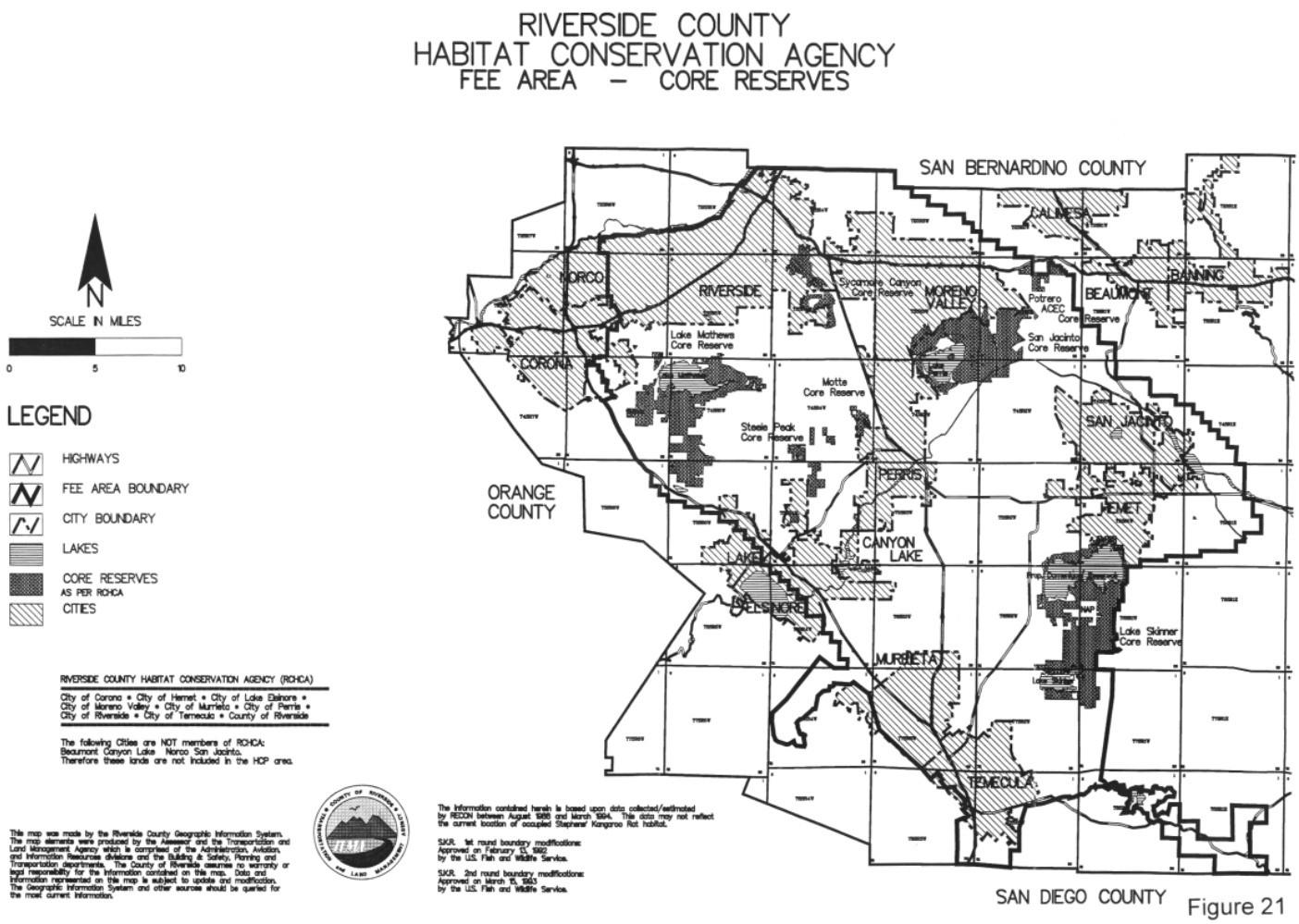

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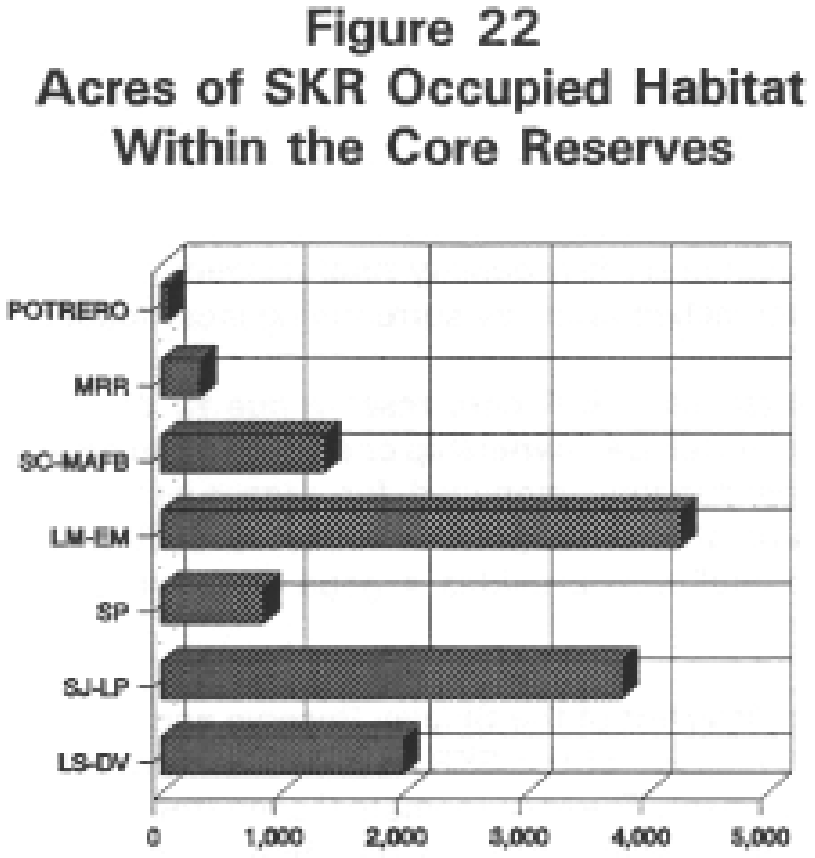
Figure 22



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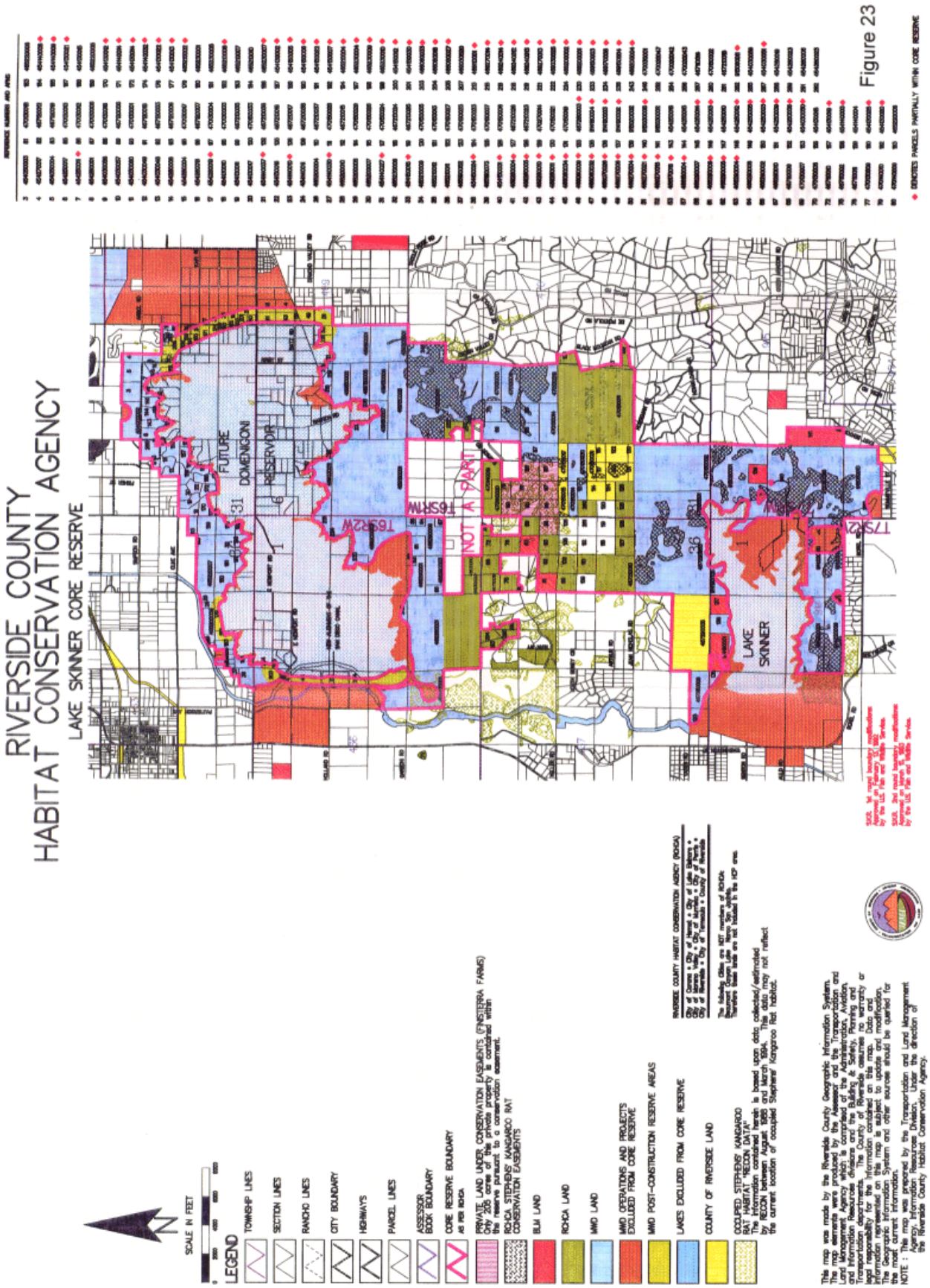

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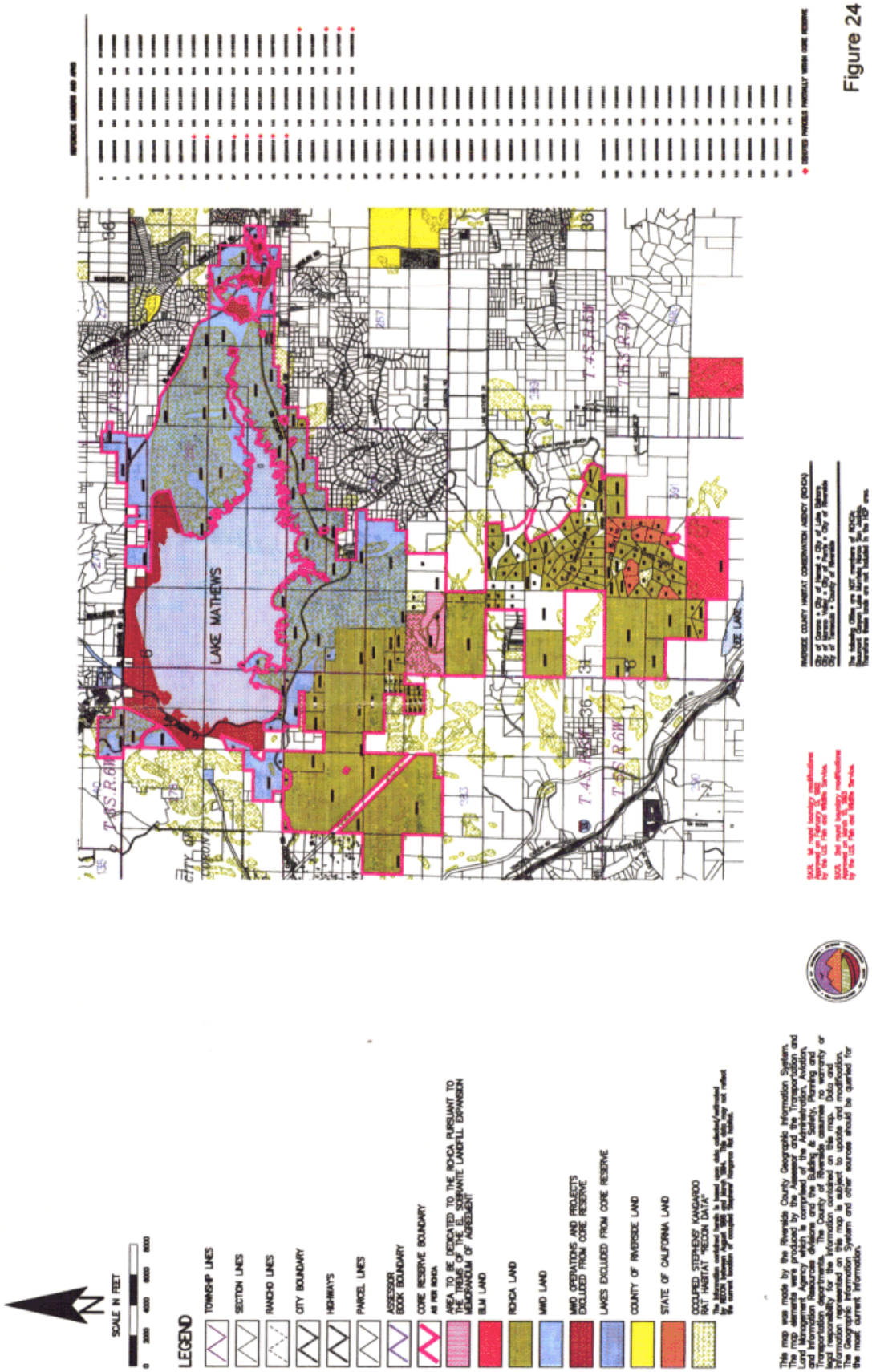
Figure 24



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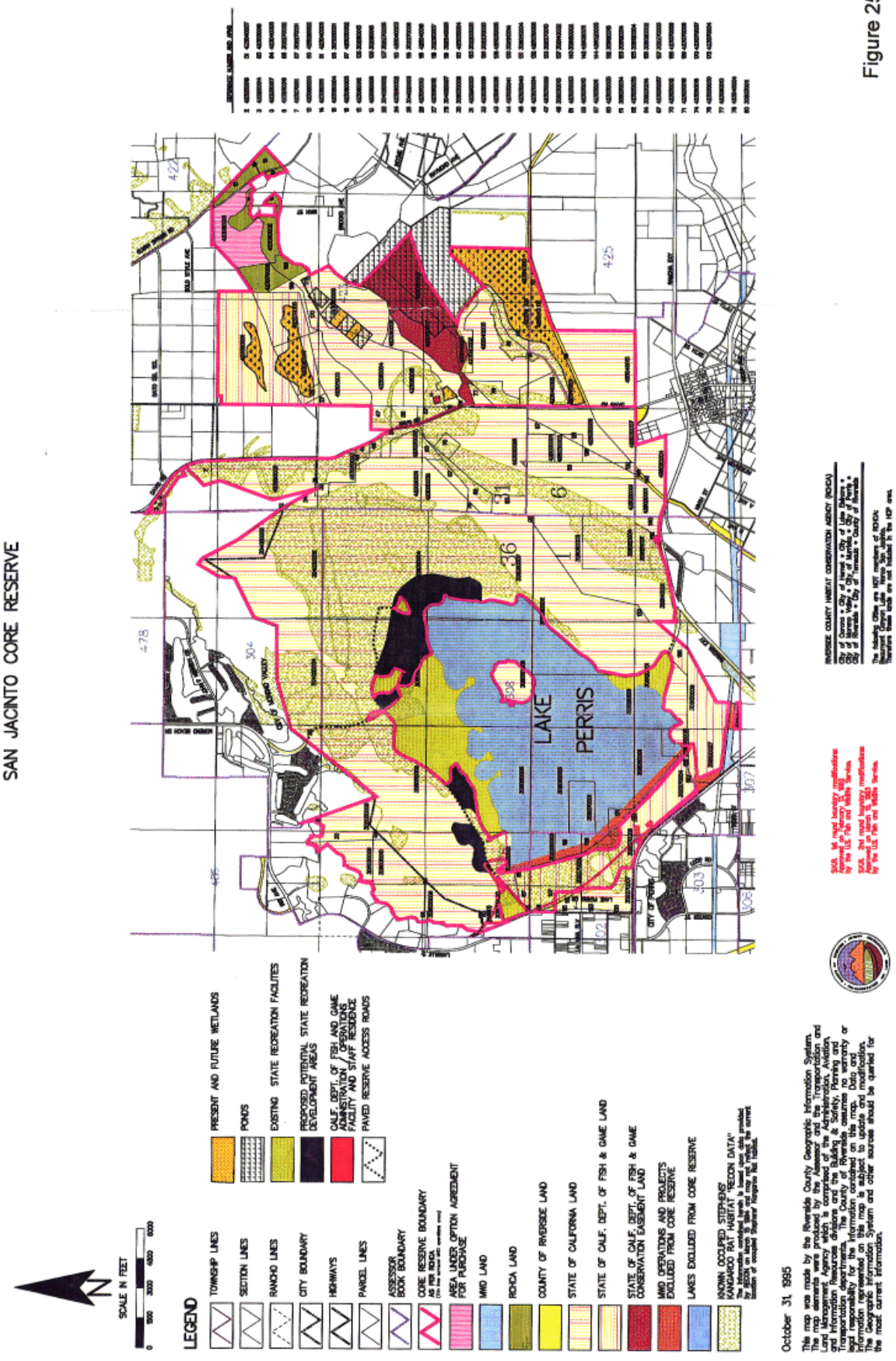

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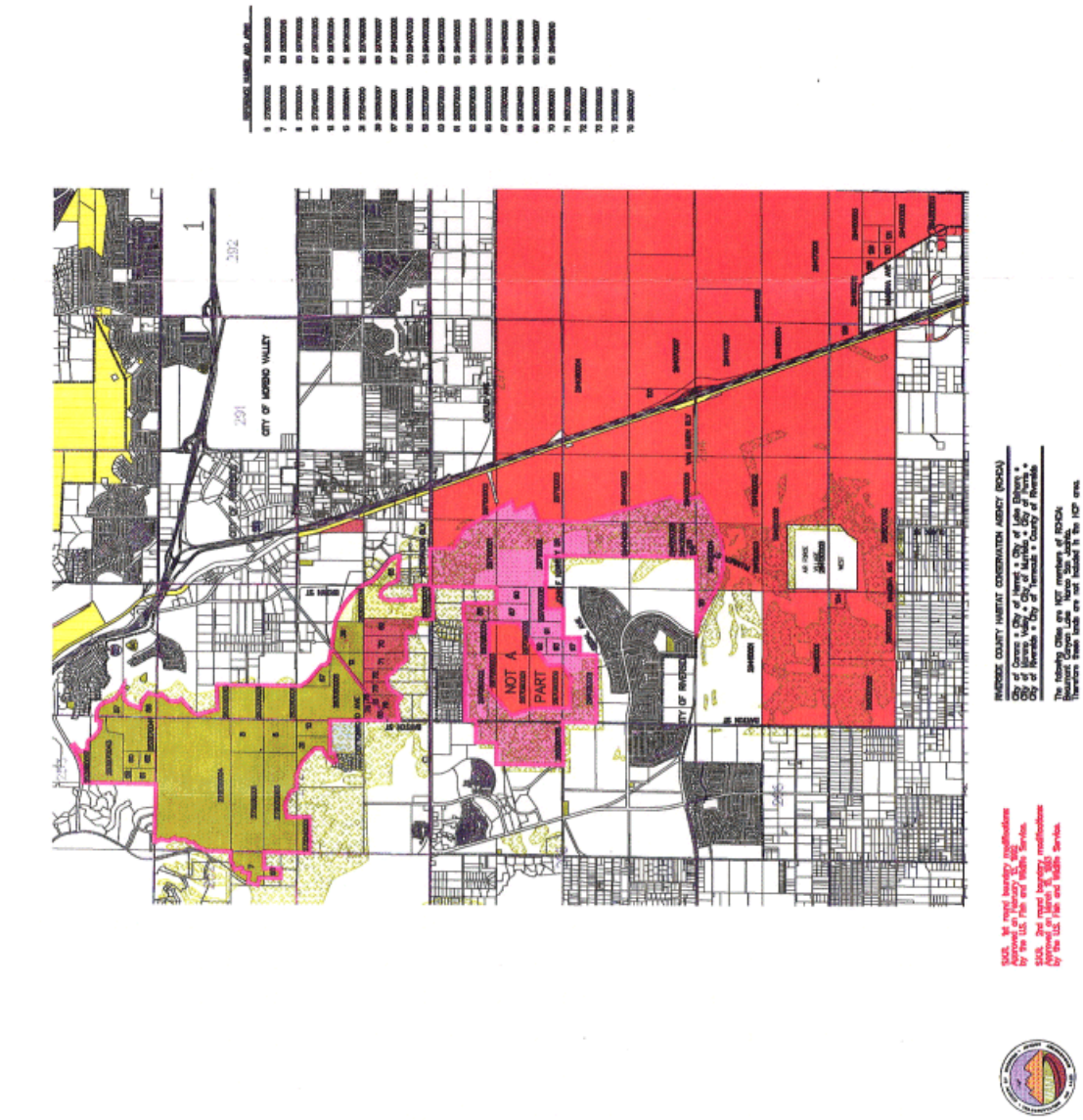

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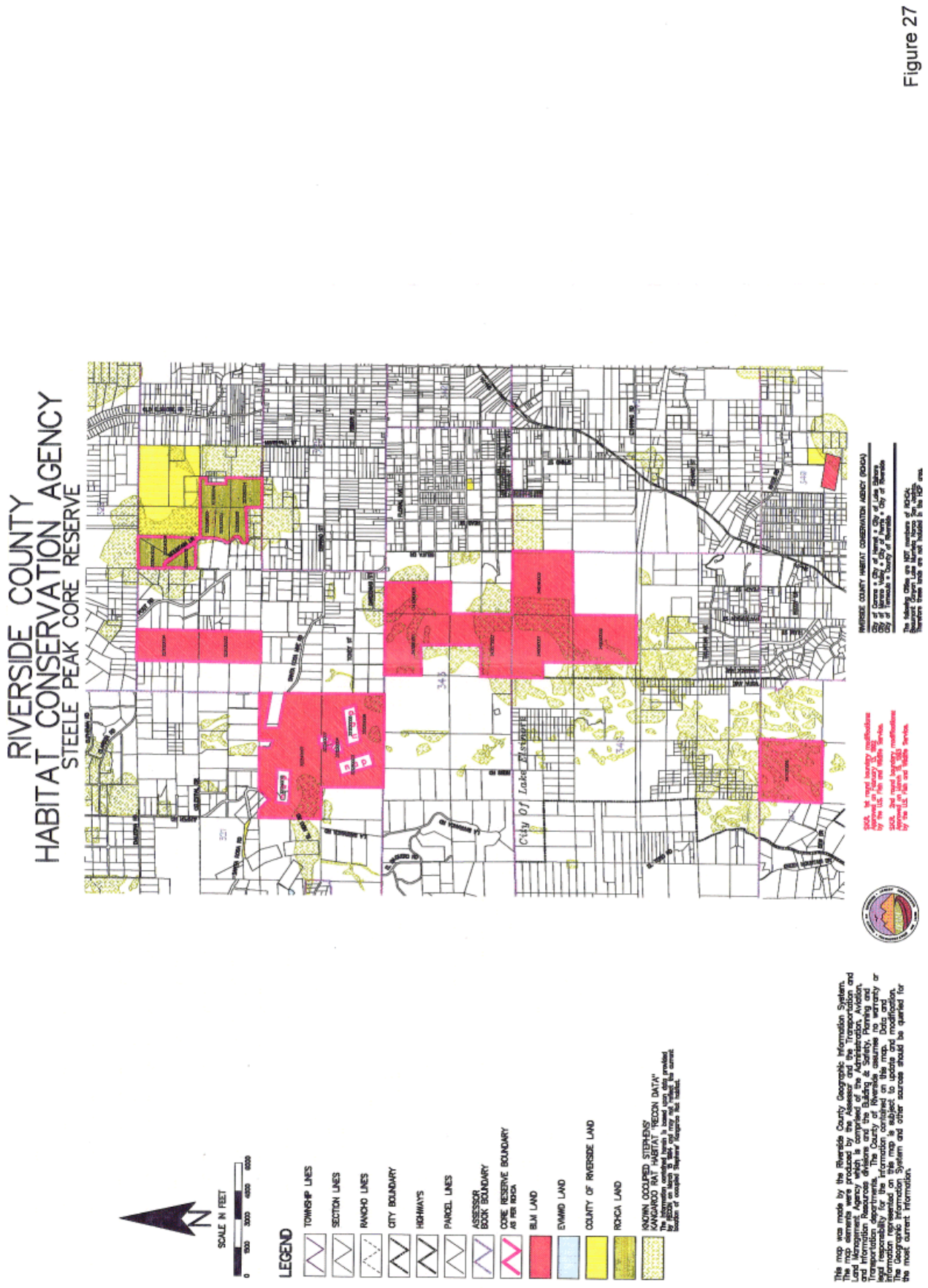

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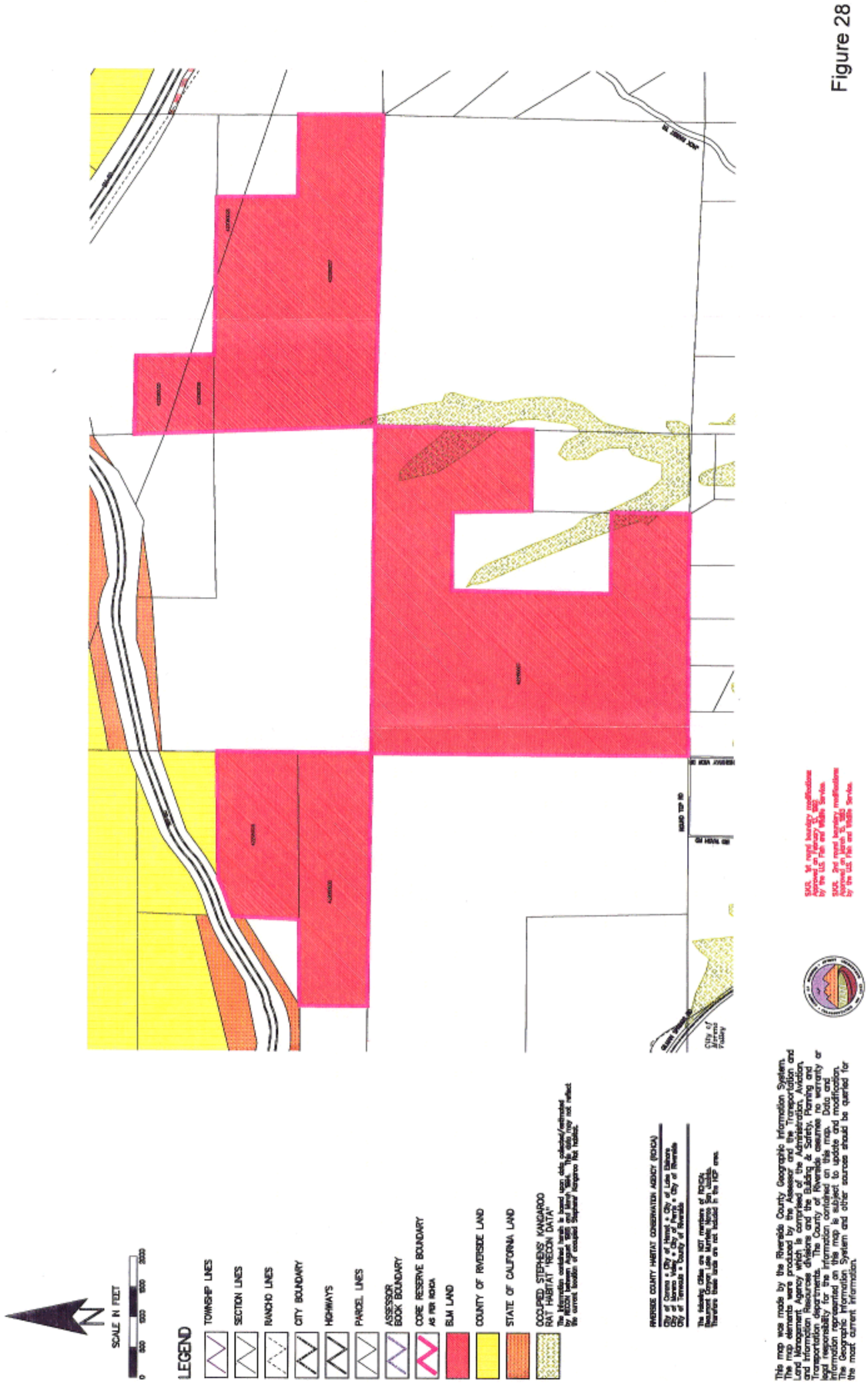

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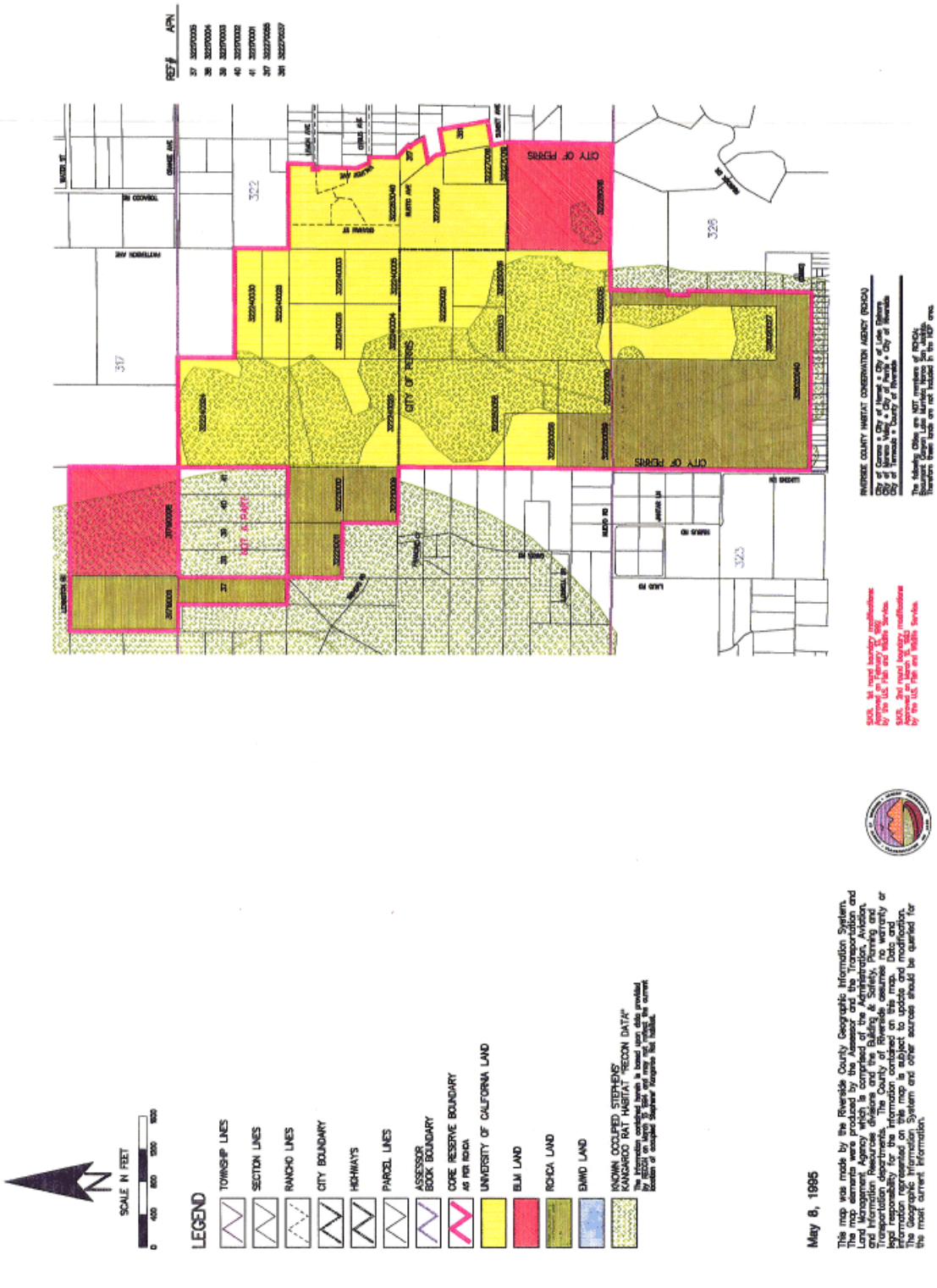

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