



**PRELIMINARY DRAFT  
(SUBJECT TO CHANGE)**  
*Western Riverside County MSHCP  
Work Product #3*

*Prepared for:*

**COUNTY OF RIVERSIDE**  
**Transportation and Land Management Agency**

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*[This report has been prepared by the County's MSHCP consultant, Dudek & Associates, Inc., for informational purposes to assist in the development of the MSHCP. This report is the work product of the MSHCP consultant and does not represent the opinions of the County or other agencies or stakeholders. This report is an incremental step in the development of the MSHCP. Preparation of the MSHCP is an iterative public process with many opportunities for public review.]*

**JULY 2001**

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## **SECTION 4.0**

# **ASSEMBLING THE MSHCP RESERVE**

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is one of three components of the Riverside County Integrated Project (RCIP). The remaining two components are preparation of an updated General Plan for all of Riverside County and completion of a Community and Environmental Transportation Acceptability Process (CETAP) for Western Riverside County. The RCIP sponsors are the County of Riverside and the Riverside County Transportation Commission (RCTC). Taken together, the components of the RCIP establish a vision and process for future growth and development in Riverside County that will provide for high quality development, necessary infrastructure to serve that development and implementation of an open space reserve that will provide for conservation and stewardship of Western County's rich biological heritage, both for the benefit of biological resources and future generations within Riverside County.

The MSHCP establishes a framework for complying with state and federal endangered species regulations while accommodating future growth in the study area. Under existing regulations, the responsibility for conserving habitat for endangered species rests primarily with those public and private entities whose activities directly affect declining species and their habitats. The framework established by the MSHCP shares those responsibilities among a broader group of individuals and organizations, recognizing that the benefits of a successful MSHCP will be shared by such a broader group. This broader group includes the existing and future communities within the MSHCP Plan Area as well as other individuals and organizations across California and the United States. The Western Riverside County MSHCP Planning Agreement summarized in Section 1.2.2 of this document also highlights the entities benefitting from the MSHCP and with roles and responsibilities in assembling the MSHCP Reserve. Accordingly, the following groups of beneficiaries will share responsibility for implementing the MSHCP, including lands and costs associated with reserve assembly and the costs associated with long-term management of the Reserve:

- ❑ Federal and state governments, representing the interests of the State of California and the United States have a responsibility for contributing to assembly of the MSHCP Reserve. These governments, and the communities they represent, benefit from the survival and continuation of species that their laws are designed to protect. Federal and state governments should direct mitigation activities for impacts of public projects that they undertake to assembling, conserving and managing the MSHCP reserve system.

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- Local governments, with jurisdiction in the MSHCP Plan Area, representing the communities of Western Riverside County have a responsibility for contributing to assembly of the MSHCP Reserve. Existing communities benefit from the preservation of their natural heritage and the visual and recreational values of regional open space. Regional infrastructure facilities are being identified and planned for as part of the overall RCIP process that will benefit existing and future residents of these communities and will also have effects on species and habitats the MSHCP is attempting to conserve. Local governments should direct mitigation activities for impacts of public projects that they undertake to assembling, conserving and managing the MSHCP reserve system.
  
- Private landowners and developers benefit from the MSHCP because it establishes a local permitting process, eliminating uncertainty and duplication of agency review that often occurs in review of individual private projects. It also provides a framework for reserve assembly, conservation and management toward which mitigation funds and activities may be directed. To the extent that development costs are passed on to future residents and businesses, private landowners and developers also represent their interests directly.
  
- Existing and future residents in the MSHCP Plan Area benefit from the MSHCP because it establishes the process through which future needed infrastructure to serve residents may be constructed and also conserves Riverside County’s natural heritage for enjoyment and appreciation by future generations.
  
- The Southern California region as a whole benefits from the MSHCP because it will provide the framework for future development and infrastructure to be permitted to occur in a manner that considers conservation and interconnectedness with important components of Southern California’s natural heritage.

### **4.1 SUMMARY OF ACTIONS TO ASSEMBLE THE RESERVE**

The MSHCP reserve will be assembled through a combination of the following methods:

- conservation of lands already in public ownership;

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- public acquisition of private lands from willing sellers;
- private actions to mitigate for the direct impacts of private development projects;
- private actions to conserve habitat in conformance with development regulations.  
and
- public action to mitigate for the direct impacts of public projects.

It is anticipated that conservation of lands already in public ownership will form the backbone of the reserve system and public entities will cooperate to manage these lands for the benefit of the species addressed in the MSHCP. Maximum use of conservation on public lands is intended to minimize the need to conserve privately owned habitat.

Public acquisition of private lands is also anticipated to be a key component of reserve assembly. Public acquisition of private lands is intended to occur in accordance with the procedures described in *Section 6.2.1* of this document.

Other public actions to conserve habitat will be associated with implementation of public projects. Mitigation for impacts of such projects will be directed toward assembly and management of the MSHCP Reserve.

Private actions to conserve habitat are anticipated to occur as part of the development review and entitlement process. It is intended that conservation of habitat occurring as a condition of development approval will occur in accordance with local jurisdictions' land use and environmental regulations generally involving avoidance and minimization of habitat impacts, and compensatory mitigation for unavoidable impacts. Section 6.2.1 of this document describes the local implementation strategy designed to provide the framework for conservation occurring as a result of private development approvals.

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### 4.2 ACTIONS BY FEDERAL AND STATE GOVERNMENTS

#### 4.2.1 Existing Federal and State Habitat Lands

Federal and state-owned lands to be managed for the benefit of the resources addressed in the MSHCP are summarized below. These lands total 313,825 acres including 234,000 acres of federal lands and 79,825 acres of state lands. Summary descriptions of these lands are included in the *Description of Existing Reserves, Western Riverside County MSHCP* (DUDEK, April 2000) on file with the County of Riverside Transportation and Land Management Agency.

#### Federal Lands

Name	Ownership	Acreege
Cleveland National Forest	U.S. Forest Service	75,000
San Bernardino National Forest	U.S. Forest Service	128,000
Prado Basin	U.S. Army Corps of Engineers	4,000
BLM Lands	Bureau of Land Management	27,000

#### State Lands

Name	Ownership	Acreege
Lake Perris Recreation Area	California State Parks	8,800
San Jacinto Wildlife Area	CDFG/California State Parks	7,000
Chino Hills State Park	California State Parks	350*
Anza Borrego Desert State Park	California State Parks	40,000*
Mt. San Jacinto Wilderness State Park	California State Parks	10,000*
Santa Margarita Ecological Reserve	CSU/CDFG	4,300
Santa Rosa Plateau Nature Reserve	California State Parks	8,300
Motte Rimrock Reserve	UC Regents	640

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Box Springs Reserve	UC Regents	160
Emerson Oaks Reserve	UC Regents	245
UC James San Jacinto Mtn Reserve	UC Regents	30

\*Acreage includes only portions of these ownerships within MSHCP Plan Area.

#### 4.2.2 Financial Contributions by Federal and State Governments

**NOTE TO REVIEWERS:** *This section needs to be completed. Some possible suggestions for the discussion of Financial Contributions by Federal and State Governments are provided below:*

##### Land and Water Conservation Fund Appropriations:

- National Recreation Area or National Wildlife Refuge designations
- Grant funds from entities such as Wildlife Conservation Board, National Fish and Wildlife Challenge Grants, California Environmental License Plate Fund
- Tax preference programs that encourage below market sales or donations
- TEA-21 funds
- Funds generated from sale, lease or conversion of public agency lands
- Other sources

#### 4.2.3 Non-Financial Contributions by Federal and State Governments

The following non-financial contributions are expected to be provided by federal and state governments:

- Management of federal and state lands for the benefit of the species addressed in the MSHCP and in accordance with adaptive management plans incorporated in the MSHCP.

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- Mitigation of impacts associated with federal and state activities to be directed toward MSHCP reserve assembly, conservation and management.
- Consideration of MSHCP reserve assembly, conservation and management in conjunction with the exchange, purpose or sale of federal and state lands.
- Facilitation of ecological research or restoration activities by other entities on federal and state lands that benefit MSHCP resources.

#### **4.2.4 Habitat Acquisitions by Federal and State Governments**

Federal and state governments may acquire habitat lands for the MSHCP using a variety of methods including:

- Compensation to landowners for voluntary conservation on their lands.
- Direct purchase from willing sellers/landowners using appropriated funds;
- Cooperative federal/state programs for the conservation of endangered or threatened species (such as the Cooperative Endangered Species Conservation Fund);
- Land exchanges, including bundling lands for sale or exchange;
- Grants and matching funds;
- Tax credits where applicable.

### **4.3 ACTIONS BY LOCAL GOVERNMENTS**

#### **4.3.1 Existing Local Government Habitat Lands**

Local government habitat lands to be managed for the benefit of the resources addressed in the MSHCP are summarized below. These lands total 49,265 acres. Summary descriptions of these lands are included in the *Description of Existing Reserves, Western Riverside County MSHCP* (DUDEK, April 2000) on file with the County of Riverside Transportation and Land Management Agency.

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<b>Name</b>	<b>Ownership</b>	<b>Acreage</b>
Kabian Park	County of Riverside	640
Norton Younglove/De Anza Reserve?	County of Riverside	
Harford Springs Reserve	County of Riverside	325
Box Springs Mountain Reserve	County of Riverside	1,150
Santa Ana Regional Park	County of Riverside	
Lake Skinner Recreation Area	County of Riverside	6,000
RCHCA Lands	RCHCA	10,000
Orange County Water District Lands	OCWD	2,400
Sycamore Canyon Wilderness Park	City of Riverside	1,550
Lake Mathews/Estelle Mtn Reserve	MWD (and others)	3,000
Southwest Riverside County Multi-Species Reserve	MWD (and others)	13,000
MWD Lands	MWD	
Riverside County Flood Control Lands	RCFCWD	

#### **4.3.2 Financial Contributions By Local Governments**

*NOTE TO REVIEWERS: This section still to be completed. Potential funding sources for local jurisdictions to acquire, restore and manage habitat lands are to be described in Section 8.0 of the MSHCP Plan.*

#### **4.3.3 Non-financial Contributions and Habitat Acquisitions by Local Governments**

Privately owned habitat may be acquired for the MSHCP using alternative methods that do not require expenditure of public funds. Among these non-financial methods are land exchange, transfer of development rights, and private land donation, possibly supported by tax credits.

Land exchanges may involve developable lands owned by public agencies that may be

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exchanged for private lands with important habitat. Such exchanges could also occur between public entities.

Transfer of development rights are currently being contemplated as part of the overall incentives program for the General Plan update. ***NOTE TO REVIEWERS: This section should include appropriate references to the General Plan incentives program as that program is finalized.***

Private landowners may donate habitat lands to wildlife agencies, local governments, or qualified nonprofit conservation organizations. Alternative forms of donation include the following:

- outright gift of fee title;
- donation of a remainder interest, where the donor or family member retains the right to use of live on the property for a specified period;
- donation by will, where the donation occurs as a bequest; or
- sale at less than fair market value and donation of the remainder of the fair market value.

Financial incentives are available to landowners who donate land or easement for conservation purposes. The value of the property interest that is donated may qualify as a charitable contribution and for federal and state income tax deduction. Donating land with significant conservation value, but limited development value, can also reduce the total value of an estate subject to inheritance tax. Grant of conservation easement or an “enforceable restriction” for conservation purposes also qualifies a property to be assessed for property tax based on current use, which is often substantially lower than market value. Tax credits directly reduce tax obligations and are financially more attractive than tax deductions, which reduce taxable income. In recent years, several proposals have been made in the California Legislature to provide tax credits for qualified donations of property for conservation purposes. In July 2000, the Natural Heritage Preservation Tax Credit Act (SB 1647) became law. The new law directs the State Wildlife Conservation Board to implement a program under which property may be contributed to the state or local governments, or non-profit organizations designated by a local government, in order to provide for the protection of

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wildlife habitats, open space, or agricultural lands. Specified criteria must be put in place to defined eligible lands.

The law authorizes a tax credit against the California Personal Income on Corporation Tax Laws in an amount equal to 55% of the fair market value of any qualified and contributed land. The credit may be taken in the tax year the contribution of land is made. The law was enacted upon its signature by Governor Davis on July 10, 2000.

#### 4.3.4 Estimated Conservation of Privately Owned Habitat

Section 3.2 of this document provides target estimates for conservation of privately owned habitat within the MSHCP Plan Area by Area Plan. Section 3.2 also contains the criteria to be used to ensure appropriate conservation of private lands habitat lands within each Area Plan. The tables below summarize the private land acreage estimates by vegetation category for the plan area and for each Area Plan and City.

**TABLE ?. ESTIMATED CONSERVATION OF PRIVATE HABITAT  
IN STUDY AREA ACCORDING TO VEGETATION CATEGORY**

<b>Vegetation Category</b>	<b>Acreage Range</b>
Agricultural Land	7,410-7,640
Chaparral	53,620-55,280
Cismontane Alkali Marsh	38-40
Coastal Sage Scrub	49,290-50,810
Desert Scrubs	3,400-3,510
Grassland	19,350-19,950
Meadows and Marshes	220-230
Montane Coniferous Forest	29-30
Peninsular Juniper Woodland and Scrub	280-290
Playas and Vernal Pools	3,950-4,070
Riparian Scrub, Woodland, and Forest	5,270-5,430
Riversidean Alluvial Fan Sage Scrub	3,300-3,400
Water	1,270-1,310
Woodlands and Forests	1,810-1,870
<b>Total</b>	<b>149,240-153,860*</b>

\* Totals may not add up accurately due to rounding.

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**TABLE ?**  
**ESTIMATED CONSERVATION OF PRIVATE HABITAT**  
**FOR STUDY AREA ACCORDING TO AREA PLAN**

<b>Area Plan and Associated Cities</b>	<b>Acreage Range</b>
<b>Riverside/Norco</b>	
Unincorporated County	9-10
Norco	570-590
Riverside	480-490
<b>Total</b>	<b>1,060-1,090</b>
<b>Eastvale</b>	
Unincorporated County	360-370
<b>Total</b>	<b>360-370</b>
<b>Elsinore</b>	
Unincorporated County	6,300-6,490
Canyon Lake	89-92
Lake Elsinore	8,810-9,080
<b>Total</b>	<b>15,200-15,660*</b>
<b>Highgrove/Northside</b>	
Unincorporated County	840-870
<b>Total</b>	<b>840-870</b>
<b>Highway 74/79 Corridor</b>	
Unincorporated County	2,880-2,970
<b>Total</b>	<b>2,880-2,970</b>

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**TABLE ? (Continued)**  
**ESTIMATED CONSERVATION OF PRIVATE HABITAT**  
**FOR STUDY AREA ACCORDING TO AREA PLAN**

<b>Area Plan and Associated Cities</b>	<b>Acreage Range</b>
<b>Jurupa</b>	
Unincorporated County	2,740-2,830
<b>Total</b>	<b>2,740-2,830</b>
<b>Lake Matthews</b>	
Unincorporated County	5,300-5,460
<b>Total</b>	<b>5,300-5,460</b>
<b>Lakeview/Nuevo</b>	
Unincorporated County	9,010-9,290
<b>Total</b>	<b>9,010-9,290</b>
<b>March</b>	
Unincorporated County	0
<b>Total</b>	<b>0</b>
<b>Mead Valley</b>	
Unincorporated County	1,410-1,450
Perris	1,880-1,930
<b>Total</b>	<b>3,290-3,380</b>
<b>REMAP</b>	
Unincorporated County	46,920-48,370
<b>Total</b>	<b>46,920-48,370</b>

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**TABLE ? (Continued)**  
**ESTIMATED CONSERVATION OF PRIVATE HABITAT**  
**FOR STUDY AREA ACCORDING TO AREA PLAN**

<b>Area Plan and Associated Cities</b>	<b>Acreage Range</b>
<b>Reche Canyon/Badlands</b>	
Unincorporated County	10,560-10,880
Moreno Valley	210-220
<b>Total</b>	<b>10,770-11,100</b>
<b>San Jacinto Valley</b>	
Unincorporated County	8,550-8,810
Hemet	890-910
San Jacinto	1,590-1,640
<b>Total</b>	<b>11,030-11,360</b>
<b>Southwest Area</b>	
Unincorporated County	22,330-23,020
Murrieta	2,910-3,000
Temecula	820-840
<b>Total</b>	<b>26,060-26,860</b>
<b>Sun City/Menifee</b>	
Unincorporated County	1,420-1,470
<b>Total</b>	<b>1,420-1,470</b>
<b>Temescal Canyon</b>	
Unincorporated County	6,030-6,220
Corona	1,950-2,010
<b>Total</b>	<b>7,980-8,230</b>

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TABLE ? (Continued)  
ESTIMATED CONSERVATION OF PRIVATE HABITAT  
FOR STUDY AREA ACCORDING TO AREA PLAN

Area Plan and Associated Cities	Acreage Range
<b>The Pass</b>	
Unincorporated County	2,940-3,040
Banning	1,120-1,160
Beaumont	6,770-6,980
Calimesa	470-490
<b>Total</b>	<b>11,300-11,670</b>

\* Totals may not add up accurately due to rounding.

#### 4.4 CONSERVATION BANKING

A mitigation or conservation bank is land that is permanently conserved and managed for its natural resource values, with the intent of selling conservation credits to either private or public parties requiring mitigation. Conservation banks are intended to protect resources in large, connected areas in advance of the need for mitigation, and therefore are considered a valuable tool for assembling the MSHCP reserve.

##### 4.4.1 Existing Conservation Banks in the MSHCP Plan Area

Currently (June 2001), the following conservation banks are active or in process in the MSHCP Plan Area:

- Goldrich Mitigation Bank – 400 acres southwest of Lake Skinner
- North Peak Conservation Bank – southwest of Steele Peak
- Silverado Ranch Conservation Bank – up to 2,500 acres west of the Cahuilla mountains

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- Wilson Valley Conservation Bank – Wilson Valley area
- Sedco Hills Conservation Bank – west of Cottonwood Canyon Creek

The MSHCP Plan considers these banks to be included within the estimates of conservation of privately owned habitat. It is anticipated that lands within the existing conservation banks would be a priority for acquisition as part of the overall private lands acquisition process of the MSHCP.

#### **4.4.2 Establishment of Future Conservation Banks**

Conservation banks may be established by public or private parties. Proposed banks should follow the official policy adopted by the California Resources Agency and the California EPA and the supplemental policy issued by the USFWS and CDFG for banks in the NCCP region of Southern California. For a private conservation bank, the owner of habitat would voluntarily conserve habitat or purchase habitat lands in anticipation of the future sale of mitigation credits. It is anticipated that establishment of new conservation banks would occur in conjunction with market conditions and that credits from such banks would be acquired to the extent that there is a market for such credits.

Conservation banks could also be established by public agencies as part of an early mitigation program for their anticipated future projects.

#### **4.5 ADDITIONAL METHODS OF RESERVE ASSEMBLY**

Participating jurisdictions, other agencies, and non-profit organizations could undertake programs to encourage charitable donations for conservation purposes. Nature walks, bird watching and other activities could be organized in conjunction with fund raising for habitat acquisition. Adaptive management activities and public access improvements could be funded by individuals or corporate sponsors in exchange for public recognition of financial contribution. General conservation activities such as recycling, could be promoted in the community with proceeds directed to habitat conservation or the adopt-a-park/adopt-a-trail method could be applied to adopt a reserve.

## **SECTION 5.0**

# **RESERVE MANAGEMENT AND MONITORING**

### **5.1 ADAPTIVE MANAGEMENT FRAMEWORK**

#### **5.1.1 Regulatory Framework**

The Western Riverside County MSHCP is being prepared as a habitat conservation planning program under Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) and as a Natural Community Conservation Planning (NCCP) plan authorized by the State of California NCCP Act of 1991 and codified as Chapter 10 of Division 3 of the California Fish and Game Code. Both the federal ESA and the State NCCP Act call for incorporation of adaptive management programs in conservation plans.

The federal requirements for adaptive management programs are described in *Section 3.B.3.g of the USFWS/NMFS Habitat Conservation Planning Handbook (November 1996)* and in the 5-point Addendum to the Handbook published in the Federal Register in March 1999. The Federal Register notice contains the following guidance regarding adaptive management programs.

- An adaptive management approach allows for up-front mutually agreed-upon changes in an HCP's operating conservation plan that may be necessary for the species in light of new information. In order to be successfully implemented, adaptive management provisions must be linked to measurable biological goals and monitoring.
  
- Not all HCPs or all species covered in an incidental take permit need an adaptive management strategy. However, an adaptive management strategy is essential for permits that cover species that have biological data or information gaps that incur a significant risk to that species. Possible significant data gaps that could lead to the development of an adaptive management strategy include, but are not limited to, significant biological uncertainty about specific information about the ecology of the species or its habitat (*e.g.*, food preferences, relative importance of predators, territory size), habitat or species management techniques, or the degree of potential effects of the activity on the species covered in the incidental take permit.

## **5.0 Reserve Management & Monitoring**

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Guidelines have also been developed as part of the state NCCP program to ensure that NCCPs meet the conservation standards identified for NCCPs in the State Fish and Game Code. With respect to adaptive management, the state guidelines require that NCCPs: *“Provide for a management plan to determine whether management objectives remain appropriate and whether new or different techniques could be better utilized to achieve management goals.”*

### **5.1.2 Overview of Adaptive Management**

The overriding goal of the MSHCP is to maintain and establish a self-sustaining reserve system to the extent feasible, with a focus on conserving habitats and species. A self-sustaining reserve system and conservation of species and habitats require that ecosystems and higher-level landscape functions are maintained through conservation and management. Ecosystems and landscapes are dynamic environments of interacting biotic and abiotic components (Holling 1995). They do not have a single equilibrium of species (*e.g.*, populations and distributions) and habitats; rather, they may exhibit multiple equilibria, destabilizing forces, and an absence of equilibria (Holling 1995; Holling and Meffe 1996). Furthermore, ecological processes are not linear among different spatial and temporal scales; they shift from one range of scale to another (Holling 1995; Holling and Meffe 1996). Consequently, adaptive management of ecosystems, landscapes, and associated species and habitats requires a flexible, inductive approach where ecological theory and field experimentation must be combined in an iterative manner to monitor the status of the system and respond to the unexpected; *i.e.*, an informed “learning by doing.”

Under existing conditions, western Riverside County already is a highly fragmented landscape that may not function without human intervention through land-based adaptive management. With a projected doubling of the population from 1.4 million to 2.8 million people by 2020, the increased future demands on the ecosystem and the need for effective land management are clear.

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#### ➤ **Definition and Key Features of Adaptive Management Programs**

Adaptive management is an experimental and flexible approach to resource management that integrates ecological theory, modeling, hypotheses generation, field manipulations and interventions, and feedback that allows for refinement of the model(s) and hypotheses and, ultimately, management of the resource. As stated by Gunderson (1999), adaptive management is “adaptive because it acknowledges that managed resources will always change as a result of human intervention, that surprises are inevitable, and that new uncertainties will emerge.” A key concept of adaptive management is that the world is uncertain and flexibility in resources management is crucial (Holling 1995; Holling and Meffe 1996). This approach requires a departure from the traditional command-and-control approach to management, which assumes that the managed system is relatively simple and predictable (Holling and Meffe 1996). Several authors have commented on the key common features of adaptive management.

1. Available theory, empirical information, and expertise are used to develop dynamic models that make predictions about the outcomes of different management actions (Carpenter *et al.* 1999; Walters 1997). Modeling is a powerful tool to simulate the spatial and temporal dynamics of key ecosystem factors, or what Holling (1995) terms “structuring variables,” and to generate and screen hypotheses that may not yield useful data or are unlikely to be effective management policies (Walters 1997).
2. Models, hypotheses and experiments must meet on-the-ground manager’s needs and should be developed in collaboration with managers (Rogers 1998). As part of this process, the monitoring tools, the options and strategies available to managers, and strategies for utilizing new data and information should be developed (Bosch *et al.* 1996).
3. Adaptive management is a “dual control problem where short-term management goals and objectives need to be met while also learning about the managed system (Nichols 1999).

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4. Adaptive management strategies may not yield decisive results for a decade or two and, thus, the agencies and stakeholders must be patient (Lee 1993; Walters 1997).
5. Adaptive management strategies may pose risks for some populations and habitats of endangered and rare species (Johnson 1999a; Walters 1997), but the focus should be on restoring and maintaining ecological resiliency such that risk and catastrophe to other resources are avoided. In other words, there are likely to be difficult tradeoffs in the adaptive management and habitats and species.
6. Reversible treatments should be used where possible so that if hypotheses turn out to be incorrect, the resource is not permanently lost (*e.g.*, loss of a population, state transition of a habitat) (Walters 1997).

#### **➤ Extrapolation and Generalization of Experimental Results**

Several authors have cautioned against unwarranted extrapolation and generalization of experimental results from small scale studies to larger scale ecosystem, landscape, or global processes (*e.g.*, Holling and Meffe 1996; Houlahan 1998). One cannot simply apply such experimental results to larger scale processes without systematically examining the effects at the larger scale. Lee (1993) lists three reasons why scale is important and that ecosystem-level management, for example, requires ecosystem-level experimentation: (1) ecosystems have properties that cannot be measured at a small scale; (2) some effects are too small to be measured at a laboratory scale; and (3) ecosystem interventions may already be in place because of policy actions, and thus would need to be incorporated in the adaptive management program. For example, a field experiment of the effects of habitat fragmentation on the population dynamics of three rodent species carried out at the scale of 5,000 sq. meter blocks of habitat with varying patch size has shown that habitat fragmentation does indeed differentially affect the distribution of the species (Diffendorfer, *et al.*, 1995). However, these results cannot be directly generalized or extrapolated to much larger habitat fragments in the real world because the result is highly scale-dependent. Nonetheless, small-scale experimental studies such as Diffendorfer, *et al.* (1995) have great value in helping to generate the conceptual models of ecosystem- and landscape-level interactions.

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#### ➤ **Management Issues**

A variety of management issues are associated with adaptive management and are discussed later in this section, including species-specific management issues, institutional issues and challenges, monitoring, reporting and costs. The discussion below presents an overview of habitat- and ecosystem-level processes management issues taken from the literature that help to inform the adaptive management program for the MSHCP.

1. **Fire and Fire Suppression** – The vegetation type in the study area comprising the largest number of acres is chaparral, and the dominant driving force in chaparral is fire. The majority of chaparral species are either adapted to occasional fire or are able to persist in fire prone ecological regimes (Hanes 1977; Zedler and Zammit 1989). Wildfire events promote the resprouting of some species, while other species produce seeds that lie dormant until after a wildfire event.

Chaparral has been described as “autosuccessional,” undergoing a rapid succession from largely herbaceous flora immediately after fire to relatively dense woody vegetation in a short time period with minimal loss of species (Hanes 1971; Zedler and Zammit 1989). Early research suggested that without fire, chaparral would develop into oak woodlands or grasslands (Sampson 1944; Wells 1962). Chaparral succession to oak woodlands may occur in mesic situations adjacent to current stands of oak woodlands (*e.g.*, Callaway and D’Antonio 1991) but most research has provided examples of greater than 100 year-old chaparral stands without evidence of physiognomic succession (Zedler 1981; Keeley 1992). This research has shown that in addition to remaining stable and reproductively viable following long periods without fire, some chaparral species (most resprouting species) sexually reproduce largely within older aged stands (Zedler 1981; Keeley 1992). Additional research has shown that high frequency burning of chaparral in the presence of non-native grasses can cause type-conversion from shrublands to non-native grasslands (Wells 1962; Zedler *et al.* 1983; Keeley 1990). Thus while chaparral appears to be fire-adapted, it can remain healthy for long periods without fire, and too-frequent fire may cause conversion to grassland.

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An additional consideration is the accumulation of fuel loads in fire suppressed areas. As fuel loads increase due to fire suppression, the likelihood of a catastrophic, extremely hot crown fire also increases. These crown fires may, in turn, completely destroy a large area of habitat.

- 2. Hydrology and Flood Control** – Alluvial scrub is a shrubland type that occurs in washes and on gently sloping alluvial fans on actively alluviating surfaces experiencing infrequent but severe flooding events. Vegetation comprising alluvial scrub is adapted to periodic heavy flooding and contains more mesic species than other types of coastal scrub. Without this periodic flooding, stands of alluvial scrub are prevented from maturing into mature alluvial scrub, which contains higher species diversity (Haines *et al.* 1989) than intermediate- or pioneer-successional stages of alluvial scrub.

Hydrological modifications can also negatively affect wildlife. For example, Gamradt and Kats (1997) found that post-wildfire erosion in a Santa Monica mountain stream affected major changes in stream morphology. After the wildfire event, fewer pools occurred in the stream, leading to a decrease in suitable oviposition habitat for California newts (*Taricha torosa*), which prefer slow-moving water for oviposition. This hydrological modification may have led to the observed decrease in number of egg masses in the stream.

- 3. Non-Native Species Invasions** – Non-native species have been shown, time after time, to wreak havoc on native ecosystems. Argentine ants (*Linepithema humile*) are known to be in the process of excluding the native harvester ants (genera *Messor* and *Pogonomyrmex*) in much of southern California. However, these introduced ants do not represent a suitable replacement food source for horned lizards (genus *Phrynosoma*) and are contributing to the decline of this lizard. As another example, Gamradt and Kats (1996) found that introduced crayfish and mosquitofish prey upon egg masses of California newts, *Taricha torosa*, and may be responsible for the decline of this species in the wild. Other highly disruptive exotic species include non-native Mediterranean grasses and forbs, Russian thistle, mustards, giant reed, pampas grass, castor bean, tamarisk, introduced bullfrogs, pet and feral dogs and cats, skunks,

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opossums, raccoons, brown-headed cowbirds, European starlings, earwigs, and sowbugs.

4. **Pollution** – Pollution in the form of fertilizer, pesticides, and untreated sewage can increase the amount of organics entering an aquatic ecosystem. This increase in turbidity of the water and reduction of oxygen levels can kill vegetation (Holland and Keil 1995). In addition, air pollution can also affect terrestrial systems. For example, Allen *et al.* (1993) report that high soil nitrogen concentrations due to deposition into the soil from smog led to the death of laboratory coastal sage scrub seedlings and may be responsible for decreasing amounts of coastal sage scrub in heavily polluted areas.
  
5. **Urban development** – In addition to loss of habitat caused by development of wildlands into urban areas, urbanization also causes fragmentation of remaining habitat. Implicit in this process of fragmentation is an increase in the overall amount of edge (compared to interior) bordering the habitat. This increased edge leads to phenomena known as “edge effects,” which are not completely understood but which may have very profound effects on species composition and abundance within the habitat in question. For example, Scott (1993) investigated the avifauna of patches of habitat adjacent to land undergoing development. He saw a transitory increase in species richness (attributed to immigration from surrounding lands being cleared of vegetation) followed by a decrease in richness (presumably due to resultant interspecific competition). Moreover, these results were magnified as study patches neared the area under development, suggesting a more pronounced competition effect in areas closer to urban development. In addition to edge effects, the reduction in remaining habitat due to urban development and other anthropogenic influences also results in a decrease in genetic diversity and therefore vulnerability of the constituent species to extinction, as well as an overall simplification of the flora and fauna of the habitat.
  
6. **Ecosystem State Transition** – As previously mentioned, frequently burned chaparral and coastal sage scrub convert to grassland (Keeley 1990, Zedler *et al.* 1983), while less frequently burned chaparral may revert to woodland (two citations here). Fire

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frequency also plays an important role in the maintenance of some types of forest. For example, Minnich *et al.* (1995) found a change in the Jeffrey pine forest physiognomy of the past 100 years due to fire suppression activities. In this study, fire suppression caused an ecosystem shift from Ponderosa Pine and Jeffrey Pine to incense cedar and white fir, which in turn may have important consequences for migrant and resident bird species.

7. **Other Anthropogenic Influences** – Activities of humans provide a number of management challenges. Farming, discing, mining, logging, and off-road vehicles all create disturbance and may lead to habitat fragmentation, ecosystem state transition (especially conversion of habitat to non-native grassland), and local species extirpations. Sheep and cattle grazing also cause disturbance and may allow an avenue for exotic species invasions. Pesticides (*e.g.*, rodenticides, insecticides, herbicides) also disrupt naturally-occurring levels of vital ecosystem components.

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### **5.1.3 Institutional Issues Summary**

A recurring problem is a failure to implement and maintain adaptive management programs (Lee 1993; Walters 1997). Adaptive management programs tend to fail where there must be a collaboration among various stakeholders regarding management, research, and policy change (Gunderson 1999; Walters 1997). In order to overcome these institutional impediments to successful implementation of adaptive management programs, clear goals and objectives must be established and agencies and stakeholders must be willing to accept risk and uncertainty.

The broad goal of adaptive management is to develop an “optimal management capacity” that maintains the ecological resiliency to withstand ecological stresses (Johnson 1999b).

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Specific goals and objectives of the management program should be developed with participation of the stakeholders (Johnson 1999a). Rogers (1998) suggests that different sets of goals and objectives should be developed for the upper levels of management and for on-the-ground managers. For upper-level management, “high-level” goals and objectives reflect the strategic intent and societal values implicit in the broad policy. The “low-level” goals provide the on-the-ground managers with institutional targets and specific conservation goals (Rogers 1998).

Agencies and stakeholders must be willing to accept risk and uncertainty, and institutions that are amenable to adaptive management must be developed (Johnson 1999a). The institutional structure and stakeholders must be flexible and allow managers to respond when conditions change or management actions are unsuccessful (Johnson 1999b). The inherent uncertainty of adaptive management reflects a change in the management structure from the command-and-control approach where the goal is variance reduction, and it is assumed that the system is well-bounded, clearly defined, relatively simple, and generally linear with regard to cause and effect (Holling and Meffe 1996). Such command-and-control approaches to management ultimately result in less ecosystem resiliency and a greater chance for ecological state transitions (e.g., permanent conversion of coastal sage scrub to annual grassland) (Holling 1995). To avoid reverting to “passive management,” active management will require the support of all stakeholders (Rogers 1998). Adaptive management must rely on operating agency staff and the program must be developed to withstand policy and political change (Lee 1993) with clear lines of responsibility and decision-making procedures established.

#### **5.1.4 An Adaptive Management Approach**

Based on the available literature and regulatory guidance from the wildlife agencies, it is anticipated that an effective adaptive management program would incorporate the following key elements:

1. An institutional framework needs to be established which includes the agencies and stakeholders and specifically a working interface/partnership between the scientists and the on-the-ground managers (Rogers 1998).

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2. The ecological system or landscape needs to be assessed to identify key ecological factors, resilience, and stability. Scientists develop working conceptual models at the appropriate scale of ecosystem and/or landscape processes to identify state of knowledge and information gaps. These conceptual models explicitly describe how the system is thought to function; *i.e., what are the relationships and their interactions?* Experimental hypotheses are generated based on the work of the scientific community. The role of the on-the-ground managers is very important in this process. While the managers cannot be expected to generate the conceptual models, they must be involved in translating the models into testable, real world experimental hypotheses because they will be responsible for implementing the management programs in their respective reserves given their own institutional constraints.
  
3. Based on the initial ecosystem or landscape assessment, the agencies, stakeholders, scientists, and managers collaboratively develop a set of rigorous, measurable conservation and management goals and objectives, priorities, and management and monitoring tools. The conservation and management goals likely will need to be tailored for the different reserves, both because of ecological and institutional differences. Also, it is desirable that the monitoring and management studies are complementary, thus providing the broadest amount of information for the least cost and effort. While adaptive management, by definition, deals with uncertainty, the goals and objectives especially should be as spatially and temporally explicit, rigorous, and certain as possible. The goals and objectives also should be consistent with the vision, values, policies and input of the agencies and stakeholders (*i.e., the “upper-level” goals*). Finally, the goals and objectives also must be consistent with the requirements of the Endangered Species Act such that they become part of the permit conditions.
  
4. Following establishment of the goals and objectives, field methods to monitor and manage resources are developed utilizing the priorities, tools, and institutional constraints identified by the reserve managers in concert with the scientist, agencies and stakeholders.

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5. Management and monitoring activities are implemented by the reserve managers and information is provided for scientific analysis and interpretation and agency review as part of the overall annual reporting and monitoring. A Goal Management System (GMS) may be established to provide internal auditing (Rogers 1998). The GMS ensures that once acceptable goals have been set, they are met, revised, audited and, where necessary, reintegrated into the adaptive management process.
6. Concurrent with field applications, basic and applied research is ongoing. It is possible that scientists and their students will participate in the on-the-ground implementation of the adaptive management program as part of their own research programs, but it is important that these research efforts be conducted under the auspices of the adaptive management program and in conjunction with the protocols, policy, decision-making, and oversight of the program.
7. The scientists work with the reserve managers, with oversight by the agencies and stakeholders, to modify the adaptive management program reflecting feedback from the management and monitoring programs, new independent scientific information, and new or revised experimental hypotheses.

As described above, a recurring problem is a failure to implement and maintain adaptive management programs (Holling 1995; Lee 1993; Walters 1997). Because adaptive management is inherently uncertain and risky, the wildlife agencies must be flexible and willing to accept uncertainty within their regulatory framework. Any short-term failures must not result in the suspension of permits as long as the management program is being implemented in good faith. Such flexibility may be incorporated into the HCP/IA in the same manner as the no surprises/extraordinary circumstances policy. Other stakeholders (*e.g.*, the County of Riverside, environmental organizations, etc.) also need to be patient and allow the programs to mature. Because valid results may take years to collect, the adaptive management program should incorporate features that can withstand political and policy changes; *i.e.*, the authority and the funding for the program should be established up front.

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### **5.2 BIOLOGICAL MONITORING AND ADAPTIVE MANAGEMENT**

*NOTE TO REVIEWERS: This section is still in the process of being prepared.*

### **5.3 RESERVE MANAGEMENT**

*NOTE TO REVIEWERS: This section is still in the process of being prepared.*

### **5.4 FIRE MANAGEMENT/BRUSH MANAGEMENT**

*NOTE TO REVIEWERS: This section is still in the process of being prepared.*

## **SECTION 6.0**

# **MSHCP IMPLEMENTATION STRUCTURE**

Implementation of the MSHCP will require coordinated actions among the local jurisdictions, the Wildlife Agencies and the private sector. Generally, local jurisdictions will implement the MSHCP through their normal land use, planning and approval process as described in *Section 6.2.1* of this document. Local jurisdictions will also contribute to MSHCP implementation through management of contributed public lands. This section describes the overall implementation policies and structure of the MSHCP including the institutional arrangements among the various parties involved in MSHCP implementation.

### **6.1 FEDERAL AND STATE REQUIREMENTS AND LEGAL AUTHORITY**

The MSHCP addresses requirements for obtaining take authorizations under one federal and one state environmental law. This plan is a Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act (ESA), as amended in 1982, and a Natural Communities Conservation Plan (NCCP) subregional plan pursuant to the California NCCP Act of 1991.

#### **6.1.1 Federal Requirements and Legal Authority**

The USFWS has the legal authority to enter into Implementing Agreement(s) (IAs) based on the MSHCP pursuant to the ESA and the Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-666c), and the Fish and Wildlife Act of 1956 (16 U.S.C. Sections 742(f) et seq.). Section 10(a)(1)(B) of the ESA, U.S.C. Section 1539(a)(1)(B), expressly authorizes the USFWS to issue a Section 10(a) permit to allow the incidental take of species listed as threatened or endangered under the ESA. The legislative history of Section 10(a)(1)(B) clearly indicates that Congress also intended that the USFWS would approve HCPs that protect unlisted species as if they were listed under the ESA, and that in doing so the USFWS would provide Section 10(a)(1)(B) assurances for such unlisted species (H.R. Rep. No. 97-835, 97<sup>th</sup> Cong., 2d Sess. 30-31, 1982. Conference Report on 1982 Amendments to the ESA). The USFWS routinely approves HCPs that address both listed and unlisted species.

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The Secretary of the Interior’s August 11, 1994, “Habitat Conservation Plan Assurances Policy” sets forth how the USFWS plans to implement the intent of Congress regarding both listed and unlisted species. This policy was amended and superseded by the “No Surprises” rule, which became a Final Rule for federal purposes on March 25, 1998. It provides that, as long as the HCP is being properly implemented, the federal government will not require any additional lands or money from the permittee(s) in the event of unforeseen changed circumstances and that additional measures to mitigate reasonably unforeseeable changed circumstances will be limited to those changed circumstances specifically identified in the HCP (and only to the extent of the mitigation specified). Such changed circumstances may involve listing of new species. Changed Circumstances and No Surprises are described in Section 6.8 of this document.

#### **6.1.2 California Requirements and Legal Authority**

California law (Section 2800 et seq. Of the California Fish and Game Code) established the NCCP program “to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth.” With regard to the state NCCP Act, the MSHCP has been recognized as an NCCP. The NCCP Act calls for preparation of subregional plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time.

#### **6.1.3 Compliance with Mandatory Requirements**

This document, together with its associated IA and NEPA/CEQA document, is intended to meet the mandatory requirements, or issuance criteria, of an HCP as listed below. These same requirements also apply for a state authorization for take of state-listed species.

<b>Requirement/Issuance Criterion</b>	<b>Where Addressed</b>
1. Impacts likely to result from the proposed taking	NEPA/CEQA document
2. Measures the applicant will undertake to monitor, minimize, and mitigate such impacts.	Sections 5, 6, 7 and 9 of MSHCP Plan, Volume I

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<b>Requirement/Issuance Criterion</b>	<b>Where Addressed</b>
3. Funding that will be made available to undertake such measures.	Section 8 of the MSHCP Plan, Volume I
4. Procedures to deal with unforeseen circumstances.	Section 6 of MSHCP Plan, Implementing Agreement
5. Alternative actions the applicant considered that would not result in take, and the reasons why such alternatives are not being used.	Section 9 of the MSHCP Plan, NEPA/CEQA document
6. Additional measures the USFWS may require as necessary or appropriate for purposes of the Plan.	Implementing Agreement

This document also incorporates the following elements as called for the in the HCP Guidelines:

1. States the biological goals and objectives of the Plan;
2. Includes an Adaptive Management Plan;
3. Includes a Monitoring Program;
4. Includes a Statement regarding permit duration; and
5. Summarizes public participation efforts during the development of the Plan.

***NOTE TO REVIEWERS: Probably need to say something here about NCCP Act mandatory requirements too.***

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## **6.2 LOCAL IMPLEMENTATION MEASURES**

### **6.2.1 Local Implementation Strategy**

*NOTE TO REVIEWERS: The Habitat Evaluation and Negotiation Process paper being prepared and reviewed by the Funding and Implementation Subcommittee will be inserted in this section when it is complete.*

### **6.2.2 Protection of Wetland Habitats and Species**

#### **➤ Purpose**

The protection of wetland habitats, including drainages which may or may not support wetland vegetation communities or species conserved under the MSHCP, is essential to the adequate conservation of several species proposed for coverage by the Plan. Wetlands are dynamic systems and activities in upstream areas may strongly affect downstream habitat values. The purpose of the procedures described in this section is to ensure that functions and values of wetlands throughout the MSHCP Plan Area are conserved such that habitat values for species inside the MSHCP reserve are maintained.

The methods for protection of wetland habitats and species described in this section are intended to be applied throughout the MSHCP Plan Area and form one of the implementation tools to assure that conservation of MSHCP covered species occurs in accordance with the conditions of coverage for individual species described in Section 9.0 of this document. The methods described in this section are intended to be implemented for public and private projects throughout the MSHCP Plan Area.

#### **➤ Background**

According to general theories of biodiversity, stream channels are considered to be relatively species-rich when compared with typical upland environments (Huston 1979, Solbrig 1991). Naiman *et al.* (1993) demonstrated that the “dynamic environment” present within riparian

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corridors, for example, results in “an unusually diverse array of species and environmental processes.” Furthermore, “effective riparian management” has the potential to “ameliorate many ecological issues related to land use and environmental quality” (Naiman *et al.* 1993). In addition to the importance of protecting wetland resources, it has been shown that stream corridors, which may include adjacent uplands, also support disproportionately high species diversity and act to “facilitate a high level of ecological and genetic exchange [which may] ... counter to some extent the many problems associated with landscape fragmentation (Spackman and Hughes 1995, Findlay and Houlihan 1997).”

The methods for protection of wetland habitats and species described in this section consider existing state and federal wetlands regulations, currently available information regarding wetland resources within the Plan area, and the quality of habitat within and outside the proposed Reserve. Sections 401 and 404 of the federal Clean Water Act and Section 1600 of the state of California Fish and Game Code include requirements regarding dredges and fills in wetlands; however, these existing regulations do not specifically address conservation of MSHCP species associated with wetland habitats, unless a federally- or state-listed species would be affected. The methods for protection of wetland habitats and species presented in this section are based on the following assumptions about the information available for wetland resources in the Plan Area and the contribution to overall function and values of the resources.

- (1) The existing MSHCP vegetation mapping does not provide the level of detail necessary to identify the presence and extent of wetlands within the MSHCP Plan Area; this is especially true for isolated wetlands and ephemeral drainages. This lack of information will require additional studies and surveys of wetland resources. The functional assessment and programmatic wetland delineation for the study area currently being developed by the U.S. Army Corps of Engineers (ACOE) as part of the SAMP process currently underway is anticipated to provide the necessary level of mapping detail
- (2) Drainages identified as desirable for conservation have frequently been subject to some level of urbanization or human encroachment that constrain efforts to conserve drainages within large habitat blocks.

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- (3) Drainages and isolated wetlands occurring outside the proposed reserve may be important in maintaining functions and values of resources within the reserve.

#### **➤ Survey, Mapping and Documentation Requirements**

For public and private projects within the MSHCP Plan Area, a determination of the presence/absence of drainages and/or wetlands on the project site shall be made using the available information augmented by project-specific mapping if determined necessary by the County biologist. Because the term wetland does not specifically include ephemeral drainages, the phrase drainage/wetland is used here and refers to all wetlands (isolated or non-isolated, including vernal pools, alkali playatas, stock ponds, etc.) and drainages (*i.e.*, any landform with a distinguishable bed and bank). The project site should be evaluated based on existing available information or through site survey, if determined necessary by the County biologist. The project site evaluation should consider species composition, topography/hydrology, and soil analysis, where necessary.

The wetlands documentation shall include a statement of the functions and values of the mapped wetland with respect to the species conserved by the MSHCP. Functions and values which should be considered, should focus on those that may affect downstream values related to conservation of covered species within the Reserve. Factors to be considered include hydrological regime, flood storage and flood flow modification, nutrient retention and transformation, sediment trapping, toxicant trapping, public use, wildlife habitat, and aquatic habitat.

#### **➤ Wetlands Avoidance and Minimization**

The applicant shall develop alternatives demonstrating efforts that first avoid, and then minimize direct and indirect effects to the mapped drainage/wetland(s) and shall review these alternatives with the County, participating jurisdictions, and regulatory agencies, as appropriate. An avoidance alternative shall be selected, if feasible. If an avoidance alternative is selected, measures shall be incorporated into the project design to ensure the long-term

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conservation of the drainage/wetland(s) to be avoided, and associated functions and values through the use of deed restrictions, conservation easement, or other mechanisms.

Long-term conservation of functions and values of drainage/wetland(s) within the MSHCP Plan Area to assure maintenance of functions and value within the MSHCP Reserve Area will often necessitate edge treatments. Edge treatments are areas adjacent to sensitive habitat (including drainage/wetlands) where land use should be reviewed in order to protect the sensitive habitat area. The extent and type of edge treatment needs to be evaluated on a project-by-project and resource-by-resource basis but should consider the following potential indirect impacts: lighting, noise, trash/debris, urban and stormwater runoff, toxic materials, exotic plant and animal infestations, dust, trampling and unauthorized recreational use, and their relation to the functions and values of the drainage/wetland(s) which is(are) to be conserved. Guidelines for such edge treatments are presented as land use adjacency guidelines in Section 6.2.4 of this document. Consideration of such edge or land use adjacency issues is typically required of all projects under existing regulations.

If an avoidance alternative is not feasible, a practicable alternative that minimizes direct and indirect effects to wetlands and associated functions and values to the greatest extent possible shall be selected. Measures to mitigate the unavoidable impacts to drainage/wetland(s) shall be incorporated in the project design in accordance with the “No Net Loss” policy of federal and state wetland regulations. This will involve replacement of the affected drainage/wetland(s) at a ratio of at least 1:1. The proposed mitigation shall be directly related to the functions and values to be lost through the expected impacts. In other words, the original statement of functions and values of the drainage/wetland(s) in relation to covered MSHCP species should be evaluated in terms of potential impacts of the proposed project. Those impacts which are unavoidable should be mitigated such that the lost functions and values of the drainage/wetland(s) as related to covered MSHCP species, are equivalently replaced.

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#### **6.2.3 Protection of Narrow Endemic Plant Species**

##### **► Purpose**

The MSHCP is a criteria-based plan, focused on preserving individual species through habitat conservation. Habitat conservation is based on the particular habitat requirements of each species as well as the known distribution data for each species. The existing MSHCP

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database does not, however, provide the level of detail sufficient to determine the extent of the presence or distribution of narrow endemic plant species within the MSHCP Plan Area. Since conservation planning decisions for these species will have a substantial effect on the status of the species, additional information regarding the presence of these species must be gathered during the long-term implementation of the MSHCP to ensure that appropriate conservation planning decisions are made.

#### ➤ **MSHCP Narrow Endemic Plant Species List**

The narrow endemic plant species list for the MSHCP is presented below. The letter (F) shown in parentheses in the list below indicates that the species is generally confined to Forest Service lands.

#### **Narrow Endemic Plant Species:**

- Allium munzii* – Munz’s onion
- Ambrosia pumila* – San Diego ambrosia
- Arabis johnstoni* – Johnston’s rock-cress (F)
- Atriplex coronata* var. *notatior* – San Jacinto Valley crownscale
- Atriplex parishii* – Parish’s brittlescale
- Atriplex serenana* var.  *davidsonii* – Davidson’s saltscale
- Berberis nevinii* – Nevin’s barberry
- Brodiaea filifolia* – thread-leaved brodiaea
- Calochortus palmeri* var. *munzii* – Munz’s mariposa lily (F)
- Ceanothus ophiochilus* – Vail Lake ceanothus
- Dodecahema leptoceras* – slender-horned spineflower
- Dudleya multicaulis* – many-stemmed dudleya
- Eriastrum densifolium* ssp. *sanctorum* – Santa Ana River woolly-star  
(Santa Ana River)
- Galium angustifolium* ssp. *jacinticum* – San Jacinto Mountains bedstraw (F)
- Hemizonia pungens* ssp. *laevis* – smooth tarplant
- Lasthenia glabrata* ssp. *coulteri* – Coulter’s goldfields
- Lepechinia cordiophylla* – heart-leaved pitcher-sage (F)
- Myosurus minimus* ssp. *apus* – little mousetail

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*Navarretia fossalis* – spreading navarretia  
*Orcuttia californica* – California Orcutt grass  
*Satureja chandleri* – San Miguel savory (Santa Rosa Plateau, Steele Rock)  
*Trichocoronis wrightii* var. *wrightii* – Wright’s trichocoronis

#### **➤ Narrow Endemic Plant Species Survey, Mapping and Documentation Requirements**

Within identified narrow endemic plant species survey areas (including reserve areas), site-specific focused surveys for narrow endemics shall be required for all public and private projects where appropriate habitat is present. The narrow endemic plant species survey areas are depicted on *Figure \_\_\_*. These survey areas were identified based on the presence of select soils, existing occurrence data for narrow endemic plant species (UC Riverside database and CNDDB), personal communication with the Service and Fred Roberts, a botanist with extensive experience in western Riverside County. Select soils were digitized from 1971 Soil Conservation Service Soil Survey (Knecht 1971); they include Altamont clay, Auld clay, Bosanko clay, clay pit, Domino, Porterville cobbly clay, Traver and Willow soils. Habitat type was also a consideration.

The narrow endemic plant species survey areas include habitats in various stages of disturbance. Almost all of the habitats have been disturbed by some form of mechanical disturbance (*e.g.*, farming, clay mining, etc.) at some time in the past; thus, quality and current potential to support narrow endemic plants varies within the habitats. Some locations within the narrow endemic plant species survey areas have been relatively undisturbed within the past 10 years and are considered to be of higher quality (*i.e.*, higher potential for occurrence of narrow endemic species) while other locations have been highly disturbed within the last few years and are considered to be of lower quality (*i.e.*, lower potential for occurrence of narrow endemic species). However, given the underlying soils and the possible presence of a seed bank in those soils, even the areas of lower quality areas have the potential to support narrow endemics if allowed to remain undisturbed (*e.g.*, if farmed fields are allowed to go fallow, flood control activities cease, etc.) Therefore, site-specific focused surveys for narrow endemics shall be required within the narrow endemic plant species survey areas where appropriate soils and habitat are present. Surveys shall be

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FigureFigure 2 Narrow Endemic Plant Species Survey Area **(PLEASE SEE "JPG" FILE ATTACHMENT)**

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conducted in the appropriate season, in accordance with established protocols (for species for which protocols have been established).

#### ***(SEASONAL SURVEY PERIODS FOR PLANTS ON THE NARROW ENDEMIC PLANT SURVEY LIST TO BE INSERTED)***

Survey results shall be documented in mapped and text form and shall be presented for review by the County or participating jurisdiction. Where survey results are positive (*i.e.*, a narrow endemic plant species is present), any proposals with the potential to affect narrow endemics shall be subject to avoidance, minimization and mitigation strategies, as described below. Specific habitat requirements for certain narrow endemic species or populations may limit the ability to minimize impacts to these species through transplanting/translocation or revegetation.

#### **➤ Narrow Endemic Plant Species Avoidance and Minimization**

Impacts to covered narrow endemic plant species populations from planned and future projects within the narrow endemic plant species survey areas will be avoided to the greatest extent feasible. Where avoidance is feasible, measures shall be incorporated into the project design to ensure conservation in perpetuity of the onsite narrow endemic species population and associated habitat and/or watershed through the use of deed restrictions, conservation easements or other mechanisms. Where impacts are considered unavoidable, impacts will be limited to no more than 20% of the total narrow endemic species population that would be affected by the proposed project for projects outside the MSHCP designated reserve area. No more than 5% of the total narrow endemic species population may be affected for projects inside the designated MSHCP reserve area. Findings of equivalency shall be made according to the procedures outlined below to demonstrate that avoidance is infeasible and that the 5% or 20% threshold has been met. ***(NOT TO REVIEWERS: The 5% and 20% thresholds have been identified based on thresholds that have been determined to be acceptable by the Wildlife Agencies in the City of San Diego, County of San Diego, and City of Chula Vista. DUDEK does not have any empirical literature-based information that would suggest different thresholds.)***

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If it is determined that impacts cannot be avoided and minimized to 5% or less, the County or participating jurisdiction must make a determination of biologically superior preservation as described below. The Wildlife Agencies shall be consulted for review and approval of biologically superior determination.

#### ➤ **Equivalency Findings**

The following information shall be included in the equivalency findings related to impacts to covered narrow endemic species. Equivalency findings need only be made if avoidance of the plant population is infeasible and encroachment up to the 5% or 20% threshold is proposed.

- Definition of the project area.
- A written project description.
- A written description of biological information available for the project site including the results of narrow endemic plant surveys.
- Written finding of infeasibility of total avoidance of narrow endemic species' population(s).
- Quantification of unavoidable impacts to narrow endemic species associated with the project, including direct and indirect effects, documenting that the 5% or 20% threshold will be met.
- A written description of project design features that reduce indirect effects, such as edge treatments, landscaping, elevation differences; minimization and/or compensation through restoration or enhancement.
- A summary conclusion, including findings of consistency with the applicable percentage criterion (*i.e.*, at least 80% or 95% conservation).

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#### **➤ Determination of Biologically Superior Preservation**

Determination of biologically superior preservation will be made if both avoidance of the identified plant population and making the equivalency findings is determined to be infeasible.

A determination of biologically superior preservation by the County or participating jurisdiction will be based upon the criteria for findings of equivalency, as defined above, as well as an expanded written description of the project. The expanded project description shall include information demonstrating that although the proposed project would exceed the 5% or 20% narrow endemic species impact threshold, with proposed design and compensation measures, it would result in an overall reserve design and configuration biologically superior to that which would occur under a project alternative within the 5% or 20% narrow endemic species impact threshold without these measures.

Demonstration that the biologically superior alternative would provide benefits with respect to reserve design and configuration should be considered in the context of the following factors:

- effects on conserved habitats supporting narrow endemic species;
- effects on the populations of the narrow endemic species;
- effects on habitat linkages and function of reserve areas; and
- effects on reserve configuration and management.

#### **6.2.4 Land Use Adjacency Guidelines**

The land use adjacency guidelines presented in this section are intended to address indirect effects associated with locating development adjacent to the reserve. Existing local regulations are generally in place that address the land use adjacency issues presented in this section.

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*Section 3.2* of this document provides a general description of the planned MSHCP reserve and contains the criteria for assembly of the reserve for each Area Plan within the MSHCP Plan Area. As the reserve is assembled, “hard-line” reserve boundaries will be established and development will occur adjacent to the reserve. Existing and future development adjacent to the reserve may result in edge effects that will adversely affect biological resources within the reserve. To minimize such edge effects, the following land use adjacency guidelines will be implemented in conjunction with review of individual public and private development projects adjacent to the reserve. Edge effects will also be addressed through overall reserve management activities described in *Section 5.0* of this document.

#### ➤ **Drainage**

Proposed developments adjacent to the reserve shall incorporate plans to ensure that the quantity and quality of runoff discharged to the reserve is not altered in an adverse way when compared with existing conditions. In particular, runoff from developed and paved areas adjacent to the reserve shall be directed away from the reserve. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the reserve. This can be accomplished using a variety of methods including natural detention basins, grass swales, or mechanical trapping devices. Regular maintenance shall occur to ensure effective operations of runoff control systems.

#### ➤ **Toxics**

Land uses proposed adjacent to the reserve that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife species, habitat or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge to the reserve. Measures such as those employed to address drainage issues shall be implemented.

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#### ➤ **Lighting**

For proposed developments adjacent to the reserve, lighting of areas adjacent to the reserve shall be directed away from the reserve to protect species within the reserve from night lighting. Landscape shielding may be incorporated in project designs to minimize the effects of lighting adjacent to the reserve.

#### ➤ **Noise**

Noise generating land uses adjacent to the reserve shall incorporate setbacks, berms or walls to minimize the effects of noise on reserve resources pursuant to current local, state and federal rules, regulations and guidelines. For planning purposes, resources within the reserve should not be subject to noise that would exceed residential noise standards.

#### ➤ **Invasives**

Invasive, non-native plant species shall not be incorporated in the landscape for land uses adjacent to the reserve. Landscape treatments adjacent to the reserve should incorporate native plant materials to the extent feasible. The plant lists below note plant materials that should not be used adjacent to the reserve, and those that are most appropriate adjacent to the reserve.

#### ***Plant lists to be provided***

#### ➤ **Barriers**

Land uses adjacent to the reserve should incorporate barriers in individual project designs to prevent unauthorized public access, illegal trespass or dumping in the reserve and to minimize domestic animal predation. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

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#### ➤ **Grading/Land Development**

Manufactured slopes associated with site development shall not extend into the reserve.

#### ➤ **Fire Management/Brush Management**

*To be included in Section 5.0.*

### **6.2.5 Interim Controls**

*(IN PROGRESS)*

### **6.3 AGRICULTURE**

*(IN PROGRESS)*

### **6.4 DATABASE UPDATES AND REFINEMENTS/NEED FOR SURVEYS**

#### **6.4.1 Vegetation Mapping**

The MSHCP vegetation map described in *Section 2.0* of this document forms the basis for the assessment of vegetation communities to be conserved under the MSHCP. New vegetation mapping shall not be required for the purposes of assessing habitat conservation under the MSHCP. However, individual project-level vegetation mapping may be required for the following circumstances:

- ❑ For public and private projects determined to be subject to the MSHCP criteria described in Section 3.0 and the local implementation measures described in *Section 6.2.1*, project-level vegetation mapping may be required to demonstrate consistency with criteria subject to a project-by-project determination by County staff.

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- For public and private projects within the MSHCP Plan Area determined to be subject to the Protection of Wetland Habitats and Species policies included in *Section 6.2.2*, mapping of wetlands may be required to demonstrate consistency with the policies subject to a project-by-project determination by County staff.
- For public and private projects within the narrow endemic plant species survey area and subject to the narrow endemics policies included in *Section 6.2.3*, vegetation mapping may be required to assess the presence of suitable habitat for survey purposes. Vegetation mapping will not be required if other data, such as the presence of suitable soils, are sufficient to assess the presence of suitable habitat.
- For public and private projects seeking reserve boundary adjustments as describe in *Section 6.5* vegetation mapping will be required in order to demonstrate the equivalency findings.
- Vegetation mapping requirements may be imposed by the County as part of the local CEQA review process for individual public and private projects.

#### **6.4.2 Additional Survey Needs and Procedures**

In addition to the narrow endemic plant species listed in Section 6.2.3, additional surveys may be needed for certain species in conjunction with Plan implementation in order to achieve coverage for these species. Species-specific survey requirements are included in the conservation analysis and conditions of coverage for each individual species presented in Section 9.0 of this document.

#### **6.5 RESERVE BOUNDARY ADJUSTMENTS**

Individual public and private projects within the MSHCP Plan Area are expected to be designed and implemented in accordance with the criteria for each Area Plan presented in *Section 3.2* of the *MSHCP Plan*. Findings of consistency with the criteria shall be made in conjunction with individual project approvals within the MSHCP Plan Area. In cases where deviations from the criteria are necessary, resulting in adjustments to the reserve boundary

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from that described in the criteria, the boundary adjustment/equivalency analysis procedure described in this section will apply.

Deviations from the criteria/reserve boundary adjustments may be made without the need to amend the MSHCP Plan where the adjusted reserve boundary results in the same or greater biological value to the reserve. Boundary adjustments may occur for reasons such as: 1) new biological information obtained through site-specific studies; 2) updated land use information that clearly demonstrates an area as unsuitable for inclusion in the reserve (primarily limited to the presence of existing development that was unknown at the time the MSHCP criteria were developed); 3) site-specific topographic, engineering or design information that materially affects the development of the site and its relationship to the MSHCP reserve; 4) other reasons such as might be offered by a landowner or individual project proponent.

The process for evaluating and accepting deviations from the criteria/reserve boundary adjustments will include assembly of necessary project information and completion of equivalency analysis as described below:

#### **➤ Project Information**

The following information will be assembled for projects requesting deviations from criteria/reserve boundary adjustments:

- Definition of the study area for the project;
- Narrative and graphic description of the project;
- Narrative and graphic description of biological information available for the project site including current project-specific vegetation mapping and appropriate species surveys;
- Narrative and graphic description of the project's efforts to be consistent with the MSHCP criteria/reserve boundary and explanation of the rationale why consistency has been determined to be infeasible.

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- Quantification and characterization of impacts/benefits of the proposed project (incorporating reserve boundary adjustment) on habitats, species and overall reserve design with respect to core reserve areas, linkages and corridors.

#### **➤ Equivalency Analysis**

Based on the assembled project information, an equivalency analysis will be provided in narrative and graphic form comparing the effects/benefits of the proposed project and a project on the same site not deviating from the MSHCP criteria/reserve boundary. The analysis may include site-specific project design features as well as onsite and/or offsite mitigation offered by the project proponent. The equivalency analysis will address the following categories:

- effects on habitats;
- effects on covered species;
- effects on core habitat areas;
- effects on linkages and corridors;
- effects on reserve configuration and management (such as increases or decreases in edge);
- effects on ecotones and other conditions affecting species diversity (such as invasion by exotics);
- effects on species of concern not on the covered species list.

The equivalency analysis shall draw conclusions regarding the degree to which the proposed projects is considered to be biologically equivalent or superior to a project on the same site not deviating from the MSHCP criteria/reserve boundary. Projects determined to be biologically equivalent or superior will be determined to be acceptable deviations from the MSHCP criteria and amendment to the MSHCP will not be required for such projects. Projects not determined to be biologically equivalent or superior will be determined to be unacceptable deviations from the MSHCP criteria and an amendment to the MSHCP would

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be required for such projects. MSHCP amendment procedures are described in *Section 6.10* of the administrative draft MSHCP Plan.

### **6.6 COOPERATIVE INSTITUTIONAL STRUCTURE FOR IMPLEMENTATION OF THE MSHCP**

*(IN PROGRESS)*

### **6.7 RESERVE ASSEMBLY ACCOUNTING**

Annual reports need to be prepared that track habitat losses and gains associated with public and private development projects and track the assembly of the reserve system. The annual reports are used to demonstrate that habitat loss is occurring in rough proportionality with development, ensure that the habitat reserve is being assembled as contemplated in the MSHCP, and make certain that the habitat conservation goals are being achieved.

The County of Riverside will prepare and provide to the Wildlife Agencies an annual report of total habitat area lost and habitat area conserved within the MSHCP Plan Area and total conservation contributions made to the MSHCP Reserve throughout the MSHCP Plan Area. The annual report will provide this information by vegetation type, consistent with “HabiTrak” methodology.

HabiTrak, an ArcView application, was developed cooperatively by the Wildlife Agencies, local jurisdictions, special districts, and others to meet the reporting requirements for multiple species HCPs. It is designed to be an easy-to-use, stand-alone desk-top application that could be used by non-GIS staff. The tool uses common and standardized data to prepare standardized tables and maps for the annual reports. HabiTrak was first used by the City of San Diego and the County of San Diego to prepare their subarea habitat tracking reports for 1999.

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HabiTrak uses common baseline databases (*e.g.*, vegetation, habitat preserve boundaries) and a user created project database (*i.e.*, development project footprints including both loss and conservation components of a project) to create standardized outputs (maps and tables) summarizing the habitats lost and conserved for the current year and cumulatively over time. It is designed to run on ArcView 3.1 or higher and on high-grade performance PCs (Pentium 500 with 128 meg of RAM) with Windows 95/98/NT. The application uses Avenue scripting, Dialog Designer, Crystal Reports and Visual Basic to interface with ArcView 3.1+ to create user interfaces, to conduct the required geoprocessing and analysis, and to create the final reports. All of ArcView's standard capabilities and functionality are available to users, the HabiTrak extension simply adds customized menus and options unique to HabiTrak.

The functionality of the HabiTrak application includes:

- Digitizing (tablet or "heads up" digitizing)
- Importing of digital data from other commonly used digital data exchange formats (*i.e.*, ESRI shapefile, ESRI ArcInfo export, DXF)
- Ability to enter development and conservation project attributes
- Linking of project attribute data with spatial data
- Ability to distinguish between pending/temporary projects from permitted projects
- Ability to use project-level information in lieu of regional information
- Polygon overlay geoprocessing
- Data aggregation
- Report generation (see *Attachment C* for a sample of the reports generated by HabiTrak)
- Map generation
- Export of digital data
- On-line help documentation and screens

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## **6.8 ASSURANCES FOR UNFORESEEN AND CHANGED CIRCUMSTANCES**

### **6.8.1 No Surprises Rule**

In accordance with the Habitat Conservation Plan (“No Surprises”) Assurances Rule (63 Federal Register 8859), it is acknowledged that the purpose of the Western Riverside County MSHCP is to provide for the conservation of Covered Species and the mitigation, minimization and compensatory measures required in connection with incidental taking of the Covered Species in the course of otherwise lawful and permitted activities within the MSHCP Plan Area. Accordingly, as described below and except as otherwise required by law and/or provided under the terms of the MSHCP Plan and except for Unforeseen Circumstances, in particular as these requirements are addressed in *Section 6.8.2* of this Plan, no further mitigation or compensation will be required by the Wildlife Agencies to address impacts of permitted activities undertaken by the City and the beneficiaries of the Take Authorization for Covered Species.

### **6.8.2 Unforeseen Circumstances**

The U.S. Department of Interior’s “No Surprises” policy provides, in part, that:

“In negotiating unforeseen circumstances, the [Wildlife Agencies] will not require without the consent of the permittee, the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water, including quantity and timing of delivery, or other natural resources beyond the level otherwise agreed upon for the species covered by the conservation plan.”

If, due to Unforeseen Circumstances, additional compensation measures as defined in *Section 6.8.2* become necessary, the provisions of this section will apply. However, in the event that extraordinary circumstances adversely affect any of the Western Riverside County MSHCP’s Covered Species within the life of the Plan, the County or beneficiaries would not be required

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to provide additional financial compensation, land, or land restrictions beyond that required under the Western Riverside County MSHCP at the time of issuance of its associated Section 10(a)(1)(B) permit without their consent.

The Wildlife Agencies will not require the County or beneficiaries to commit additional land, additional land restrictions, or additional financial compensation for the Covered Species beyond that provided pursuant to the Western Riverside County MSHCP, provided that the County and beneficiaries are properly implementing the Plan. If the Wildlife Agencies subsequently determine that Unforeseen Circumstances have arisen and that additional land, additional land restrictions, or additional financial compensation beyond that required pursuant to the Plan are necessary to provide for the conservation of a Covered Species, then the obligation for such additional measures will not rest with the County or third party beneficiaries.

1. **DEFINED** – “Unforeseen Circumstances” (defined in 50 C.F.R. Section 17.3) means changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Wildlife Agencies at the time of the conservation plan's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species.

For the purposes of the Western Riverside County MSHCP, the term “Unforeseen Circumstances” under the Federal Endangered Species Act is defined as: (1) any significant, unanticipated adverse change in the status of this Subarea Plan’s Covered Species; (2) any significant adverse change in the habitat values and other biological resources of the MSHCP Plan Area that are not reasonably contemplated by this Subarea Plan; (3) any significant adverse change in the anticipated impacts of urban development activities upon which this Plan is based; or (4) any new and substantial scientific information relevant to the Plan that was not anticipated by the Wildlife Agencies or the County at the time the Plan was approved and that would be likely to result in significant adverse change in (1), (2), (3) or (4).

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2. **RELEVANT FACTORS** – For the purposes of the Western Riverside County MSHCP, extraordinary circumstances will not exist without notice of a formal finding by the USFWS. In making that finding, the agency will consider:
- The size of the current range of the affected Covered Species.
  - The percentage of the range of the affected Covered Species and habitat that has been adversely affected by urban development in the MSHCP Plan Area.
  - The percentage in the range of the affected Covered Species and habitat that has been conserved by the Western Riverside County MSHCP.
  - The ecological significance of that portion of the range or habitat of the affected Covered Species.
  - The level of knowledge about the affected Covered Species and habitat and the degree of specificity of the conservation program for that species or habitat under the Western Riverside County MSHCP.
  - Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the Covered Species in the wild.

USFWS will make an extraordinary circumstances finding only on the basis of a finding by the Regional Director of the USFWS, based on the best scientific evidence and commercial data available and after considering any responses submitted by any other party pursuant to the advance notice provisions in (3) below. Any findings of Unforeseen Circumstances must be clearly documented and based upon reliable technical information regarding the biological status and habitat requirements of the affected species. In making such determination, USFWS will have burden of demonstrating the existence of extraordinary circumstances.

Extraordinary circumstances will not include the changes anticipated to occur as a result of the urban development activities anticipated by the Western Riverside County MSHCP. However, nothing in this section will be interpreted to restrict the authority of the USFWS to take appropriate action under the Endangered Species Act to ensure that the MSHCP Plan is implemented properly.

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3. **ADVANCE NOTICE** – Except where there is substantial threat of imminent, significant adverse impacts to a Covered Species, the Permitting Agencies will provide the County and any affected beneficiary at least 30 calendar days notice of a written, proposed finding of Unforeseen Circumstances, during which time the Wildlife Agencies will meet with the County and any affected beneficiary to discuss the proposed finding, to provide the County and any affected beneficiary with an opportunity to submit information to rebut the proposed finding, and to consider any proposed changes to the conservation strategies for the Reserve.
4. **LIMITS ON ADDITIONAL CONSERVATION MEASURES** – If the Wildlife Agencies make a finding of Unforeseen Circumstances in accordance with the procedures described above, and determine that additional conservation measures are warranted, such additional conservation measures will conform to the maximum extent possible to the original terms of the Western Riverside County MSHCP. Additional conservation measures will be limited to those modifications, restrictions, and agreements described below.

### **Effects of Unforeseen Circumstances on Take Authorization**

A finding of Unforeseen Circumstances will not be grounds to suspend, terminate or otherwise revoke the Take Authorizations issued pursuant to the Western Riverside County MSHCP provided that the County and affected beneficiary cooperate with the Wildlife Agencies to identify and implement fair, reasonable and necessary modifications as specified in *Section 6.8.2*, and *Section 6.8.3* of this Plan. As described in the “No Surprises Rule,” the USFWS retains the right to take actions at its own expense to protect or conserve an MSHCP Covered Species.

### **Notification**

It is the duty of the County to notify the Wildlife Agencies, in writing, within 60 calendar days of becoming aware of an existing or potential Unforeseen Circumstance. Similarly, the Permitting Agencies will notify the City, in writing, within 60 calendar days, if any of the Permitting Agencies become aware of existing or potential Unforeseen Circumstance.

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### **Reconciliation of the No Surprises Rule and Unforeseen Circumstances**

If additional conservation and mitigation measures are deemed necessary to respond to Unforeseen Circumstances, the Services may require additional measures of the County or beneficiary where the conservation plan is being properly implemented, but only if such measures are limited to modifications of conservation strategies for the affected species within the Reserve, and maintain the original terms of the Western Riverside County MSHCP to the maximum extent possible. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or restrictions on the use of land, water (including quantity and timing of delivery), or other natural resources otherwise available for development or use under the original terms of the conservation plan, without the consent of the County and/or beneficiary.

Thus, in the event that Unforeseen Circumstances adversely affect any of the MSHCP Covered Species during the life of the Plan, the County or beneficiaries would not be required to provide additional financial compensation, land or land restrictions beyond those required by the Plan at the time of issuance of the Section 10(a)(1)(B) Take Authorization without their consent.

Pursuant to the “No Surprises” Rule, the County and the Wildlife Agencies agree that the following MSHCP components are not subject to modification as a result of Unforeseen Circumstances:

- (1) The estimates of conservation of private land as described in *Section 4.0* and the MSHCP criterion as described in *Section 3.0*.
- (2) The wetland, narrow endemics, land use adjacency, vegetation mapping, survey and boundary adjustment guidelines and policies included in *Section 6.0*
- (3) The permitted activities described in *Section 7.0*.
- (4) The Reserve funding plan described in *Section 8.0*.
- (5) Any other change not currently described in this Plan that would significantly increase the Plan’s costs or the interests in land of the County or any of the beneficiaries or any landowner in the MSHCP Plan Area.

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Additional compensation measures will not be imposed on beneficiaries where the County has already granted final project approvals unless such additional conservation measures are agreed to by the beneficiaries.

#### **6.8.3 Changed Circumstances**

Changed Circumstances are defined as reasonably foreseeable circumstances, including natural catastrophes, that normally occur in an area and which could affect covered species. Reserve areas within the MSHCP Plan Area represent the most important habitat areas in the County. Therefore, these changed circumstances provisions reflect reasonably foreseeable changes in circumstances that could occur in the reserve. The changed circumstances discussed here pertain only to the reserve established within the MSHCP Plan Area pursuant to the MSHCP Plan and are not intended to cover these same circumstances outside the MSHCP Plan Area or if they occur within the MSHCP Plan Area, but outside of the reserve.

The County has identified the following changed circumstances: flood, drought, fire, invasion by exotic species, toxic spills, and illegal dumping of toxic materials. Emergency response and access to the reserve during many of these occurrences is addressed in *Section 7.0* of this Plan. While it may be reasonably foreseeable that these changed circumstances may occur during the life of the permit, it is not reasonably foreseeable that any of these events will occur with such magnitude as to jeopardize the continued existence of any species covered by the MSHCP.

If the Wildlife Agencies determine that additional conservation and mitigation measures are deemed necessary to respond to Changed Circumstances and the additional measures are provided for in *Section 6.8.3* of this Plan, the County or appropriate managing entity will implement the measures specified, subject to funds available pursuant to *Section 8.0* of this Plan.

- (1) **FLOOD** – Some flooding may occur from time to time within the Reserve due to natural occurrences outside of the control of man and it may be infeasible to prevent future occurrences or to fully remediate such events.

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In the event that flooding disturbs all or part of the Reserve, the County will assess the extent of the damage. This assessment will include consideration of any potential habitat benefits of the flooding. If potential benefits may occur from flooding, the County or appropriate managing entity will monitor the area for a period of up to two years following the flood to assess the effects of the flooding on habitat values. If the County finds that habitat values are in decline as a result of flooding, the County will implement remedial action consistent with the guidelines for re-establishing reserves after changed circumstances presented in the discussion of re-establishing reserves after changed circumstances presented in this section.

- (2) **FIRE** – In the event that fire disturbs all or a portion of the Reserve, the County will assess the extent of the damage. The County or appropriate managing entity will monitor the burned area for a period of two years following the fire to assess the amount of natural regeneration. If natural regeneration of native plant species is not occurring at a rate sufficient to create the desired vegetation communities and habitat as determined by the County, the County or appropriate managing entity will undertake remediation consistent with the guidelines for re-establishing reserves after changed circumstances presented in this section.
- (3) **DROUGHT** – In the event of drought, new planting or revegetation efforts on the Reserve will be delayed until the cessation of the drought period. When the pertinent jurisdiction officially proclaims drought conditions and implements water preservation measures, the County will determine which water-consuming Reserve enhancement activities will be delayed until the end of the drought period. The determination will emphasize the retention of existing vegetation planted by the County and appropriate managing entity and will, wherever feasible, delay requirements to establish new vegetation in the Reserve until the end of the drought period. Replacement of vegetation destroyed by drought will be consistent with the guidelines for re-establishing reserves after changed circumstances presented in this section.
- (4) **INVASION BY EXOTIC SPECIES** – Should exotic species inundate the reserve, the County will assess the extent of the damage to the reserve and reserve habitat values and

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identify and implement an appropriate remediation response consistent with the guidelines for re-establishing reserves after Changed Circumstances presented in this section. The local University of California Cooperative Extension also will be consulted in evaluating appropriate methods for eradication of exotic species.

- (5) **TOXIC SPILLS AND ILLEGAL DUMPING OF TOXIC MATERIALS** – If any toxic spills or illegal dumping of toxic materials occur in the reserve, the County will determine the extent of damage to the reserve and identify and implement any appropriate remediation response consistent with the guidelines for re-establishing reserves after changed circumstances presented in this section. In addition, consultation with local environmental health departments, hazardous materials teams, or other emergency response personnel will occur to determine the appropriate agencies and hazardous materials relief alternatives available for providing remediation.

Landowners will continue to maintain their lands in a manner that prevents toxic spills and illegal dumping of toxic materials into the reserve. The County and landowners maintain all rights to prosecute and seek remediation from responsible parties for toxic spills and illegal dumping of toxic materials.

### **Re-establishing Reserves after Changed Circumstances**

If a changed circumstance occurs in the reserve, the County will assess the damage to the reserve and estimate the costs and time required to re-establish the affected vegetation communities or habitats in the reserve. Repairs, re-establishment of habitat, or reacquisition of reserve lands will occur based on the following categories and parameters:

- (1) **MINOR** – Minor damages are those with repair costs of \$25,000 or less. The County and/or the Reserve Owner/Manager will repair minor damage to the reserve within 18 months. Examples of minor damage include: damage to reserve fencing, damage to small patches (*i.e.*, less than one acre) of narrow endemic species or young vegetation (*i.e.*, generally vegetation up to and including 18 months in age), and destruction of all or most of the habitat values on up to ten acres in the reserve. In the event there are insufficient funds to accomplish the repairs within 18 months, the

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County may extend the repair schedule, subject to the notification requirement in noted below.

- (2) **MODERATE** – Moderate damages are those with repair costs of greater than \$25,000 and less than \$50,000. The County and/or the reserve Owner/Manager will repair moderate damage to reserves within 36 months. Examples of moderate repairs include: damage to medium patches (i.e., at least one acre in size and up to three acres in size) of narrow endemic species or moderately-aged vegetation (i.e., vegetation more than 18 months old, but less than three years of age), destruction of all or most of the habitat values of up to 20 acres of the reserve. In the event there are insufficient funds to accomplish the repairs within 36 months, the County may extend the repair schedule, subject to the notification requirement noted below.
  
- (3) **SEVERE** – Severe damages are those with repair costs of \$50,000 or greater. Normally severe damage takes five years or more to repair or re-establish. Severe damages will be considered unforeseen circumstances and will be subject to *Section 6.8.2* of this Plan. Examples of severe damage may include: destruction of large patches (i.e., greater than five acres) of mature (i.e., generally three years of age or older) vegetation, the destruction of all or part of the reserve 20 acres or more in size.

The County will include in the annual report prepared pursuant to *Section 6.7* of this Plan repair costs and repair schedules undertaken or anticipated pursuant to the preceding schedule in response to changed circumstances. Monetary thresholds established in items 1-3, above, will be adjusted annually for inflation in accordance with the consumer price index (CPI).

### **Notification**

It is the duty of the County to notify the Wildlife Agencies, in writing, within 60 calendar days of becoming aware of an existing or potential changed circumstance. If the County has extended the schedule for minor or moderate repairs, the notification shall include a brief description of the new schedule. Similarly, the Wildlife Agencies will notify the County, in

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writing, within 60 calendar days, if any of the Wildlife Agencies become aware of existing or potential changed circumstance.

### **Changed Circumstances Not Provided for in the MSHCP**

If the Wildlife Agencies determine that additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and the additional measures are not provided for in *Section 6.8.3* of this Plan, the Wildlife Agencies will not require the additional measures without the consent of the County and the applicable beneficiary.

If any of the above-named events occur of such magnitude that the Wildlife Agencies conclude that either that the damage to the Reserve is severe or that the continued existence of an MSHCP covered species is in jeopardy, then the occurrence shall be deemed an unforeseen circumstance and any additional conservation and mitigation measures shall be subject to *Section 6.8.2* of this Plan.

## **6.9 CRITICAL HABITAT**

The USFWS has adopted and proposed critical habitat designations for the the following species within the MSHCP Plan Area.

- southwestern willow flycatcher (final)
- San Bernardino kangaroo rat (proposed)
- Riverside fairy shrimp (proposed)
- Quino checkerspot butterfly (proposed)
- least Bell's vireo (final)
- California red-legged frog (final)
- California gnatcatcher (final)
- Arroyo toad (final)

It is anticipated that the Western Riverside County MSHCP will not result in adverse modification to any of the proposed or final critical habitat designations because the Plan **(1)** provides for development in nonessential areas, **(2)** establishes a Reserve including key

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linkages and wildlife corridors, **(3)** employs long-term conservation strategies with special management considerations for the protection of each of the Covered Species including those for which proposed or final critical habitat has been designated, and **(4)** employs added protections for narrow endemic species. Because the issuance of the Take Authorization will not destroy or adversely modify critical habitat for any of the Covered Species, no additional special management considerations or protection for those species will be needed within the MSHCP Plan Area once Take Authorization is issued. Therefore, upon issuance of Take Authorization, any critical habitat designation for covered species for lands within the MSHCP Plan Area will be removed entirely from within the boundaries of the MSHCP Plan Area. Such removal will occur automatically upon issuance of Take Authorization.

Consistent with the No Surprises Rule, if critical habitat is designated for any of the covered species after Take Authorization is issued, and the MSHCP is being implemented properly, then neither the County nor the beneficiaries will be required to commit additional land, to be subject to additional land restrictions, or to provide additional financial compensation beyond that described in the Plan. In the event that the Wildlife Agencies adopt recovery plans or designate critical habitat for covered species following the approval of this Plan and issuance of Take Authorization, such adoptions or designations will not apply to any lands within the MSHCP Plan Area, the covered species or habitat conserved by this Plan, or otherwise affect any of the conservation strategies or mitigation measures required by the MSHCP.

### **6.10 AMENDMENTS TO THE MSHCP**

**(IN PROGRESS)**